

General

Project Description

This project consists of the planing and resurfacing of U.S.-322 from SLM 14.11+/- to SLM 16.70+/- in the Village of Gates Mills, in Cuyahoga County.

Existing Typical Sections

Existing typical sections have been taken from the records and are believed to represent the existing pavement, but the State of Ohio does not guarantee the accuracy of the same.

For further information in regard to the existing typical sections, the Contractor shall refer to the previous construction plans.

These plans may be reviewed at the following location:

Ohio Department of Transportation
District 12 Office
5500 Transportation Boulevard
Garfield Heights, Ohio 44125

Plan Sheet Stationing

The roadway was not surveyed prior to the preparation of these plans. Record drawings were used to prepare plan sheets and calculate estimated pavement area quantities and pavement marking quantities.

Contingency Quantities

The Contractor shall not order materials or perform work for items designated by plan note to be used "As Directed by the Engineer" unless authorized by the Engineer. The actual work locations and quantities used for such items shall be incorporated into the final change order governing completion of this project.

Equipment and Material Storage

In order to provide for the safety of the traveling public the Contractor's attention is directed to 614.03. In addition the following provisions shall apply:

1. Any removed items shall not be stored on the right of way for more than thirty (30) days.
2. The storage of equipment, materials, and vehicles within the highway right of way will be permitted. The number of areas and exact locations shall be approved by the Engineer.
3. All disturbed areas shall be returned to their original condition at no expense to the state.

Cooperation Between Contractors

The contractor shall cooperate and coordinate operations with the contractors on other projects that may be in force during the life of the contract.

Work Limits

The work limits shown on these plans are for physical construction only. Provide the installation and operation of all work zone traffic control and work zone traffic control devices required by these plans whether inside or outside these work limits.

Environmental Commitments

For this project the following environmental commitments shall be adhered to:

1. All work to be within existing Right-of-Way.
2. No work in streams and wetlands, or Pollinator Initiative sites.
3. No tree removal.
4. There will be no disturbances to the Buckeye Trail markers (blazes) as a result of this project. The blue-colored blazes are on the wooden utility poles on the NW and SW corners of the intersection of US-322 and Chagrin River Road.

Right of Way

All work shall be performed within the existing right of way or easements.

Construction Noise

Activities and land use adjacent to this project may be affected by construction noise. In order to minimize any adverse construction noise impacts, do not operate power-operated construction-type devices between the hours of 9:00pm and 7:00am. In addition, do not operate at any time any device in such a manner that the noise created substantially exceeds the noise customarily and necessarily attendant to the reasonable and efficient performance of such equipment.

Staging Areas

There are no specific areas given in the plans for the Contractor to use as a staging area(s). If the Contractor wants to use an area(s) for staging, regardless if it falls within the project limits or not, the Contractor is to use the Right of Way E-Permitting System at <https://odhcp.bemcorp.net/Accounts/Account/Account> in order to apply for a permit per Section 107.02 of the CMS. For specific permitting questions, the Contractor can contact the District Permitting Office, (Melvin Safford) at 216-584-2137, (Andrew Tomko) at 216-584-2195 or at District12Permits@dot.ohio.gov.

If a permit is granted, all conditions of the permit shall be met in addition to the requirements of 104.04 of the CMS, at no additional cost to the State. If the Project Engineer deems that all the conditions of the permit were not met, then 10% of the Contract bid amount for mobilization shall be withheld until all the conditions of the permit are satisfied.

Item 619 – Field Office, Type B, As Per Plan

In addition to the requirements of CMS 619, the Contractor shall furnish and set up a Wi-Fi router meeting the requirements of IEEE 802.11ac for the exclusive use of the Department.

All other field office items supplied shall meet the requirements of a Type B Field Office.

Item 619 – Field Office, Type B, As Per Plan **6 Months**

Public Safety Commitment

The contractor shall advise emergency services and school districts fourteen (14) days prior to the start of construction activities.

Village of Gates Mills – Administrative Office
440-423-4405

Protection of Right-of-Way Landscaping

Prior to beginning work, the Contractor, the Project Engineer and a representative of the maintaining agency will review and record all landscaping items within the right-of-way (both within and outside the construction limits). A record of this review will be kept in the Project Engineer's files. Prior to final acceptance, a final review of landscaping items will be made.

Constrict all activities, equipment storage and staging to within the construction limits. Unless otherwise identified in the plans or proposal, the construction limits are identified as 30 feet from the edge of pavement.

Submit a written request to the Project Engineer to use any area outside these limits. The document submitted must clearly identify the area and explain the proposed use and restoration of the area. Use of these areas for disposal of waste material and construction debris, excavation of borrow material and placement of portable plants is prohibited. The request must be approved, in writing, before the Contractor has permission to use the area.

Any items damaged beyond the construction limits, as defined above, will be replaced in kind or as approved by the Project Engineer.

Item 623 – Construction Layout Stakes and Survey Monuments
Item 623 – Monument Assembly Adjusted To Grade, As Per Plan
Item 623 – Monument Assembly Reconstructed To Grade, As Per Plan

Per CMS 623.04 and 623.05, the Contractor shall field verify the location of all existing survey control and monument assemblies prior to beginning any work and after project completion. The use of metal detection rods may be necessary to locate buried monumentation. Any monument box listed in the note that is immediately visible on the surface of the existing pavement, or is uncovered during the planing process, shall be adjusted to grade. Any monument box that exhibits substantial deterioration as determined by the engineer requiring more work than would be considered normal for Item 623, Monument Box Adjusted To Grade shall be reconstructed. The Engineer shall make the final determination of whether each monument box is to be adjusted or reconstructed. Where a monument box is either being adjusted to grade or reconstructed to grade requires a new frame and cover, the frame and cover will be paid for under Item 611, Miscellaneous Metal. When performing this item, ensure all castings and monuments are clean and free of debris. Remove any existing sections of the monument identified as a potential failure point by the Engineer. Use of salvaged sections of the monuments is permitted upon the approval of the Engineer. In addition to adjusting or reconstructing the casting vertically, the pay items shall include monument referencing and centering the casting over the existing iron pin or stone monument. A Pre-Inspection report is to be submitted prior to commencement of work and a Post-Construction report submitted prior to or in conjunction with the final inspection to the District Survey Operations Manager. Existing monumentation shall be preserved and perpetuated throughout the project.

The Department’s standardized verification report template can be found at the following location:
<https://www.dot.state.oh.us/Divisions/ConstructionMgt/Documents>

The Contractor shall coordinate with the District 12 Survey Operations Manager in conjunction with pavement removal operation to be on site to search for possible buried castings from previous pavement work.

D12 SURVEY OPERATIONS MANAGER
Scott Raypholtz, P.S.
Office: (216) 584-2135
Scott.Raypholtz@DOT.OHIO.GOV

All work related to adjusting or reconstructing monument boxes to grade will be in accordance with Specifications 623.04, and 623.05 of the ODOT Construction and Materials Specifications.

All labor, material, equipment, and incidentals needed to complete survey work in support of the above described maintaining and re-establishing of roadway monumentation is to be paid using the contract bid price for the below pay item, which is carried to the General Summary:

Item 623 – Construction Layout Stakes
And Surveying, As Per Plan **Lump Sum**

All labor, material, equipment, and incidentals needed to complete this work is to be paid using the contract bid price per each for Item 623 – Monument Box Adjusted To Grade, As Per Plan or Item 623 – Monument Box Reconstructed To Grade, As Per Plan.

The following estimated quantities have been carried to the General Summary for use As Directed By The Engineer:
(If none are needed, these items are to be non-performed.)

	SPLIT 1	SPLIT 2
Item 623 – Monument Assembly Adjusted To Grade, As Per Plan	<u>3 Each</u>	<u>2 Each</u>
Item 623 – Monument Assembly Reconstructed To Grade, As Per Plan	<u>1 Each</u>	<u>1 Each</u>

Utilities

Listed below are known utilities located within the project construction limits together with their respective owners. The Ohio Department of Transportation has used the best available information to determine the utility companies serving this area but cannot guarantee that this utility company list is complete.

AT&T 13630 Lorain Avenue, 2 nd Floor Cleveland, Ohio 44111 Attn: James Janis Design Manager Phone: (216) 534-7285 Fax: (216) 476-6013	City of Cleveland Division of Water 1201 Lakeside Ave. Cleveland, Ohio 44114 Phone: (216) 664-2444, EXT 75590 Fax: (216) 664-2378
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CEI First Energy
PUBLIC WORKS TERRITORIES - THE
ILLUMINATING COMPANY
Dan Carman - Underground Engineering
First Energy
6896 Miller Rd, Suite 101
Brecksville, OH 44141
740-314-9986
drcarman@firstenergycorp.com

Enbridge Gas Ohio (EGO)
General E-mail
Relocation@enbridge.com

Ryan Bond – Scheduler (Reports to Jim Clark)
320 Springside Drive, Suite 320
Akron, OH 44333
Phone: 330-664-2409
Ryan.Bond@enbridge.com

Ohio Department of Transportation
District 12 – Roadway Services
5500 Transportation Boulevard
Garfield Heights, Ohio 44125
Attn: Andrew Cross,
District Traffic Engineer
Phone: (216) 584-2220
Andrew.Cross@dot.state.oh.us

There are no underground utilities shown on this plan. The nature of the work required by this project will not affect any known underground utilities that exist under or adjacent to the work area.

Drainage

Review of Drainage Facilities

Before any work is started on the project and again before final acceptance by the State, representatives of the State and the Contractor, along with local representatives, shall make an inspection of all existing sewers which are to remain in service and which may be affected by the work. The condition of the existing conduits and their appurtenances shall be determined from field observations. Records of the inspection shall be kept in writing by the State.

All new conduits, inlets, catch basins and manholes constructed as part of the project shall be free of all foreign matter and in a clean condition before the project will be accepted by the State.

All existing sewers inspected initially by the above mentioned parties shall be maintained and left in a condition reasonably comparable to that determined by the original inspection. Any change in the condition resulting from the Contractor’s operations shall be corrected by the Contractor to the satisfaction of the Engineer.

Payment for all operations described above shall be included in the contract price for the pertinent 611 drainage items.

Castings Reconstructed to Grade

The Contractor and Field Engineer shall field check all existing catch basins, manholes, or monument boxes located within the limits of the project. Any casting found that exhibits substantial deterioration and requires more work than is specified under “Castings Adjusted to Grade” shall be “Reconstructed to Grade”, As Directed by the Engineer. If none are needed, these items are to be non-performed.

The following estimated quantities have been carried to the General Summary for use As Directed by the Engineer:

	SPLIT 1	SPLIT 2
Item 611 – Catch Basin Reconstructed to Grade.....	<u>1 Each</u>	<u>1 Each</u>
Item 611 – Inlet Reconstructed to Grade.....	<u>1 Each</u>	<u>1 Each</u>

Castings Adjusted to Grade, As Per Plan

All castings, within the asphalt overlay section, shall be adjusted to the finished roadway elevation by the Contractor. The time between adjusting the castings and resurfacing shall be kept to an absolute minimum. No adjusting rings shall be permitted. If none are needed, these items are to be non-performed.

The following estimated quantities have been carried to the General Summary:

	SPLIT 1	SPLIT 2
Item 611 – Catch Basin Adjusted to Grade, As Per Plan.....	<u>1 Each</u>	<u>1 Each</u>
Item 611 – Inlet Adjusted to Grade, As Per Plan.....	<u>1 Each</u>	<u>1 Each</u>
Item 611 – Manhole Adjusted to Grade, As Per Plan.....	<u>18 Each</u>	<u>9 Each</u>
Item 638 – Valve Box Adjusted to Grade, As Per Plan.....	<u>51 Each</u>	<u>44 Each</u>

Item Special – Miscellaneous Metal

Existing castings may prove to be unsuitable for reuse, as determined by the Engineer. It shall be the Contractor’s responsibility to provide the castings of the required type, size, and strength (heavy duty) for the particular structure in question. All materials must meet Item 611 of the CMS and shall have the prior approval of the Engineer.

The Contractor is cautioned to use extreme care in the removal, storage, and replacement of all existing castings. Castings damaged by the negligence of the Contractor, as determined by the Engineer, shall be replaced with the proper new castings at the expense of the Contractor.

The Contractor shall not order materials until authorized by the Engineer, and if none are needed, the item shall be non-performed.

The following estimated quantity has been carried to the General Summary for use As Directed by the Engineer:

	SPLIT 1	SPLIT 2
Item Special – Miscellaneous Metal.....	<u>1000 LB</u>	<u>1000 LB</u>

Pavement

Profile and Alignment

Place the proposed pavement to follow the alignment of the existing pavement. Place the proposed asphalt concrete with a uniform thickness as shown on the typical sections.

Planed Surfaces

At no time shall traffic be driving on the planed surface. The Contractor shall limit the amount of pavement planing performed in one shift such that the intermediate course can be placed in the planed section before the lane is opened back up to traffic.

Item 254 – Pavement Planing, Asphalt Concrete, As Per Plan, (3.0”)

Pavement planing shall be performed at an average depth of 3” as specified in the plans. Areas which have transverse wedge (butt joints) are to be removed in two passes as required for maintaining traffic. No additional payment shall be made for the second pass.

All equipment, materials and labor required to perform the pavement repairs as detailed in these plans shall be included for payment under:

Item 254 – Pavement Planing, Asphalt Concrete, As Per Plan, (3.0”)

Item 251 – Partial Depth Pavement Repair (441)

This item shall be used to repair unsound, cold patch, or pop-out areas of longitudinal and transverse joints As Directed by the Engineer.

This work shall be performed prior to the planing operation.

The depth of the repair shall be 6” below the top of the existing asphalt surface prior to planing.
The width of the repair shall be 24” centered over the existing joint.
Use replacement materials conforming to the requirements of Item 441, Type 2.

For estimated quantities, see Pavement Sub-Summary Sheet.

**Item 441 – Asphalt Concrete Surface Course, Type 1, (446),
As Per Plan, PG70-22M**

All requirements of C&MS 441 shall apply except as modified within this note.
The coarse virgin aggregate for this item shall consist of a blend of 60% minimum air cooled blast furnace slag (ACBFS) or trap rock from Ontario with limestone comprising the remaining percentage.

Curb Replacement

The following quantities have been carried to the General Summary for repairing broken sections of curb As Directed by the Engineer:

	SPLIT 1	SPLIT 2
Item 202 – Curb Removed	<u>30 FT</u>	<u>20 FT</u>
Item 609 – Curb, Type 6	<u>30 FT</u>	<u>20 FT</u>

**Item 255 - Full Depth Pavement Removal And Rigid Replacement,
Type 1, Class QC MS, As Per Plan A**
**Item 255 - Full Depth Pavement Removal And Rigid Replacement,
Type 1, Class QC MS, As Per Plan B**

This item shall consist of replacing existing pavement per Item 255 and the notes below and details on Sheet 31.

Existing pavement thickness may vary from that shown on the typical sections by plus two inches or minus one inch. No adjustment in payment for this item shall be made providing that the average pavement thickness is within one inch of the thickness shown on the typical sections. Additional compensation shall be made by change order for the material cost of concrete only when the average thickness exceeds the one inch maximum tolerance above. The volume of concrete paid for shall be based upon the amount of concrete additional above the one inch tolerance limit.

The contractor shall saw through the asphalt overlay prior to the pavement planing operation. The contractor shall remove the existing overlay and rigid pavement with care so as to not disturb the adjacent remaining concrete pavement and overlay. The repair shall be brought up to the existing surface and the top 3" will be sacrificial and will be planed off when the pavement planing operation is performed.

If, after removal of the rigid pavement the engineer determines that the subbase or subgrade has failed or is pumping, the engineer will direct the contractor to excavate the unsuitable material and replace it with compacted 304 aggregate. Quantities of Item 203 - Excavation and Item 304 - Aggregate Base have been provided to repair said failed subbase or subgrade areas.

Pavement repair less than or equal to ten (10) feet in length shall be paid for under "Full Depth Rigid Pavement Removal And Replacement, Type 1, Class QC MS, As Per Plan, A". Pavement repairs greater than ten (10) feet in length shall be paid for under "Full Depth Rigid Pavement Removal And Replacement, Type 1, Class QC MS, As Per Plan B".

All costs associated with this item including sawcutting, labor, materials and equipment shall be included in Item 255 - Full Depth Pavement Removal and Rigid Replacement Type 1 Class QC MS, As Per Plan “A” and “B”.

	SPLIT 1	SPLIT 2
Item 255 – Full Depth Pavement Removal And Rigid Replacement, Type 1, Class QC MS, As Per Plan “A”	<u>760 SY</u>	<u>490 SY</u>
Item 255 – Full Depth Pavement Removal And Rigid Replacement, Type 1, Class QC MS, As Per Plan “B”	<u>60 SY</u>	<u>40 SY</u>
Item 203 – Excavation	<u>15 CY</u>	<u>10 CY</u>
Item 304 – Aggregate Base	<u>15 CY</u>	<u>10 CY</u>

Asphalt Concrete Surface Course Sealing Requirements

- In addition to the gutter sealing requirements specified in SCD BP-3.1 and C&MS 401.08 (D), after completion of the surface course, the contractor shall use a certified 702.01 PG binder to seal the following locations:
- All castings including but not limited to monuments, manholes, water valves, catch basins, curb inlets.
 - Butt joints and feather joints including bridge approaches.
 - Forward joint for driveway asphalt and trailing joint when butting to existing asphalt drive.
 - Perimeter of all pavement repairs or other asphalt inlays when pavement repairs/inlays are not overlaid with an asphalt concrete surface course.
 - All cold longitudinal joints between paved shoulders and guardrail asphalt.

The material used shall be a certified 702.01 PG binder. The width of the sealer shall be 2-3 inches.
Any additional costs associated with the work identified in this note shall be included in the appropriate asphalt concrete surface course item of work.

Traffic Control

Item Special – Misc.: Inventory Existing Pavement Markings

Prior to planing and paving operations, the Contractor is responsible for conducting a field survey of the existing permanent markings excluding center line markings. This inventory shall be used for the placement of temporary markings and proposed final pavement markings. It is the intent of this plan to replace the pavement markings in the same location as the existing pavement markings excluding center line markings. Any staking or marking required to establish control points to ensure that markings are accurately placed is the responsibility of the Contractor.

The field survey shall be provided to the Engineer at least two weeks prior to the disturbance of the existing pavement markings for verification and approval. The Engineer will provide written concurrence once the inventory has been approved. The Engineer will also verify all permanent marking locations prior to the actual installation.

The Contractor must lay out all center lines using the most recent copy of the No Passing Zone log. Copies of the No Passing Zone log can be obtained from the District 12 Roadway Services Department or can be found on the web at: <http://www.dot.state.oh.us/districts/D12/HighwayManagement/Pages/NoPassingZones.aspx>

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

Item Special – Misc.: Inventory Existing Pavement Markings	SPLIT 1	SPLIT 2
	Lump Sum	Lump Sum

Item 621 – Raised Pavement Marker Removed

This item shall include the removal and disposal of RPM’s. For estimated quantities, see the Traffic Control Sub-Summary Sheet.

Item 621 – Raised Pavement Marker (RPM)

For estimated quantities, see the Traffic Control Sub-Summary Sheet.

Item 632 – Detector Loop, As Per Plan

Prior to paving the pavement, the Contractor shall field survey the locations of the existing loop detectors within the project limits. The Project Engineer shall confirm these locations. The survey shall include the location of the loop, size of the loop, offset from curb and/or centerline and the location of the stub. A copy of this survey shall be given to the Project Engineer.

An estimated quantity of Item 632 – Detector Loop, As Per Plan has been provided as a contingency when wire is cut, broken, destroyed due to pavement paving operations or determined by the Project Engineer to be replaced.

All stop line inductance detector loops shown in the plans shall be the powerhead configuration shown on TC-82.10. The stop line detector loops shall not be wired to any other loops and shall have its own detector channel. The location of these loops shall be such that the powerhead is located at the stop line, not past it.

All dilemma zone inductance detector loops called for in the plans shall be the Angular Design Detection (ADD) loop as shown on TC-82.10.

System loops shall be as depicted in the plans.

All stop line detection shall be tested for a bicycle target and all dilemma detection zones shall be tested for a motorcycle target.

When replacing the loop detectors, the loop detector wire shall be replaced to the pull box or pole, whichever is applicable, under Item 632 and Standard Drawing TC-82.10. The new cable splice kits shall be included in this pay item.

The Contractor shall contact the Project Engineer and David J. Nimrichter Sr., (216) 584-2296, Cell: (216) 312-0201, seven (7) days prior to paving through an intersection to adjust signal operation as needed. The detector loops shall be placed in the surface course.

Refer to plan sheets for approximate locations. These locations are from record plans and field verification is needed. The following estimated quantity has been carried to the General Summary, to be used As Directed by the Engineer:

Item 632 – Detector Loop, As Per Plan.....15 Each

Detection Maintenance

If vehicle detection becomes unexpectedly disabled, requires modification, or is scheduled to be temporarily removed during the construction project, the Contractor shall immediately notify the Project Engineer and District Traffic Engineer.

If the loss of vehicle detection is known prior to the start of construction, it shall be discussed at the preconstruction meeting. At such time, the District Traffic Engineer shall advise the Project Engineer and Contractor on the appropriate action to rectify any loss of vehicle detection. This may include placing the traffic signal on minimum or maximum recall, modifying the minimum green times, and removing the malfunctioning detection from service. Where nonintrusive detection (i.e. video, radar) already exists, the Contractor shall insure that detection is operating and maintained by reconfiguring the detection units accordingly during all construction phases. This is to avoid the signal from maxing out the effected signal phase and creating unnecessary delays.

Locations where non-intrusive detection is proposed and the existing vehicle detection is to be abandon, the non-intrusive vehicle detection shall be installed, configured and made fully functional prior to the existing detection being disabled. The Contractor shall continue to maintain and modify the detection until final acceptance of the traffic signal. This is to ensure vehicle detection remains fully functional throughout construction.

Detector Loop Locations

REFERENCE NO.	PLAN SPLIT NO.	LOCATION	632	632	632
			6' X 6' LOOP SIZE	6' X 30' LOOP SIZE	ANGULAR DESIGN DETECTION LOOP
			EACH	EACH	EACH
L-1	1	WB-Left Turn Slot- At Tower Lane		1	
L-2	1	WB-Left Thru Lane-At Tower Lane	1		
L-3	1	WB-Right Thru Lane-At Tower Lane	1		
L-4	1	EB-Left Thru Lane-At West Hill Dr		1	
L-5	1	EB-Right Thru Lane-At West Hill Dr		1	
L-6	1	WB-Left Thru Lane-At West Hill Dr		1	
L-7	1	WB-Right Thru Lane-At West Hill Dr		1	
L-8	1	SB-Thru Lane-On West Hill Dr		1	
L-9	1	NB-Thru Lane-On West Hill Dr		1	
L-14	2	EB-Left Thru Lane-At County Line Rd			1
L-14A	2	EB-Right Thru Lane-At County Line Rd			1
L-15	2	EB-Left Turn Slot- At County Line Rd			1
L-16	2	SB-Thru Lane-On County Line Rd			1
L-17	2	NB-Thru Lane-On County Line Rd			1
L-18	2	WB-Left Turn Slot- At County Line Rd			1
		SUBTOTALS	2	7	6
		TOTAL TO GENERAL. SUMMARY	15		

Maintenance of Traffic

Item 614 – Maintaining Traffic

Generally the Contractor shall conduct his operations as to complete the proposed improvement with a minimum of hazard, delay and inconvenience to the motorists using the highway affected by the work done under this contract. In addition to the construction and material specifications, the following specific provisions are mandatory.

I. Notification

Since functional traffic control is a major concern on this project, it is essential that the motoring public be adequately forewarned of future lane closures and traffic constrictions. Therefore, the Contractor shall submit a written schedule to the Engineer, responsible law enforcement agencies, and the ODOT Public Information Office (216-584-2007) indicating the locations and dates of the lane closures at least 7 days prior to the implementation of any such closures.

Use portable changeable message signs to alert motorists 7 days prior to the implementation of any changes such as lane closures or other restrictions.

II. Work Hours

The Contractor is permitted to work at night.

III. Lane Closure, Planing and Paving Restrictions

- All closures shall be in accordance with the applicable Standard Construction Drawing(s).
- All through traffic lanes shall be kept open at all times except during hours of construction and as needed for curing of full depth pavement repairs. Maintain a minimum of two 10 foot lanes when a flagger or temporary signal is not present.
- Pedestrian traffic shall be permitted and accommodated on at least one side at all times.

No lane closures shall be implemented or in place during increased traffic volumes caused by special events or when the Engineer deems the climatological conditions too hazardous.

IV. Maintenance of Traffic Systems

A. When Required

Whenever any part of the traveled surface is being worked upon or is otherwise not suitable for safe and convenient use by vehicles, traffic control devices sufficient to protect such areas to assure the safe and convenient passage of vehicular traffic shall be installed and maintained. Such traffic control devices and the manner in which they are used shall be consistent with these plans and the Ohio Manual of Uniform Traffic Control Devices for Streets and Highways, hereinafter referred to as the OMUTCD. The traffic control device system shall constitute the minimum provisions for traffic control for each particular situation. Whenever the Engineer deems it necessary especially where a grade, curve, or merge conditions exists, he may direct that additional or alternative devices be used.

B. Conditions

During all parts of this project, flaggers, signing, barricades, flashing arrows, etc. shall be located as indicated in the OMUTCD or as shown in the Standard Construction Drawings. Two-way traffic shall be maintained at all times.

C. Advance Warning Signs

All advance warning signs for any condition which restricts traffic shall be erected before any such restriction is put into effect. All such signs shall be covered or removed from the view of traffic whenever they are not applicable.

D. Flashing Arrow Requirement

Whenever any part of the traveled surface is closed, the motorists shall be warned and directed by the Contractor through the use of one flashing arrow for each lane closed. Additionally, the provisions set forth in the OMUTCD and the applicable Standard Construction Drawings shall be met.

E. Flaggers and Law Enforcement Officers

At least two flaggers are required for each closure. The Contractor shall furnish additional flaggers as directed by the Engineer. Law Enforcement Officers (LEO's) shall be required for traffic direction only under the following circumstances: (1) if signals are non-operational, or (2) if traffic must move against signal phasing.

F. Protection of Public

Personal cars shall not be parked within the R/W.

G. Failure to Comply

If there is any failure to comply with provisions for traffic control set out in these plans and notes, or with the provisions of the OMUTCD, the highway in the vicinity of the work area shall not be considered in a condition for the safe and convenient use by the traveling public. Any failure to keep the highway, in the vicinity of the work area, in a condition for the safe and convenient use by the traveling public shall be considered a breach of this contract. Work shall be suspended until the Contractor complies with the provisions of the aforementioned items.

V. Maintenance of Traffic Materials

A. Signs

Sign dimensions and specifications, including letter sizes, shall be as provided in the OMUTCD or in design drawings provided by the Department of Transportation. The signs shall be subject to approval of the Engineer prior to the start of the project.

B. Sign Supports

Sign supports shall be of sufficient size and mass as to support the signs at the appropriate height. Supports shall be as shown on the Standard Construction Drawings.

C. Flashing Arrows

2-Lane roads – Not Used

D. Drums

Drums shall be in accordance with pertinent sections of the OMUTCD. All costs for installing, maintaining and subsequent removal of said drums shall be included in the lump sum bid price for Item 614 – Maintaining Traffic.

E. Cones

Cones, if utilized, shall be located as shown in the OMUTCD and the Standard Construction Drawings.

F. Flashers

Flashers shall be 12 volt battery-operated models with 7 inch diameter yellow lenses illuminated by rapid intermittent flashers of short duration and shall be placed on all signs at all times as required by the OMUTCD and the Standard Construction Drawings.

VI. Payment

Payment for providing, erecting, maintaining and removing temporary maintenance of traffic control devices shall be made under the lump sum price bid for Item 614 – Maintaining Traffic.

Holiday Closures

No work shall be performed and all existing lanes shall be open to traffic during the following designated holidays or events:

New Years (Observed)	-	Memorial Day
Fourth of July (Observed)	Labor Day	General/Regular Election Day (Nov)
Thanksgiving	Christmas (Observed)	(Other Holiday or Special Event)

The period of time that the lanes are to be open depends on the day of the week on which the holiday or event falls. The following schedule shall be used to determine this period:

Day of Holiday or Special Event	Times All Lanes Must Be Open to Traffic
Sunday	12:00N Friday through 6:00 AM Monday
Monday	12:00N Friday through 6:00 AM Tuesday
Tuesday	12:00N Monday through 6:00 AM Wednesday
Tuesday (Gen. / Reg. Election)	5:00 AM Tuesday through 12:00 AM Wednesday
Wednesday	12:00N Tuesday through 6:00 AM Thursday
Thursday	12:00N Wednesday through 6:00 AM Friday
Thursday (Thanksgiving only)	6:00 AM Wednesday through 6:00 AM Monday
Friday	12:00N Thursday through 6:00 AM Monday
Saturday	12:00N Friday through 6:00 AM Monday

During the same periods, maintain pedestrian access if pedestrian access was present prior to construction.

Should the contractor fail to meet any of these requirements, the Contractor shall be assessed a disincentive in the amount of \$100 for each minute the above-described lane closure restrictions are violated.

Suspension of Work

If the Contractor fails to comply with the provisions for traffic control as set forth in these plans or with provisions of the OMUTCD, the Engineer shall suspend work until the Contractor complies with the necessary requirements.

Maintenance of Traffic (Cont’d)

Construction Traffic

All construction traffic shall use acceptable truck routes to access the construction area. Use of local residential streets is strictly prohibited unless allowed in writing by the local enforcement authority.

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 intermediate course is placed, use the following temporary markings:

	614	614	614	614	614	614	614	614	614	614
	WORK ZONE EDGE LINE, CLASS III, 6", 642 PAINT, (YEL)	WORK ZONE EDGE LINE, CLASS III, 6", 642 PAINT, (WHT)	WORK ZONE CENTER LINE, CLASS III, 642 PAINT	WORK ZONE CHANNELIZING LINE, CLASS III, 12", 642 PAINT	WORK ZONE LANE LINE, CLASS III, 6", 642 PAINT	WORK ZONE ARROW, CLASS III, 642 PAINT	WORK ZONE STOP LINE, CLASS III, 642 PAINT	WORK ZONE SCHOOL SYMBOL MARKING, 120", CLASS III, 642 PAINT	WORK ZONE ISLAND MARKING, CLASS III, 642 PAINT, (YEL)	WORK ZONE TRANSVERSE/DIAGONAL LINE, CLASS III, 642 PAINT, (YEL)
				FT		EACH	FT	EACH	SF	FT
SUBTOTALS:	26293	27675	517	1022	27007	13	373	1	82	199
TOTALS:	4.98 MI	5.24 MI	0.1 MI	1022	5.11 MI	13	373	1	82	199
PLAN SPLIT #1	2.86 MI	2.96 MI	0.08 MI	602	2.88 MI	8	214	1	56	122
PLAN SPLIT #2	2.12 MI	2.28 MI	0.02 MI	420	2.23 MI	5	159		26	77

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

	614	614	614	614	614	614	614	614	614	614
	WORK ZONE EDGE LINE, CLASS I, 6", 642 PAINT, (YEL)	WORK ZONE EDGE LINE, CLASS I, 6", 642 PAINT, (WHT)	WORK ZONE CENTER LINE, CLASS I, 642 PAINT	WORK ZONE CHANNELIZING LINE, CLASS I, 12", 642 PAINT	WORK ZONE LANE LINE, CLASS I, 6", 642 PAINT	WORK ZONE ARROW, CLASS I, 642 PAINT	WORK ZONE STOP LINE, CLASS I, 642 PAINT	WORK ZONE SCHOOL SYMBOL MARKING, 120", CLASS I	WORK ZONE ISLAND MARKING, CLASS I, (YEL)	WORK ZONE TRANSVERSE/DIAGONAL LINE, CLASS I, 642 PAINT, (YEL)
				FT		EACH	FT	EACH	SF	FT
SUBTOTALS:	26293	27675	517	1022	27007	13	373	1	82	199
TOTALS:	4.98 MI	5.24 MI	0.1 MI	1022	5.11 MI	13	373	1	82	199
PLAN SPLIT #1	2.86 MI	2.96 MI	0.08 MI	602	2.88 MI	8	214	1	56	122
PLAN SPLIT #2	2.12 MI	2.28 MI	0.02 MI	420	2.23 MI	5	159		26	77

Permanent Pavement Markings

After placing the surface course, the Contractor may place permanent pavement markings instead of placing work zone pavement markings, which shall be non-performed at these locations.

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. Completion of pavement repairs.
- C. Adjustment/reconstruction of existing castings.
- D. Planing of asphalt concrete.
- E. Placement of asphalt concrete intermediate course.
- F. Placement of Work Zone Pavement Markings.
- G. Placement of asphalt concrete surface course.
- H. Placement of Work Zone Pavement Markings.
- I. Placing proposed pavement markings and raised pavement markers.

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.

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.

Maintenance of Traffic Control Zones

The Contractor shall be responsible to maintain the signs, drums and temporary pavement markings at the locations detailed in the plans or specified in the Standard Drawings. When the Contractor is notified of deficiencies, he shall correct the deficiencies as soon as possible, preferably within 12 hours and no later than 24 hours.

If any noted deficiencies are not corrected within 24 hours the Engineer shall deduct one day pay for Item 614 – Maintaining Traffic, not as a penalty but as road user costs. The Contractor shall be subject to these road user costs for each and every day that these provisions are not met. All costs for maintaining the work zones as described above shall be included under Item 614 – Maintaining Traffic.

Item 614 – Asphalt Concrete for Maintaining Traffic

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 25 Cu Yd

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 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 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) should 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	<u>150 Hours</u>
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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	<u>12 SNMT</u>
Assuming 4 PCMS Sign(s) for 3 Month(s)	