STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

GEA-87-19.75
MIDDLEFIELD TOWNSHIP
GEauga COUNTY

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PROJECT DESCRIPTION
RECONSTRUCT APPROXIMATELY 600 FEET AND RESURFACE 0.9 MILE OF S.R. 87 BETWEEN HAYES ROAD AND BUNDYSBURG ROAD INCLUDING WIDENED SHOULDERS AND STORM WATER DRAINAGE IMPROVEMENTS.

PROJECT EARTH DISTURBED AREA: 8.82 ACRES
ESTIMATED CONTRACTOR EARTH DISTURBED AREA: 0.25 ACRES
NOTICE OF INTENT EARTH DISTURBED AREA: 8.07 ACRES

2016 SPECIFICATIONS
THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, INCLUDING CHANGES AND SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY EXCEPT AS NOTED ON SHEET 8, AND THAT DETOURS WILL BE PROVIDED AS INDICATED ON THE PLANS.

DATE                DIRECTOR, DEPARTMENT OF TRANSPORTATION
07-19-13

DATE                DISTRICT DEPUTY DIRECTOR
07-18/13

APPROVED

DATE                DISTRICT DEPUTY DIRECTOR
07-19-13

APPROVED

DATE                DIRECTOR, DEPARTMENT OF TRANSPORTATION
07-19-13

ENGINEERS SEAL:

STANDARD CONSTRUCTION DRAWINGS

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ENGINEERS SEAL:

SIGNED DATE

SUPPLEMENTAL SPECIFICATIONS

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SIGNED DATE

SPECIAL PROVISIONS

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SIGNED DATE

APPROVED

DATE                DISTRICT DEPUTY DIRECTOR
07-19/13

APPROVED

DATE                DIRECTOR, DEPARTMENT OF TRANSPORTATION
07-19-13

UNDERGROUND UTILITIES

Contact both services two working days before you dig.

Ohio Utilities Protection Service
1-800-562-2164

Utilities must be called directly.

Oil & Gas Products
1-800-898-9384
**S.R. 87 (Kinsman Road)**

**Description Station & Elevations**

- **P.O.T.**: 00+00, 566471.65, 2377459.61
- **P.O.T.**: 00+10, 566484.74, 2377304.34
- **P.O.T.**: 00+30, 566484.74, 2377304.34
- **P.O.T.**: 00+50, 566484.74, 2377304.34

**Station Numbers and Elevations**

- **Station 00+00**: Easting 656471.65, Northing 2377459.61
- **Station 00+10**: Easting 656484.74, Northing 2377304.34
- **Station 00+30**: Easting 656484.74, Northing 2377304.34

**Geometric Details**

- **Detail "A"**: STA. 113+39, Begin Project
- **Detail "A"**: STA. 131+00, 14" X 23" Conduit, Type A

**Other Notes**

- STA. 149+91.63
- STA. 164+32.17, 8" X 4" Conduit, Type A

**Construction Details**

- **Construction Converges with R/W**
- **Construction Converges with R/W**

**Alphabets and Numerals**

- A: STA. 121+13.50, 21" Conduit, Type A
- B: STA. 149+91.63, 38,197.19' P.I.
- C: STA. 164+32.17, 8" X 4" Conduit, Type A

**Check Scale**

- Horizontal Scale in Feet

---

**End Project STA. 94+40**

**Match Line STA. 139+00, See Below**
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ITEM 202 - PAVEMENT REMOVED
PG64-22

ITEM 301 - 6" ASPHALT CONCRETE BASE, (TYP.)
BOTTOM DITCH 2'-0" FLAT

ITEM 204 - SUBGRADE COMPACTION

ITEM 304 - 6" AGGREGATE BASE

ITEM 441 - 1½" ASPHALT CONCRETE SURFACE Course, TYPE 1 (448), PG64-22

ITEM 659 - SEEDING AND MULCHING

ITEM 670 - DITCH EROSION PROTECTION

ITEM 836 - SEEDING AND EROSION CONTROL WITH TURF (TYP.)
THE ROUNDING AT SLOPE BREAKPOINTS SHOWN ON THE TYPICAL LOCATION PLANS ARE ALL OBTAINED UNDERGROUND.

CONSTRUCTION AREAS AND FURTHER COORDINATION WITH THE FEDERAL AVIATION ADMINISTRATION (FAA) AND GOD OFFICE OF AVIATION, WILL BE NECESSARY PRIOR TO ERECTING SUCH TEMPORARY STRUCTURES, OPERATING SUCH EQUIPMENT ON THE PROJECT.

C O N T R A C T O R T O USE AS A STAGING AREA(S). IF THE CONTRACTOR REQUESTS TO USE A STAGING AREA(S) WITHIN THE PROJECT LIMITS OR NOT, THE CONTRACTOR IS TO CONTACT JILL POWERS AT 216-584-2195 AT DISTRICT 12 IN ORDER TO ASSEMBLE MONUMENTS AS SHOWN ON THE CROSS-SECTIONS, MAY BE PLACED BY THE METHOD OF END DUMPING IF SURFACE WATER ON OR PAVED MEDIANS.

THE ENGINEER SHALL TAKE THE FOLLOWING MEASURMENTS AND OBSERVATIONS.

ITEM 201 - DUMPED ROCK FILL, TYPE ----, AS PER PLAN/ ITEM 203 - GRANULAR MATERIAL, TYPE ----, AS PER PLAN

IN THE AREA BETWEEN STATIONS ---- AND ----, DUMPED ROCK FILL, TYPE ---- / GRANULAR MATERIAL, TYPE ----, AS SHOWN ON THE CROSS-SECTIONS, MAY BE PLACED BY THE METHOD OF END DUMPING IF SURFACE WATER IS PRESENT AT THE TIME OF CONSTRUCTION. END DUMPING METHODS MAY BE USED UP TO 2 FEET ABOVE THE WATER LEVEL. ABOVE THIS ELEVATION, EMBANKMENT CONSTRUCTION METHODS WILL BE IN ACCORDANCE WITH 203.05 TO 203.07 INCLUSIVE. DURING NORMAL CLEARING METHODS WILL BE IN ACCORDANCE WITH THE WATER LEVEL. ABOVE THIS ELEVATION, EMBANKMENT CONSTRUCTION METHODS MAY BE USED UP TO AN ELEVATION 2 FEET ABOVE

2. EXCAVATE AND REPLACE UNSTABLE SUBGRADE BEFORE PROOF ROLLING. THE EXCAVATIONS WERE SHOWN IN THE CROSS-SECTIONS AS UNSTABLE SUBGRADE. SUBGRADE MATERIALS, UNSTABLE MATERIALS, SHALL BE SHOWN IN THE CROSS-SECTIONS AS UNSTABLE SUBGRADE. THE ENGINEER SHALL ACCEPT THE APPROPRIATE TYPE AND QUALITY OF MATERIAL REPLACE UNSUITABLE SUBGRADE BASED ON THE PROOF ROLLING RESULTS AND VISUAL OBSERVATIONS.

UNSTABLE SUBGRADE INCLUDES UNSUITABLE SUBGRADE. UNSUITABLE SUBGRADE MATERIALS, UNSTABLE SUBGRADE MATERIALS, WHICH NEED TO BE REMOVED ACCORDING TO THE CONTRACT, IS TO SHAKE THE SUBGRADE TO WITHIN 0.2 FEET OF THE PLAN ELEVATION.

ITEM 200 - DOUBLE ROLLING heures.

ITEM 200 - DOUBLE ROLLING heures.

ITEM 204 - PROOF ROLLING heures.

THE FOLLOWING QUANTITY IS PROVIDED IN THE GENERAL SUMMARY TO ADDRESS LOCATIONS REQUIRING PROOF ROLLING.

ITEM 204 - DOUBLE ROLLING heures.


ITEM 606 - ANCHOR ASSEMBLY, MGS TYPE E

This item shall consist of furnishing and installing any of the articles specified as either end or terminal for the type MGS guardrail, as listed on roadway engineering work page under roadway safety devices for approved guardrail end and terminal types. Item 606 shall be placed in the location specified in the plans, in accordance with the manufacturer's specifications.

The face of the type E impact head shall be covered with a sheet of type D reflective sheeting, per CMS 730.19.

Method B:

1. Set guardrail posts.
2. Place item 441.
3. Bore asphalt at post locations (may be omitted in steel posts).
4. Set guardrail posts.
5. Patch around posts. The materials used for the patch shall consist of asphalt concrete approved by the engineer. Patched areas shall be compacted using either hand or mechanical methods. Final grade shall be smooth and gapped to drain away from the posts.

All equipment, materials and labor required to perform the work outlined above, with the exception of setting guardrail posts, shall be included in the contract price for the pertinent 611 conduit items.

Method C:

ITEM SPECIAL - MAILBOX SUPPORT

This work shall consist of furnishing and erecting mailbox supports and any associated mounting hardware in accordance with plan details, and attaching an impact head to locations specified in the plan, or otherwise established by the engineer.

Support hardware shall accommodate either a single or a double mailbox installation, and no more than two boxes may be mounted on a single post.

The mailbox shall be securely and neatly attached by the contractor to the new support. The contractor shall furnish all necessary attachment hardware, including bolts, plates, spacers, and washers as necessary to accommodate the complete installation.

In the absence of a new box supplied by the owner, the contractor shall salvage the existing box and place it on the new support. Due care shall be exercised in such an operation, and the contractor shall be responsible for replacing any box damaged by improper handling on the part, as judged and directed by the engineer.

The contractor shall be responsible for coordinating with the local post master regarding the timing of the movement of any mailbox to a new location.

Payment under this item shall be limited to final permanent installations. Temporary installations shall be in accordance with 630.20. However, the same material and size limitations as for permanent installations shall apply.

Mailbox supports, complete in place, will be paid for at the contract quantity, for item special mailbox support system, single (double).

Mailboxes shall be placed at post locations, as detailed on the plans.

The number of units between mailing and placement of the surface course shall be no longer than seven (7) days. The work shall be done continuously after the last of the guardrails shall be installed, and shall continue based on calendar days, minus any bad weather days, until completion of the asphalt concrete surface course.

In the event that the time between the existing pavement and the asphalt concrete surface course exceeds seven (7) calendar days, liquidated damages as per 108.07 of the EMA shall be assessed.

SEEDING AND MULCHING

The following quantities are provided to promote growth and care of permanent seeded areas:

- 608, 301. ANALYZE TEST ... EACH
- 609, TOPSOIL ... CU. YD.
- 610, SEEDING AND MULCHING ... SQ. YD.
- 610, INTER-SEEDING ... SQ. YD.
- 610, COMMERCIAL FERTILIZER ... TON
- 612, LIQUID FERTILIZER ... SQ. FT.
- 613, MULCH ... CUB. YD.
- 614, WORK ... M. SQ. FT.

Seeding and mulching shall be applied to all areas of exposed soil between the right-of-way lines, and within the construction limits for areas outside the right-of-way lines covered by 601 rock channel protection type C with filter gravel.

Quantity calculations for seeding and mulching are based on these limits.

POST CONSTRUCTION STORM WATER TREATMENT

This plan utilizes structural best management practices (BMP) for post construction storm water treatment.

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 storm sewers which are to be retained in service and which may be affected by the work. The condition of the existing conduits and their appropriateness shall be determined from field observations. Records of the inspection shall be kept in making by the state.

All new conduits, inlets, catch basins, and manholes constructed as part of this 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 and found to be 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 conduit items.

ITEM 605 - AGGREGATE DRAINS

Aggregate drains shall be placed at 50 foot intervals on the shoulder. Drains shall be constructed using one commercial size larger than the existing drain. The optimum outlet elevation shall be one foot above the low line elevation of the ditch. Lateral field tiles which cross all farm drains as determined by the engineering department shall be intercepted by 605, type E conduit, and carried in a lateral field to an adequate outlet or roadway crossing.

The location, type, size and grade of replacements shall be determined by the engineer and payment shall be made on final measurements.

Erosion control pads and animal guards shall be provided at each location and for all farm drains as per standard construction drawing W-232, except when they go into a drainage structure. Payment for the erosion control pads and animal guards and any necessary bents or branches shall be included in payment for payment in the pertinent conduit items.

The following estimated quantities have been included in the general summary for the work noted above:

- 611, CONDUIT, TYPE B ... FT.
- 611, CONDUIT, TYPE E ... FT.
- 611, CONDUIT, TYPE F ... FT.
- 611, ROCK CHANNEL PROTECTION TYPE C WITH FILTER GRAVEL ... CU. YD.

ITEM 601 - DRAINAGE DITCHES

Drainage ditches shall be placed at 50 foot intervals on the shoulder. Drains shall be placed at the locations shown in the plans. The optimum outlet elevation shall be determined by the engineer, and payment shall be made on final measurements.

FARM DRAINS

All farm drains, which are encountered during construction, shall be provided with unobstructed outlets. Existing collectors which are located below the roadway side elevations, and which cross the roadway, shall be suitably marked. The work shall be placed within the construction limits by item 611 conduit, type B, one commercial size larger than the existing conduit.

Existing collectors and isolated farm drains, which are encountered above the elevation of roadway ditches, shall be outletted into the roadway ditch by 611 type conduit. The optimum outlet elevation shall be one foot above the low line elevation of the ditch. Lateral field tiles which cross all farm drains as determined by the engineering department shall be intercepted by 605, type E conduit, and carried in a lateral field to an adequate outlet or roadway crossing.

The location, type, size and grade of replacements shall be determined by the engineer and payment shall be made on final measurements.

Erosion control pads and animal guards shall be provided at each location and for all farm drains as per standard construction drawing W-232, except when they go into a drainage structure. Payment for the erosion control pads and animal guards is included in payment for payment in the pertinent conduit items.

The following estimated quantities have been included in the general summary for the work noted above:

- 611, CONDUIT, TYPE B ... FT.
- 611, CONDUIT, TYPE E ... FT.
- 611, CONDUIT, TYPE F ... FT.
- 611, ROCK CHANNEL PROTECTION TYPE C WITH FILTER GRAVEL ... CU. YD.
1. This project is located within the known habitat ranges of the federally listed and protected Indiana bat and northern long-eared bat. No trees shall be removed under this project from April 1 through September 30. All necessary tree removal shall occur from October 1 through March 31. This requirement is necessary to avoid and minimize impacts to these species as required by the Endangered Species Act. For the purposes of this note, a tree is defined as a live, dying, or dead woody plant with a truck three inches or greater in diameter at a height of 4.5 feet above the ground surface, and with a minimum height of 13 feet.

2. Any changes made to the work areas shall be done so with the intent to minimize the number of trees being removed on the project.

3. All trees marked for removal on the project plans are marked with an X symbol. Trees and shrubs to remain within the work area area designated "save".

4. For public notification by ODOT District 12 Public Information Officer, the contractor will advise the district office of communications and the district work zone traffic manager of the anticipated start date of any construction activities at least 14 days in advance, including but not limited to the placement of work zone signs. Throughout the duration of the project, the contractor will notify the project engineer and the others listed in this section in writing of all traffic restrictions and upcoming maintenance of traffic changes. Information will include all construction activities that impact or interfere with traffic and will list the specific location, type of work, road status, date and time of restriction, duration of restriction, number of lanes maintained, detour routes if applicable, and any other information requested by the project engineer and the district 12 communications office.
ITEM 6H, MAINTAINING TRAFFIC

Preparation:
1. INSTALL PUMPS ALONG S.R. 87 EASTBOUND APPROACH TO S.R. 87. PUMPS TO BE INSTALLED IN 4 CALENDAR DAYS PRIOR TO THE ACTUAL CLOSURE OF THE ROADWAY. S.R. 87 CLOSED TO LOCAL TRAFFIC BETWEEN HAYES ROAD AND BUNDBURY ROAD.

2. INSTALL PUMPS ALONG S.R. 87 WESTBOUND APPROACH TO S.R. 87. PUMPS TO BE INSTALLED IN 4 CALENDAR DAYS PRIOR TO THE ACTUAL CLOSURE OF THE ROADWAY. S.R. 87 OPEN TO BUGGY TRAFFIC ON 1/2 CLOSURE IS LOCATED AT THE WEST SIDE OF S.R. 87 AND BUNDBURY ROAD INTERSECTION.

3. INSTALL SIGNAGE AS SHOWN ON SHEET 13.

SUGGESTED SEQUENCE OF CONSTRUCTION (CONTINUED)

Phase 1:
1. INSTALL LOCAL TRAFFIC AND AMISH BUGGY THROUGH TRAFFIC TO THE LEFT ONTO THE NEWLY CONSTRUCTED TEMPORARY PAVEMENT AND EXISTING PAVEMENT AS SHOWN ON SHEET 164-05 AND STA. 164-40, RIGHT TO BE UTILIZED IN PHASE 2. CONTRACTOR SHALL INSTALL TEMPORARY SIGNS ALONG PROPOSED TEMPORARY PAVEMENT between STA. 164-40 AND STA. 164-70, LEFT.

2. CONTRACTOR SHALL BEGIN CONSTRUCTION OF PROPOSED TEMPORARY PAVEMENT AND EXISTING PAVEMENT BETWEEN STA. 164-40 AND STA. 164-70, LEFT. CONTRACTOR SHALL REFER TO SCD MT-97.10.

3. CONTRACTOR SHALL也开始 CONSTRUCTION OF PROPOSED SUBBASE AND BASE MATERIAL. A MINIMUM WIDTH OF 18 FEET OF TEMPORARY PAVEMENT BETWEEN STA. 164-40 AND STA. 164-70, LEFT TO BE UTILIZED IN PHASE 3.

4. CONTRACTOR SHALL INSTALL TEMPORARY SIGNS ALONG PROPOSED TEMPORARY PAVEMENT between STA. 164-40 AND STA. 164-70, LEFT.

Phase 2:
1. CONTRACTOR SHALL BEGIN CONSTRUCTION OF PROPOSED PAVEMENT AND TEMPORARY PAVEMENT BETWEEN STA. 164-40 AND STA. 164-70, LEFT TO BE UTILIZED IN PHASE 2. SEE SHEET 14 FOR PROJECT SPECIFICATIONS.

2. CONTRACTOR SHALL BEGIN CONSTRUCTION OF PROPOSED TEMPORARY PAVEMENT AND TEMPORARY PAVEMENT BETWEEN STA. 164-40 AND STA. 164-70, LEFT.

3. CONTRACTOR SHALL REFER TO SCD MT-97.10.

Phase 3:
1. CONTRACTOR SHALL BEGIN CONSTRUCTION OF PROPOSED PAVEMENT AND TEMPORARY PAVEMENT BETWEEN STA. 164-40 AND STA. 164-70, LEFT TO BE UTILIZED IN PHASE 3. CONTRACTOR SHALL REFER TO SCD MT-97.10.

2. CONTRACTOR SHALL BEGIN CONSTRUCTION OF PROPOSED SUBBASE AND BASE MATERIAL. A MINIMUM WIDTH OF 18 FEET OF PROPOSED PAVEMENT BETWEEN STA. 164-40 AND STA. 164-70, LEFT.

3. CONTRACTOR SHALL REFER TO SCD MT-97.10.

ITEM 6H, MAINTAINING TRAFFIC

FLATBED SIGNS PROVIDED BY THE CONTRACTOR IN ACCORDANCE WITH THE REQUIREMENTS OF THE PLAN, SPECIFICATIONS AND PROPOSAL MUST BE REMOVED AND DISPOSED OF IN A REASONABLE TIME FRAME FIRST, AS DETERMINED BY THE ENGINEER. REPLACEMENT SIGNS SHALL BE NEW. OTHER MATERIALS MAY BE IN USED, BUT GOOD CONDITION SUBJECT TO APPROVAL BY THE ENGINEER.

PAYMENT FOR THE NEW SIGNS SHALL BE MADE AT THE CONTRACT PRICE PER EACH FOR ITEM 6H, REPLACEMENT SIGN, AND SHALL INCLUDE THE COST OF REMOVING AND DISPOSING OF DAMAGED SIGNS, HARDWARE AND SUPPORTS, AND PROVIDING THE NECESSARY REPLACEMENT HARDWARE, SUPPORTS, ETC.

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AN ESTIMATED QUANTITY OF 10 EACH HAS BEEN PROVIDED IN THE GENERAL SUMMARY.

ITEM 6H, MAINTAINING TRAFFIC

NOTICE OF CLOSURE SIGN

NOTICE OF CLOSURE SIGN PROVIDED SHALL BE ERECTED BY THE CONTRACTOR PRIOR TO THE SCHEDULED ROAD CLOSURE IN ACCORDANCE WITH THE NOTICE OF CLOSURE TIME TABLE BELOW.

THE SIGNS SHALL BE ERECTED ON THE RIGHT HAND SIDE OF THE ROAD. THEY SHALL BE PLACED SO AS NOT TO INTERFERE WITH THE VISIBILITY OF ANY OTHER TRAFFIC CONTROL SIGNS. ON ROADS WITH MOWWAYS THEY SHOULD BE ERECTED AT THE END OF THE WORK ZONE.

NOTICE OF CLOSURE SIGN TIME TABLE TIME DURATION OF CLOSURE SIGN

<table>
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<tr>
<th>ITEM</th>
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AN ESTIMATED QUANTITY OF 10 EACH HAS BEEN PROVIDED IN THE GENERAL SUMMARY.
ITEM 644, REMOVAL OF MARKING MARKINGS THIS ITEM SHALL BE USED TO REMOVE EXISTING PERMANENT MARKINGS WHICH ARE IN CONFLICT WITH THE TEMPORARY MARKINGS AS SHOWN ON THE TRAFFIC MANUAL DETAILS. PAYMENT SHALL BE BASED UPON THE ACTUAL LENGTH REMOVED. GAPS SHALL NOT BE INCLUDED IN THE MEASURED LENGTH. THE FOLLOWING ESTIMATED QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY TO BE USED AS OUTLINED ABOVE, AND AS DIRECTED BY THE ENGINEER.

ITEM 644, REMOVAL OF MARKING MARKINGS 50,000 FT

ITEM 644, MAINTAINING TRAFFIC SIGNS AND BARRICADES THE CONTRACTOR SHALL PROVIDE, EFFECT AND MAINTAIN SIGNS AND BARRICADES, AS DETAILLED IN THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, AND TYPE III BARRICADES OF THE TYPE AND LOCATION AS FOLLOWS:


ITEM 644, MAINTAINING TRAFFIC SIGNS AND BARRICADES TAKEN IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

ITEM 644, MAINTAINING TRAFFIC SIGNS AND BARRICADES THE CONTRACTOR SHALL REPAIR OR REPLACE A DAMAGED UNIT WITHIN 24 HOURS OF A DAMAGING IMPACT.

WHEN BIDIRECTIONAL DESIGNS ARE SPECIFIED, THE CONTRACTOR MAY SUBMIT DOCUMENTATION TO THE ENGINEER FOR ACCEPTANCE.

THE COST FOR THE ADDED BARRIER REQUIRED FOR A CLOSING BARRIER MAY BE INCLUDED IN THE COST OF THE CLOSING BARRIER ATTACHMENT!

ITEM 644, MAINTAINING TRAFFIC SIGNS AND BARRICADES PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE FOR EACH UNIT WITHIN 24 HOURS OF A DAMAGING IMPACT.

THE CONTRACTOR SHALL SUPPLY APPROPRIATE TRANSITIONS. WHEN BIDIRECTIONAL DESIGNS ARE SPECIFIED, THE CONTRACTOR SHALL SUPPLY APPROPRIATE TRANSITIONS.

CONTRACTOR SHALL SUBMIT DOCUMENTATION TO THE ENGINEER FOR THE MAINTENANCE OF DRIVE ACCESS.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY TO BE USED AS DETERMINED BY THE PROJECT ENGINEER FOR THE MAINTENANCE OF DRIVE ACCESS.

ITEM 450, TRAFFIC COMPACTED SURFACE, TYPE A OR B CO. YD. M. GAL.

ITEM 614, WATER ITEM 614, TRAFFIC COMPACTED SURFACE CAN BE USED TO MAINTAIN DRIVE ACCESS.

ITEM 616, MAINTAINING TRAFFIC (DRIVE ACCESS) ITEM 410, TRAFFIC COMPACTED SURFACE CAN BE USED TO MAINTAIN DRIVE ACCESS.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY TO BE USED AS DETERMINED BY THE PROJECT ENGINEER FOR THE MAINTENANCE OF DRIVE ACCESS.

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ITEM 614, MAINTAINING TRAFFIC (ROAD CLOSED SIGNS) ITEM 614, MAINTAINING TRAFFIC (ROAD CLOSED SIGNS) ITEM 614, MAINTAINING TRAFFIC (ROAD CLOSED SIGNS) ITEM 614, MAINTAINING TRAFFIC (ROAD CLOSED SIGNS) ITEM 614, MAINTAINING TRAFFIC (ROAD CLOSED SIGNS)

ITEM 614, MAINTAINING TRAFFIC (ROAD CLOSED SIGNS) THE CONTRACTOR SHALL PROVIDE, EFFECT AND MAINTAIN STANDARD AS R 55 INCH ROAD CLOSED SIGNS, SIGN SUPPORTS, BARRICADES AND LIGHTS, AS DETAILLED IN SCD MT-501.60 AT THE FOLLOWING LOCATIONS DURING PERIODS IN WHICH THE AFFECTED ROADS ARE CLOSED TO TRAFFIC.

THE FOLLOWING QUANTITY HAS BEEN PROVIDED FOR INFORMATION ONLY:

ITEM 614, MAINTAINING TRAFFIC (ROAD CLOSED SIGNS) 2 EACH

THE FOLLOWING QUANTITY HAS BEEN PROVIDED FOR INFORMATION ONLY:

ITEM 614, MAINTAINING TRAFFIC NOTICE OF CLOSURE SIGN (THIS ROAD CLOSED 12 HOURS) SPECIAL 48" X 36"

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ITEM 614, MAINTAINING TRAFFIC NOTICE OF CLOSURE SIGN (THIS ROAD CLOSED 12 HOURS) SPECIAL 48" X 36"

ITEM 614, WORK ZONE IMPACT ATTENUATOR FOR 24" WIDE HAZARDS (UNIDIRECTIONAL OR BIDIRECTIONAL) THIS ITEM SHALL CONSIST OF FURRING AND INSTALLING A NON-CAGING IMPACT ATTENUATOR. FURRING AN IMPACT ATTENUATOR FROM THE OFFICE OF ROADWAY ENGINEERS' APPROVED LIST FOR WORK ZONE IMPACT ATTENUATORS, FROM THE ROADWAY STANDARDS WEB PAGE FOR HIGHWAY STANDARDS APPROVED PRODUCTS.

INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

THE CONTRACTOR SHALL REPAIR OR REPLACE A DAMAGED UNIT WITHIN 24 HOURS OF A DAMAGING IMPACT.

WHEN BIDIRECTIONAL DESIGNS ARE SPECIFIED, THE CONTRACTOR SHALL SUPPLY APPROPRIATE TRANSITIONS. WHEN CLOSING IMPACT ATTENUATORS ARE DESIGNED, THE CONTRACTOR SHALL SUBMIT DOCUMENTATION TO THE ENGINEER FOR ACCEPTANCE.

THE COST FOR THE ADDED BARRIER REQUIRED FOR A CLOSING BARRIER MAY BE INCLUDED IN THE COST OF THE CLOSING BARRIER ATTACHMENT.

ITEM 614, WORK ZONE IMPACT ATTENUATOR FOR 24" WIDE HAZARDS (UNIDIRECTIONAL OR BIDIRECTIONAL) THE CONTRACTOR SHALL PROVIDE, EFFECT AND MAINTAIN STANDARD AS R 55 INCH ROAD CLOSED SIGNS, SIGN SUPPORTS, BARRICADES AND LIGHTS, AS DETAILLED IN SCD MT-501.60 AT THE FOLLOWING LOCATIONS DURING PERIODS IN WHICH THE AFFECTED ROADS ARE CLOSED TO TRAFFIC.

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ITEM 6M - LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE DURING CONSTRUCTION OPERATIONS

The use of law enforcement officers (LEOs) by contractors other than those specified below will not be permitted at project cost. LEOs should not be used where the service extends beyond the site boundary except where the local jurisdiction requires their services to be utilized. In addition to the requirements of Item 6M and the omitted, 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.
- For lane closures during initial set-up periods, tear down periods, substantial shifts or a closure point on when new lane closure arrangements are initiated for long-term lane closures/shutdowns (for the first and last day of major changes in traffic control setup). In general, LEOs should be positioned at the point of lane restriction or road closure and to manually control traffic movements through intersections in work zones.

When construction vehicles are entering/exiting the zone directly from/to an open lane of traffic, if a lane has been closed to provide an acceleration/deceleration lane for the vehicle, the LEO will not be required.

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 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 provide the contractor with an official patrol car (car with top-mounted emergency flashing lights and complete markings of the appropriate law enforcement agency). The replacement LEO shall be provided for the following traffic control tasks:

- For all detour and construction warning signs.
- For information only.

For information only.

ITEM 6M, LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE --- 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 6M, Law Enforcement Officer with Patrol Car for Assistance.

ITEM 6H, DETOUR SIGNING, AS PER PLAN

Advance traffic signing and support, including detour signing, construction work zone approach signing, barricades and signs on barricades shown on the plans beyond the work limits shall be furnished, erected, maintained, and subsequently removed by the contractor.

Fluorescent orange type G sign sheeting shall be used for all detour and construction warning signs.

ITEM 6H - REPLACEMENT DRUM

Drums furnished by the contractor in accordance with the requirements of the plans, specifications and proposal which become damaged by traffic for reasons beyond the control of the contractor shall be replaced in kind when ordered by the engineer. Replacement drums shall be new.

Payment for the new drums shall be made at the contract price per each for Item 6H, Replacement Drum, and shall include the cost of removing and disposing of the damaged drum, and providing and maintaining the replacement drum in accordance with the contract requirements for the original drum.

An estimated quantity of 50 each has been provided in the general summary.

ITEM 6M, LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE --- 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 6M, Law Enforcement Officer with Patrol Car for Assistance.

ITEM 6H, DETOUR SIGNING, AS PER PLAN

Advance traffic signing and support, including detour signing, construction work zone approach signing, barricades and signs on barricades shown on the plans beyond the work limits shall be furnished, erected, maintained, and subsequently removed by the contractor.

Fluorescent orange type G sign sheeting shall be used for all detour and construction warning signs.

FOR INFORMATION ONLY.

ITEM 6H - REPLACEMENT DRUM

Drums furnished by the contractor in accordance with the requirements of the plans, specifications and proposal which become damaged by traffic for reasons beyond the control of the contractor shall be replaced in kind when ordered by the engineer. Replacement drums shall be new.

Payment for the new drums shall be made at the contract price per each for Item 6H, Replacement Drum, and shall include the cost of removing and disposing of the damaged drum, and providing and maintaining the replacement drum in accordance with the contract requirements for the original drum.

An estimated quantity of 50 each has been provided in the general summary.
STA. 119+50 TO STA. 164+50
WIDENING & RESURFACING
10.00' (MIN.)

STA. 113+60 TO STA. 119+50
RECONSTRUCTION
18.00'

PHASE 1
RECONSTRUCTION
STA. 113+60 TO STA. 119+50

PHASE 1
WIDENING & RESURFACING
STA. 119+50 TO STA. 164+50

PREPHASE
RECONSTRUCTION
STA. 113+60 TO STA. 119+50

TEMPORARY PAVEMENT CONSTRUCTED
TEMPORARY PAVEMENT REMOVED
M A I N T E N A N C E  O F  T R A F F I C  -  P H A S E  1
S T A .  1 0 7 + 0 0  T O  S T A .  1 2 1 + 0 0

1. NO OPEN TRENCH, ALL EXCAVATIONS NEED BROUGHT TO GRADE WITH ITEM 410 OR OTHER MEANS APPROVED BY THE ENGINEER. ALL COST TO PROVIDE FOR TWO-WAY TRAFFIC AT THE END OF EACH WORK DAY UNTIL PHASE 1A COMPLETION SHALL BE INCLUDED IN ITEM 615 - ROADS FOR MAINTAINING TRAFFIC.

2. TAPER DRUMS TO IMPACT ATTENUATOR AT THE END OF EACH WORK DAY TO PROVIDE TWO LANES OF TRAFFIC.

3. ONCE PROPOSED PAVEMENT AND TEMPORARY PAVEMENT ARE CONSTRUCTED, MOVE ONTO PHASE 2 CONSTRUCTION.

NOTES:

SEE SHEET 13 FOR LEGEND.
SEE SHEET 18 FOR DETOUR PLAN.
MAINTENANCE OF TRAFFIC - PHASE 2
STA. 107+00 TO STA. 121+00
ITEM 202 - PAVEMENT REMOVED

ITEM 615 - PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A

FOR UTILITY LEGEND, SEE SHEET 30

MRO - EXHAUST DUCTS (ITS)

INCLUDE 4" TOPSOIL

4' VEGETATED BIOFILTER PRIOR TO EARTHWORK

EX. FENCE

EX. 3-1.5" DUCTS (ITS)

EX. 8" GAS (TO BE REMOVED PRIOR TO EARTHWORK)

EX. 24" DRAIN (TO BE EXCAVATED BY DEO)

EX. 24" DRAIN (TO BE EXCAVATED BY DEO)

EX. AERIAL LINE / E X . A E R IA L  L I N E /
CROSS SECTIONS S.R. 87
STA. 162+00.00 TO STA. 165+00.00

END AREA
VOLUME
CUT
CUT
FILL
FILL
SEEDING

PROJECT NO. 20-79-011
CONTRACT P No. 2

FOR UTILITY LEGEND, SEE SHEET 30
ITEM 202 - PAVEMENT REMOVED

ITEM 615 - PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A

FOR UTILITY LEGEND, SEE SHEET 30

ITEM 616 - PAVEMENT FOR MAINTAINING TRAFFIC, CLASS B

RELOCATED BY DEO

RELOCATED BY ORW

RELOCATED BY COB

REMAIN
NOTE:
1. FOR ADDITIONAL HEADWALL/WINGWALL DETAILS SEE SHEET 10.
FOR REINFORCING SCHEDULE, SEE SHEET 71.

NOTES:
1. FOR ADDITIONAL HEADWALL/WINGWALL DETAILS SEE SHEET 69.
2. FOR REINFORCING SCHEDULE, SEE SHEET 71.
C A L C U L A T E D  C H E C K E D  G E A - 8 7 - 1 9 . 7 5  F O R  C U L V E R T  A T  S T A . 1 6 4 + 3 2 . 1 7

REINFORCEMENT SCHEDULE

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TOTAL 2,077

BENDING DIAGRAMS

NOTE: REINFORCING STEEL WEIGHTS GIVEN ARE FOR INFORMATIONAL PURPOSES ONLY.

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