



CALL NO. 323

CONTRACT ID. 234202

MARION COUNTY

FED/STATE PROJECT NUMBER FD04 078 0084 011-015

DESCRIPTION ST MARY'S ROAD (KY 84)

WORK TYPE GRADE & DRAIN WITH ASPHALT SURFACE

PRIMARY COMPLETION DATE 10/31/2023

LETTING DATE: February 23,2023

Sealed Bids will be received electronically through the Bid Express bidding service until 10:00 AM EASTERN STANDARD TIME February 23,2023. Bids will be publicly announced at 10:00 AM EASTERN STANDARD TIME.

NO PLANS ASSOCIATED WITH THIS PROJECT.

REQUIRED BID PROPOSAL GUARANTY: Not less than 5% of the total bid.

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PART I
SCOPE OF WORK

ADMINISTRATIVE DISTRICT - 04

CONTRACT ID - 234202

FD04 078 0084 011-015

COUNTY - MARION

PCN - 0407800842301

FD04 075 0084 011-015

ST MARY'S ROAD (KY 84) (MP 11.300) FROM 0.22 MILE EAST OF KY 329 EXTENDING EAST TO KY 49 (MP 15.000), A DISTANCE OF 03.70 MILES.GRADE & DRAIN WITH ASPHALT SURFACE SYP NO. 04-09018.00.
GEOGRAPHIC COORDINATES LATITUDE 37:34:26.20 LONGITUDE 85:18:37.50
ADT 1,796

COMPLETION DATE(S):

COMPLETED BY 10/31/2023

APPLIES TO ENTIRE PROJECT

CONTRACT NOTES

PROPOSAL ADDENDA

All addenda to this proposal must be applied when calculating bid and certified in the bid packet submitted to the Kentucky Department of Highways. Failure to use the correct and most recent addenda may result in the bid being rejected.

BID SUBMITTAL

Bidder must use the Department's electronic bidding software. The Bidder must download the bid file located on the Bid Express website (www.bidx.com) to prepare a bid packet for submission to the Department. The bidder must submit electronically using Bid Express.

JOINT VENTURE BIDDING

Joint venture bidding is permissible. All companies in the joint venture must be prequalified in one of the work types in the Qualifications for Bidders for the project. The bidders must get a vendor ID for the joint venture from the Division of Construction Procurement and register the joint venture as a bidder on the project. Also, the joint venture must obtain a digital ID from Bid Express to submit a bid. A joint bid bond of 5% may be submitted for both companies or each company may submit a separate bond of 5%.

UNDERGROUND FACILITY DAMAGE PROTECTION

The contractor shall make every effort to protect underground facilities from damage as prescribed in the Underground Facility Damage Protection Act of 1994, Kentucky Revised Statute KRS 367.4901 to 367.4917. It is the contractor's responsibility to determine and take steps necessary to be in compliance with federal and state damage prevention directives. When prescribed in said directives, the contractor shall submit Excavation Locate Requests to the Kentucky Contact Center (KY811) via web ticket entry. The submission of this request does not relieve the contractor from the responsibility of contacting non-member facility owners, whom shall be contacted through their individual Protection Notification Center. Non-compliance with these directives can result in the enforcement of penalties.

REGISTRATION WITH THE SECRETARY OF STATE BY A FOREIGN ENTITY

Pursuant to KRS 176.085(1)(b), an agency, department, office, or political subdivision of the Commonwealth of Kentucky shall not award a state contract to a person that is a foreign entity required by [KRS 14A.9-010](#) to obtain a certificate of authority to transact business in the Commonwealth ("certificate") from the Secretary of State under [KRS 14A.9-030](#) unless the person produces the certificate within fourteen (14) days of the bid or proposal opening. If the foreign entity is not required to obtain a certificate as provided in [KRS 14A.9-010](#), the foreign entity should identify the applicable exception. Foreign entity is defined within [KRS 14A.1-070](#).

For all foreign entities required to obtain a certificate of authority to transact business in the Commonwealth, if a copy of the certificate is not received by the contracting agency within the time frame identified above, the foreign entity's solicitation response shall be deemed non-responsive or the awarded contract shall be cancelled.

Businesses can register with the Secretary of State at <https://secure.kentucky.gov/sos/ftbr/welcome.aspx>.

SPECIAL NOTE FOR PROJECT QUESTIONS DURING ADVERTISEMENT

Questions about projects during the advertisement should be submitted in writing to the Division of Construction Procurement. This may be done by fax (502) 564-7299 or email to kytc.projectquestions@ky.gov. The Department will attempt to answer all submitted questions. The Department reserves the right not to answer if the question is not pertinent or does not aid in clarifying the project intent.

The deadline for posting answers will be 3:00 pm Eastern Daylight Time, the day preceding the Letting. Questions may be submitted until this deadline with the understanding that the later a question is submitted, the less likely an answer will be able to be provided.

The questions and answers will be posted for each Letting under the heading "Questions & Answers" on the Construction Procurement website (www.transportation.ky.gov/contract). The answers provided shall be considered part of this Special Note and, in case of a discrepancy, will govern over all other bidding documents.

HARDWOOD REMOVAL RESTRICTIONS

The US Department of Agriculture has imposed a quarantine in Kentucky and several surrounding states, to prevent the spread of an invasive insect, the emerald ash borer. Hardwood cut in conjunction with the project may not be removed from the state. Chipping or burning on site is the preferred method of disposal.

INSTRUCTIONS FOR EXCESS MATERIAL SITES AND BORROW SITES

Identification of excess material sites and borrow sites shall be the responsibility of the Contractor. The Contractor shall be responsible for compliance with all applicable state and federal laws and may wish to consult with the US Fish and Wildlife Service to seek protection under Section 10 of the Endangered Species Act for these activities.

ACCESS TO RECORDS

The contractor, as defined in KRS 45A.030 (9) agrees that the contracting agency, the Finance and Administration Cabinet, the Auditor of Public Accounts, and the Legislative Research Commission, or their duly authorized representatives, shall have access to any books, documents, papers, records, or other evidence, which are directly pertinent to this contract for the purpose of financial audit or program review. Records and other prequalification information confidentially

disclosed as part of the bid process shall not be deemed as directly pertinent to the contract and shall be exempt from disclosure as provided in KRS 61.878(1)(c). The contractor also recognizes that any books, documents, papers, records, or other evidence, received during a financial audit or program review shall be subject to the Kentucky Open Records Act, KRS 61.870 to 61.884.

In the event of a dispute between the contractor and the contracting agency, Attorney General, or the Auditor of Public Accounts over documents that are eligible for production and review, the Finance and Administration Cabinet shall review the dispute and issue a determination, in accordance with Secretary's Order 11-004.

BUILD AMERICA, BUY AMERICA ACT (BABA)

On November 15, 2021, President Biden signed into law the Infrastructure Investment and Jobs Act (IIJA), Pub. L. No. 117-58, includes the Build America, Buy America Act (“the Act”). Pub. L. No. 117-58, §§70901-52. The Act strengthens the Buy America preference to include “construction materials.” The current temporary waiver for **“construction materials”** will expire on November 10, 2022.

The Act will apply to construction materials as outlined in the guidance issued in OMB [M-22-11](#).

Construction Materials – Includes an article, material, or supply – other than an item of primarily iron or steel; a manufactured product; cement and cementitious materials; aggregates such as stone, sand, or gravel; or aggregate binding agents or additives – that is or consists primarily of:

- Non-ferrous metals
- Plastic/polymer-based products (including polyvinylchloride, composite building materials, and polymers used in fiber optic cables);
- Glass (including optic glass);
- Lumber; or
- Drywall.

Construction Materials only applies to items, materials, and supplies that are consumed in, incorporated into, or affixed to an infrastructure project.

Construction Materials does not apply to tools, equipment or supplies brought to the jobsite and removed before completion.

BOYCOTT PROVISIONS

If applicable, the contractor represents that, pursuant to [KRS 45A.607](#), they are not currently engaged in, and will not for the duration of the contract engage in, the boycott of a person or an entity based in or doing business with a jurisdiction with which Kentucky can enjoy open trade. **Note:** The term Boycott does not include actions taken for bona fide business or economic reasons, or actions specifically required by federal or state law.

If applicable, the contractor verifies that, pursuant to KRS 41.480, they do not engage in, and will not for the duration of the contract engage in, in energy company boycotts as defined by KRS 41.472.

LOBBYING PROHIBITIONS

The contractor represents that they, and any subcontractor performing work under the contract, have not violated the agency restrictions contained in [KRS 11A.236](#) during the previous ten (10) years, and pledges to abide by the restrictions set forth in such statute for the duration of the contract awarded.

The contractor further represents that, pursuant to [KRS 45A.328](#), they have not procured an original, subsequent, or similar contract while employing an executive agency lobbyist who was convicted of a crime related to the original, subsequent, or similar contract within five (5) years of the conviction of the lobbyist.

February 1, 2023

SPECIAL NOTE FOR RECIPROCAL PREFERENCE

RECIPROCAL PREFERENCE TO BE GIVEN BY PUBLIC AGENCIES TO RESIDENT BIDDERS

By reference, KRS 45A.490 to 45A.494 are incorporated herein and in compliance regarding the bidders residency. Bidders who want to claim resident bidder status should complete the Affidavit for Claiming Resident Bidder Status along with their bid in the electronic bidding software. Submittal of the Affidavit should be done along the bid in Bid Express.

April 30, 2018

ASPHALT MIXTURE

Unless otherwise noted, the Department estimates the rate of application for all asphalt mixtures to be 110 lbs/sy per inch of depth.

DGA BASE

Unless otherwise noted, the Department estimates the rate of application for DGA Base to be 115 lbs/sy per inch of depth.

ASPHALT PAVEMENT RIDE QUALITY CATEGORY B

The Department will apply Pavement Rideability Requirements on this project in accordance with Section 410, Category B.

OPTION B

Be advised that the Department will control and accept compaction of asphalt mixtures furnished on this project under OPTION B in accordance with Sections 402 and 403.

General Notes & Description of Work
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**Special Notes Applicable to Project – General Notes & Description of Work
Item No. 04-9018.00 (KY 84 MP 11.3 to MP 15.0)**

Except as specified herein, perform all work in accordance with the Department's Standard Specifications, Supplemental Specifications, applicable Special Notes and Special Provisions, and applicable Standard and Sepia Drawings, current editions. Section references are to the Standard Specifications.

CAUTION – PROPOSAL INFORMATION IS APPROXIMATE – PERFORM AN ON-SITE INSPECTION

Potential bidders are cautioned that the information within this proposal is approximate only and is not to be taken as an exact evaluation of the bid quantities, nor the materials and conditions that may be encountered during construction. As such, before submitting a bid, potential bidders shall make a thorough inspection of the site to examine the conditions to be encountered per Section 104.07. Furthermore, during the execution of the work, the Engineer reserves the right to make changes to the bid item quantities and/or alterations in the work when necessary to complete the project satisfactorily per Section 104.02.

NOTE: The Department will pay for bid item quantity overruns, but only if pre-approved by the Engineer.

STATIONING

The contractor is advised that the planned locations of work were established from a beginning station number which is Station 585+24 which is at the intersection of KY 84 and KY 327, and corresponds to Milepoint 11.084 of KY 84.

EXISTING MAPPING AND CONTROL AND LIDAR

Survey information was obtained by a combination of field survey supplemented with available KYTC Aerial LIDAR data and should be field verified as appropriate during construction and prior to incorporating the various project work items. Refer to the Special Note for Staking concerning staking operations required to control and construct the work.

ON-SITE INSPECTION

Before submitting a bid for the work, make a thorough inspection of the site and determine existing conditions so that the work can be expeditiously performed after a contract is awarded. The Department will consider submission of a bid to be evidence of this inspection having been made. The Department will not honor any claims for money or time extension resulting from site conditions.

RIGHT OF WAY LIMITS

The Department has not established the exact limits of the Right-of-Way. Unless a consent and release form is obtained from the adjoining property owner, limit work activities to the obvious Right-of-Way and staging areas secured and environmentally cleared by the Contractor at no additional cost to the Department. In the event that private improvements (i.e. fences, buildings, etc.) encroach upon the Right-of-Way, the contractor shall notify the Engineer and limit work

General Notes & Description of Work

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activities in order to NOT disturb the improvements. If they become necessary, the Department will secure consent and releases from property owners through the Engineer. Be responsible for all encroachments onto private lands.

CONTROL

Perform all work under the absolute control of the Department of Highways. Obtain the Engineer's approval of all designs required to be furnished by the Contractor prior to incorporation into the work. The Department reserves the right to have other work performed by other contractors and its own forces and to permit public utility companies and others to do work during the construction within the limits of, or adjacent to, the project. Conduct operations and cooperate with such other parties so that interference with such other work will be reduced to a minimum. The Department will not honor any claims for money or time extension created by the operations of such other parties. Should a difference of opinion arise as to the rights of the Contractor and others working within the limits of, or adjacent to, the project, the Engineer will decide as to the respective rights of the various parties involved in order to assure the completion of the Department's work in general harmony and in a satisfactory manner, and his/her decision shall be final and binding upon the Contractor.

DESCRIPTION OF WORK

Except as specified herein, perform all work in accordance with the Department's Standard Specifications, Supplemental Specifications, applicable Special Notes and Special Provisions, and applicable Standard and Sepia Drawings, current editions. Furnish all materials, labor, equipment, and incidentals for the following work:

Drainage Improvements. This work consists of replacement or modification of some headwalls. Some pipes will be extended, lined or replaced. Improvements to drainage also include extensions to some Reinforced Concrete Box Culverts.

CAUTION: The existing culvert pipes on the project are Vitrified Clay Pipe (VCP). The contractor shall use extreme caution when working on existing pipes to not damage existing VCP intended to remain in place. Remove existing headwalls and the first segment of existing pipes in a manner to not damage the existing pipe intended to remain in place. Excavate around the existing pipes intended to remain in service by hand to expose the minimum amount needed to construct the proposed pipe collar. Any damage to existing pipes intended to remain in service caused by the contractor's activities will be repaired by the contractor and at the contractor's expense. The contractor may repair the damage by removal and replacement of additional length of pipe or install a pipe liner at his/her own expense.

Insert Fittings. Several existing headwalls have been selected to receive an insert fitting to be inserted into the existing headwall eliminating the need to remove the existing headwall. The contractor is encouraged to use this method of pipe extension where practical to avoid impacts to the existing VCP. This method shall only be used when the existing headwall and first joints of pipe are in good condition and have not separated from the remainder of existing VCP.

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Partial removal of the top of the existing headwalls are required to obtain cover and including the cover needed to construct proposed Sloped and Mitered Headwalls. The proposed concrete collar required for these insert fittings shall be modified where they will be in conflict with the proposed Sloped and Mitered Headwalls. These modifications to the dimensions of the proposed collar are to be kept at a minimum and the engineer must approve of the proposed modifications.

Pipe Replacements & Extensions. There are locations throughout the project where culvert pipes are being extended or replaced. Locations and estimated quantities are noted on the Culvert Pipe Replacement & Extension Summary. For pipe extensions where the existing pipe is RCP or VCP, remove the existing headwall and first section of existing RCP or VCP attached to the headwall (approx. 3 to 4 ft of existing pipe). Other items that may be included with the pipe extensions/replacements include culvert headwalls, sloped & mitered concrete headwalls, intermediate anchor/collar, roadside regrading, ditching, channel lining, erosion control blanket, asphalt pavement quantities, etc. Refer to the Special Note for Pipe Replacements/Extensions for more information on this item of work.

Pipe Collar. There are quantities of Class A Concrete and Steel Reinforcement included in the contract to construct pipe collars around the pipes at the pipe extension locations not receiving an insert fitting. This is so the new pipe can be securely connected to the existing pipe.

Sloped and Mitered Concrete Headwalls. Sloped & Mitered Concrete Headwalls shall be constructed as shown on the detail sheets titled: Sloped & Mitered Concrete Headwall Details. This headwall is intended to combine the benefits of a pipe headwall with the advantages of safety and adaptability by allowing the headwall to be custom fit to the surrounding embankment. The Culvert Pipe Replacement & Extension Summary identifies which pipe ends are to receive the Sloped & Mitered Concrete Headwalls. The identified pipe ends shall have the headwall installed and the pipe mitered at a slope that matches the final embankment slopes at each location. If the pipe is on a skew, install the headwall and miter the pipe so that the concrete slope paving of the new headwall is perpendicular to the roadway. In other words, the embankment slope should not be warped to fit the skew of the pipe; the headwall should be installed and the pipe should be mitered to match the final embankment slope, so that the roadside fill slope is fairly consistent prior to the pipe, at the pipe, and beyond the pipe, and does not create an excessive bulge in the embankment. When completed the edges of the Sloped & Mitered Concrete Headwall should be flush with the surrounding ground line. Payment at the Contract unit price Each shall be full compensation for furnishing all labor, materials, equipment, and incidentals necessary to install the headwall and miter the pipe.

NOTE: For pipes that receive the Sloped & Mitered Concrete Headwall, the pipe length will be measured to the furthest point along the mitered end of the pipe.

Reinforced Concrete Box Culvert (RCBC) Extensions. There are several locations within the project where existing reinforced concrete box culverts are being extended. Locations

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and estimated quantities are noted on the RCBC Extensions Summary. Refer to the Structure Plans, Special Note for Box Culvert Extensions, and Traffic Control Plan for more details and information on this item of work.

Channel Lining. A quantity of 661 Tons of Channel Lining Class II has been included in the Channel Lining Summary for use at the locations indicated on the summary. An additional 100 Tons of Channel Lining Class III has been included in the contract for potential use around drop box inlets, safety box inlets, inlets and outlets of pipes, along areas of regraded ditch line and/or fill slope, and other areas as directed by the Engineer. The Contractor and Engineer should work together to determine the location and best use of Channel Lining throughout this project. The Engineer will make the final determination as to the needed quantities and placement of Channel Lining.

Backfill and Slopes. Complete backfill of pipe and RCBC extensions and grade the roadside slopes to the dimensions depicted in the pipe sheets. Construct adequate backfill and embankment to provide a 2' wide berm (at 4% grade) adjacent to the existing paved shoulder, construct the proposed slope, and inlet/outlet ditches and blend the slopes into the typical slopes ahead and back station of the pipe modification area. Backfill of pipe and additional embankment required to construct proposed slopes and blend slopes to surrounding slopes, and ditching is incidental to the pipe construction where no roadside regrading is proposed at the pipe construction location. Pipe backfill slopes may be required to be warped from adjacent existing or proposed slopes in order to stay on existing Right of Way.

Roadside Regrading. Areas have been identified along the route for Roadside Regrading. The overall intent of the Roadside Regrading work operation is to improve the existing roadside by constructing a proposed width of earth shoulder and regrading the roadside fill slopes, ditch foreslopes, and/or ditch backslopes as flat as possible within the Right-of-Way (or any work areas the Department has obtained through Consent & Release), while NOT disturbing any sensitive obstructions (i.e. fences, buildings, utilities, etc.). A variety of information is included in the proposal to communicate the proposed Roadside Regrading.

- The Special Note for Roadside Regrading provides information on:
 - The required materials and construction methods.
 - How roadside regrading is measured and paid.
- The ROADSIDE REGRADING AND EMBANKMENT BENCHING DETAILS includes:
 - 11 different Figures that show the common conditions and situations that may be encountered when performing Roadside Regrading.
 - Notes that provide guidance on how to adjust the proposed shoulder and/or roadside dimensions so that Roadside Regrading work operations will remain within the Right-of-Way (or Consent & Release work area) and/or not impact a sensitive obstruction.
- The Typical Section(s) show:
 - The desired dimensions of the proposed shoulder, ditch, and/or roadside slopes.

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- NOTE: There may be situations where the desired shoulder, ditch, and/or roadside dimensions must be modified based on existing site conditions. When situations arise where the desired roadside dimensions need to be adjusted, the Contractor and Engineer should work together to determine the final dimensions for the proposed shoulder, ditch, and/or roadside slopes. The notes within the ROADSIDE REGRADING AND EMBANKMENT BENCHING DETAILS provide guidance on ways to adjust the Roadside Regrading when common site conditions and constraints are encountered.
- The Roadside Regrading Summary:
 - Lists the locations where Roadside Regrading is to be performed.
 - Lists estimated volumes of excavation and embankment for each Roadside Regrading location to help indicate the approximate level of effort of each Roadside Regrading location. NOTE: the estimated volumes of excavation and embankment are provided for informational purposes only and final payment for Roadside Regrading will be made based on the actual LF of Roadside Regrading performed.
 - Indicates which Figure reference within the ROADSIDE REGRADING AND EMBANKMENT BENCHING DETAILS is the closest representation of each proposed Roadside Regrading location.
 - Lists the Targeted Fill Slope (or Ditch Foreslope) and, if applicable, the Targeted Backslope for each Roadside Regrading location.
 - Indicates if there is a need for Embankment Benching, a DGA Wedge, and Channel Lining for each Roadside Regrading location.
 - If applicable, lists the estimated quantities of DGA, Asphalt Seal Coat, Asphalt Seal Aggregate, Channel Lining, and Geotextile Fabric for each Roadside Regrading location.
 - Summarizes the quantities of the bid items associated with the Roadside Regrading work operation.

Cribbing. See Cribbing Summary for a list of locations to construct cribbing. Construct according to the details. A detail has been provided to furnish and drive guardrail posts for the cribbing and attach the cribbing to the posts and backfill. A separate detail has been provided to attach cribbing to proposed guardrail system installations. Use extra length (9' long posts) where cribbing is to be added to the proposed guardrail system.

Guardrail. Several locations within the project are set up for guardrail replacement or new installation. The approximate locations and estimated quantities are noted on the Guardrail Summary. Refer to the Special Note for Guardrail, Typical Sections, and Plan Sheets for more detail and information on this item of work.

NOTE: When the plans call for a Type 1 or Type 4A End Treatment, a MASH eligibility letter from FHWA is required for these end terminals. When a MASH tested eligibility letter is not available for the end terminal being utilized, the most recent NCHRP 350 eligibility letter from FHWA for that terminal will apply. Acceptance of the terminal will be at the discretion of the Engineer.

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Tree Removal. There are locations within the project where trees are to be removed. Locations are noted on the plan sheets. Refer to the Special Note for Tree, Stump, and Brush Removal for more information.

Erosion Control Blanket. A quantity of 16,300 square yards of Erosion Control Blanket has been included in the contract for potential use along areas of regraded shoulders, ditch lines, fills slopes and/or back slopes, inlets and outlets of pipes, and any other areas as directed by the Engineer. The Contractor and Engineer should work together to determine the location and best use of Erosion Control Blanket throughout this project. The Engineer will make the final determination as to the quantities and placement of Erosion Control Blanket.

Temporary Striping. A quantity of 2,480 linear feet of Pave Striping – Temp Paint – 4 in has been included in the contract for potential use in restoring pavement at the culvert extension and replacement areas, and any other areas as directed by the Engineer. The Contractor and Engineer should work together to determine any locations throughout the project requiring temporary pavement striping. The Engineer will make the final determination as to the quantities and placement of temporary pavement striping.

Permanent Striping. A quantity of 2,480 linear feet of Durable Waterborne Marking - 4 in Y has been established to restripe areas that asphalt pavement mill and inlay will be performed to restore pavement at culvert extension and replacement areas.

Special Note for Staking

Perform Contractor Staking according to Section 201; except, in addition to the requirements of Section 201, perform the following:

1. Contrary to Section 201.03.01, perform items 1 & 2 usually performed by the Engineer.
2. Verify the dimensions, type, and quantities of the culvert pipes, entrance pipes, and/or box culverts as listed and detailed in the proposal, and determine flow line elevations and slopes necessary to provide positive drainage. Revise as necessary to accommodate the existing site conditions; to provide proper alignment of the drainage structures with existing and/or proposed ditches, stream channels, swales, and the roadway lines and grades; and to ensure positive drainage upon completion of the work.
3. Produce and furnish to the Engineer "As Built" information for the drainage improvements. For the drainage improvements, as built information will consist of a final record of the actual types, sizes, and locations of the drainage structures (i.e. box inlets, headwalls, junction boxes, etc.), culvert pipes, and/or box culverts constructed. Final elevation data of the drainage improvements is not necessary.
4. Prior to incorporating into the work, obtain the Engineers approval of all revisions determined by the Contractor.
5. Perform any and all other staking operations required to control and construct the work.
6. Coordinate control has been provided. Coordinates are considered to be assumed project coordinates and not state plane coordinates. Elevations are assumed elevations.

Special Note for Erosion Control

I. DESCRIPTION

Perform all erosion and water pollution control work in accordance with any other notes in the Proposal, the Department's Standard and Interim Supplemental Specifications, the Special Provisions and Special Notes, and the Standard and Sepia Drawings, current editions, or as directed by the Engineer. Section references are to the Standard Specifications. This work shall consist of:

(1) Developing and preparing a Best Management Practices Plan (BMP) tailored to suit the specific construction phasing for each site within the project; (2) Preparing the project site for construction, including locating, furnishing, installing, and maintaining temporary and/or permanent erosion and water pollution control measures as required by the BMP prior to beginning any earth disturbing activity on the project site; (3) Clearing and grubbing and removal of all obstructions as required for construction; (4) Removing all erosion control devices when no longer needed; (5) Restoring all disturbed areas as nearly as possible to their original condition; (6) Preparing seedbeds and permanently seeding all disturbed areas; (7) Providing a Kentucky Erosion Prevention and Sediment Control Program (KEPSC) qualified inspector; and (8) Performing any other work to prevent erosion and/or water pollution as specified by this contract, required by the BMP, or as directed by the Engineer.

II. MATERIALS

Furnish materials in accordance with these notes, the Standard Specifications and Interim Supplemental Specifications, applicable Special Provisions and Special Notes, and the Standard and Sepia Drawings, current editions. Provide for all materials to be sampled and tested in accordance with the Department's Sampling Manual. Unless directed otherwise by the Engineer, make the materials available for sampling a sufficient time in advance of the use of the materials to allow for the necessary time for testing.

III. CONSTRUCTION

Be advised, these Erosion Control Notes do not constitute a BMP plan for the project. Jointly with the Engineer, prepare a site-specific BMP plan for each drainage area within the project in accordance with Section 213. Provide a unique BMP at each project site using good engineering practices taking into account existing site conditions, the type of work to be performed, the construction phasing, methods, and the techniques to be utilized to complete the work. Be responsible for all erosion prevention, sediment control, and water pollution prevention measures required by the BMP for each site. Represent and warrant compliance with the Clean Water Act (33 USC Section 1251 et seq.), the 404 Permit, the 401 Water Quality Certification, and applicable state and local government agency laws, regulations, rules, specifications, and permits. Contrary to Section 105.05, in case of discrepancy between these notes, the Standard Specifications, Interim Supplemental Specifications, Special Provisions and Special Notes, Standard and Sepia Drawings, and such state and local government agency requirements, adhere to the most restrictive requirement.

Conduct operations in such a manner as to minimize the amount of disturbed ground during each phase of the construction and limit the haul roads to the minimum required to perform the work. Preserve existing

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vegetation not required to be removed by the work or the contract. Seed and/or mulch disturbed areas at the earliest opportunity. Use silt fence, silt traps, temporary ditches, brush barriers, erosion control blankets, sodding, channel lining, and other erosion control measures in a timely manner as required by the BMP and as directed or approved by the Engineer. Prevent sediment laden water from leaving the project, entering an existing drainage structure, or entering a stream.

Provide for erosion control measures to be in place and functioning prior to any earth disturbance within a drainage area. Compute the volume and size of silt control devices necessary to control sediment during each phase of construction. All silt control devices shall be sized to retain a volume of 3,600 cubic feet per disturbed contributing acre. Remove sediment from silt traps before they become a maximum of ½ full. Maintain silt fence by removing accumulated trappings and/or replacing the geotextile fabric when it becomes clogged, damaged, or deteriorated, or when directed by the Engineer. Properly dispose of all materials trapped by erosion control devices at approved sites off the right of way obtained by the Contractor at no additional cost to the Department. See the Special Provision for Waste and Borrow Sites.

As work progresses, add or remove erosion control measures as required by the BMP, applicable to the Contractor's project phasing, construction methods, and techniques. Update the volume calculations and modify the BMP as necessary throughout the duration of the project. Ensure that an updated BMP is kept on site and available for public inspection throughout the life of the project.

The required volume at each Silt Trap shall be computed based on the Up Gradient Contributing Areas that are disturbed and/or stabilized to the satisfaction of the Engineer. The required volume calculation for each Silt Trap shall be determined by the Contractor and verified by the Engineer. The required volume at each Silt Trap may be reduced by the following amounts:

- Up Gradient Areas not disturbed (acres)
- Up Gradient Areas that have been reclaimed and protected by Erosion Control Blanket or other ground protection material such as Temporary Mulch (acres)
- Up Gradient Areas that have been protected by Silt Fence (acres) – Areas protected by Silt Fence shall be computed at a maximum rate of 100 square feet per linear foot of Silt Fence
- Up Gradient Areas that have been protected by Silt Traps (acres)

The use of Temporary Mulch is encouraged.

Silt Trap Type B shall always be placed at the collection point prior to discharging into a Blue Line Stream or onto an adjacent Property Owner. Where overland flow exists, a Silt Fence or other filter devices may be used.

After all construction is complete, restore all disturbed areas in accordance with Section 212. Completely remove all temporary erosion control devices not required as part of the permanent erosion control from the construction site. Prior to removal, obtain the Engineer's concurrence of items to be removed. Grade the remaining exposed earth (both on and off the Right-of-Way) as nearly as possible to its original condition, or as directed by the Engineer. Prepare the seed bed areas and sow all exposed earthen areas with the applicable seed mixture(s) according to Section 212.03.03.

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IV. MEASUREMENT

The Department will measure the various erosion control items according to Section 212.04 and Section 213.04, as applicable.

V. Basis of Payment

The Department will make payment for the various erosion control items according to Section 212.04 and Section 213.04, as applicable.

Special Note for Roadside Regrading

I. DESCRIPTION

Except as provided herein, all work shall be performed in accordance with Department's Standard Specifications, Interim Supplemental Specifications, applicable Standard and Sepia Drawings, and applicable Special Provisions and Special Notes, current editions. Article references are to the Standard Specifications. This project shall consist of furnishing all labor, equipment, materials, and incidentals for the following:

(1) Maintaining and Controlling Traffic; (2) Site Preparation; (3) Roadside Regrading; (4) Constructing Embankments, Embankment Benching, and/or Excavation; (5) Erosion Control; and (6) Any other work as specified in this Contract.

II. MATERIALS

All materials shall be sampled and tested in accordance with the Department's Sampling Manual and the materials shall be available for sampling a sufficient time in advance of the use of the materials to allow for the necessary time for testing unless otherwise specified in these Notes.

- A. **Maintain and Control Traffic.** See Traffic Control Plan.
- B. **Erosion Control.** See Special Note for Erosion Control.
- C. **Channel Lining, Class II.** When listed as a bid item, furnish Channel Lining, Class II as per Section 805.
- D. **Geotextile Fabric Class 1.** When listed as a bid item, furnish Geotextile Fabric Class 1 as per Section 843.

III. CONSTRUCTION METHODS

- A. **Maintain and Control Traffic.** See Traffic Control Plan.
- B. **Erosion Control.** See Special Note for Erosion Control.
- C. **Site Preparation.** Be responsible for all site preparation including, but not limited to: staking; clearing, grubbing, and removal of all obstructions or any other items; excavation, embankment benching, compacting embankment in place; temporary pollution and erosion control; disposal of excess, waste, and debris; and final dressing, cleanup, and seeding and protection. Perform all site preparation as approved or directed by the Engineer.
- D. **Staking.** See Special Note for Staking.

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- E. Roadside Regrading.** Perform Roadside Regrading at the approximate locations listed on the Summary Sheets and/or Plan Sheets, or at locations as directed by the Engineer. All work shall be completed as specified in the ROADSIDE REGRADING AND EMBANKMENT BENCHING DETAILS, the Typical Sections, the Plan Sheets, or as directed by the Engineer. Roadside Regrading shall consist of any necessary clearing, grubbing, grading, and/or reshaping of the existing shoulder, ditch, and/or roadside to achieve the proposed shoulder, ditch, and/or roadside dimensions detailed on the Typical Sections. Depending on the existing conditions encountered and to achieve the dimensions as detailed in the Typical Sections, Roadside Regrading may also include, but is not limited to: embankment benching, excavating and removing excess material, excavation of rock, providing additional earth material suitable for vegetation growth and grading, shaping, and compacting the earth material.

Provide positive drainage of ditches and slopes at all times during and upon completion of construction. When asphalt surfacing or resurfacing is included in the contract, perform all Roadside Regrading operations as is practical before beginning final surfacing operations.

- F. Embankment Benching.** Embankment Benching shall be required when the existing groundline has an incline greater than 15%. Any and all required embankment benching shall be incidental to the bid item ROADSIDE REGRADING. For more information refer to the ROADSIDE REGRADING AND EMBANKMENT BENCHING DETAILS.
- G. Channel Lining.** Install Class II Channel Lining along any sections of ditches, fill slopes, or ditch backslopes identified in the Proposal, or any other locations the Engineer directs for slope protection or erosion control. When Channel Lining is proposed to be installed along a steep fill slope in order to establish a width of shoulder (as shown in Figure 5 of the ROADSIDE REGRADING AND EMBANKMENT BENCHING DETAILS), the Channel Lining is to be capped with Geotextile Fabric Class 1 and 4" of Crushed Stone Base. In lieu of 4" of Crushed Stone Base, 4" of DGA and a Double Asphalt Seal Coat may be specified in the Proposal. Install whichever aggregate capping material the Proposal specifies, or as directed by the Engineer.
- H. Right-of-Way Limits.** The Department has not established exact limits of the Right-of-Way. Unless a consent and release form is obtained from the adjoining property owner, limit work activities to the obvious Right-of-Way and staging areas secured by the Contractor at no additional cost to the Department. In the event that private improvements (i.e. fences, buildings, etc.) encroach upon the Right-of-Way, the contractor shall notify the Engineer and limit work activities in order to NOT disturb the improvements. If they become necessary, the Department will secure consent and releases from property owners through the Engineer. Be responsible for all encroachments onto private lands.
- I. Property Damage.** The Contractor shall be responsible for all damage to public and/or private property resulting from the Contractor's activities. Repair or replace damaged roadway features in like kind materials and design as directed by the Engineer at no additional cost to the Department. Repair or replace damaged private property in like kind materials and design to the satisfaction of the owner and the Engineer at no additional cost to the Department.

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- J. Coordination with Utility Companies.** Locate all underground, above ground, and overhead utilities prior to beginning construction. Be responsible for contacting and maintaining liaison with all utility companies that have utilities located within the project limits. Do not disturb existing overhead or underground utilities. It is not anticipated that any utility facilities will need to be relocated and/or adjusted; however, in the event that it is discovered that the work does require that utilities be relocated and/or adjusted, the utility companies will work concurrently with the Contractor while relocating their facilities. Be responsible for repairing all utility damage that occurs due to the Contractor's operations at no additional cost to the Department. NOTIFY THE ENGINEER AND THE UTILITY OWNER(S) IMMEDIATELY WHEN IT IS DISCOVERED OR ANTICIPATED THAT ANY UTILITY CONFLICT COULD DELAY THE CONTRACTOR'S OPERATIONS. If the total delay exceeds ten working days, an extension of the specified completion date will be negotiated with the Contractor for delay to the Contractor's work; however, no extension will be granted for any delay caused by the Contractor's failure to notify the Engineer and/or the utility company as specified above when a conflict is discovered or anticipated as specified.
- K. Caution.** The information in this proposal and the type of work listed herein are approximate only and are not to be taken as an exact evaluation of the materials and conditions to be encountered during construction; the bidder must draw his/her own conclusions when developing the Unit Bid Prices for each bid item. As such, if the conditions encountered are not in accordance with the information shown, the Department does not guarantee any changes to the Unit Bid Prices nor extension of the contract will be considered. The Department will pay for bid item quantity overruns, but only if pre-approved by the Engineer.
- L. Control.** Perform all work under the absolute control of the Department. Obtain the Engineer's approval of all designs required to be furnished by the Contractor prior to incorporation into the work. The Department reserves the right to have other work performed by other contractors and its own forces, and to permit public utility companies and others to do work during the construction within the limits of, or adjacent to, the project. Conduct operations and cooperate with such other parties so that interference with such other work will be reduced to a minimum. The Department will not honor any claims for money or time extension created by the operations of such other parties.
- Should a difference of opinion arise as to the rights of the Contractor and others working within the limits of, or adjacent to, the project, the Engineer will decide as to the respective rights of the various parties involved in order to assure the completion of the Department's work in general harmony and in a satisfactory manner, and the Engineer's decision shall be final and binding upon the Contractor.
- M. Clean Up, Disposal of Waste.** Clean up the project area as work progresses. Dispose of all removed excess material, debris, and other waste at approved sites off the Right of Way obtained by the Contractor at no additional cost to the Department. See the Special Provision for Waste and Borrow Sites.
- N. Final Dressing, Seeding and Protection.** Grade all disturbed areas to blend with the adjacent roadways features and to provide a suitable seed bed. Apply Class A Final Dressing to all disturbed

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areas, both on and off the Right-of-Way. Sow all disturbed earthen areas with the applicable seed mixture(s) according to Section 212.03.03.

IV. METHOD OF MEASUREMENT

- A. **Maintain and Control Traffic.** See Traffic Control Plan.
- B. **Erosion Control.** See Special Note for Erosion Control.
- C. **Site Preparation.** Other than the bid items listed, the Department will NOT measure Site Preparation for payment, but shall be incidental to the project bid items.
- D. **Staking.** See Special Note for Staking.
- E. **Roadside Regrading.** The Department will measure the bid item ROADSIDE REGRADING in linear feet along the centerline of the roadway as the length of the actual Roadside Regrading work performed. Further, this measurement will only include one side of the roadway. Therefore, for areas where roadside regrading occurs on both sides of the road, the Department will measure each side independently. The Department will not measure cleaning pipe structures 36 inches or less in diameter or reshaping any deformed ends on metal entrance pipes that are to remain in place, as these operations are considered incidental to the bid item ROADSIDE REGRADING.
- F. **Embankment Benching.** The Department will not measure Embankment Benching for payment. Any and all required embankment benching shall be incidental to the bid item ROADSIDE REGRADING.
- G. **Channel Lining, Class II.** When listed as a bid item, Class II Channel Lining shall be measured according to Section 703.04.
- H. **Geotextile Fabric, Class 1.** When listed as a bid item, Geotextile Fabric, Class 1 shall be measured according to Section 214.04.
- I. **Clean Up, Disposal of Waste, Final Dressing, Seeding and Protection.** The Department will NOT measure for payment the following activities: Clean Up, Disposal of Waste, and Final Dressing. These activities shall be incidental to the project bid items. Seeding and Protection shall be measured according to Section 212.

V. BASIS OF PAYMENT

- A. **Maintain and Control Traffic.** See Traffic Control Plan.
- B. **Erosion Control.** See Special Note for Erosion Control.

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- C. Staking.** See Special Note for Staking.
- D. Roadside Regrading.** The Department will make payment for the completed and accepted quantities under the bid item ROADSIDE REGRADING. The Department will consider payment full compensation for furnishing all labor, materials, equipment, and incidentals necessary to perform Roadside Regrading as required by these notes, at the locations indicated on the summary sheets, plans, and/or as directed by the Engineer.
- E. Channel Lining, Class II.** When listed as a bid item, the Department will make payment for Class II Channel Lining according to Section 703.05.
- F. Geotextile Fabric, Class 1.** When listed as a bid item, the Department will make payment for Geotextile Fabric, Class 1 according to Section 214.05.

Special Note for Tree, Stump, and Brush Removal

I. DESCRIPTION

Except as provided herein, perform all work in accordance with the Department's Standard Specifications, interim Supplemental Specifications, Standard and Sepia Drawings, and Special Notes and Special Provisions, current editions. Article references are to the Standard Specifications. This project shall consist of furnishing all labor, equipment, materials, and incidentals for the following:

(1) Site Preparation; (2) Maintaining and controlling traffic; (3) Temporary erosion control and temporary pollution control; (4) Cutting, trimming, and/or removing trees, stumps, and/or brush as specified or directed by the Project Engineer; (5) Treating all cut stumps required by Project Engineer to prevent re-sprouting; (5) Clean up and disposal of waste; (6) Final dressing and seeding and protection; and (7) all other work specified in the Contract.

II. MATERIALS

All materials shall be sampled and tested in accordance with the Department's Sampling Manual and the materials shall be available for sampling a sufficient time in advance of the use of the materials to allow for the necessary time for testing unless otherwise specified in these Notes.

- A. Maintain and Control Traffic.** The Contractor shall maintain and control traffic in accordance with the Traffic Control Plan.
- B. Seeding and Protection.** Use applicable Seed Mixture as specified per Section 212.03.03.
- C. Erosion Control.** See the Special Note for Erosion Control.

III. CONSTRUCTION METHODS

- A. Maintain and Control Traffic.** The Contractor shall maintain and control traffic in accordance with the Traffic Control Plan.
- B. Cutting and/or Removing Trees and/or Stumps.** The Contractor shall cut and/or remove the trees and/or stumps as indicated in the Proposal, or as directed by the Engineer. Cut trees as close to the ground as possible; three inches (3") or less from ground line. All tree stumps within the mowing zone shall be removed via mechanical grinding, or other methods approved by the Engineer, to a minimum depth of four inches (4") below the surrounding grade line. For trees that are cut but will not be required to have their stump removed, treat the stump, within one hour of cutting, with the herbicide solution specified below.

Replace and level any and all soil disturbed during the tree, stump, and/or brush removal operations. Leave the soil in a condition suitable for seeding that is level with the surrounding soil grade, with no holes or indentions to catch water or present unsafe mowing conditions. This work will be incidental to the bid items "Remove Trees or Stumps."

Tree, Stump, & Brush Removal
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NOTE: Tree cutting restrictions apply. See the Special Note for Tree Removal for details on the restrictions.

- C. Removal of Tree, Stump, and Brush Debris.** The Contractor will remove all debris and biomass from the cutting and/or removal of trees, stumps, and/or brush from the work site and dispose of such off the right-of-way in accordance with local, state, and federal solid waste laws and regulations. Cleanup and remove all existing downed trees and brush located within the designated areas. At the discretion of the Project Engineer, the contractor may be permitted to chip and blow biomass onto non-mowing zones. Chips shall not be blown onto areas that would potentially restrict the flow of water in drainage ditches. All un-chipped biomass must be removed from roadway right-of-ways.

The Contractor shall keep the work zone free of accumulated waste material and debris at all times. Remove and dispose of all tree, stump, and brush chips off the right-of-way. Remove and dispose of all debris and waste material off the right-of-way as work is completed and at the end of each workday. Remove desirable wood pieces from the right-of-way at the end of each workday. Stockpile trees and brush off the right-of-way. At the discretion of the Project Engineer, the Contractor may be permitted to stockpile trees and brush at approved locations along the right-of-way.

The Contractor shall immediately correct any disturbance to all drainage features and structures caused by the Contractor’s work.

- D. Stump Treatment.** Within one hour of cutting, the Contractor shall apply a stump treatment mix consisting of fifty percent (50%) Glyphosate (EPA Reg. No. 524-579) with water and add twelve (12) ounces of Imazapyr (EPA Reg. No. 241-431), as specified, per gallon of solution. The addition of a non-ionic surfactant 5% (v/v) shall be added to the solution to increase uptake of the herbicide solution into the root system. Generic formulations are not acceptable. Mix the herbicide solution in the presence of the Inspector. Include a color indicator in the herbicide solution to mark the treated stumps. Spray or paint the herbicide solution onto all cut stumps within one hour after cutting. Apply the herbicide solution in a manner to avoid drift onto surrounding vegetative ground cover. Stumps in the mowing zone, designated for mechanical grinding treatment, need not receive the herbicide treatment.

Provide herbicide material for the treatment of cut stumps meeting the following criteria:

a. Glyphosate

Active ingredient: **(Glyphosate)**

*Glyphosate, N-(phosphonomethyl)glycine, in the form of its potassium salt.....	48.7%
Inert ingredients	51.3%
Total	100.0%

* Contains 660 grams per liter or 5.5 pounds per U.S. gallon of the active ingredient glyphosate, in the form of its potassium salt. Equivalent to 540 grams per liter or 4.5 pounds per U.S. gallon of the acid, glyphosate.
EPA Reg. No. 524-579

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b. Imazapyr

Active ingredient: (**Imazapyr**)

*Isopropylamine salt of Imazapyr 2-[4,5-dihydro-4-methyl-4-(1methylethyl)-5oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid) 26.7%

Inert ingredients 73.3%

Total 100%

* Equivalent to 21.8 percent 2-[4,5-dihydro-4-methyl-4-(1methylethyl)-5oxo-1H-imidazolyl]-3-pyridinecarboxylic acid or 2 pounds acid per gallon.

EPA Reg. No. 241-431

KRS 217B requires that any individual who applies pesticides to Kentucky Highway Right-of-Way areas must be certified as a Pesticide Applicator under Category 6 guidelines. Comply with all current laws and regulations established by the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) and by KRS 217B that regulate the handling, use, and application of pesticides.

E. Property Damage. The Contractor will be responsible for all damage to public and/or private property resulting from his/her work.

F. Coordination with Utility Companies. NOTICE: Utility locations shown in the plans are approximate and have not been specifically located by the Department. Locate all underground, above ground and overhead utilities prior to beginning construction. The Contractor shall have the responsibility for contacting and maintaining liaison with all utility companies that have utilities located within the project limits. Do not disturb existing overhead or underground utilities. It is not anticipated that any utility facilities will need to be relocated and/or adjusted; however, in the event that it is discovered that the work does require that utilities be relocated and/or adjusted, the utility companies will work concurrently with the Utility Owner while they relocate their facilities. The Contractor shall be responsible for repairing all utility damage that occurs as a result of his/her operations.

G. Right-of-Way Limits. The exact limits of the Right-of-Way have not been established by the Department. The Contractor shall limit his/her activities to the obvious Right-of-Way, permanent or temporary easements, and any work areas secured by consent and release of the adjacent property owners. The Contractor shall be responsible for all encroachments onto private lands.

H. Clean Up, Disposal of Waste. Clean up and dispose of all removed debris by the end of each workday, and other waste as per Section 204.03.08. The Department will incur no cost to obtain the disposal sites. The Department will NOT make direct payment for clean up or disposal of waste and debris from the project. See the Special Provision for Waste and Borrow Sites.

I. Final Dressing, Seeding and Protection. Apply final dressing, class A to all disturbed areas, both on and off the Right-of-Way. Sow all disturbed earthen areas with the appropriate Seed Mixture as specified in Section 212.03.03.

J. Erosion Control. See the Special Note for Erosion Control.

Tree, Stump, & Brush Removal
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IV. METHOD OF MEASUREMENT

- A. **Maintain and Control Traffic.** See the Traffic Control Plan.
- B. **Site preparation.** Other than the bid items listed, site preparation will NOT be measured for payment, but shall be incidental to the project bid items.
- C. **Remove Trees or Stumps.** The Department will measure the quantity as EACH tree and/or stump removed. Trees and/or stumps to be measured under this bid item are only those trees and/or stumps indicated on the Plans or in the Proposal, or as directed by the Engineer.
- D. **Stump Treatment.** The Department will NOT measure for payment the operation of Stump Treatment. This activity shall be incidental to the bid item "Remove Trees or Stumps".
- E. **Clean Up, Disposal of Waste.** The Department will NOT measure for payment the operations of Clean Up and Disposal of Waste. These activities shall be incidental to the project bid items.
- F. **Final Dressing, Seeding and Protection.** The Department will NOT measure for payment the operations of Final Dressing. Seeding and Protection will be measured according to Section 212.
- G. **Erosion Control.** See the Special Note for Erosion Control.

V. BASIS OF PAYMENT

- A. **Maintain and Control Traffic.** See the Traffic Control Plan.
- B. **Remove Trees or Stumps.** The Department will make payment for the completed and accepted quantities of EACH tree and/or stump removed. The Department will consider payment at the contract unit price as full compensation for furnishing all materials, equipment, labor, other expenses, and all incidentals necessary to complete the work of removing the trees and/or stumps.
- C. **Erosion Control.** See the Special Note for Erosion Control.

Special Note for Box Culvert Extensions

I. DESCRIPTION

Except as provided herein, perform all work in accordance with the Department's Standard Specifications, interim Supplemental Specifications, Standard and Sepia Drawings, and Special Notes and Special Provisions, current editions. Section references are to the Standard Specifications. This project shall consist of furnishing all labor, equipment, materials, and incidentals for the following:

- (1) Contractor staking; (2) Site preparation; (3) Removing existing concrete masonry, as necessary; (4) Foundation preparation and construction of reinforced concrete box culvert extensions and headwalls; (4) Maintain and Control Traffic; and (5) all other work specified as part of this contract.

II. MATERIALS

Provide for sampling and testing of all materials in accordance with the Department's Sampling Manual. Make materials available for sampling a sufficient time in advance of the use of the materials to allow for the necessary time for testing unless otherwise specified in these notes.

- A. Maintain and Control Traffic.** See Traffic Control Plan.
- B. Erosion Control.** See Special Note for Erosion Control.
- C. Foundation Preparation.** Furnish materials according to Section 603, the drawings, and as directed by the Engineer.
- D. Reinforced Concrete Box Culvert Extensions.** Furnish Class A Concrete and deformed Steel Reinforcement according to Sections 601 and 602. Contrary to Section 602.03.03, field bending bars will be allowed; however, obtain the Engineers approval of proposed field bending methods prior to bending. Furnish additional reinforcement to provide adequate splice lengths with existing box culvert steel as determined by the Engineer.
- E. Steel Reinforcement.** See Section 811.

III. CONSTRUCTION

- A. Maintain and Control Traffic.** See Traffic Control Plan.
- B. Erosion Control.** See Special Note for Erosion Control.
- C. Site Preparation.** Be responsible for all Site Preparation, including but not limited to Clearing and Grubbing; Removing pavement; Tree and Stump removal; Temporary Fencing; Roadway Excavation and Structure Excavation; Embankment and Embankment in Place; removal of obstructions or any other items; Grading, Reshaping, and Compacting; Roadside Regrading, obtaining borrow and waste

Box Culvert Extensions

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sites, and disposal of materials, waste, and debris; cleaning inlet and outlet ditches; and restoration, cleanup and final dressing. Clear and Grub only the minimum area required for construction and/or as directed by the Engineer. Limit clearing and grubbing to the absolute minimum required to construct the box culvert extensions. Obtain the Engineer's approval before removing trees and stumps from the cleared areas. Phase construction such that the potential for erosion is as minimal as possible. Excavate as needed to remove any portion of the existing structure necessary for construction of the box culvert extension. Perform any ditching or roadside grading as directed by the Engineer. Stockpile suitable materials for incorporation into the work as approved by the Engineer. Be responsible for all excavation (common, roadway, structure, solid rock, and unclassified) required for foundation preparation, toe walls, and all other excavation required for the box culvert extensions. Excavate rock in channel as required to allow for construction of foundation and construction of box culvert extensions. Be responsible for all embankment, embankment in place, and borrow required for backfilling the box culvert extension, constructing widened roadway and shoulder transitions, and all other embankment required to complete the work. Provide positive drainage of slopes and ditches at all times during and upon completion of construction. Waste all removed materials not incorporated into the work at sites off the right of way obtained by the Contractor at no additional cost to the Department (see the Special Provision for Waste and Borrow Sites). Perform all excavation and removal of obstructions only as approved or directed by the Engineer.

Sheeting, shoring, cofferdams, and/or dewatering methods may be necessary for construction of the culvert. Include all costs in the unit price bid for Foundation Preparation.

- D. Remove Headwall.** Remove the existing headwall(s) and wingwalls at the existing box culvert end(s) to sound concrete masonry, or as directed by the Engineer. Before removing any concrete masonry saw around the perimeter of the removal area on the interior and exterior to a depth of 1 inch. When sawing, take care not to cut into the existing steel reinforcement. Do not kink or unnecessarily bend exposed existing steel reinforcement. Remove structure excavation to solid rock, or as directed by the Engineer, and prepare foundation. Existing steel reinforcement shall be thoroughly cleaned of concrete and straightened for use to bond the new concrete and reinforcement with a minimum overlap of 1'-9", unless otherwise shown in the drawings. Coat exposed ends of cut reinforcement with a bituminous produce to prevent corrosion of the ends of the exposed reinforcement. As an alternative, if the existing headwall is sound, the Engineer may approve leaving the existing headwall in place, in which case the existing parapet should be removed to 6" below proposed roadway elevation. If the Engineer approves leaving the existing headwall in place, center 3'-0" long, #6 dowel bars at 12" spacing into the existing slabs and walls, embedded 1'-6" deep into the existing box culvert concrete, and set with an adhesive anchorage system to provide a pullout strength of equal or greater capacity than the corresponding reinforcing steel.
- E. Box Culvert Extensions.** Construct the box culvert extension(s) according to the notes and details in the drawings, and Sections 601, 602, 603, 610, and/or any other applicable Standard Specifications. Class A Concrete shall be used throughout. Bond the proposed plastic concrete to the existing hardened concrete in all locations using a Type V Epoxy Resin or other approved structural adhesive, as prescribed in Section 826. Follow the manufacturer's application instructions. All exposed concrete edges shall be beveled $\frac{3}{4}$ ", unless otherwise noted. Reinforcement shall have a 2" clear distance to the proposed face of concrete, unless otherwise noted. Obtain the Engineer's approval

Box Culvert Extensions

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of the final centerline, flow line, length, skew, and revised dimensions and/or steel pattern, if any, of each box culvert extension prior to placing concrete.

The Contractor is required to complete the box culvert extension(s) in accordance with the plans and all applicable specifications. The cost of any and all labor, materials, equipment, and/or any other items necessary to construct the box culvert extension(s) shall be incidental to the most appropriate bid items. Incidental items may include, but are not limited to, cofferdams, shoring, excavation, backfilling, and phased construction.

- F. Remove Concrete Masonry.** If the Engineer approves leaving the existing headwall(s) in place, a portion of the existing parapet(s) may need to be removed in order to construct a shoulder of suitable depth from the edge of pavement to the proposed headwall. Any necessary removal of a portion of the existing parapet shall be considered Site Preparation and shall be incidental to the box culvert bid items. Also, if the existing headwall(s) are left in place, one or both of the existing wingwalls, or a portion of either wingwall may need to be removed in order to construct the proposed box culvert extension(s) and/or headwall(s). In this situation, any necessary removal of the existing wingwall(s), or any portion thereof, shall be considered Site Preparation and shall be incidental to the box culvert bid items.
- G. Embankments.** Backfill box culvert extensions and construct embankments, slopes, roadway shoulders, and ditches as shown on the drawings, or as directed by the Engineer. Warp and tie the embankment slopes into the adjacent existing roadway to match the existing slopes and ditches. Provide positive drainage of slopes and ditches at all times during and upon completion of construction.
- H. Roadside Regrading.** Construct ditches and shoulders to provide positive drainage. Transition the ditches and shoulders between the existing typical section and the reconstructed roadway at the box culvert extension site(s). Clean all new and existing cross drainage and entrance structures within the limits of the roadside regrading and/or ditching areas according to Section 209.03.B.
- I. Clean Culvert.** Remove all deleterious material and objects not native to the box culvert barrel, such as, but not limited to debris and silt. The Contractor may choose to clean the box culvert prior to, or after, the proposed box culvert extension work. If the Contractor chooses to clean the box culvert prior to the proposed box culvert extension work, and additional debris, silt, etc. builds up during the box culvert extension operations, the Contractor shall remove the additional debris, silt, etc. at no additional cost to the Department, after the box culvert extension operations are complete.

NOTE: The proposal lists the existing box culverts that are to receive the Clean Culvert bid item. These identified box culverts are those that had existing debris, silt, etc. at the time the proposal was developed. The Engineer and the Contractor are encouraged to review the proposed box culvert extension site(s) prior to the Contractor beginning the box culvert extension work and determine if the Clean Culvert bid item applies. The Engineer shall determine the final approved quantities. If an existing box culvert location has a buildup of debris, silt, etc., but the Clean Culvert bid item is NOT listed in the proposal for that box culvert, the Contractor shall notify the Engineer prior to beginning box culvert extension operations, so that the Engineer can confirm that the existing box culvert has a buildup of debris, silt, etc. If the contractor does not notify the Engineer of this situation prior to

Box Culvert Extensions

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beginning the box culvert extension operations, the Engineer will assume the buildup was a result of the Contractor's operations, and the cost of cleaning the box culvert shall be at no additional cost to the Department.

- J. Property Damage.** Be responsible for all damage to public and/or private property resulting from the work. Restore damaged roadway features and private property at no additional cost to the Department.
- K. On-Site Inspection.** Before submitting a bid for the work, make a thorough inspection of the site and determine existing conditions so that the work can be expeditiously performed after a contract is awarded. The Department will consider submission of a bid to be evidence of this inspection having been made. The Department does not warrant or give any guarantee as to the accuracy of the data and information shown and no claims for money or time extensions will be considered if the conditions encountered, items used or omitted, and final quantities required are not in accordance with the information shown.
- L. Coordination with Utility Companies.** Locate all underground, above ground, and overhead utilities prior to beginning construction. Be responsible for contacting and maintaining liaison with all utility companies that have utilities located within the project limits. Do not disturb existing overhead or underground utilities. It is not anticipated that any utility facilities will need to be relocated and/or adjusted; however, in the event that it is discovered that the work does require utilities to be relocated and/or adjusted, the utility companies will work concurrently with the Contractor while relocating their facilities. Be responsible for repairing all utility damage that occurs as a result of the Contractor's operations at no additional cost to the Department.
- M. Right of Way Limits.** The Department has not established the exact limits of the Right-of-Way. Limit work activities to obvious Right-of-Way, permanent or temporary easements, and work areas secured by the Department through consent and release of the adjacent property owners. Be responsible for all encroachments onto private lands.
- N. Control.** Perform all work under the absolute control of the Department. Obtain the Engineer's approval of all designs required to be furnished by the Contractor prior to incorporation into the work. The Department reserves the right to have other work performed by other contractors and its own forces and to permit public utility companies and others to do work during the construction within the limits of, or adjacent to, the project. Conduct operations and cooperate with such other parties so that interference with such other work will be reduced to a minimum. The Department will not honor any claims for money or time extension created by the operations of such other parties. Should a difference of opinion arise as to the rights of the Contractor and others working within the limits of, or adjacent to, the project, the Engineer will decide as to the respective rights of the various parties involved in order to assure the completion of the Department's work in general harmony and in a satisfactory manner, and his decision shall be final and binding upon the Contractor.
- O. Clean Up, Disposal of Waste.** Dispose of all removed concrete, debris, and other waste and debris off the Right-of-Way at sites obtained by the Contractor at no additional cost to the Department. See the Special Provision for Waste and Borrow Sites.

Box Culvert Extensions
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- P. Final Dressing, Seeding and Protection.** Apply Class A Final Dressing to all disturbed areas, both on and off the Right-of-Way. Sow all disturbed earthen areas with the applicable seed mixture(s) according to Section 212.03.03.

IV. MEASUREMENT

Quantities shown on the summaries and drawings are approximate only. The Department will measure for payment only the listed bid items and the actual quantities incorporated in the work. All other items required to complete the construction shall be incidental to the listed bid items.

- A. Maintain and Control Traffic.** See Traffic Control Plan.
- B. Erosion Control.** See the Special Note for Erosion Control.
- C. Site Preparation.** Other than the bid items listed, the Department will not measure Site Preparation for separate payment but shall be incidental to the applicable project bid items.
- D. Remove Headwall.** The Department will measure the removal of existing headwalls as Each. If the Engineer allows a proposed box culvert extension to be constructed without removing the existing headwall, the Remove Headwall bid item shall not be measured for payment.
- E. Foundation Preparation.** The Department will measure Foundation Preparation of box culvert extensions as Lump Sum. The Lump Sum unit price shall include all extensions at each identified box culvert and shall not be measured as individual units per inlet or outlet. Except for the Foundation Preparation bid items listed, the Department will NOT measure Foundation Preparation for any other items of work and shall consider it incidental to the other items of work, as applicable.
- F. Box Culvert.** The Department will measure box culvert in linear feet, from the face of the existing barrel, after headwall removal, to the face of the new culvert headwall.
- G. Box Culvert Headwall.** The Department will measure box culvert headwall as Each.
- H. Clean Culvert.** The Department will measure each box culvert cleaned as Lump Sum. The bid item Clean Culvert will not be measured when a box culvert must be cleaned due to buildup of debris, silt, etc. that occurs during the Contractor's construction operations.

V. PAYMENT

The Department will make payment only for the bid items listed. All other items required to complete the construction shall be incidental to the listed bid items.

- A. Maintain and Control Traffic.** See Traffic Control Plan.

Box Culvert Extensions
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- B. Erosion Control.** See the Special Note for Erosion Control.
- C. Foundation Preparation.** Payment at the Lump Sum unit price shall be full compensation for furnishing all labor, materials, and equipment necessary for Foundation Preparation of all extensions at each identified box culvert.
- D. Box Culvert.** The Department will make payment for the completed and accepted quantities of linear foot of box culvert constructed, as approved by the Engineer. Payment at the unit price shall be full compensation for furnishing all labor, materials, and equipment necessary to clean each box culvert measured for payment.
- E. Box Culvert Headwall.** The Department will make payment for the completed and accepted quantities of each box culvert headwall constructed, as approved by the Engineer. Payment at the unit price shall be full compensation for furnishing all labor, materials, and equipment necessary to clean each box culvert measured for payment.
- F. Clean Culvert.** The Department will make payment for the completed and accepted quantities of each box culvert cleaned, as approved by the Engineer. Payment at the Lump Sum unit price shall be full compensation for furnishing all labor, materials, and equipment necessary to clean each box culvert measured for payment. Any box culverts that require cleaning but are not approved by the Engineer for measurement of payment, shall be incidental to the box culvert bid items.

Special Note for Pipe Replacements and Extensions

I. DESCRIPTION

Except as provided herein, perform all work in accordance with the Department's Standard Specifications, interim Supplemental Specifications, Standard and Sepia Drawings, and Special Notes and Special Provisions, current editions. Article references are to the Standard Specifications. This project shall consist of furnishing all labor, equipment, materials, and incidentals for the following:

- (1) Maintaining and Controlling Traffic; (2) Constructing pipe replacements and/or pipe extensions; (3) Embankment and/or Excavation; (4) Erosion Control; and (6) Any other work as specified by this contract.

II. MATERIALS

Provide for sampling and testing of all materials in accordance with the Department's Sampling Manual. Make materials available for sampling a sufficient time in advance of the use of the materials to allow for the necessary time for testing unless otherwise specified in these notes.

- A. **Maintain and Control Traffic.** See Traffic Control Plan.
- B. **Culvert Pipe.** Furnish pipe meeting the requirements of Section 810. Select pipe for pH range Medium and minimum fill cover height according to the applicable Standard or Sepia Drawings, current editions. Verify maximum and minimum fill cover height required for new pipe prior to construction and obtain the Engineer's approval of the class or gauge of pipe and type of coating prior to delivering pipe to project. Furnish approved connecting bands or pipe anchors and toe walls.
- C. **Flowable Fill.** Furnish Flowable Fill for Pipe Backfill per Section 601.03.03(B).
- D. **Erosion Control.** See Special Note for Erosion Control.

III. CONSTRUCTION METHODS

- A. **Maintain and Control Traffic.** See Traffic Control Plan.
- B. **Erosion Control.** See Special Note for Erosion Control.
- C. **Site Preparation.** Be responsible for all site preparation including, but not limited to, saw cutting and removing existing pavement; clearing and grubbing; staking; incidental excavation and backfilling; common and solid rock excavation; embankment in place; removal of obstructions, or any other items; restoration of pavements, slopes, and all disturbed areas; final dressing and cleanup; and disposal of materials. Limit clearing and grubbing to the absolute minimum required to construct the drainage features. Perform all site preparation only as approved or directed by the Engineer.
- D. **Removing Headwalls, Pipe, and Excavation.** Remove existing headwalls and lengths of culvert and/or

Pipe Replacements/Extensions

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entrance pipes at the approximate locations noted on the summary. The Engineer will determine the exact locations and lengths of pipe to be removed at the time of construction. When any portion of pipe under the roadway, saw cut the existing asphalt pavement and base to a neat edge prior to excavation and removal of the existing pipe. NOTE: Saw cutting the pavement shall be incidental. Obtain the Engineer's approval of trench width and/or saw cutting limits prior to saw cutting the pavement. Excavate the trench and remove the pipe as directed, or approved, by the Engineer without disturbing existing underground utilities.

- E. Constructing Pipe, Headwalls, and Drainage Boxes.** Construct culvert and/or entrance pipes, pipe extensions, headwalls, drainage boxes, and other drainage structures at the locations shown in the proposal or as designated by the Engineer. The Contractor will establish, with the approval of the Engineer, the final centerlines, flow lines, and skews to obtain the best fit with the existing and/or proposed ditches and other proposed improvements. (See the Special Note for Staking.) Construct pipe bedding according to Section 701 and the applicable Standard or Sepia Drawings, current editions. Use approved connecting bands or concrete anchors as required. Prior to backfilling pipe, obtain the Engineer's approval of the pipe installation. Provide positive drainage upon completion of pipe installation.
- F. Pipe Backfill.** Backfill entrance pipes according to Section 701.03.06. Contrary to Section 701.03.06, regardless of cover height, backfill culvert pipes with flowable fill as shown on the Culvert Pipe Replacement Detail from the outside edge of shoulder or back of curb to outside edge of shoulder or back of curb. Steel plates will likely be required to maintain traffic while the flowable fill cures. Once the flowable fill has sufficiently cured, place the Asphalt Base in lifts with thicknesses of 3-4 inches, up to the surface of the existing pavement. Seal with Leveling & Wedging. Allow the asphalt base and leveling & wedging to be exposed to traffic for a minimum of 30 days to allow for settlement. During the waiting period, level & wedge (incidental) any settlement as directed by the Engineer. After the waiting period has been met for the last pipe replacement constructed, the final milling and/or surfacing operations can begin, unless directed otherwise by the Engineer. For culvert pipe beyond the outside edge of shoulder or back of curb, backfill according to Section 701.03.06.
- G. Embankments.** Backfill pipe and culvert extensions, and construct shoulder embankments as directed by the Engineer. The Contractor shall bench into the existing slope and apply proper compaction according to Section 206. For more information and details on benching, refer to Note 2 on the detail sheet titled: ROADSIDE REGRADING AND EMBANKMENT BENCHING DETAILS, found elsewhere in the Proposal. Provide positive drainage of ditches, shoulders, and slopes at all times during and upon completion of construction.
- H. Property Damage.** Be responsible for all damage to public and/or private property resulting from the work. Repair or replace damaged roadway features in like kind materials and design, as directed by the Engineer at no additional cost to the Department. Repair or replace damaged private property in like kind materials and design to the satisfaction of the owner and the Engineer at no additional cost to the Department.
- I. Coordination with Utility Companies.** Locate all underground, above ground, and overhead utilities prior to beginning construction. Be responsible for contacting and maintaining liaison with all utility companies that have utilities located within the project limits. Do not disturb existing overhead or

Pipe Replacements/Extensions
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underground utilities. It is not anticipated that any utility facilities will need to be relocated and/or adjusted; however, in the event that it is discovered that the work does require that utilities be relocated and/or adjusted, the utility companies will work concurrently with the Contractor while relocating their facilities. Be responsible for repairing all utility damage that occurs as a result of pipe replacement and pipe extension operations at no additional cost to the Department. NOTIFY THE ENGINEER AND THE UTILITY OWNER(S) IMMEDIATELY WHEN IT IS DISCOVERED OR ANTICIPATED THAT ANY UTILITY CONFLICT COULD DELAY THE CONTRACTOR'S OPERATIONS. If the total delay exceeds ten working days, an extension of the specified completion date will be negotiated with the Contractor for delay to the Contractor's work; however, no extension will be granted for any delay caused by the Contractor's failure to notify the Engineer and/or the utility company as specified above when a conflict is discovered or anticipated as specified.

- J. Right-of-Way Limits.** The Department has not established exact limits of the Right-of-Way. Unless a consent and release form is obtained from the adjoining property owner, limit work activities to the obvious Right-of-Way and staging areas secured by the Contractor at no additional cost to the Department. In the event that private improvements (i.e. fences, buildings, etc.) encroach upon the Right-of-Way, the Contractor shall notify the Engineer and limit work activities in order to NOT disturb the improvements. If they become necessary, the Department will secure consent and releases from property owners through the Engineer. Be responsible for all encroachments onto private lands.
- K. Clean Up, Disposal of Waste.** Clean up the project area as work progresses. Dispose of all removed concrete, pipe, pavement, debris, excess and unsuitable excavation, and all other waste at approved sites off the Right of Way obtained by the Contractor at no additional cost to the Department. See the Special Provision for Waste and Borrow Sites.
- L. Final Dressing, Seeding and Protection.** Grade all disturbed areas to blend with the adjacent roadways features and to provide a suitable seed bed. Apply Class A Final Dressing to all disturbed areas, both on and off the Right-of-Way. Sow all disturbed earthen areas with the applicable seed mixture(s) according to Section 212.03.03.
- M. Erosion Control.** See the Special Note for Erosion Control.

IV. METHOD OF MEASUREMENT

- A. Maintain and Control Traffic.** See the Traffic Control Plan.
- B. Site Preparation.** Other than the bid items listed, site preparation will NOT be measured for payment, but shall be incidental to culvert and/or entrance pipe bid items, as applicable.
- C. Remove Headwall.** The Department will measure the removal of existing headwalls as Each. Any excavation, including rock excavation, necessary to remove existing headwalls will NOT be measured for payment, but shall be incidental to the bid item "Remove Headwall".
- D. Remove Pipe.** Removal of existing culvert and entrance pipe shall be measured according to Section

Pipe Replacements/Extensions

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701.04.14. Any excavation, including rock excavation, necessary to remove existing pipe will NOT be measured for payment, but shall be incidental to the bid item "Remove Pipe".

- E. Culvert and Entrance Pipe.** The Department will measure the quantities according to Section 701.04. Any excavation, including rock excavation, necessary to install culvert or entrance pipe shall be incidental to the corresponding pipe bid items.
- F. Headwalls, Drainage Boxes.** The Department will measure according to Section 710. Any excavation, including rock excavation, necessary to construct headwalls and/or drainage boxes will NOT be measured for payment, but shall be incidental to the applicable bid item.
- G. Excavation, Pipe Backfill, Embankments.** The Department will NOT measure for payment the following items: any excavation, including rock excavation, necessary to remove the existing pipe and/or install the proposed culvert or entrance pipe, pipe backfill material, geotextile fabric, flowable fill, and re-constructing shoulder embankments, but shall considered these items incidental to the bid items for culvert and entrance pipe.
- H. Clean Up, Disposal of Waste, Final Dressing, Seeding and Protection.** The Department will NOT measure for payment the following activities: Clean Up, Disposal of Waste, and Final Dressing. These activities shall be incidental to the project bid items. Seeding and Protection shall be measured according to Section 212.
- I. Erosion Control.** See the Special Note for Erosion Control.

V. BASIS OF PAYMENT

- A. Maintain and Control Traffic.** See the Traffic Control Plan.
- B. Remove Headwall.** The Department will make payment for the completed and accepted quantities of Each headwall removed. Payment at the Contract unit price per Each shall be full compensation for furnishing all labor, materials, equipment, and incidentals for removing the existing headwall.
- C. Remove Pipe.** The Department will make payment according to Section 701.05. Payment at the Contract unit price per linear foot shall be full compensation for furnishing all labor, materials, equipment, and incidentals for removing the existing pipe.
- D. Culvert and Entrance Pipe.** The Department will make payment according to Section 701.05. Payment at the Contract unit price per linear foot shall be full compensation for furnishing all labor, materials, equipment, and incidentals necessary for installing and backfilling new culvert and entrance pipe.
- E. Headwalls, Drainage Boxes.** The Department will make payment according to Section 710.
- F. Erosion Control.** See the Special Note for Erosion Control.

March 29, 2017

SPECIAL NOTE FOR PIPE CLEANING

PART 1 -- GENERAL

1.01 SCOPE OF WORK

- A. Furnish all labor, materials, equipment, and incidentals required to clean all pipes, as specified herein.
- B. Cleaning shall include the proper high pressure water jetting, rodding, snaking, bucketing, brushing, and flushing of pipes prior to inspection by closed circuit television, pipeline rehabilitation, and testing operations.
- C. Cleaning shall dislodge, transport, and remove all sludge, mud, sand, gravel, rocks, bricks, grease, roots, sticks, and all other debris from the interior of the sewer pipe and structures as required for pipeline rehabilitation.

PART 2 -- PRODUCTS

2.01 MATERIALS

- A. Hydraulically propelled Sewer Cleaning Equipment
 - 1. Hydraulically propelled sewer cleaning equipment shall be the movable dam type constructed such that a portion of the dam may be collapsed during cleaning to prevent flooding of the sewer.
 - 2. The movable dam shall be the same diameter as the pipe being cleaned and shall provide a flexible scraper around the outer periphery to ensure total removal of grease.
 - 3. Contractor shall take precautions against flooding prior to using sewer cleaning balls or other such equipment that cannot be collapsed instantly.
- B. High Velocity Hydro-Cleaning Equipment shall have the following:
 - 1. A minimum of 500-ft of high-pressure hose.
 - 2. Two or more high velocity nozzles capable of producing a scouring action from 15 to 45 degrees in all size lines to be cleaned.
 - 3. A high velocity gun for washing and scouring manhole walls and floor.
 - 4. Capability of producing flows from a fine spray to a long-distance solid stream.
 - 5. A water tank, auxiliary engines and pumps and a hydraulically driven hose reel.

6. Equipment operating controls located above ground.
- C. Mechanical cleaning equipment for sewer mains shall be either power buckets or power rodders.
 1. Bucket machines
 - a. To be furnished with buckets in pairs
 - b. Use V-belts for power transmission or have an overload device. No direct drive machines will be permitted.
 - c. To be equipped with a take up drum and a minimum of 500-ft of cable.
 - d. Have sufficient dragging power to perform the work efficiently.
 2. Power rodding machine
 - a. Either sectional or continuous.
 - b. Hold a minimum of 750-ft of rod.
 - c. The machine shall have a positive rod drive to produce 2000 pounds of rod pull.

PART 3 -- EXECUTION

3.01 PERFORMANCE

- A. Selection of cleaning equipment shall be based on the conditions of the structures and lines at the time the work commences based on the pre-construction CCTV inspection to be conducted by the Contractor under this Contract.
- B. Use properly selected equipment to remove all dirt, grease, rock and other deleterious materials, and obstructions.
- C. Protect existing lines from damage caused by improper use of cleaning equipment.
- D. Take precautions to avoid damage or flooding to public or private property being served by the line being cleaned.
- F. Removal of Materials
 1. Remove all solids and semi-solids at the downstream opening of the section being cleaned.
 2. Passing material from one section of a line to another will not be permitted, unless access to any one section of line cannot be achieved.
- G. Remove from the site and properly dispose of all solids or semi-solids recovered during the cleaning operation.
- H. No cleaning shall take place in a particular segment until all upstream pipe segments have been cleaned. If cleaning is done in a downstream pipe segment in order to facilitate overall cleaning

operations, the segment shall be re-cleaned at no additional cost, after all pipes upstream of that segment have been cleaned.

3.02 FIELD QUALITY CONTROL

- A. Acceptance of this portion of the work shall be dependent upon the results of the television inspection. Lines not acceptably clean as to permit television inspection and rehabilitation shall be re-cleaned and re-inspected at no additional cost to the Owner
- B. Following cleaning, the Contractor shall inspect each section in accordance with the Special Note for Pipe Liner Acceptance Testing.
- C. Upon the Engineer's final structure to structure inspection of the system, if any foreign matter is still present in the system, clean the sections and portions of the lines as required.

PART 4 – MEASUREMENT & PAYMENT

Payment for cleaning of the pipes as detailed in the Pipe Drainage Summary will be made per linear foot as the price bid for CLEAN PIPE. The CLEAN PIPE bid item will be paid for the cleaning of all pipe sizes. Payment for CLEAN PIPE shall be considered full compensation for all work, equipment, and incidentals necessary to clean the pipe in accordance with this note.

June 1, 2017

SPECIAL NOTE FOR PVC FOLD-AND-FORM PIPE LINER

I. GENERAL

A. SUMMARY

1. Section Includes: Definition of the approved methods and materials to rehabilitate gravity pipelines by the insertion of a continuously extruded, folded, PVC Fold-and-Form Pipe Liner into a conduit (host pipe), and the “blow-molding” (thermoforming) of the pipe liner to conform to the shape of the existing pipe. The pipe liner shall:
 - a) Extend continuously from one access point to the next access point with no joints.
 - b) Provide a tightly conforming fit against the inner wall of the host pipe.
 - c) Definitions:
 - (1) PVC Fold-and-Form Pipe Liner: A continuously extruded (joint-less), polyvinyl chloride (PVC) Pipe Liner that is shaped into a reduced form to facilitate insertion into existing pipelines or conduits. The Pipe Liner shall return to its extruded, round memory upon application of heat and pressure and form tightly against the host pipe by “blow molding” (thermoforming) techniques.
 - (2) Host Pipe: An existing gravity pipeline or conduit to be internally rehabilitated by installation of the PVC Fold-and-Form Pipe Liner.

B. REFERENCES

1. Codes and standards referred to in this Special Note are:
 - a) ASTM D 256: Standard Test Methods for Determining the Pendulum Impact Resistance of Notched Specimens of Plastics.
 - b) ASTM D 638: Standard Test Method for Tensile Properties of Plastics
 - c) ASTM D 790: Standard Test Method for Flexural Properties of Unreinforced and Reinforced Plastics
 - d) ASTM D 1784: Standard Specification for Rigid Polyvinyl Chloride (PVC) Compounds and Chlorinated Polyvinyl Chloride (CPVC) Compounds
 - e) ASTM D 2122: Standard Test Method for Determining Dimensions of Thermoplastic Pipe and Fittings
 - f) ASTM D 2152: Standard Test Method for Extrusion Quality using Acetone Immersion
 - g) ASTM D 2444: Standard Test Method for Impact Strength
 - h) ASTM F 1057: Standard Test Method for Extrusion Quality using Heat Reversion
 - i) ASTM F 1504: Standard Specification for Folded/Formatted Poly (Vinyl Chloride) Pipe for Existing Sewer and Conduit rehabilitation

C. PIPE DESIGN AND DIMENSION

1. Submittals: The Contractor shall furnish engineering data covering materials and installation procedures.
2. Unless otherwise specified, the Contractor shall determine the minimum and maximum length of liner to effectively span the distance from the inlet to the outlet of the respective pipelines.
3. The pipe liner shall have a nominal outside diameter and minimum wall thickness based upon project parameters and the condition of the host pipe.

D. SAFETY

1. The CONTRACTOR shall conform to all safety requirements of pertinent regulatory agencies and

shall secure the site for the working conditions in compliance with the same. The CONTRACTOR shall erect signs and devices as are necessary for the safety of the work site.

2. The CONTRACTOR shall also provide all of the WORK in accordance with applicable OSHA standards. Emphasis shall be placed upon the requirements for entering confined spaces and working with steam.

II. PRODUCTS

A. MATERIAL SPECIFICATIONS:

1. PHYSICAL PROPERTIES: The PVC Fold-and-Form Pipe Liner will be manufactured from virgin PVC Fold-and-Form Pipe Liner compound, containing no fillers, and meet or exceed the following minimum physical properties:
 - a) COMBUSTIBILITY: Self-Extinguishing
 - b) FLEXURAL MODULUS: ASTM D 790 280,000 PSI @73F
 - c) FLEXURAL STRENGTH: ASTM D 790 5,000 PSI @73F
 - d) IZOD IMPACT: ASTM D 256 1.5 FT-LB/IN
 - e) CHEMICAL RESISTANCE: suitable under general sanitary sewer conditions
2. CHARACTERISTICS: The PVC Fold-and-Form Pipe Liner shall be designed to meet the following installation performance requirements:
 - a) The Pipe Liner shall be capable of expanding a full pipe size larger than the nominal diameter (ex: 8" to 10") without splitting, or rupturing with the understanding that the pipe liner dimension ratio will increase when so expanded.
 - b) After being expanded by "blow-molding", the installed Pipe Liner will match the configuration of the host pipe.
 - c) The Pipe Liner shall be capable of negotiating pipe line bends in the host pipe without splitting, rupturing, or wrinkling of the pipe liner material.
 - d) The pipe liner shall be dimensionally stable after cool-down.
 - e) Processing of the pipe liner shall cause no degradation of the pipe liner physical properties.
3. MARKINGS: The pipe liner shall be marked at maximum five (5) foot intervals indicating ASTM D 1784 cell classification, manufacturer, and size (diameter and SDR). Each production lot will be uniquely coded.
4. DIMENSIONS:
 - a) The Pipe Liner outside diameter will be manufactured substantially smaller than the inside diameter of the host pipe. The pipe liner shall be manufactured with sufficient excess wall thickness to allow the pipe liner to meet or exceed the DR requirements after being expanded by "blow-molding" within the host pipe.
 - b) Unless otherwise specified, the Standard Dimension Ration (SDR) of 4" to 15" diameter Pipe Liner will be SDR 35. 18" to 36" Pipe Liner will be specified by wall thickness. The Pipe Liner will be continuously extruded (no joints) at the factory to the minimum length required to effectively span the distance between access points, in accordance with actual distances which shall be field verified by the Contractor prior to manufacturing.

- B. TESTING: Each production lot of Pipe Liner will be inspected and tested at the time of manufacture for defects in accordance with ASTM D 2444, and ASTM D 2152. All pipe liners shall conform to the specified dimensions. Material design properties shall be confirmed in accordance with ASTM D 790.

III. EXECUTION

A. HOST PIPE PREPARATION

1. The existing pipeline shall be cleaned of any obstructions and televised using CCTV immediately prior to installation of the pipe liner. The host pipe condition shall be acceptable to the ENGINEER as appropriate for lining prior to the insertion of the pipe Liner.
2. Prior to beginning the insertion of the pipe liner, the CONTRACTOR shall confirm that the host pipe is adequately cleaned.

B. INSTALLATION PROCEDURES:

1. The pipe liner manufacturer's installation instructions and procedures shall be followed during installation.
2. Point Repairs
 - a) Point repairs and obstruction removals shall be completed, as necessary, to enable lining.
3. Liner Insertion
 - a) The entrance to the host pipe shall be covered so as to provide a smooth surface to prevent damage to the Pipe Liner.
 - b) The Pipe Liner shall be positioned to enable it to naturally curve into the access point and the host pipe.
 - c) The insertion end of the Pipe Liner shall be sealed to inhibit fluids and solids from entering the lumen of the Pipe Liner.
 - d) Insert the Pipe Liner into the entry access point. Slowly feed the Pipe Liner from the supply reel, while simultaneously pulling the Pipe Liner at the exit access point, to minimize tension on the Pipe Liner. Maintain two-way communication between personnel at entry and exit access points to coordinate the rate of Pipe Liner supply and pulling operations.
 - e) Use a power winch and a steel cable connected to the pulling head as recommended by the manufacturer to advance the Pipe Liner.
4. Pipe Liner Processing and "Blow-Molding":
 - a) Process and "blow-mold" the PVC Fold and-Form Pipe Liner in accordance with the manufacturer's instructions for heating and expanding the Pipe Liner. Upon completion of processing and "blow-molding", the Pipe Liner shall fit tightly against the inside wall of the host pipe and be locked into the joints of the host pipe, if possible.
 - b) Temperature and pressure gauges shall be used at the insertion and termination access points to monitor internal conditions during Pipe Liner processing and "blow-molding".
 - c) Introduce pressurized steam to heat and relax the Pipe Liner in strict accordance with the recommendations of the Pipe Liner manufacturer.
 - d) Continue the application of steam while introducing compressed air to increase internal pressure on the Pipe Liner as recommended by the manufacturer. DO NOT ALLOW PRESSURE TO EXCEED 12 PSI, AS DAMAGE MAY OCCUR TO HOST PIPE.
 - e) Discontinue the use of steam while continuing the use of compressed air to maintain the internal pressure. Allow the Pipe Liner to cool below 100 F before releasing pressure.
5. Liner Termination:
 - a) During the pulling in place and "blow-molding" process, the PVC liner shall form a bell shape at each end effectively locking the liner in place.

IV. PAYMENT

The Department will make payment for the completed and accepted quantities under the following:

<u>Code</u>	<u>Pay Item</u>	<u>Pay Unit</u>
24860EC	PVC Fold and Form Pipe Liner – 12 Inch	LF
24861EC	PVC Fold and Form Pipe Liner – 15 Inch	LF
24862EC	PVC Fold and Form Pipe Liner – 18 Inch	LF
24863EC	PVC Fold and Form Pipe Liner – 24 Inch	LF
24864EC	PVC Fold and Form Pipe Liner – 30 Inch	LF
24865EC	PVC Fold and Form Pipe Liner – 36 Inch	LF

The Department will consider payment as full compensation for all work, equipment, and incidentals necessary to install the pipe liners in accordance with this note.

June 1, 2017

SPECIAL NOTE FOR PIPE LINER ACCEPTANCE TESTING

PART 1 -- GENERAL

1.01 SCOPE OF WORK

- A. Furnish all necessary labor, materials, equipment, services, and incidentals required to visually inspect by means of closed-circuit television (CCTV) designated pipe sections including, but not limited to, recording and playback equipment, materials, and supplies.
- B. The inspection shall be performed on one section (i.e. curb box inlet to curb box inlet) at a time. The section being inspected shall be suitably isolated from the remainder of the system.
- C. Video recordings shall be made of the television inspections and copies of both the recordings and printed inspection logs shall be supplied to the Engineer.
- D. Contractor may have to perform point repairs, remove obstructions, or remove protruding service connections to complete pre-rehabilitation TV inspection.

PART 2 -- PRODUCTS

2.01 EQUIPMENT

- A. The television camera used for inspection shall be one specifically designed and constructed for such inspection. Lighting for the camera shall be suitable to allow a clear picture for the entire periphery of the pipe. The camera shall be operative in 100 percent humidity conditions. The camera, television monitor and other components of the video system shall be capable of producing a minimum 500-line resolution color video picture. Picture quality and definition shall be to the satisfaction of the Engineer and if unsatisfactory, inspection shall be performed again with the appropriate changes made as designated by the Engineer at no additional cost to the Engineer. The television inspection equipment shall have an accurate footage counter that shall display on the monitor, the exact distance of the camera from the centerline of the starting manhole.

PART 3 -- EXECUTION

3.01 PROCEDURE

- A. The camera shall be moved through the pipe in either direction at a uniform rate, stopping when necessary to ensure proper documentation of the pipe's condition but in no case will the television camera be pulled at a speed greater than 30 fpm. Manual winches, power winches, TV cable and powered rewinds or other devices that do not obstruct the camera view or interfere with proper documentation of the pipe conditions shall be used to move the camera through the line. If, during the inspection operation, the television camera will not pass through the entire section, the equipment shall be removed and repositioned in a manner so that the inspection can be

performed from the opposite opening. All set-up costs for the inspection shall be included in the unit prices bid. If the camera fails to pass through the entire section, the Contractor shall perform point repairs as required or approved by the Engineer. Point repairs will be paid as each at the bid price for "PIPE REPAIR". The Contractor shall re-clean or further remove blockage after the point repairs at no additional cost to the Engineer.

- B. Whenever non-remote powered and controlled winches are used to pull the television camera through the line, telephones, radios, or other suitable means of communication shall be set up between the two openings of the line being inspected to ensure that good communications exist between members of the crew.

The camera height shall be adjusted such that the camera lens is always centered in the pipe being televised. Flow shall be controlled such that depth of flow shall not exceed 20% of pipe's diameter.

Lighting system shall be adequate for quality pictures.

3.02 RECORDING OF FIELD OBSERVATIONS

A. Television Inspection logs

- 1. Printed location records shall be kept which shall clearly show the location. In addition, other data of significance including joints, unusual conditions, roots, collapsed sections, or presence of scale and corrosion that the camera failed to pass through and reasons for the failure and other discernible features shall be recorded and annotated using the PACP system and a copy of such records shall be supplied to the Engineer.

B. Digital Recordings

- 1. The purpose of digital recording shall be to supply a visual and audio record of areas of interests of the pipe segments that may be replayed by the Engineer. Digital recording playback shall be at the same speed that it was recorded and shall be made in color. The Contractor shall be required to have all digital media and necessary playback equipment readily accessible for review by the Engineer during the project.
- 2. The Contractor shall perform CCTV inspection of each newly installed or rehabilitated pipe segment after testing and before re-introducing any flow into the pipe. Each test shall be witnessed by the Engineer.
- 3. The Contractor shall record each CCTV inspection on a DVD and submit such recordings to the Engineer as a prerequisite for Partial Utilization/Substantial Completion.
- 4. CCTV inspections shall be performed by a PACP certified and trained person.
- 5. Inspections shall include narration that notes the location and type of defects, if any.

6. At the completion of the project, the Contractor shall furnish all of the original digital recordings to the Engineer. Each disc shall be labeled as to its contents. Labels shall include the disc number, date televised, sewer segment reach designation, street location, and structure numbers on the disc. The Contractor shall keep a copy of the discs for 30 days after the final payment for the project, at which time the discs may be erased at the Contractor's option.

PART 4 – MEASUREMENT & PAYMENT

Payment for both the video inspection prior to and after the Pipe Liners have been installed will be made as one lump sum payment as PIPE LINER ACCEPTANCE TESTING. Payment for PIPE LINER ACCEPTANCE TESTING will be considered full compensation for all work, equipment, and incidentals necessary to perform the video inspection in accordance with this note.

Payment for pipe point repairs will be made as each at the bid price for PIPE REPAIR. Payment for PIPE REPAIR will be considered full compensation for all work, equipment, and incidentals necessary to make point repairs as required and approved by the Engineer.

Special Note for Completion Date & Liquidated Damages

I. COMPLETION DATE

The ultimate fixed completion date for this project will be October 31, 2023. Liquidated Damages for failure to complete the project on time will be assessed following Section 108.09.

II. LIQUIDATED DAMAGES

In addition to the requirements of Section 108.09, the Department will assess Liquidated Damages in the amount of **\$1,000** per hour for each hour, or fraction of an hour, for any and all road closures that are in place beyond the time frame(s) noted in the Traffic Control Plan and approved by the Engineer.

Contrary to Section 108.09, Liquidated Damages will be assessed regardless of whether seasonal limitations prohibit the Contractor from performing work on the controlling operation.

Contrary to Section 108.09, Liquidated Damages will be assessed for the months of December through March.

All liquidated damages will be applied accumulatively.

All other applicable portions of Section 108 apply.

SPECIAL PROVISION FOR WASTE AND BORROW SITES

Obtain U.S. Army Corps of Engineer's approval before utilizing a waste or borrow site that involves "Waters of the United States". The Corps of Engineers defines "Waters of the United States" as perennial or intermittent streams, ponds or wetlands. The Corps of Engineers also considers ephemeral streams, typically dry except during rainfall but having a defined drainage channel, to be jurisdictional waters. Direct questions concerning any potential impacts to "Waters of the United States" to the attention of the appropriate District Office for the Corps of Engineers for a determination prior to disturbance. Be responsible for any fees associated with obtaining approval for waste and borrow sites from the U.S. Army Corps of Engineer or other appropriate regulatory agencies.

1-296 Waste & Borrow Sites
01/02/2012

SPECIAL NOTE FOR NON-TRACKING TACK COAT

1. DESCRIPTION AND USEAGE. This specification covers the requirements and practices for applying a non-tracking tack asphalt coating. Place this material on the existing pavement course, prior to placement of a new asphalt pavement layer. Use when expedited paving is necessary or when asphalt tracking would negatively impact the surrounding area. This material is not suitable for other uses. Ensure material can “break” within 15 minutes under conditions listed in 3.2.

2. MATERIALS, EQUIPMENT, AND PERSONNEL.

2.1 Non-Tracking Tack. Provide material conforming to Subsection 2.1.1.

2.1.1 Provide a tack conforming to the following material requirements:

Property	Specification	Test Procedure
Viscosity, SFS, 77 ° F	20 – 100	AASHTO T 72
Sieve, %	0.3 max.	AASHTO T 59
Asphalt Residue ¹ , %	50 min.	AASHTO T 59
Oil Distillate, %	1.0 max.	AASHTO T 59
Residue Penetration, 77 ° F	0 - 30	AASHTO T 49
Original Dynamic Shear (G*/sin δ), 82 ° C	1.0 min.	AASHTO T 315
Softening Point, ° F	149 min.	AASHTO T 53
Solubility, %	97.5 min.	AASHTO T 44

¹ Bring sample to 212 °F over a 10-15 minute period. Maintain 212 °F for 15-20 minutes or until 30-40 mL of water has distilled. Continue distillation as specified in T59.

2.2. Equipment. Provide a distributor truck capable of heating, circulating, and spraying the tack between 170 °F and 180 °F. Do not exceed 180 °F. Circulate the material while heating. Provide the correct nozzles that is recommend by the producer to ensure proper coverage of tack is obtained. Ensure the bar can be raised to between 14” and 18” from the roadway.

2.3. Personnel. Ensure the tack supplier has provided training to the contractor on the installation procedures for this product. Make a technical representative from the supplier available at the request of the Engineer.

3. CONSTRUCTION.

3.1 Surface Preparation. Prior to the application of the non-tracking tack, ensure the pavement surface is thoroughly dry and free from dust or any other debris that would inhibit adhesion. Clean the surface by scraping, sweeping, and the use of compressed air. Ensure this preparation process occurs shortly before application to prevent the return of debris on to the pavement. If rain is expected within one hour after application, do not apply material. Apply material only when the surface is dry, and no precipitation is expected.

3.2 Non-tracking Tack Application. Placement of non-tracking tack is not permitted from October 1st to May 15th. When applying material, ensure the roadway temperature is a minimum of 40°F and rising. Prior to application, demonstrate competence in applying the tack according to this note to the satisfaction of the Engineer. Heat the tack in the distributor to between 170 – 180 °F. After the initial heating, between 170 – 180 °F, the material may be sprayed between 165 °F and 180 °F. Do not apply outside this temperature range. Apply material at a minimum rate of 0.70 pounds (0.08 gallons) per square yard. Ensure full coverage of the material on the pavement surface. Full coverage of this material is critical. Increase material application rate if needed to achieve full coverage. Schedule the work so that, at the end of the day's production, all non-tracking tack is covered with the asphalt mixture. If for some reason the non-tracking tack cannot be covered by an asphalt mixture, ensure the non-tracking tack material is clean and reapply the non-tracking tack prior to placing the asphalt mixture. Do not heat material more than twice in one day.

3.3 Non-tracking Tack Certification. Furnish the tack certification to the Engineer stating the material conforms to all requirements herein prior to use.

3.4 Sampling and Testing. The Department will require a sample of non-tracking tack be taken from the distributor at a rate of one sample per 15,000 tons of mix. Take two 1 gallon samples of the heated material and forward the sample to the Division of Materials for testing within 7 days. Ensure the product temperature is between 170 and 180 °F at the time of sampling.

4. MEASUREMENT. The Department will measure the quantity of non-tracking tack in tons. The Department will not measure for payment any extra materials, labor, methods, equipment, or construction techniques used to satisfy the requirements of this note. The Department will not measure for payment any trial applications of non-tracking tack, the cleaning of the pavement surface, or furnishing and placing the non-tracking tack. The Department will consider all such items incidental to the non-tracking tack.
5. PAYMENT. The Department will pay for the non-tracking tack at the Contract unit bid price and apply an adjustment for each manufacturer's lot of material based on the degree of compliance as defined in the following schedule. Non-tracking tack will not be permitted for use from October 1st to May 15th. During this timeframe, the department will allow the use of an approved asphalt emulsion in lieu of a non-tracking tack product but will not adjust the unit bid price of the material. When a sample fails on two or more tests, the Department may add the deductions, but the total deduction will not exceed 100 percent.

Non-Tracking Tack Price Adjustment Schedule						
Test	Specification	100% Pay	90% Pay	80% Pay	50% Pay	0% Pay
Viscosity, SFS, 77 ° F	20 – 100	19 - 102	17 - 18	15 - 16	14	≤13
			103 - 105	106 - 107	108 - 109	≥ 110
Sieve, %	0.30 max.	≤ 0.40	0.41 - 0.50	0.51 - 0.60	0.61 - 0.70	≥ 0.71
Asphalt Residue, %	50 min.	≥49.0	48.5 – 48.9	48.0 – 48.4	47.5-47.9	≤ 47.4
Oil Distillate, %	1.0 max.	≤1.0	1.1-1.5	1.6 - 1.7	1.8-1.9	>2.0
Residue Penetration, 77 ° F.	30 max.	≤ 31	32 - 33	34 - 35	36 - 37	≥ 38
Original Dynamic Shear (G*/sin δ), 82 ° C	1.0 min.	≥0.95	0.92 – 0.94	0.90 – 0.91	0.85 - 0.89	≤ 0.84
Softening Point, ° F	149 min.	≥145	142 - 144	140 - 141	138 - 139	≤ 137
Solubility, %	97.5 min.	≥ 97.0	96.8 – 96.9	96.6 – 96.7	96.4 – 96.5	≤ 96.3

<u>Code</u>	<u>Pay Item</u>	<u>Pay Unit</u>
24970EC	Asphalt Material for Tack Non-Tracking	Ton

Revised: May 23, 2022

COORDINATION OF WORK WITH OTHER CONTRACTS

Be advised, there may be an active project(s) adjacent to or within this project. The Engineer will coordinate the work of the Contractors. See Section 105.06.

1-3193 Coordination Contracts
01/02/2012

Special Note for Guardrail

I. DESCRIPTION

Except as specified herein, perform all work in accordance with the Department's Standard and Supplemental Specifications, Special Notes and Special Provisions, and the Standard and Sepia Drawings, current editions. Article references are to the Standard Specifications. Furnish all equipment, labor, materials, and incidentals for the following work items:

(1) Site preparation; (2) Remove existing guardrail systems; (3) Construct Guardrail, Guardrail with Extra Length Post, End Treatments, Bridge End Connectors, and Terminal Sections, as applicable; (4) Delineators for guardrail; (5) Maintain and Control Traffic; and (6) all other work specified as part of this contract.

II. MATERIALS

Except as specified herein, provide for all materials to be sampled and tested in accordance with the Department's Sampling Manual and make the materials available for sampling a sufficient time in advance of the use of the materials to allow for the necessary time for testing.

- A. Maintain and Control Traffic.** See Traffic Control Plan.
- B. Guardrail.** Furnish guardrail system components according to Section 814 and the Standard and Sepia Drawings; except use steel posts only, no alternates. Furnish the quantity of Extra Length Post (9 foot length, steel, no alternates) shown in the proposal.
- C. Delineators for Guardrail.** Furnish white and/or yellow Delineators for Guardrail according to Standard Drawing RBR-055 – Delineators for Guardrail, current edition.
- D. Erosion Control.** See the Special Note for Erosion Control.

III. CONSTRUCTION METHODS

- A. Maintain and Control Traffic.** See Traffic Control Plan.
- B. Site Preparation.** Remove existing guardrail system, including the guardrail end treatments, Bridge End connectors and all other elements of the existing guardrail system as per Section 719, except that the Contractor will take possession of all concrete posts and all concrete associated with the existing bridge and/or guardrail end treatments. Locate all disposal areas off the Right of Way. Be responsible for all site preparation, including but not limited to, clearing and grubbing, excavation, embankment, and removal of all obstructions or any other items; regrading, reshaping, adding and compacting of suitable materials on the existing shoulders to provide proper template or foundation for the guardrail; filling voids left as the result of removing existing guardrail and guard posts with dry sand; temporary pollution and erosion control; disposal of excess, waste materials,

Guardrail
Page 2 of 3

and debris; and final dressing, cleanup, and seeding and protection. Perform all site preparation as approved or directed by the engineer.

- C. Guardrail.** Except as specified herein, construct guardrail system according to Section 719 and the Standard and Sepia Drawings, current editions. Locations listed on the summary and/or shown on the drawings are approximate only. The Engineer will determine the exact termini for individual guardrail installations and locations for Extra Length Posts at the time of construction. Unless directed otherwise by the Engineer, provide a minimum two (2) foot shoulder width. Construct radii at entrances and road intersections as directed by the Engineer.

Erect guardrail to the lines and grades shown on the current Standard and Sepia Drawings, or as directed by the Engineer by any method approved by the Engineer which allows construction of the guardrail to the true grade without apparent sags.

When removing existing guardrail and installing new guardrail, do not leave the blunt end exposed where it would be hazardous to the public. When it is not practical to complete the construction of the guardrail and the permanent end treatments and terminal sections first, provide a temporary end by connecting at least 25 feet of rail to the last post, and by slightly flaring, and burying the end of the rail completely into the existing shoulder. If left overnight, place a drum with bridge panel in advance of the guardrail end and maintain during use.

- D. Delineators for Guardrail.** Construct Delineators for Guardrail according to Standard Drawing RBR-055 – Delineators for Guardrail, current edition.
- E. Property Damage.** Be responsible for all damage to public and/or private property resulting from the work. Restore damaged roadway features and private property at no additional cost to the Department.
- F. Coordination with Utility Companies.** Locate all underground, above ground, and overhead utilities prior to beginning construction. Be responsible for contacting and maintaining liaison with all utility companies that have utilities located within the project limits. Do not disturb existing overhead or underground utilities. It is not anticipated that any utility facilities will need to be relocated and/or adjusted; however, in the event that it is discovered that the work does require utilities to be relocated and/or adjusted, the utility companies will work concurrently with the Contractor while relocating their facilities. Be responsible for repairing all utility damage that occurs as a result of guardrail operations at no additional cost to the Department.
- G. Right of Way Limits.** The Department has not established the exact limits of the Right-of-Way. Limit work activities to obvious Right-of-Way, permanent or temporary easements, and work areas secured by the Department through consent and release of the adjacent property owners. Be responsible for all encroachments onto private lands.
- H. Clean Up, Disposal of Waste.** Dispose of all removed concrete, debris, and other waste and debris off the Right-of-Way at sites obtained by the Contractor at no additional cost to the Department. See the Special Provision for Waste and Borrow Sites.

Guardrail
Page 3 of 3

- I. **Final Dressing, Seeding and Protection.** Apply Class A Final Dressing to all disturbed areas, both on and off the Right-of-Way. Sow all disturbed earthen areas with the applicable seed mixture(s) according to Section 212.03.03.
- J. **Erosion Control.** See the Special Note for Erosion Control.

IV. METHOD OF MEASUREMENT

- A. **Maintain and Control Traffic.** See Traffic Control Plan.
- B. **Site preparation.** Other than the bid items listed, the Department will not measure Site Preparation for separate payment but shall be incidental to the Guardrail, End Treatments, Bridge End Connectors, and Terminal Sections, as applicable.
- C. **Guardrail, Extra Length Post, End Treatments, Bridge End Connectors, Terminal Sections, and Remove Guardrail.** The Department will measure according to Section 719.04.
- D. **Delineators for Guardrail.** See Standard Drawing RBR-055 – Delineators for Guardrail.
- E. **Clean Up, Disposal of Waste, Final Dressing, and Seeding and Protection.** The Department will NOT measure for payment the operations of: Clean Up, Disposal of Waste, and Final Dressing. These activities shall be incidental. Seeding and Protection will be measured according to Section 212.
- F. **Erosion Control.** See the Special Note for Erosion Control.

V. BASIS OF PAYMENT

- A. **Maintain and Control Traffic.** See Traffic Control Plan.
- B. **Guardrail, Extra Length Post, End Treatments, Bridge End Connectors, Terminal Sections, and Remove Guardrail.** The Department will make payment according to Section 719.05.
- C. **Delineators for Guardrail.** See Standard Drawing RBR-055 – Delineators for Guardrail.
- D. **Erosion Control.** See the Special Note for Erosion Control.

**SPECIAL NOTE FOR
ASPHALT MILLING AND TEXTURING**

Begin paving operations within **48 hours** of commencement of the milling operation. Continue paving operations continuously until completed. If paving operations are not begun within this time period, the Department will assess liquidated damages at the rate prescribed by Section 108.09 until such time as paving operations are begun.

Take possession of the millings and recycle the millings or dispose of the millings off the Right-of-Way at sites obtained by the Contractor at no additional cost to the Department.

1-3520 48 hours Contractor keeps millings
01/2/2012

SPECIAL NOTE FOR TYPICAL SECTION DIMENSIONS

Consider the dimensions shown on the typical sections for pavement and shoulder widths and thickness' to be nominal or typical dimensions. The Engineer may direct or approve varying the actual dimensions to be constructed to fit existing conditions. Do not widen existing pavement or shoulders unless specified elsewhere in this proposal or directed by the engineer.

1-3725 Typical Section Dimensions
01/02/2012

**TRAFFIC CONTROL PLAN
MARION COUNTY
KY 84
Item No. 4-9018.00**

TRAFFIC CONTROL GENERAL

Except as provided herein, traffic shall be maintained in accordance with the current editions of the Manual on Uniform Traffic Control Devices (MUTCD), Standard Specifications, Supplemental Specifications, and the Standard and Sepia Drawings. Except for the roadway and traffic control bid items listed, all items of work necessary to maintain and control traffic shall be paid at the lump sum bid price to “Maintain and Control Traffic”.

Contrary to Section 106.01, traffic control devices used on this project may be new, or used in like new condition, at the beginning of the work and maintained in like new condition until completion of the work. Any temporary traffic control items, devices, materials, and incidentals shall remain the property of the contractor unless otherwise addressed, when no longer needed.

PROJECT PHASING & CONSTRUCTION PROCEDURES

Maintain alternating one-way traffic during construction. Provide a minimum clear lane width of 8 feet; however, provide for passage of vehicles of up to 16 feet in width. If traffic should be stopped due to construction operations, and a school bus or emergency vehicle on an official run arrives on the scene, make provisions for the passage of the school bus or emergency vehicle as quickly as possible.

Take these restrictions into account in submitting bid. The Department will not consider any claims for money or grant contract time extensions for any delays to the Contractor as a result of these restrictions.

Time of Allowable Road Closures:

9:00 AM – 2:00 PM (One road closure per cross drain replacement, date to be determined)

Unless otherwise approved by the Engineer, no lane and/or road closures will be allowed during the following times:

Easter Weekend	3 pm Friday, April 7, 2023 – 8 pm Sunday, April 9, 2023
Memorial Day Weekend	3 pm Friday, May 26, 2023 – 8 pm Monday, May 29, 2023
Independence Day	7 am Saturday, July 1, 2023 – 11 pm Tuesday, July 4, 2023
Labor Day Weekend	3 pm Friday, September 1, 2023 – 8 pm Monday, September 4, 2023
Thanksgiving Holiday	3 pm Wednesday, November 22, 2023 – 8 pm Sunday, Nov. 26, 2023
Christmas Holiday	3 pm Friday, December 22, 2023 – 8 pm Monday, December 25, 2023
New Year’s Day Holiday	7 am Saturday, December 30, 2023 – 8 pm Monday, January 1, 2024

At the discretion of the Engineer, additional hours and dates may be specified when road closures will not be allowed.

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The Contractor shall submit proposed road closure dates and times to the Engineer at least 14 Calendar Days in advance for approval. Liquidated Damages will be assessed for each hour or fraction of an hour that a road closure is in place outside of an approved time period. See the Special Notes for Completion Dates and Liquidated Damages for details on the Liquidated Damages amount.

SHOULDER PREPARATION AND RESTORATION

Traffic shying away from equipment or workers may inadvertently tend to travel for short distances on the shoulders. Clean any debris from the shoulders prior to beginning any work on the project and periodically when debris accumulates throughout the duration of the project. Monitor shoulder conditions and perform repairs as necessary if damage develops. Repair shoulders by excavating failed asphalt material as directed by the engineer and replace with asphalt base. Repairs to shoulders are to be paid by the measured tons of the asphalt mixture used. Use asphalt base and/or surface for repairs as directed by the engineer. No direct payment for these repairs will be made other than measurement and payment of established contract work items necessary to make the repairs. No additional mobilization or traffic control, excavation or pavement removal will be considered for payment for these potential repairs.

LANE CLOSURES

Contrary to Section 112.04.17, Lane closures, whether long term or short term, will not be measured for payment and will be incidental to the bid item "Maintain and Control Traffic." Remove lane closures and restore traffic to 2 lanes when work is not in progress and at the conclusion of each work shift.

ROAD CLOSURE

Three road closures will be allowed for installation of the proposed culvert crossings at MP 11.33, MP 12.784, and MP 13.658.

The contractor shall be required to saw cut the pavement full depth and perform any other preparatory work while maintaining one lane traffic with flaggers. On the day chosen to install each crossing, the contractor will be required to close the road, excavate the trench, place bedding, install pipe, backfill the trench with flowable fill, and plate the trench to prepare for opening to traffic. Plates will be required to be pinned to the existing pavement in a manner approved by the engineer to ensure their security. The pavement trench cap and headwalls will be required to be installed part width under traffic.

Provide a message near the intersections at both ends of the project on KY 84 on Portable Changeable Message Boards for a minimum of 7 days prior to the closure advising of the date and time of closure.

LANE WIDTHS

The minimum clear lane width will be 8'. Maintain 9' lane widths at all times when practical. Make provisions for the passage of trucks and larger vehicles. Use a lane closure all times when work is performed in the lane or adjacent shoulder.

TEMPORARY SIGNS

Additional traffic control signs in addition to normal lane closure signing detailed on the Standard Drawings may be required by the Engineer.

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Contrary to section 112, individual signs will be measured only once for payment, regardless of how many times they are set, reset, removed and relocated during the duration of the project. Replacements for damaged signs or signs directed to be replaced by the Engineer due to poor legibility or reflectivity will not be measured for payment. Contrary to Section 112.04.02, only long-term signs (signs intended to be continuously in place for more than 3 days) will be measured for payment. Short-term signs (signs intended to be left in place for 3 days or less) will not be measured for payment but will be incidental to Maintain and Control Traffic.

Temporary signposts and splices shall be compliant with NCHRP 350 or MASH. Manufacturer's documentation validating this compliance shall be installed according to manufacturer's specifications and installation recommendations.

PORTABLE CHANGEABLE MESSAGE SIGNS

Provide changeable message signs in advance of and within the project at locations determined by the Engineer. If work is in progress concurrently in both directions or if more than one lane closure is in place in the same direction of travel, provide additional changeable message signs as directed by the Engineer. Place changeable message signs approximately one mile in advance of the anticipated queue at each lane closure. As the actual queue lengthens and/or shortens, relocate or provide additional changeable message signs so that traffic has warning of slowed or stopped traffic at least one mile but not more than two miles before reaching the end of the actual queue. The Engineer may vary the designated locations as the work progresses. The Engineer will determine the messages to be displayed. In the event of damage or mechanical/electrical failure, repair or replace the Changeable Message Sign. If the damage or mechanical/electrical failure is identified during active work operations, repair or replace the Changeable Message Sign within 6 hours. If the damage or mechanical/electrical failure is identified when there are no active work operations on the project, repair or replace the Changeable Message Sign within 12 hours. The Department will measure for payment the maximum number of Changeable Message Signs in concurrent use at the same time on a single day on all sections of the contract. The Department will measure individual Changeable Message Signs only once for payment, regardless of how many times they are set, reset, removed, and/or relocated during the duration of the project. The Department will not measure for payment any replacements for damaged Changeable Message Signs or any changeable message signs the Engineer directs to be replaced due to poor condition or readability. Retain possession of the Changeable Message Signs upon completion of the work.

TYPE III BARRICADES

Place Type III Barricades in advance of each road closure. Utilize Type III Barricades at all other locations required by the Standard Drawings or MUTCD. The Department will measure barricades used for road closures and to protect pavement removal areas in individual units Each. The Department will measure for payment the maximum number of barricades in concurrent use at the same time on a single day on all sections of the contract. The Department will measure individual barricades only once for payment, regardless of how many times they are set, reset, removed, and relocated during the duration of the project. The Department will not measure for payment any replacements for damaged barricades, or any barricades the Engineer directs to be replaced due to poor condition or reflectivity. Retain possession of the Barricades upon completion of construction.

VERTICAL PANELS AND BARRICADES

Vertical Panels and Barricades used in lieu of traffic drums for channelization will not be measured for payment and will be considered incidental to Maintain and Control Traffic.

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GUARDRAIL

A lane closure or shoulder closure will be required at all times guardrail is not in place. All blunt ends will be eliminated by removal of additional posts and pinning the blunt end to the ground and covering the end with soil or DGA. Place a drum with bridge panel in advance of the temporary guardrail end. Maintain drums at 20' spacing in any area in which guardrail has been removed until such time it is replaced.

EMERGENCY VEHICLES

Make provisions for the immediate passage of emergency vehicles and school buses.

PAVEMENT MARKINGS

Place temporary and permanent striping in accordance with Section 112 and Section 713, and:

1. Temporary striping will be 4" in width.
2. Existing, temporary, or permanent striping will be in place before a lane is opened to traffic
3. Permanent striping will be waterborne paint.

If there is to be a deviation from the existing striping plan, the Engineer will furnish the Contractor a striping plan prior to placement of the final surface course. Install Temporary Striping according to Section 112 with the following exception:

If the Contractor's operations or phasing requires temporary markings that must subsequently be removed from the final surface course, use an approved removable lane tape; however, the Department will not measure removable lane tape for separate payment, but will measure and pay for removable lane tape as temporary striping.

PAVEMENT EDGE DROP-OFFS

Pavement edge drop-offs will be protected by a lane or shoulder closure. Lane closures will be protected with plastic drums, vertical panels, or barricades as shown on the Standard Drawings.

Do not allow a pavement edge between opposing directions of traffic or lanes that traffic is expected to cross in a lane change situation with an elevation difference greater than 1½". Place Warning signs (MUTCD W8-11 or W8-9A) in advance of and at 1500' intervals throughout the drop-off area. Dual post the signs on both sides of the traveled way. Wedge all transverse transitions between resurfaced and un-resurfaced areas which traffic may cross with asphalt mixture for leveling and wedging. Remove the wedges prior to placement of the final surface course.

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

Less than 2" – No protection required.

2" to 4" – Place plastic drums, vertical panels, or barricades every 50 feet. During daylight working hours only, the Engineer will allow the Contractor to use cones in lieu of plastic drums, panels, and barricades. Wedge the drop-off with DGA with a 1:1 or flatter slope in daylight hours, or 3:1 or flatter slope during nighttime hours, when work is not active in the drop-off area.

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Greater than 4" – Protect drop-offs greater than 4 inches and within 10 feet of traffic by placing drums, vertical panels or barricades every 25 feet. The engineer will not allow the use of cones in lieu of drums, vertical panels, or barricades for drop-offs greater than 4 inches. Provide warning signs as shown on the Standard Drawings or as directed by the engineer. Provide a 3:1 or flatter wedge of soil or DGA material if practical at the end of each day's shift and prior to opening both lanes to traffic.

COORDINATION OF WORK

The Contractor is advised if other projects may be in progress within or in the near vicinity of this project, the traffic control of those projects may affect this project and the traffic control of this project may affect those projects. The Contractor will coordinate the work on this project with the work of the other contractors if necessary. In case of conflict, the Engineer will determine the relative priority to give to work phasing on the various projects.

TEMPORARY ENTRANCES

The Engineer will not require the Contractor to provide continuous access to farms, single family, duplex, or triplex residential properties during working hours; however, provide reasonable egress and ingress to each such property when actual operations are not in progress at that location. Limit the time during which a farm or residential entrance is blocked to the minimum length of time required for actual operations, not extended for the Contractor's convenience, and in no case exceeding six (6) hours. Notify all residents twenty-four hours in advance of any driveway or entrance closings and make any accommodations necessary to meet the access needs of disabled residents.

Except as allowed by the Phasing as specified above, maintain direct access to all side streets and roads, schools, churches, commercial properties, and apartments or apartment complexes of four or more units at all times. Access to fire hydrants must also be maintained at all times.

CONTRACTOR'S AND CONTRACTOR'S EMPLOYEES' VEHICLES

Do not allow contractors equipment or employees to park on private property or block access to any private or business entrances at any time. Damage to private property including but not limited to mailboxes, entrance pavement, entrance pipe, sod, or other items must be repaired immediately by the contractor, and at the contractor's expense.

Remove all contractor vehicles and equipment from the clear zone when not in use. Store all materials outside the clear zone.

WIDE LOADS

Wide load detours will not be established on this project. Remove equipment from the closed lanes and provide for passage of vehicles up to 16' in width periodically as needed.

PEDESTRIANS AND BICYCLES

Protect pedestrian and bicycle traffic as directed by the engineer.

Traffic Control Plan
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USE AND PLACEMENT OF CHANGEABLE MESSAGE SIGNS

The following policy is based upon current Changeable Message Signs (CMS) standards and practice from many sources, including the Federal Highway Administration (FHWA), other State Departments of Transportation, and Traffic Safety Associations. It is understood that each CMS installation or use requires individual consideration due to the specific location or purpose. However, there will be elements that are constant in nearly all applications. Accordingly, these recommended guidelines bring a level of uniformity, while still being open to regional experience and engineering judgment.

Application

The primary purpose of CMS is to advise the driver of unexpected traffic and routing situations. Examples of applications where CMS can be effective include:

- Closures (road, lane, bridge, ramp, shoulder, interstate)
- Changes in alignment or surface conditions
- Significant delays, congestion
- Construction/maintenance activities (delays, future activities)
- Detours/alternative routes
- Special events with traffic and safety implications
- Crash/incidents
- Vehicle restrictions (width, height, weight, flammable)
- Advance notice of new traffic control devices
- Real-time traffic conditions (must be kept up to date)
- Weather /driving conditions, environmental conditions, Roadway Weather Information Systems
- Emergency Situations
- Referral to Highway Advisory Radio (if available)
- Messages as approved by the County Engineer's Office

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CMS should not be used for:

- Replacement of static signs (e.g. ROAD WORK AHEAD), regulatory signage (e.g. speed limits), pavement markings, standard traffic control devices, conventional warning or guide signs.
- Replacement of lighted arrow board
- Advertising (Don't advertise the event unless clarifying "action" to be taken by driver – e.g. Speedway traffic next exit)
- Generic messages
- Test messages (portable signs only)
- Describe recurrent congestion (e.g. rush hour)
- Public service announcements (not traffic related)

Messages

Basic principles that are important to providing proper messages and ensuring the proper operation of a CMS are:

- Visible for at least ½ mile under ideal daytime and nighttime conditions
- Legible from all lanes a minimum of 650 feet
- Entire message readable twice while traveling at the posted speed
- No more than two message panels should be used (three panels may be used on roadways where vehicles are traveling less than 45 mph). A panel is the message that fits on the face of the sign without flipping or scrolling.
- Each panel should convey a single thought; short and concise
- Do not use two unrelated panels on a sign
- Do not use the sign for two unrelated messages
- Should not scroll text horizontally or vertically
- Should not contain both the words left and right
- Use standardized abbreviations and messages
- Should be accurate and timely
- Avoid filler/unnecessary words and periods (hazardous, a, an, the)
- Avoid use of speed limits
- Use words (not numbers) for dates

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Placement

Placement of the CMS is important to ensure that the sign is visible to the driver and provides ample time to take any necessary action. Some of the following principles may only be applicable to controlled access roadways. The basic principles of placement for a CMS are:

- When 2 signs are needed, place on same side of roadway and at least 1,000 feet apart
- Place behind semi-rigid/rigid protection (guardrail, barrier) or outside of the clear zone
- Place 1,000 feet in advance of work zone; at least one mile ahead of decision point
- Normally place on right side of roadway; but should be placed closest to the affected lane so that either side is acceptable
- Signs should not be dual mounted (one on each side of roadway facing same direction)
- Point trailer hitch downstream
- Secure to immovable object to prevent theft (if necessary)
- Do not place in sags or just beyond crest
- Check for reflection of sun to prevent the blinding of motorist
- Should be turned ~3 degrees outward from perpendicular to the edge of pavement
- Bottom of sign should be 7 feet above the elevation of edge of roadway
- Should be removed when not in use

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Standard Abbreviations

The following is a list of standard abbreviations to be used on CMS:

<u>Word</u>	<u>Abbrev</u>	<u>Example</u>
Access	ACCS	CRASH AHEAD/ USE ACCS RD NEXT RIGHT
Alternate	ALT	CRASH AHEAD/ USE ALT RTE NEXT RIGHT
Avenue	AVE	FIFTH AVE CLOSED/ DETOUR NEXT LEFT
Blocked	BLKD	FIFTH AVE BLKD/ MERGE LEFT
Boulevard	BLVD	MAIN BLVD CLOSED/ USE ALT RTE
Bridge	BRDG	SMITH BRDG CLOSED/ USE ALT RTE
Cardinal Directions	N, S, E, W	N I75 CLOSED/ DETOUR EXIT 30
Center	CNTR	CNTR LANE CLOSED/ MERGE LEFT
Commercial	COMM	OVRSZ COMM VEH/ USE I275
Condition	COND	ICY COND POSSIBLE
Congested	CONG	HVY CONG NEXT 3 MI
Construction	CONST	CONST WORK AHEAD/ EXPECT DELAYS
Downtown	DWNTN	DWNTN TRAF USE EX 40
Eastbound	E-BND	E-BND I64 CLOSED/ DETOUR EXIT 20
Emergency	EMER	EMER VEH AHEAD/ PREPARE TO STOP
Entrance, Enter	EX, EXT	DWNTN TRAF USE EX 40
Expressway	EXPWY	WTRSN EXPWY CLOSED/ DETOUR EXIT 10
Freeway	FRWY, FWY	GN SYNDR FWY CLOSED/ DETOUR EXIT 15
Hazardous Materials	HAZMAT	HAZMAT IN ROADWAY/ ALL TRAF EXIT 25
Highway	HWY	CRASH ON AA HWY/ EXPECT DELAYS
Hour	HR	CRASH ON AA HWY/ 2 HR DELAY
Information	INFO	TRAF INFO TUNE TO 1240 AM
Interstate	I	E-BND I64 CLOSED/ DETOUR EXIT 20
Lane	LN	LN CLOSED MERGE LEFT
Left	LFT	LANE CLOSED MERGE LFT
Local	LOC	LOC TRAF USE ALT RTE
Maintenance	MAINT	MAINT WRK ON BRDG/ SLOW
Major	MAJ	MAJ DELAYS I75/ USE ALT RTE
Mile	MI	CRASH 3 MI AHEAD/ USE ALT RTE
Minor	MNR	CRASH 3 MI MNR DELAY
Minutes	MIN	CRASH 3 MI/ 30 MIN DELAY
Northbound	N-BND	N-BND I75 CLOSED/ DETOUR EXIT 50
Oversized	OVRSZ	OVRSZ COMM VEH/ USE I275 NEXT RIGHT
Parking	PKING	EVENT PKING NEXT RGT
Parkway	PKWY	CUM PKWAY TRAF/ DETOUR EXIT 60
Prepare	PREP	CRASH 3 MI/ PREP TO STOP
Right	RGT	EVENT PKING NEXT RGT
Road	RD	HAZMAT IN RD/ ALL TRAF EXIT 25
Roadwork	RDWK	RDWK NEXT 4 MI/ POSSIBLE DELAYS
Route	RTE	MAJ DELAYS I75/ USE ALT RTE
Shoulder	SHLDR	SHLDR CLOSED NEXT 5 MI
Slippery	SLIP	SLIP COND POSSIBLE/ SLOW SPD
Southbound	S-BND	S-BND I75 CLOSED/ DETOUR EXIT 50
Speed	SPD	SLIP COND POSSIBLE/ SLOW SPD

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Standard Abbreviations (cont.)

<u>Word</u>	<u>Abbrev</u>	<u>Example</u>
Street	ST	MAIN ST CLOSED/ USE ALT RTE
Traffic	TRAF	CUM PKWAY TRAF/ DETOUR EXIT 60
Vehicle	VEH	OVRSZ COMM VEH/ USE I275 NEXT RIGHT
Westbound	W-BND	W-BND I64 CLOSED/ DETOUR EXIT 50
Work	WRK	CONST WRK 2MI/ POSSIBLE DELAYS

Certain abbreviations are prone to inviting confusion because another word is abbreviated or could be abbreviated in the same way. DO NOT USE THESE ABBREVIATIONS:

<u>Abbrev</u>	<u>Intended Word</u>	<u>Word Erroneously Given</u>
ACC	Accident	Access (Road)
CLRS	Clears	Colors
DLY	Delay	Daily
FDR	Feeder	Federal
L	Left	Lane (merge)
LOC	Local	Location
LT	Light (traffic)	Left
PARK	Parking	Park
POLL	Pollution (index)	Poll
RED	Reduce	Red
STAD	Stadium	Standard
TEMP	Temporary	Temperature
WRNG	Warning	Wrong

Typical Messages

The following is a list of typical messages used on CMS. The list consists of the reason or problem that you want the driver to be aware of and the action that you want the driver to take.

<u>Reason/Problem</u>	<u>Action</u>
CRASH AHEAD	ALL TRAFFIC EXIT RT
CRASH/XX MILES	AVOID DELAY USE XX
XX ROAD CLOSED	CONSIDER ALT ROUTE
XX EXIT CLOSED	DETOUR
BRIDGE CLOSED	DETOUR XX MILES
BRIDGE/(SLIPPERY, ICE, ETC.)	DO NOT PASS
CENTER/LANE/CLOSED	EXPECT DELAYS
DELAY(S), MAJOR/DELAYS	FOLLOW ALT ROUTE
DEBRIS AHEAD	KEEP LEFT
DENSE FOG	KEEP RIGHT
DISABLED/VEHICLE	MERGE XX MILES
EMER/VEHICLES/ONLY	MERGE LEFT
EVENT PARKING	MERGE RIGHT
EXIT XX CLOSED	ONE-WAY TRAFFIC
FLAGGER XX MILES	PASS TO LEFT

Traffic Control Plan
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Typical Messages (cont.)

Reason/Problem

FOG XX MILES
FREEWAY CLOSED
FRESH OIL
HAZMAT SPILL
ICE
INCIDENT AHEAD
LANES (NARROW, SHIFT, MERGE, ETC.)
LEFT LANE CLOSED
LEFT LANE NARROWS
LEFT 2 LANES CLOSED
LEFT SHOULDER CLOSED
LOOSE GRAVEL
MEDIAN WORK XX MILES
MOVING WORK ZONE, WORKERS IN ROADWAY
NEXT EXIT CLOSED
NO OVERSIZED LOADS
NO PASSING
NO SHOULDER
ONE LANE BRIDGE
PEOPLE CROSSING
RAMP CLOSED
RAMP (SLIPPERY, ICE, ETC.)
RIGHT LANE CLOSED
RIGHT LANE NARROWS
RIGHT SHOULDER CLOSED
ROAD CLOSED
ROAD CLOSED XX MILES
ROAD (SLIPPERY, ICE, ETC.)
ROAD WORK
ROAD WORK (OR CONSTRUCTION) (TONIGHT, TODAY, TOMORROW, DATE)
ROAD WORK XX MILES
SHOULDER (SLIPPERY, ICE, SOFT, BLOCKED, ETC.)
NEW SIGNAL XX MILES
SLOW 1 (OR 2) - WAY TRAFFIC
SOFT SHOULDER
STALLED VEHICLES AHEAD
TRAFFIC BACKUP
TRAFFIC SLOWS
TRUCK CROSSING
TRUCKS ENTERING
TOW TRUCK AHEAD
UNEVEN LANES
WATER ON ROAD
WET PAINT
WORK ZONE XX MILES
WORKERS AHEAD

Action

PASS TO RIGHT
PREPARE TO STOP
REDUCE SPEED
SLOW
SLOW DOWN
STAY IN LANE
STOP AHEAD
STOP XX MILES
TUNE RADIO 1610 AM
USE NN ROAD
USE CENTER LANE
USE DETOUR ROUTE
USE LEFT TURN LANE
USE NEXT EXIT
USE RIGHT LANE
WATCH FOR FLAGGER



KENTUCKY TRANSPORTATION CABINET
Department of Highways
DIVISION OF RIGHT OF WAY & UTILITIES

TC 62-226
Rev. 01/2016
Page 1 of 1

RIGHT OF WAY CERTIFICATION

<input checked="" type="checkbox"/>	Original	<input type="checkbox"/>	Re-Certification	RIGHT OF WAY CERTIFICATION
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ITEM #	COUNTY	PROJECT # (STATE)	PROJECT # (FEDERAL)
4-9018	Marion	FD04 078 0084 011-015	N/A

PROJECT DESCRIPTION

low cost safety improvements on Marion County KY 84 from MP 11.3 to 15.0

No Additional Right of Way Required

Construction will be within the limits of the existing right of way. The right of way was acquired in accordance to FHWA regulations under the Uniform Relocation Assistance and Real Property Acquisitions Policy Act of 1970, as amended. No additional right of way or relocation assistance were required for this project.

Condition # 1 (Additional Right of Way Required and Cleared)

All necessary right of way, including control of access rights when applicable, have been acquired including legal and physical possession. Trial or appeal of cases may be pending in court but legal possession has been obtained. There may be some improvements remaining on the right-of-way, but all occupants have vacated the lands and improvements, and KYTC has physical possession and the rights to remove, salvage, or demolish all improvements and enter on all land. Just Compensation has been paid or deposited with the court. All relocations have been relocated to decent, safe, and sanitary housing or that KYTC has made available to displaced persons adequate replacement housing in accordance with the provisions of the current FHWA directive.

Condition # 2 (Additional Right of Way Required with Exception)

The right of way has not been fully acquired, the right to occupy and to use all rights-of-way required for the proper execution of the project has been acquired. Some parcels may be pending in court and on other parcels full legal possession has not been obtained, but right of entry has been obtained, the occupants of all lands and improvements have vacated, and KYTC has physical possession and right to remove, salvage, or demolish all improvements. Just Compensation has been paid or deposited with the court for most parcels. Just Compensation for all pending parcels will be paid or deposited with the court prior to AWARD of construction contract

Condition # 3 (Additional Right of Way Required with Exception)

The acquisition or right of occupancy and use of a few remaining parcels are not complete and/or some parcels still have occupants. All remaining occupants have had replacement housing made available to them in accordance with 49 CFR 24.204. KYTC is hereby requesting authorization to advertise this project for bids and to proceed with bid letting even though the necessary right of way will not be fully acquired, and/or some occupants will not be relocated, and/or the just compensation will not be paid or deposited with the court for some parcels until after bid letting. KYTC will fully meet all the requirements outlined in 23 CFR 635.309(c)(3) and 49 CFR 24.102(j) and will expedite completion of all acquisitions, relocations, and full payments after bid letting and prior to AWARD of the construction contract or force account construction.

Total Number of Parcels on Project	0	EXCEPTION (S) Parcel #	ANTICIPATED DATE OF POSSESSION WITH EXPLANATION
Number of Parcels That Have Been Acquired			
Signed Deed			
Condemnation			
Signed ROE			

Notes/ Comments (Text is limited. Use additional sheet if necessary.)

LPA RW Project Manager		Right of Way Supervisor	
Printed Name		Printed Name	Michael H Price
Signature		Signature	
Date		Date	12/9/2022
Right of Way Director		FHWA	
Printed Name		Printed Name	
Signature		Signature	
Date		Date	

Digitally signed by Kelly Divine
Date: 2022.12.12 09:33:35 -06'00'

UTILITIES AND RAIL CERTIFICATION NOTE

Marion County
FD04 078 0084 011-015
School Safety Route Improvements from MP 11.3 to MP 15.0
Item No. 4-9018.00

GENERAL PROJECT NOTES ON UTILITIES

For all projects over 2000 linear feet, which are defined as a “Large Project” in KRS 367.4903(18), the awarded contractor shall initially mark the first 2000 linear feet minimally of proposed excavation or construction boundaries of the project to be worked using the procedure set forth in KRS 367.4909(9)(k). This temporary field locating of the project excavation boundary shall take place prior to submitting an excavation location request to the underground utility protection Kentucky Contact Center. For large projects, the awarded contractor shall work with the impacted utilities to determine when additional white lining of the remainder of the project site will take place. This provision shall not alter or relieve the awarded contractor from complying with requirements of KRS 367.4905 to 367.4917 in their entirety.

NOTE: The information presented in this Utility Note is informational in nature and the information contained herein is not guaranteed.

The contractor will be responsible for contacting all utility facility owners on the subject project to coordinate his/her activities. The contractor will coordinate his/her activities to minimize and, where possible, avoid conflicts with utility facilities. Due to the nature of the work proposed, it is unlikely to conflict with the existing utilities beyond minor facility adjustments. Where conflicts with utility facilities are unavoidable, the contractor will coordinate any necessary relocation work with the facility owner and Resident Engineer. The Kentucky Transportation Cabinet maintains the right to remove or alter portions of this contract if a utility conflict occurs. The utility facilities as noted in the previous section(s) have been determined using data garnered by varied means and with varying degrees of accuracy: from the facility owners, a result of S.U.E., field inspections, and/or reviews of record drawings. The facilities defined may not be inclusive of all utilities in the project scope and are not Level A quality, unless specified as such. It is the contractor’s responsibility to verify all utilities and their respective locations before excavating.

The contractor shall make every effort to protect underground facilities from damage as prescribed in the Underground Facility Damage Protection Act of 1994, Kentucky Revised Statute KRS 367.4901 to 367.4917. It is the contractor’s responsibility to determine and take steps necessary to be in compliance with federal and state damage prevention directives. The contractor is instructed to contact KY 811 for the location of existing underground utilities. Contact shall be made a minimum of two (2) and no more than ten (10) business days prior to excavation. The contractor shall submit Excavation Locate Requests to the Kentucky Contact Center (KY 811) via web ticket entry. The submission of this request does not relieve the contractor from the responsibility of contacting non-member facility owners, whom are to be contacted through their individual Protection Notification Center. It may be necessary for the contractor to contact the County Court Clerk to determine what utility companies have facilities in the area. Non-compliance with these directives can result in the enforcement of penalties.

UTILITIES AND RAIL CERTIFICATION NOTE

Marion County
FD04 078 0084 011-015
School Safety Route Improvements from MP 11.3 to MP 15.0
Item No. 4-9018.00

NOTE: DO NOT DISTURB THE FOLLOWING UTILITIES LOCATED WITHIN THE PROJECT DISTURB LIMITS

Various utility poles, guys and anchors are within the right of way and may be in the limits of planned roadside regrading operations. The contractor will be required to avoid these existing structures and work with the engineer to modify cross slopes to avoid conflict with the existing utility poles and anchors.

Minor embankment will be required to be placed over the existing underground cable owned by Windstream at MP 11.63 Rt.

Minor embankment will be required to be placed over the existing gas main owned by LG&E Gas at MP 13.68 Rt.

Water lines owned by Marion County Water District exist within the proposed roadside regrading limits and also exist in proximity with proposed culvert extensions and/or replacements. Approximate locations have been marked on the pipe sheets for most locations. Specific depictions of the underground pipe locations are present on some pipe sheets. These locations were exposed by the water district to determine location and depth. Exercise extreme caution working in close proximity with these existing water lines. It is intended that minor amounts of embankment may be placed over the existing waterlines as well as pipe installations and sloped and mitered headwalls placed over the lines assuming the proposed work does not conflict with the existing line. Embankment benching as depicted on the roadside regrading detail may need to be eliminated where in conflict with the water line. Do not construct precast headwalls over an existing water line.

If an unknown utility is encountered, the contractor will be responsible for arranging an on-site meeting with utility representatives and the Engineer to discuss possible impacts and solutions to either avoid the utility or relocate the utility.

Marion County Water District	8", 3", 2", 1" Water Mains and Various Valves, Meters, and Service Lines
LG&E Gas	Underground Gas Line
LG&E Electric	Overhead Electric
Windstream	Overhead and Underground Communications
Time Warner/Spectrum	Overhead Communications

The Contractor is fully responsible for protection of all utilities listed above

UTILITIES AND RAIL CERTIFICATION NOTE

**Marion County
FD04 078 0084 011-015
School Safety Route Improvements from MP 11.3 to MP 15.0
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**THE FOLLOWING COMPANIES ARE RELOCATING/ADJUSTING THEIR UTILITIES WITHIN THE PROJECT LIMITS
AND WILL BE COMPLETE PRIOR TO CONSTRUCTION**

N/A

**THE FOLLOWING COMPANIES HAVE FACILITIES TO BE RELOCATED/ADJUSTED BY THE COMPANY OR THE
COMPANY'S SUBCONTRACTOR AND IS TO BE COORDINATED WITH THE ROAD CONTRACT**

N/A

**THE FOLLOWING COMPANIES HAVE FACILITIES TO BE RELOCATED/ADJUSTED BY THE ROAD
CONTRACTOR AS INCLUDED IN THIS CONTRACT**

N/A

RAIL COMPANIES HAVE FACILITIES IN CONJUNCTION WITH THIS PROJECT AS NOTED

No Rail Involvement Rail Involved Rail Adjacent

UTILITIES AND RAIL CERTIFICATION NOTE

Marion County
FD04 078 0084 011-015
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AREA UTILITIES CONTACT LIST

<u>Utility Company/Agency</u>	<u>Contact Name</u>	<u>Contact Information</u>
1. Windstream	Steve Johnson	Phone: 859-321-3205 Steve.Johnson@windstream.com
	Todd Moore	Phone: 270-723-4161 Ronald.Moore@windstream.com
2. LG&E Gas	Caroline Justice	Phone: 502-627-3708 Caroline.Justice@lge-ku.com
3. LG&E Electric	Rob Royalty	Phone: 859-936-3240 Robert.Royalty@lge-ku.com
4. Time Warner/Spectrum	R. Steven Smith	Phone-O: 859-626-4809 Phone-C: 859-302-3475 RSteven.Smith@charter.com
5. Time Warner/Spectrum	Mark Harlow	Phone-O: 859-626-4899 Phone-C: 859-661-1984
6. Marion County Water District	Toby Spaulding	Phone: 270-692-2004 Mcwdh2o@yahoo.com
7.		
8.		
9.		

NOTE: The Utilities Contact List is provided as informational only, and may not be a complete list of all Utility Companies with facilities in the project area.

KyTC BMP Plan for Project 4-9018.00



Kentucky Transportation Cabinet

Highway District 4 (1)

And

_____ (2), Construction

**Kentucky Pollutant Discharge Elimination System
Permit KYR10
Best Management Practices (BMP) plan**

Groundwater protection plan

For Highway Construction Activities

For

**Highway Safety Improvement Project on KY84 in
Marion County**

Project: 4-9018.00

KyTC BMP Plan for Project 4-9018.00

Project information

Note – (1) = Design (2) = Construction (3) = Contractor

1. Owner – Kentucky Transportation Cabinet, District 4
2. Resident Engineer: (2)
3. Contractor name: (2)
Address: (2)

Phone number: (2)
Contact: (2)
Contractors agent responsible for compliance with the KPDES permit requirements (3):
4. Project Control Number (2)
5. Route (Address) KY 84 MP 11.3 to MP 15.0, Marion Co., KY
6. Latitude/Longitude (project mid-point) 37° 34' 26", -85° 18' 37"
7. County (project mid-point) Marion
8. Project start date (date work will begin): (2)
9. Projected completion date: (2)

KyTC BMP Plan for Project 4-9018.00

A. Site description:

1. Nature of Construction Activity (HSIP Roadside Improvements)
2. Order of major soil disturbing activities (2) and (3)
3. Projected volume of material to be moved 3,186 CY
4. Estimate of total project area (acres) 27 Acres
5. Estimate of area to be disturbed (acres) 3.4 Acres
6. Post construction runoff coefficient will be included in the project drainage folder. Persons needing information pertaining to the runoff coefficient will contact the resident engineer to request this information.
7. Data describing existing soil condition (In Situ roadway cut section and roadway embankment sections, well vegetated) & (2)
8. Data describing existing discharge water quality (if any) (1) & (2)
9. Receiving water name: Hardins Creek and unnamed tributaries.
10. TMDLs and Pollutants of Concern in Receiving Waters: No TDML's were involved on this project.
11. Site map – Project layout sheet plus the erosion control sheets in the project plans that depict Disturbed Drainage Areas (DDAs) and related information. These sheets depict the existing project conditions with areas delineated by DDA (drainage area bounded by watershed breaks and right of way limits), the storm water discharge locations (either as a point discharge or as overland flow) and the areas that drain to each discharge point. These plans define the limits of areas to be disturbed and the location of control measures. Controls will be either site specific as designated by the designer or will be annotated by the contractor and resident engineer before disturbance commences. The project layout sheet shows the surface waters and wetlands.
12. Potential sources of pollutants:

The primary source of pollutants is solids that are mobilized during storm events. Other sources of pollutants include oil/fuel/grease from servicing and operating construction equipment, concrete washout water, sanitary wastes and trash/debris. (3)

KyTC BMP Plan for Project 4-9018.00

B. Sediment and Erosion Control Measures:

1. Plans for highway construction projects will include erosion control sheets that depict Disturbed Drainage Areas (DDAs) and related information. These plan sheets will show the existing project conditions with areas delineated by DDA within the right of way limits, the discharge points and the areas that drain to each discharge point. Project managers and designers will analyze the DDAs and identify Best Management Practices (BMPs) that are site specific. The balance of the BMPs for the project will be listed in the bid documents for selection and use by the contractor on the project with approval by the resident engineer.

Projects that do not have DDAs annotated on the erosion control sheets will employ the same concepts for development and managing BMP plans.

2. Following award of the contract, the contractor and resident engineer will annotate the erosion control sheets showing location and type of BMPs for each of the DDAs that will be disturbed at the outset of the project. This annotation will be accompanied by an order of work that reflects the order or sequence of major soil moving activities. The remaining DDAs are to be designated as "Do Not Disturb" until the contractor and resident engineer prepare the plan for BMPs to be employed. The initial BMP's shall be for the first phase (generally Clearing and Grubbing) and shall be modified as needed as the project changes phases. The BMP Plan will be modified to reflect disturbance in additional DDA's as the work progresses. All DDA's will have adequate BMP's in place before being disturbed.
3. As DDAs are prepared for construction, the following will be addressed for the project as a whole or for each DDA as appropriate:
 - Construction Access – This is the first land-disturbing activity. As soon as construction begins, bare areas will be stabilized with gravel and temporary mulch and/or vegetation.
 - At the beginning of the project, all DDAs for the project will be inspected for areas that are a source of storm water pollutants. Areas that are a source of pollutants will receive appropriate cover or BMPs to arrest the introduction of pollutants into storm water. Areas that have not been opened by the contractor will be inspected periodically (once per month) to determine if there is a need to employ BMPs to keep pollutants from entering storm water.

KyTC BMP Plan for Project 4-9018.00

- Clearing and Grubbing – The following BMP's will be considered and used where appropriate.
 - Leaving areas undisturbed when possible.
 - Silt basins to provide silt volume for large areas.
 - Silt Traps Type A for small areas.
 - Silt Traps Type C in front of existing and drop inlets which are to be saved
 - Diversion ditches to catch sheet runoff and carry it to basins or traps or to divert it around areas to be disturbed.
 - Brush and/or other barriers to slow and/or divert runoff.
 - Silt fences to catch sheet runoff on short slopes. For longer slopes, multiple rows of silt fence may be considered.
 - Temporary Mulch for areas which are not feasible for the fore mentioned types of protections.
 - Non-standard or innovative methods.
- Cut & Fill and placement of drainage structures - The BMP Plan will be modified to show additional BMP's such as:
 - Silt Traps Type B in ditches and/or drainways as they are completed
 - Silt Traps Type C in front of pipes after they are placed
 - Channel Lining
 - Erosion Control Blanket
 - Temporary mulch and/or seeding for areas where construction activities will be ceased for 21 days or more.
 - Non-standard or innovative methods
- Profile and X-Section in place – The BMP Plan will be modified to show elimination of BMP's which had to be removed and the addition of new BMP's as the roadway was shaped. Probably changes include:
 - Silt Trap Type A, Brush and/or other barriers, Temporary Mulch, and any other BMP which had to be removed for final grading to take place.
 - Additional Silt Traps Type B and Type C to be placed as final drainage patterns are put in place.
 - Additional Channel Lining and/or Erosion Control Blanket.
 - Temporary Mulch for areas where Permanent Seeding and Protection cannot be done within 21 days.
 - Special BMP's such as Karst Policy
- Finish Work (Paving, Seeding, Protect, etc.) – A final BMP Plan will result from modifications during this phase of construction. Probably changes include:
 - Removal of Silt Traps Type B from ditches and drainways if they are protected with other BMP's which are sufficient to control erosion, i.e. Erosion Control Blanket or Permanent Seeding and Protection on moderate grades.

KyTC BMP Plan for Project 4-9018.00

- Permanent Seeding and Protection
 - Placing Sod
 - Planting trees and/or shrubs where they are included in the project
- BMP's including Storm Water Management Devices such as velocity dissipation devices and Karst policy BMP's to be installed during construction to control the pollutants in storm water discharges that will occur after construction has been completed are : *This project does not include storm water BMP's or flow controls for post-construction use.*

C. Other Control Measures

1. No solid materials, including building materials, shall be discharged to waters of the commonwealth, except as authorized by a Section 404 permit.
2. Waste Materials

All waste materials that may leach pollutants (paint and paint containers, caulk tubes, oil/grease containers, liquids of any kind, soluble materials, etc.) will be collected and stored in appropriate covered waste containers. Waste containers shall be removed from the project site on a sufficiently frequent basis as to not allow wastes to become a source of pollution. All personnel will be instructed regarding the correct procedure for waste disposal. Wastes will be disposed in accordance with appropriate regulations. Notices stating these practices will be posted in the office.

3. Hazardous Waste

All hazardous waste materials will be managed and disposed of in the manner specified by local or state regulation. The contractor shall notify the Section Engineer if there any hazardous wastes being generated at the project site and how these wastes are being managed. Site personnel will be instructed with regard to proper storage and handling of hazardous wastes when required. The Transportation Cabinet will file for generator, registration when appropriate, with the Division of Waste Management and advise the contractor regarding waste management requirements.

4. Spill Prevention

The following material management practices will be used to reduce the risk of spills or other exposure of materials and substances to the weather and/or runoff.

- **Good Housekeeping:**

KyTC BMP Plan for Project 4-9018.00

The following good housekeeping practices will be followed onsite during the construction project.

- An effort will be made to store only enough product required to do the job
- All materials stored onsite will be stored in a neat, orderly manner in their appropriate containers and, if possible, under a roof or other enclosure
- Products will be kept in their original containers with the original manufacturer's label
- Substances will not be mixed with one another unless recommended by the manufacturer
- Whenever possible, all of the product will be used up before disposing of the container
- Manufacturers' recommendations for proper use and disposal will be followed
- The site contractor will inspect daily to ensure proper use and disposal of materials onsite

➤ **Hazardous Products:**

These practices will be used to reduce the risks associated with any and all hazardous materials.

- Products will be kept in original containers unless they are not resealable
- Original labels and material safety data sheets (MSDS) will be reviewed and retained
- Contractor will follow procedures recommended by the manufacturer when handling hazardous materials
- If surplus product must be disposed of, manufacturers' or state/local recommended methods for proper disposal will be followed

The following product-specific practices will be followed onsite:

➤ **Petroleum Products:**

Vehicles and equipment that are fueled and maintained on site will be monitored for leaks and receive regular preventative maintenance to reduce the chance of leakage. Petroleum products onsite will be stored in tightly sealed containers, which are clearly labeled and will be protected from exposure to weather.

The contractor shall prepare an Oil Pollution Spill Prevention Control and Countermeasure plan when the project that involves the storage of petroleum

KyTC BMP Plan for Project 4-9018.00

products in 55 gallon or larger containers with a total combined storage capacity of 1,320 gallons. This is a requirement of 40 CFR 112.

This project (will / will not) (3) have over 1,320 gallons of petroleum products with a total capacity, sum of all containers 55 gallon capacity and larger.

➤ **Fertilizers:**

Fertilizers will be applied at rates prescribed by the contract, standard specifications or as directed by the resident engineer. Once applied, fertilizer will be covered with mulch or blankets or worked into the soil to limit exposure to storm water. Storage will be in a covered shed. The contents of any partially used bags of fertilizer will be transferred to a sealable plastic bin to avoid spills.

➤ **Paints:**

All containers will be tightly sealed and stored indoors or under roof when not being used. Excess paint or paint wash water will not be discharged to the drainage or storm sewer system but will be properly disposed of according to manufacturers' instructions or state and local regulations.

➤ **Concrete Truck Washout:**

Concrete truck mixers and chutes will not be washed on pavement, near storm drain inlets, or within 75 feet of any ditch, stream, wetland, lake, or sinkhole. Where possible, excess concrete and wash water will be discharged to areas prepared for pouring new concrete, flat areas to be paved that are away from ditches or drainage system features, or other locations that will not drain off site. Where this approach is not possible, a shallow earthen wash basin will be excavated away from ditches to receive the wash water

➤ **Spill Control Practices**

In addition to the good housekeeping and material management practices discussed in the previous sections of this plan, the following practices will be followed for spill prevention and cleanup:

- Manufacturers' recommended methods for spill cleanup will be clearly posted. All personnel will be made aware of procedures and the location of the information and cleanup supplies.
- Materials and equipment necessary for spill cleanup will be kept in the material storage area. Equipment and materials will include as appropriate, brooms, dust pans, mops, rags, gloves, oil absorbents, sand, sawdust, and plastic and metal trash containers.
- All spills will be cleaned up immediately after discovery.

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- The spill area will be kept well ventilated, and personnel will wear appropriate protective clothing to prevent injury from contact with a hazardous substance.
- Spills of toxic or hazardous material will be reported to the appropriate state/local agency as required by KRS 224 and applicable federal law.
- The spill prevention plan will be adjusted as needed to prevent spills from reoccurring and improve spill response and cleanup.
- Spills of products will be cleaned up promptly. Wastes from spill clean up will be disposed in accordance with appropriate regulations.

D. Other State and Local Plans

This BMP plan shall include any requirements specified in sediment and erosion control plans, storm water management plans or permits that have been approved by other state or local officials. Upon submittal of the NOI, other requirements for surface water protection are incorporated by reference into and are enforceable under this permit (even if they are not specifically included in this BMP plan). This provision does not apply to master or comprehensive plans, non-enforceable guidelines or technical guidance documents that are not identified in a specific plan or permit issued for the construction site by state or local officials. *There are no other local (MS4) requirements that are expected to be necessary for this project.*

E. Maintenance

1. The BMP plan shall include a clear description of the maintenance procedures necessary to keep the control measures in good and effective operating condition.
- Maintenance of BMPs during construction shall be a result of weekly and post rain event inspections with action being taken by the contractor to correct deficiencies.
 - Post Construction maintenance will be a function of normal highway maintenance operations. Following final project acceptance by the cabinet, district highway crews will be responsible for identification and correction of deficiencies regarding ground cover and cleaning of storm water BMPs. The project manager shall identify any BMPs that will be for the purpose of post construction storm water management with specific guidance for any non-routine maintenance. *There are no such BMP's for this project.*

KyTC BMP Plan for Project 4-9018.00

F. Inspections

Inspection and maintenance practices that will be used to maintain erosion and sediment controls:

- All erosion prevention and sediment control measures will be inspected at least once each week and following any rain of one-half inch or more.
- Inspections will be conducted by individuals that have successfully completed the KEPSC-RI course as required by Section 213.02.02 of the Standard Specifications for Road and Bridge Construction, current edition.
- Inspection reports will be written, signed, dated, and kept on file.
- Areas at final grade will be seeded and mulched within 14 days.
- Areas that are not at final grade where construction has ceased for a period of 21 days or longer and soil stock piles shall receive temporary mulch no later than 14 days from the last construction activity in that area.
- All measures will be maintained in good working order; if a repair is necessary, it will be initiated within 24 hours of being reported.
- Built-up sediment will be removed from behind the silt fence before it has reached halfway up the height of the fence.
- Silt fences will be inspected for bypassing, overtopping, undercutting, depth of sediment, tears, and to ensure attachment to secure posts.
- Sediment basins will be inspected for depth of sediment, and built-up sediment will be removed when it reaches 50 percent of the design capacity and at the end of the job.
- Diversion dikes and berms will be inspected, and any breaches promptly repaired. Areas that are eroding or scouring will be repaired and re-seeded / mulched as needed.
- Temporary and permanent seeding and mulching will be inspected for bare spots, washouts, and healthy growth. Bare or eroded areas will be repaired as needed.
- All material storage and equipment servicing areas that involve the management of bulk liquids, fuels, and bulk solids will be inspected weekly for conditions that represent a release or possible release of pollutants to the environment.

KyTC BMP Plan for Project 4-9018.00

G. Non – Storm Water discharges

It is expected that non-storm water discharges may occur from the site during the construction period. Examples of non-storm water discharges include:

- Water from water line flushings.
- Water from cleaning concrete trucks and equipment.
- Pavement wash waters (where no spills or leaks of toxic or hazardous materials have occurred).
- Uncontaminated groundwater and rain water (from dewatering during excavation).

All non-storm water discharges will be directed to the sediment basin or to a filter fence enclosure in a flat vegetated infiltration area or be filtered via another approved commercial product.

H. Groundwater Protection Plan (3)

This plan serves as the groundwater protection plan as required by 401 KAR 5:037.

- Contractors statement: (3)

The following activities, as enumerated by 401 KAR 5:037 Section 2 that require the preparation and implementation of a groundwater protection plan, will or may be conducted as part of this construction project:

_____ 2. (e) land treatment or land disposal of a pollutant;

_____ 2. (f) Storing, ..., or related handling of hazardous waste, solid waste or special waste, ..., in tanks, drums, or other containers, or in piles, (This does not include wastes managed in a container placed for collection and removal of municipal solid waste for disposal off site);

_____ 2. (g) Handling of materials in bulk quantities (equal or greater than 55 gallons or 100 pounds net dry weight transported held in an individual container) that, if released to the environment, would be a pollutant;

_____ 2. (j) Storing or related handling of road oils, dust suppressants,, at a central location;

_____ 2. (k) Application or related handling of road oils, dust suppressants or deicing materials, (does not include use of chloride-based deicing materials applied to roads or parking lots);

KyTC BMP Plan for Project 4-9018.00

_____ 2. (m) Installation, construction, operation, or abandonment of wells, bore holes, or core holes, (this does not include bore holes for the purpose of explosive demolition);

Or, check the following only if there are no qualifying activities

X There are no activities for this project as listed in 401 KAR 5:037 Section 2 that require the preparation and implementation of a groundwater protection plan.

The contractor is responsible for the preparation of a plan that addresses the

401 KAR 5:037 Section 3. (3) Elements of site specific groundwater protection plan:

- (a) General information about this project is covered in the Project information;
- (b) Activities that require a groundwater protection plan have been identified above;
- (c) Practices that will protect groundwater from pollution are addressed in section C. Other control measures.
- (d) Implementation schedule – all practices required to prevent pollution of groundwater are to be in place prior to conducting the activity;
- (e) Training is required as a part of the ground water protection plan. All employees of the contractor, sub-contractor and resident engineer personnel will be trained to understand the nature and requirements of this plan as they pertain to their job function(s). Training will be accomplished within one week of employment and annually thereafter. A record of training will be maintained by the contractor with a copy provide to the resident engineer.
- (f) Areas of the project and groundwater plan activities will be inspected as part of the weekly sediment and erosion control inspections
- (g) Certification (see signature page.)

KyTC BMP Plan for Project 4-9018.00

Sub-Contractor Certification

The following sub-contractor shall be made aware of the BMP plan and responsible for implementation of BMPs identified in this plan as follows:

Subcontractor

Name:
Address:
Address:

Phone:

The part of BMP plan this subcontractor is responsible to implement is:

I certify under penalty of law that I understand the terms and conditions of the general Kentucky Pollutant Discharge Elimination System permit that authorizes the storm water discharges, the BMP plan that has been developed to manage the quality of water to be discharged as a result of storm events associated with the construction site activity and management of non-storm water pollutant sources identified as part of this certification.

Signed _____ title _____, _____
Typed or printed name¹ signature

1. Sub Contractor Note: to be signed by a person who is the owner, a responsible corporate officer, a general partner or the proprietor or a person designated to have the authority to sign reports by such a person in accordance with 401 KAR 5:060 Section 9. This delegation shall be in writing to: Manager, KPDES Branch, Division of Water, 14 Reilly Road, Frankfort Kentucky 40601. Reference the Project Control Number (PCN) and KPDES number when one has been issued.

SPECIAL NOTE

Filing of eNOI for KPDES Construction Stormwater Permit

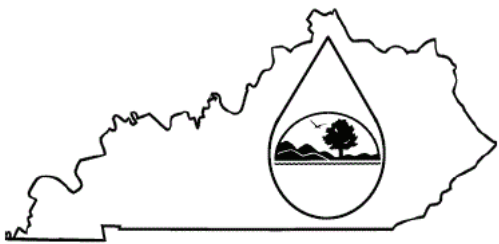
County: Marion
Item No.: 4-9018

Route: KY 49
KDOW Submittal ID:
bc6f6b0e-d226-469a-9d54-
86931267885f

Project Description: Highway Improvements to KY 84

A Notice of Intent for obtaining coverage under the Kentucky Pollutant Discharge Elimination System (KPDES) General Permit for Stormwater Discharges Associated with Construction Activities (KYR10) has been drafted, copy of which is attached. Upon award, the Contractor will be identified in Section III of the form as the “Building Contractor” and it will be submitted for approval to the Kentucky Division of Water. The Contractor shall be responsible for advancing the work in a manner that is compliant with all applicable and appropriate KYTC specifications for sediment and erosion control as well as meeting the requirements of the KYR10 permit and the KDOW.

If there are any questions regarding this note, please contact David Waldner, Director, Division of Environmental Analysis, TCOB, 200 Mero Street, Frankfort, KY 40622, Phone: (502) 564-7250.

	<h2 style="margin: 0;">KENTUCKY POLLUTION DISCHARGE ELIMINATION SYSTEM (KPDES)</h2> <p style="margin: 5px 0;">Notice of Intent (NOI) for coverage of Storm Water Discharge Associated with Construction Activities Under the KPDES Storm Water General Permit KYR100000</p> <p style="margin: 10px 0;">Click here for Instructions (Controls/KPDES_FormKYR10_Instructions.htm)</p> <p style="margin: 5px 0;">Click here to obtain information and a copy of the KPDES General Permit. (http://dep.ky.gov/formslibrary/Documents/KYR10PermitPage.pdf)</p> <p style="margin: 0;">(*) indicates a required field; (✓) indicates a field may be required based on user input or is an optionally required field</p>
---	--

Reason for Submittal:(*) <input type="text" value="Application for New Permit Coverage"/>	Agency Interest ID: <input type="text" value="Agency Interest ID"/>	Permit Number:(✓) <input type="text" value="KPDES Permit Number"/>
--	--	---

If change to existing permit coverage is requested, describe the changes for which modification of coverage is being sought:(✓)

ELIGIBILITY:
Stormwater discharges associated with construction activities disturbing individually one (1) acre or more, including, in the case of a common plan of development, contiguous construction activities that cumulatively equal one (1) acre or more of disturbance.

EXCLUSIONS:
The following are excluded from coverage under this general permit:
 1) Are conducted at or on properties that have obtained an individual KPDES permit for the discharge of other wastewaters which requires the development and implementation of a Best Management Practices (BMP) plan;
 2) Any operation that the DOW determines an individual permit would better address the discharges from that operation;
 3) Any project that discharges to an Impaired Water listed in the most recent Integrated Report, §305(b) as impaired for sediment and for which an approved TMDL has been developed.

SECTION I -- FACILITY OPERATOR INFORMATION (PERMITTEE)

Company Name:(✓) <input type="text" value="KYTC District 4"/>	First Name:(✓) <input type="text" value="Bradley"/>	M.I.: <input type="text" value="MI"/>	Last Name:(✓) <input type="text" value="Bottoms"/>
Mailing Address:(*) <input type="text" value="634 East Dixie Ave"/>	City:(*) <input type="text" value="Elizabethtown"/>	State:(*) <input type="text" value="Kentucky"/>	Zip:(*) <input type="text" value="42701"/>
eMail Address:(*) <input type="text" value="bradley.bottoms@ky.gov"/>	Business Phone:(*) <input type="text" value="2707665066"/>	Alternate Phone: <input type="text" value="Phone"/>	

SECTION II -- GENERAL SITE LOCATION INFORMATION

Project Name:(*) <input type="text" value="CID - XX-XXXX"/>	Status of Owner/Operator(*) <input type="text" value="State Government"/>	SIC Code(*) <input type="text" value="1611 Highway and Street Const"/>
Company Name:(✓) <input type="text" value="KYTC District 4"/>	First Name:(✓) <input type="text" value="Bradley"/>	M.I.: <input type="text" value="MI"/>
Last Name:(✓) <input type="text" value="Bottoms"/>		
Site Physical Address:(*) <input type="text" value="KY 84"/>		
City:(*) <input type="text" value="Lebanon"/>	State:(*) <input type="text" value="Kentucky"/>	Zip:(*) <input type="text" value="40536"/>
County:(*) <input type="text" value="Marion"/>	Latitude(decimal degrees)(*)DMS to DD Converter (https://www.fcc.gov/media/radio/dms-decimal) <input type="text" value="37.573914"/>	Longitude(decimal degrees)(*) <input type="text" value="-85.310312"/>

SECTION III -- SPECIFIC SITE ACTIVITY INFORMATION

Project Description:(*)

a. For single projects provide the following information

Total Number of Acres in Project:(√) <input style="width:95%;" type="text" value="27.0"/>	Total Number of Acres Disturbed:(√) <input style="width:95%;" type="text" value="3.4"/>
Anticipated Start Date:(√) <input style="width:95%;" type="text"/>	Anticipated Completion Date:(√) <input style="width:95%;" type="text"/>

b. For common plans of development provide the following information

Total Number of Acres in Project:(√) <input style="width:95%;" type="text" value="# Acre(s)"/>	Total Number of Acres Disturbed:(√) <input style="width:95%;" type="text" value="# Acre(s)"/>
Number of individual lots in development, if applicable:(√) <input style="width:95%;" type="text" value="# lot(s)"/>	Number of lots in development:(√) <input style="width:95%;" type="text" value="# lot(s)"/>
Total acreage of lots intended to be developed:(√) <input style="width:95%;" type="text" value="Project Acres"/>	Number of acres intended to be disturbed at any one time:(√) <input style="width:95%;" type="text" value="Disturbed Acres"/>
Anticipated Start Date:(√) <input style="width:95%;" type="text"/>	Anticipated Completion Date:(√) <input style="width:95%;" type="text"/>

List Building Contractor(s) at the time of Application:(*)

	Company Name		
+			

SECTION IV -- IF THE PERMITTED SITE DISCHARGES TO A WATER BODY THE FOLLOWING INFORMATION IS REQUIRED ?

Discharge Point(s):

	Unnamed Tributary?	Latitude	Longitude	Receiving Water Name	Delete
18	Yes	27.573036	-85.285584	Hardins Creek	Delete
19	Yes	37.572479	-85.296680	Hardins Creek	Delete
20	Yes	37.571960	-85.292712	Hardins Creek	Delete
21	Yes	37.571640	-85.291675	Hardins Creek	Delete
22	Yes	37.571614	-85.290753	Hardins Creek	Delete
23	Yes	37.571609	-85.287979	Hardins Creek	Delete
24	Yes	37.571615	-85.285699	Hardins Creek	Delete
25	Yes	37.571625	-85.283671	Hardins Creek	Delete
26	Yes	37.571621	-85.281429	Hardins Creek	Delete
27	Yes	37.571612	-85.279342	Hardins Creek	Delete
+					

SECTION V -- IF THE PERMITTED SITE DISCHARGES TO A MS4 THE FOLLOWING INFORMATION IS REQUIRED ?

Name of MS4:

Date of application/notification to the MS4 for construction site permit coverage:

Discharge Point(s):(*)

	Latitude	Longitude		
+				

SECTION VI -- WILL THE PROJECT REQUIRE CONSTRUCTION ACTIVITIES IN A WATER BODY OR THE RIPARIAN ZONE?

Will the project require construction activities in a water body or the riparian zone?: (*)

If Yes, describe scope of activity: (√)

Is a Clean Water Act 404 permit required?:(*)

Is a Clean Water Act 401 Water Quality Certification required?:(*)	<input type="text" value="No"/>
--	---------------------------------

SECTION VII -- NOI PREPARER INFORMATION			
First Name:(*) <input type="text" value="First Name"/>	M.I.: <input type="text" value="MI"/>	Last Name:(*) <input type="text" value="Last Name"/>	Company Name:(*) <input type="text" value="Company Name"/>
Mailing Address:(*) <input type="text" value="Mailing Address"/>	City:(*) <input type="text" value="City"/>	State:(*) <input type="text" value="State"/>	Zip:(*) <input type="text" value="Zip"/>
eMail Address:(*) <input type="text" value="eMail Address"/>	Business Phone:(*) <input type="text" value="Phone"/>	Alternate Phone: <input type="text" value="Phone"/>	

SECTION VIII -- ATTACHMENTS	
Facility Location Map:(*)	<input type="button" value="Upload file"/>
Supplemental Information:	<input type="button" value="Upload file"/>

SECTION IX -- CERTIFICATION			
I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.			
Signature:(*) <input type="text" value="Signature"/>	Title:(*) <input type="text" value="Title"/>		
First Name:(*) <input type="text" value="First Name"/>	M.I.: <input type="text" value="MI"/>	Last Name:(*) <input type="text" value="Last Name"/>	
eMail Address:(*) <input type="text" value="eMail Address"/>	Business Phone:(*) <input type="text" value="Phone"/>	Alternate Phone: <input type="text" value="Phone"/>	Signature Date:(*) <input type="text" value="Date"/>

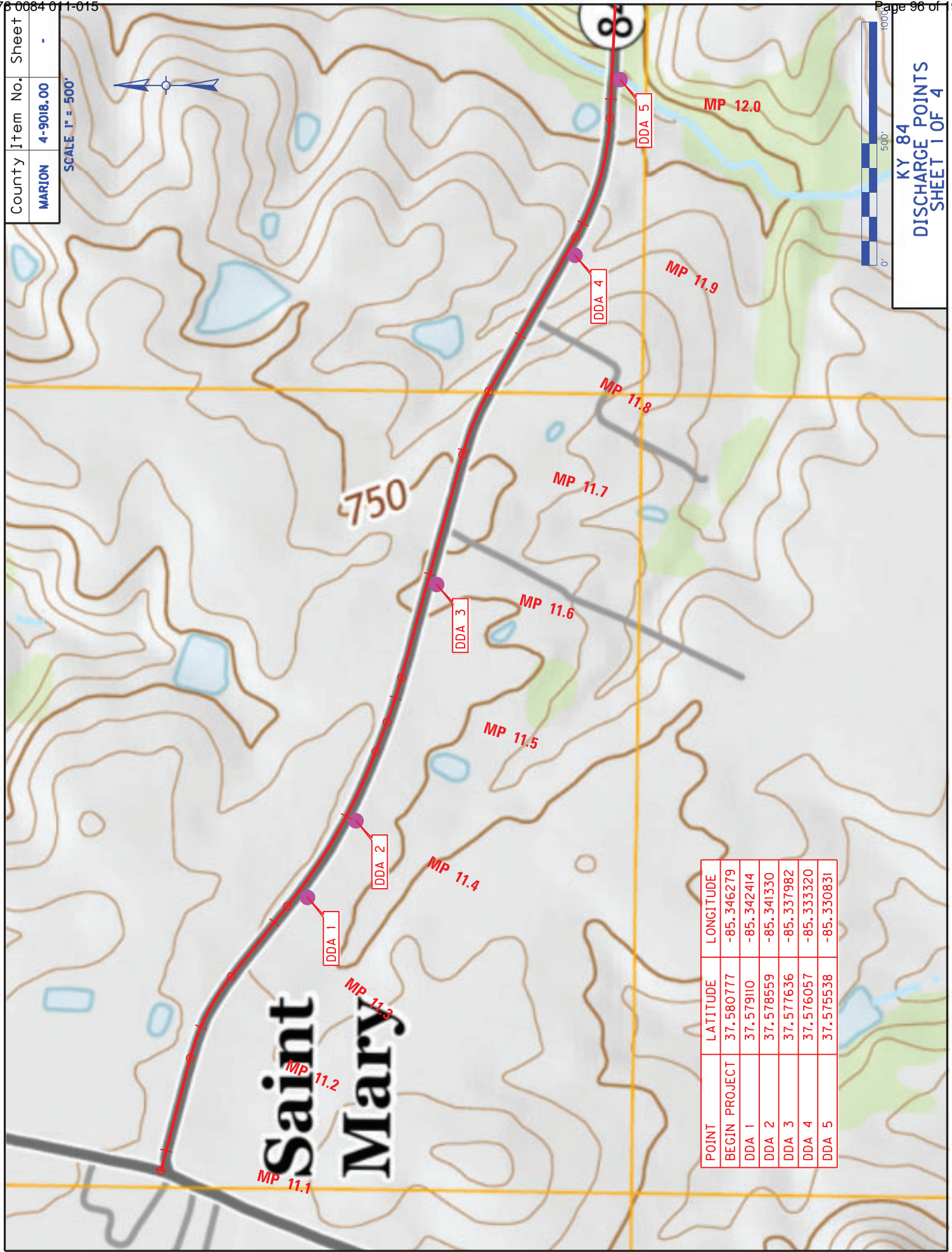
<input type="button" value="Click to Save Values for Future Retrieval"/>	<input type="button" value="Click to Submit to EEC"/>
--	---

County	Item No.	Sheet
MARION	4-9018.00	-

SCALE 1" = 500'



KY 84
DISCHARGE POINTS
SHEET 1 OF 4



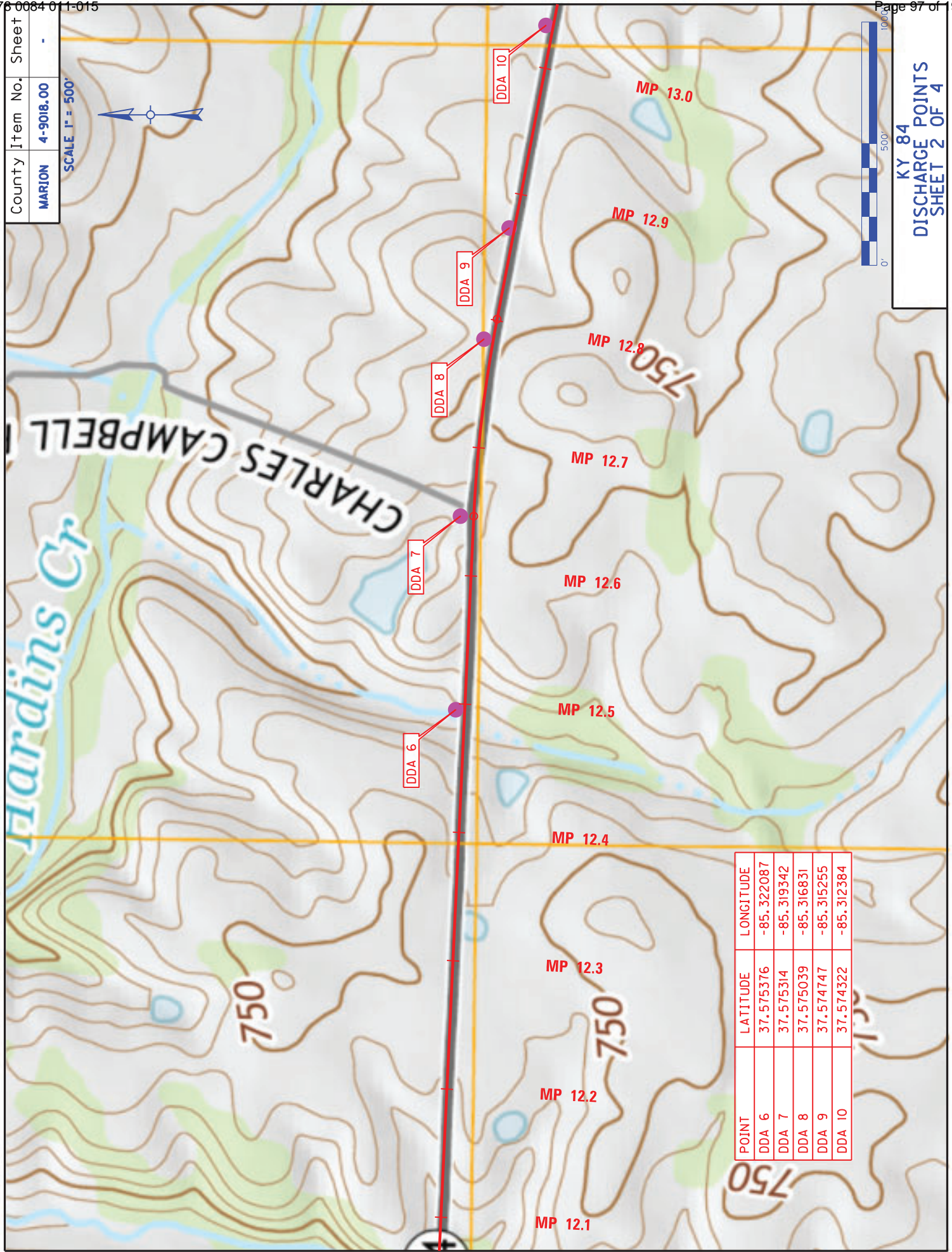
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BEGIN PROJECT	37.580777	-85.346279
DDA 1	37.579110	-85.342414
DDA 2	37.578559	-85.341330
DDA 3	37.577636	-85.337982
DDA 4	37.576057	-85.333320
DDA 5	37.575538	-85.330831

County	Item No.	Sheet
MARION	4-9018.00	-

SCALE 1" = 500'



KY 84
DISCHARGE POINTS
SHEET 2 OF 4



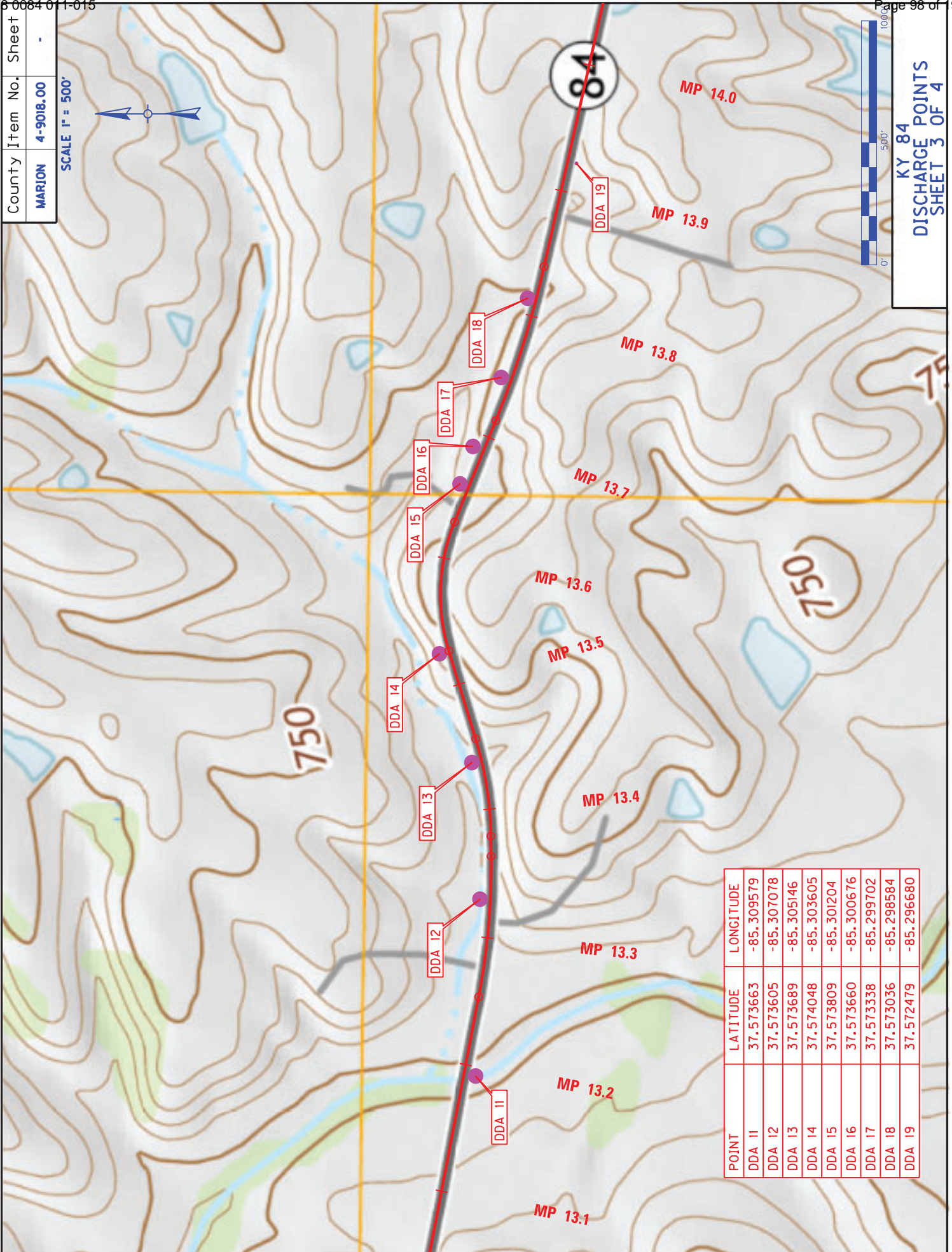
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DDA 6	37.575376	-85.322087
DDA 7	37.575314	-85.319342
DDA 8	37.575039	-85.316831
DDA 9	37.574747	-85.315255
DDA 10	37.574322	-85.312384

County	Item No.	Sheet
MARION	4-9018.00	-

SCALE 1" = 500'



KY 84
 DISCHARGE POINTS
 SHEET 3 OF 4



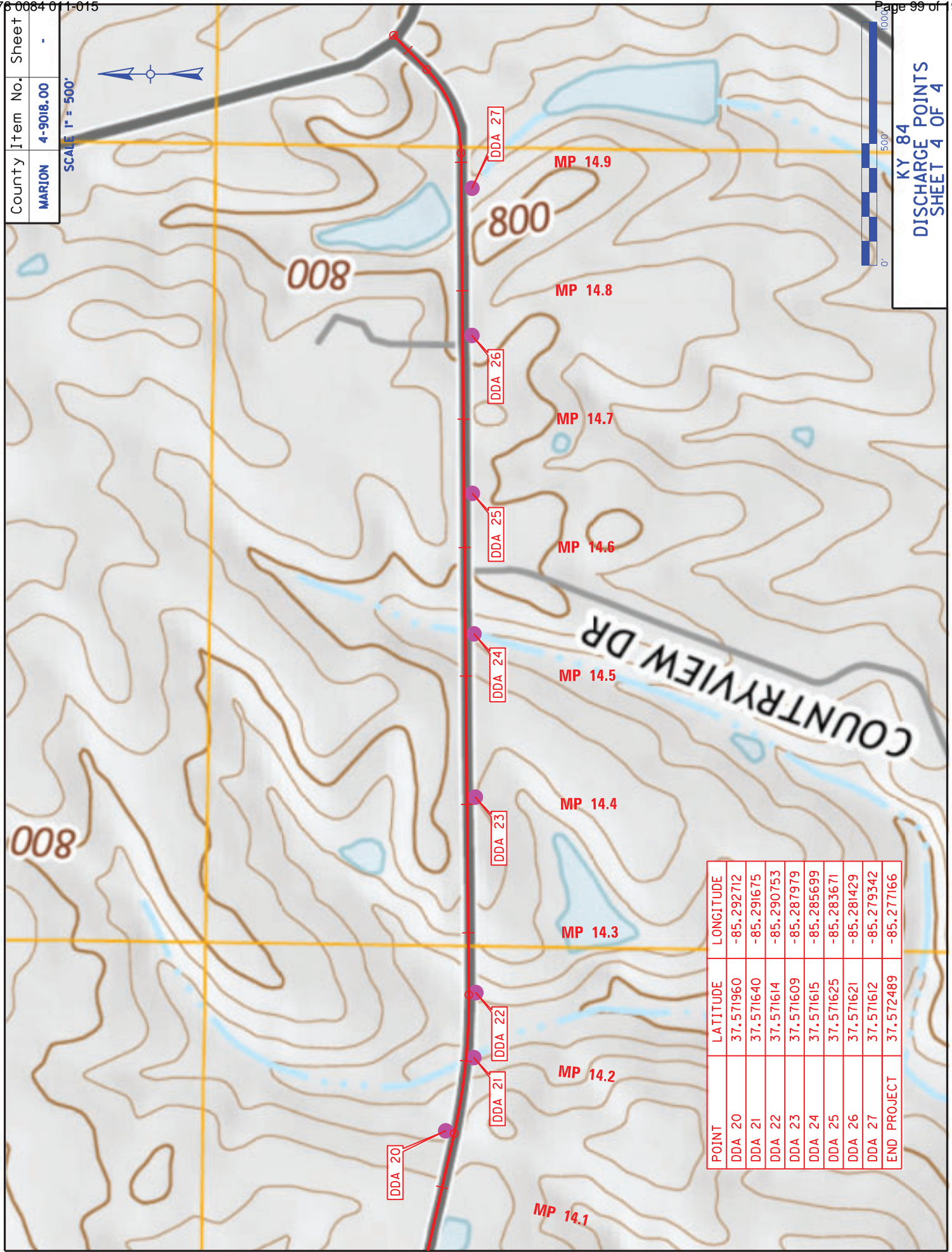
POINT	LATITUDE	LONGITUDE
DDA 11	37.573663	-85.309579
DDA 12	37.573605	-85.307078
DDA 13	37.573689	-85.305146
DDA 14	37.574048	-85.303605
DDA 15	37.573809	-85.301204
DDA 16	37.573660	-85.300676
DDA 17	37.573338	-85.299702
DDA 18	37.573036	-85.298584
DDA 19	37.572479	-85.296680

County	Item No.	Sheet
MARION	4-9018.00	-

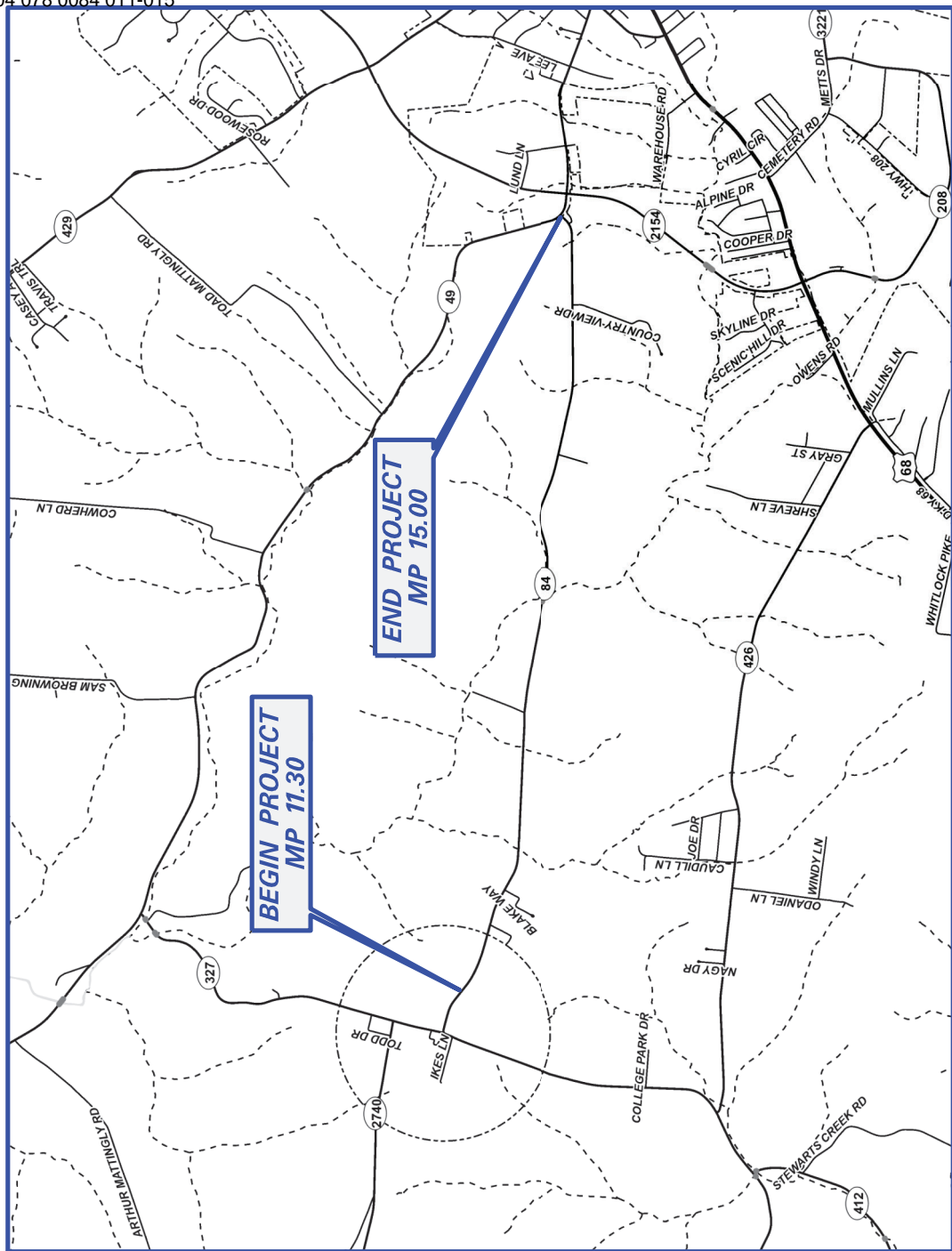
SCALE 1" = 500'



KY 84
DISCHARGE POINTS
SHEET 4 OF 4



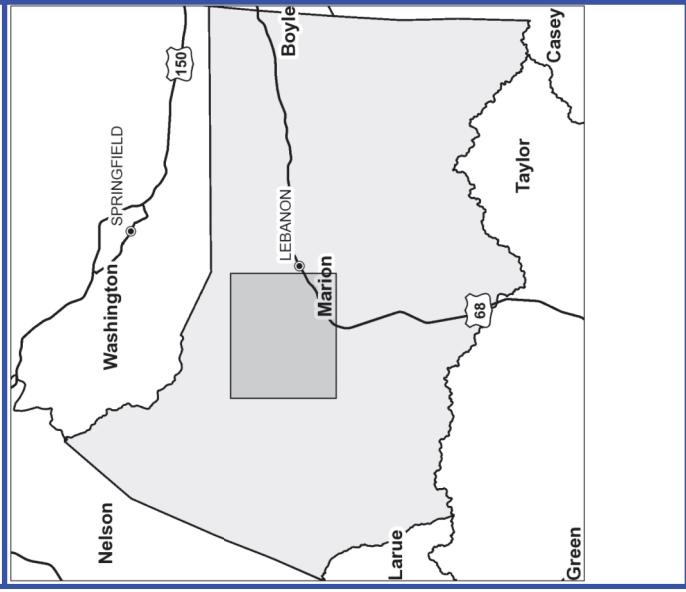
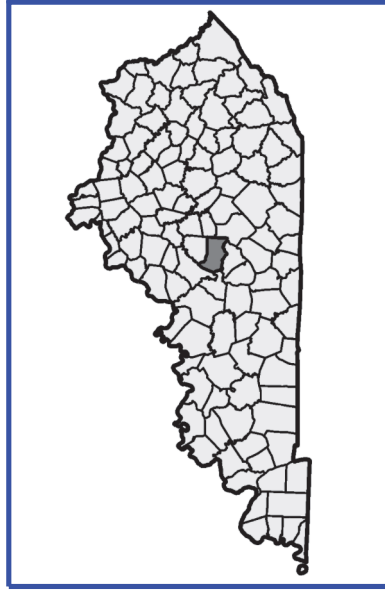
POINT	LATITUDE	LONGITUDE
DDA 20	37.571960	-85.292712
DDA 21	37.571640	-85.291675
DDA 22	37.571614	-85.290753
DDA 23	37.571609	-85.287979
DDA 24	37.571615	-85.285699
DDA 25	37.571625	-85.283671
DDA 26	37.571621	-85.281429
DDA 27	37.571612	-85.279342
END PROJECT	37.572489	-85.277166



PROJECT LENGTH: 3.70 MI.
AADT: 1,796 (2020)



31100 Clark U.S. 460
Frankfort, KY 40601
502-695-9800



PROJECT NUMBER: FD04 078 0084 011-015

ITEM NUMBER: 4-9018.00

RECOMMENDED BY: MIKE VAUGHN
Project Manager

PLAN APPROVED BY: _____
State Highway Engineer

FHWA APPROVED BY: _____

LETTING DATE: JANUARY 26, 2023

DATE: _____

DATE: _____

DATE: _____

KY 84
MARION COUNTY
ITEM NO. 4-9018.00 , PAVEMENT REHABILITATION
MILEPOINT 11.300 TO 15.000
GENERAL SUMMARY

ITEM NUMBER	ITEM		UNIT	QUANTITY
00001	DGA BASE	①	TON	217
00212	CL2 ASPH BASE 1.00D PG64-22	①	TON	39
00301	CL2 ASPH SURF 0.38D PG64-22	①	TON	140
02676	MOBILIZATION FOR MILL & TEXT	①	LS	1
02677	ASPHALT PAVE MILLING & TEXTURING	①	TON	135
24970EC	ASPHALT MATERIAL FOR TACK NON-TRACKING	①	TON	1
00462	CULVERT PIPE-18 IN	②	LF	289
00464	CULVERT PIPE-24 IN	②	LF	138
00468	CULVERT PIPE-36 IN	②	LF	5
01212	PIPE CULVERT HEADWALL-36 IN	②	EACH	1
01310	REMOVE PIPE	②	LF	132
01651	JUNCTION BOX-MOD	②	EACH	1
01653	JUNCTION BOX-SPECIAL	②	EACH	1
02483	CHANNEL LINING CLASS II	②	TON	661
02484	CHANNEL LINING CLASS III	②	TON	100
02602	FABRIC-GEOTEXTILE CLASS 1	②	SQYD	666
02607	FABRIC-GEOTEXTILE CLASS 2 FOR PIPE	②	SQYD	579
02625	REMOVE HEADWALL	②	EACH	21
24543EC	CLEAN PIPE	②	LF	203
08100	CONCRETE-CLASS A	②	CUYD	2.85
08150	STEEL REINFORCEMENT	②	LB	309
21819NN	FITTINGS	②	EACH	8
23956EC	PIPE REPAIR	②	EACH	5
24862EC	PVC FOLD AND FORM PIPE LINER-18 IN	②	LF	48
24863EC	PVC FOLD AND FORM PIPE LINER-24 IN	②	LF	209
26131ED	SLOPED AND MITERED HEADWALL-18 IN	②	EACH	20
26132ED	SLOPED AND MITERED HEADWALL-24 IN	②	EACH	11
21802EN	G/R STEEL W BEAM-S FACE (7 FT POST)	③	LF	2,642.5
02360	GUARDRAIL TERMINAL SECTION NO 1	③	EACH	3
02367	GUARDRAIL END TREATMENT TYPE 1	③	EACH	10
02373	GUARDRAIL END TREATMENT TYPE 3	③	EACH	4
02381	REMOVE GUARDRAIL	③	LF	150
02399	EXTRA LENGTH GUARDRAIL POST	③	EACH	256
01987	DELINEATOR FOR GUARDRAIL BI DIRECTIONAL WHITE	③	EACH	55
02703	SILT TRAP TYPE A		EACH	4
02704	SILT TRAP TYPE B		EACH	4

- ① CARRIED OVER FROM PAVING SUMMARY
- ② CARRIED OVER FROM PIPE SUMMARY
- ③ CARRIED OVER FROM GUARDRAIL SUMMARY

KY 84
MARION COUNTY
ITEM NO. 4-9018.00 , PAVEMENT REHABILITATION
MILEPOINT 11.300 TO 15.000
GENERAL SUMMARY

ITEM NUMBER	ITEM	UNIT	QUANTITY
02705	SILT TRAP TYPE C	EACH	4
02706	CLEAN SILT TRAP TYPE A	EACH	4
02707	CLEAN SILT TRAP TYPE B	EACH	4
02708	CLEAN SILT TRAP TYPE C	EACH	4
05950	EROSION CONTROL BLANKET	SQYD	16,300
05952	TEMP MULCH	SQYD	2,500
05953	TEMP SEEDING AND PROTECTION	SQYD	2,500
05963	INITIAL FERTILIZER	TON	0.9
05964	MAINTENANCE FERTILIZER	TON	0.6
05989	SPECIAL SEEDING CROWN VETCH	SQYD	1,956
05992	AGRICULTURAL LIMESTONE	TON	10.2
40030	TEMPORARY SILT FENCE	LF	5,000
02014	BARRICADE-TYPE III	EACH	4
02562	TEMPORARY SIGNS	SQFT	500
02650	MAINTAIN & CONTROL TRAFFIC	LS	1
02671	PORTABLE CHANGEABLE MESSAGE SIGN	EACH	2
06510	PAVE STRIPING-TEMP PAINT-4 IN	LF	2,480
24402EC	DURABLE WATERBORNE MARKING-4 IN Y	LF	2,480
02259	FENCE-TEMP (4)	LF	560
02268	REMOVE & REPLACE FENCE (5 STRAND BARBED WIRE) (4)	LF	125
02268	REMOVE & REPLACE FENCE (6 STRAND BARBED WIRE) (4)	LF	50
02268	REMOVE & REPLACE FENCE (48" WOVEN WIRE & 1 STRAND BARBED WIRE) (4)	LF	335
02268	REMOVE & REPLACE FENCE (48" WOVEN WIRE & 2 STRAND BARBED WIRE) (4)	LF	50
02460	REMOVE TREES OR STUMPS	EACH	6
02726	STAKING	LS	1
02690	SAFELOADING	CUYD	2
03236	CRIBBING (5)	SQFT	1,550
00440	ENTRANCE PIPE-15 IN	LF	30
20465EC	CLEAN CULVERT (3'X2' RCBC, STA 729+50.26)	LS	1
20465EC	CLEAN CULVERT (6'X3' RCBC, STA 785+51.92)	LS	1
23484EC	PIPE LINER ACCEPTANCE TESTING	LS	1
26175EC	ROADSIDE REGRADING (6)	LF	14,590
02569	DEMOBILIZATION	LS	1

- (4) CARRIED OVER FROM FENCING SUMMARY
- (5) CARRIED OVER FROM CRIBBING SUMMARY
- (6) CARRIED OVER FROM ROADSIDE REGRADING SUMMARY.

THIS SUMMARY DOES NOT INCLUDE THE RCBC EXTENSION QUANTITIES.

KY 84
MARION COUNTY
ITEM NO. 4-9018.00 , HSIP IMPROVEMENTS
MILEPOINT 11.300 TO 15.000
PAVING SUMMARY

PAVING AREAS (SY)

ITEM	TOTAL	ITEM	TOTAL
CULVERT PIPE TRENCH CAP			
4" DGA BASE	52		
12" CL2 ASPH BASE 1.00D PG64-22	52		
PATCHING			
1.25" ASPHALT PAVE MILLING & TEXTURING	1,960		
1.25" CL2 ASPH SURF 0.38D PG64022	1,960		

PAVING SUMMARY

ITEM CODE	ITEM	UNIT	QUANTITY
00001	DGA BASE (1)	TON	217
00212	CL2 ASPH BASE 1.00D PG64-22 (2)	TON	39
00301	CL2 ASPH SURF 0.38D PG64-22 (2)	TON	140
02676	MOBILIZATION FOR MILL & TEXT	LS	1
02677	ASPHALT PAVE MILLING & TEXTURING	TON	135
24970EC	ASPHALT MATERIAL FOR TACK NON-TRACKING	TON	1
			-
			-
			-
			-
			-
			-
			-
			-
			-
			-

- ① INCLUDES 105 TONS FROM GUARDRAIL CRIBBING SUMMARY AND INCLUDES 100 TONS TO BE USED AS DIRECTED BY THE ENGINEER.
- ② INCLUDES 5 TONS FOR POTENTIAL SHOULDER REPAIRS IF DAMAGED.

DGA BASE CALCULATED ON 115 LBS/SY/IN
 ASPHALT MIXES CALC. BASED ON 110 LBS/SY/IN

ALL ITEMS CARRIED OVER TO GENERAL SUMMARY

Sheet 1 of 1
KY 84

**MARION COUNTY
ITEM NO. 4-9018.00 , HSIP IMPROVEMENTS
MILEPOINT 11.300 TO 15.000
PIPE SUMMARY**

MILEPOINT	00462	00464	00468	01212	01310	01651	01653	02483	02484	02602	02607	02625	24543EC	08100	08150	21.819NN	23956EC	24862EC	24863EC	26131ED	26132ED	REMARKS
UNIT	LF	LF	LF	EACH	LF	EACH	EACH	TON	TON	SQYD	SQYD	EACH	LF	CUYD	LB	EACH	EACH	LF	LF	EACH	EACH	
11.333	51				8						50	2								2		STA 598+40.50
11.401	14				4					26	1	1	33	0.17	19		1	48		2		STA 601+97.82
11.594		27			4					30	1	1	25	0.22	23	1	1	41			2	STA 612+14.82
11.831							137			137												
12.111		22			4		20	20	20	22	1	1	24	0.22	23	1	1	36			2	STA 639+47.27
12.658		9			4	1	10	10	10	32	1	1	94				1	94			1	STA 668+35.35
12.784	44				28		20	20	20	28	2									2		STA 675+00.52
12.869		34			8		20	20	20	63	2			0.44	46						2	STA 679+49.01
13.027							24			24												
13.033							24			24												
13.329	21				4		10	10	10	26	1			0.17	19	1				2		STA 703+78.92
13.338							147			147												
13.439										10	30											STA 709+56.10, S&F HEADWALL
13.528	24		5	1	8		10	15	15	33	2			0.34	38					2		STA 714+25.51
13.658	41				29		20	20	20	33	2									2		STA 721+15.89
13.689	30				12		5	5	5	38	2			0.34	38					2		STA 722+78.07
13.747	25				8		35	35	35	40	2			0.34	38					2		STA 725+85.08
13.816							40	40	40	40												STA 729+50.26 SEE CULVERT PLANS
13.923		22			3		10	10	10	24			27	0.22	23	1	1	38		2		STA 735+14.45
14.142							27			27												
14.406	19						10	10	10	31										2		STA 760+62.58
14.642	20				4		10	10	10	38	1			0.17	19	1				2		STA 773+10.90
14.765		24			4					39	1			0.22	23	1					2	STA 779+60.48
14.878							28			28												STA 785+51.92 SEE CULVERT PLANS
14.880							39			39												STA 785+51.92 SEE CULVERT PLANS
							100															TO BE USED AT ENGINEER'S DISCRETION
PROJECT TOTAL	289	138	5	1	132	1	661	100	666	579	21	203	2.85	309	8	5	48	209	20	11		

THE ENGINEER WILL DETERMINE THE CLASS AND AMOUNT OF CHANNEL LINING AT THE TIME OF CONSTRUCTION.
ALL ITEMS CARRIED OVER TO THE GENERAL SUMMARY.

Roadside Regrading Summary

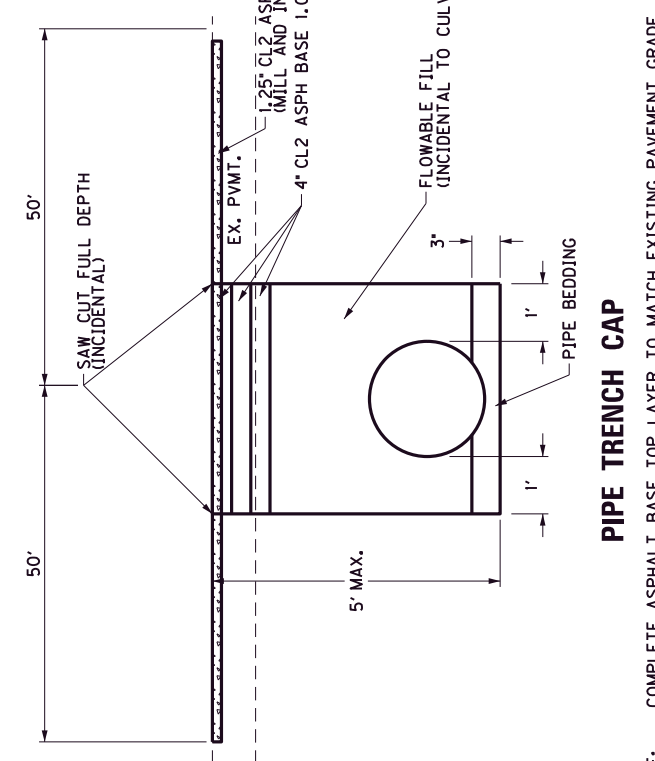
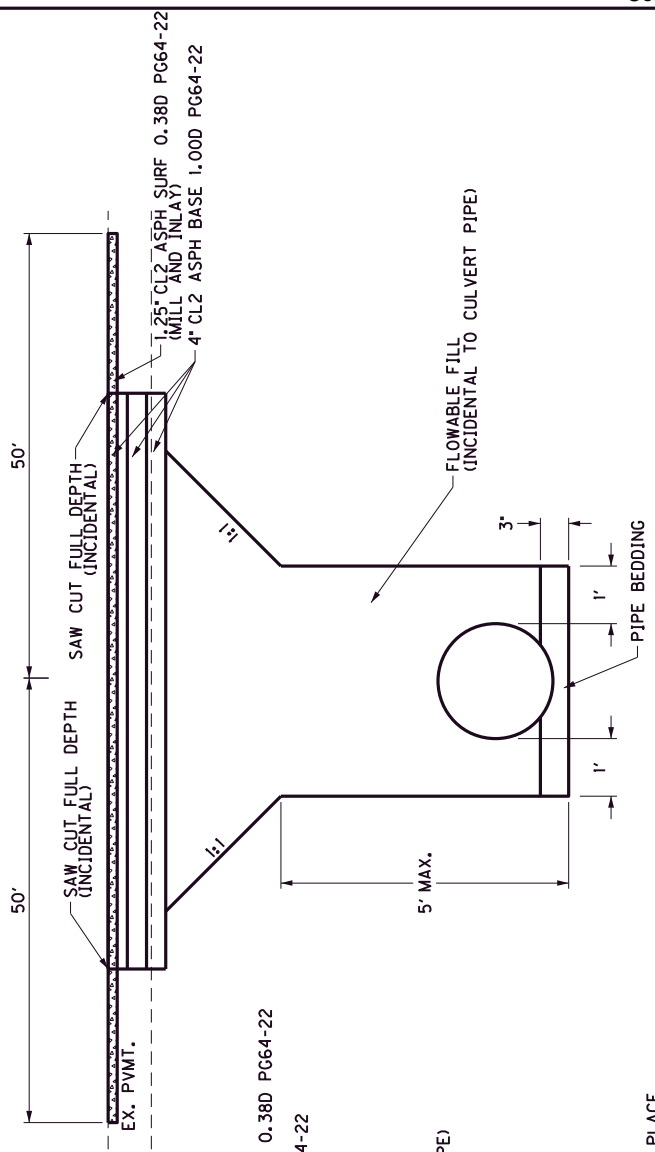
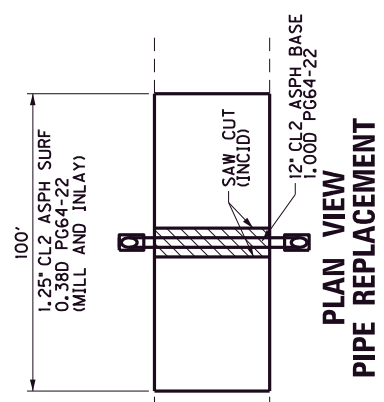
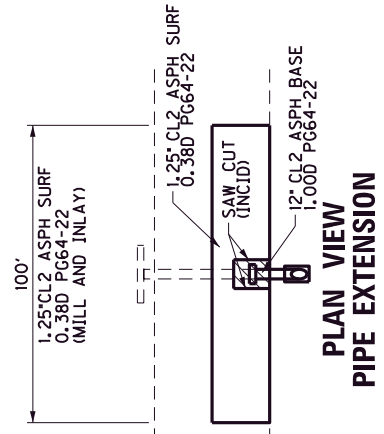
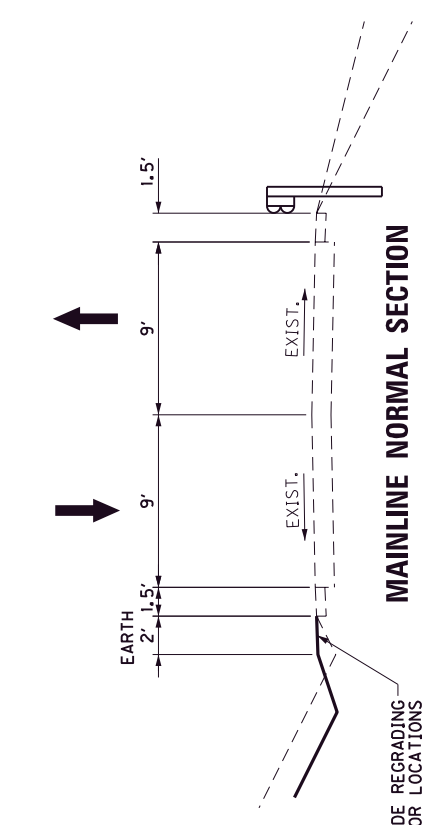
BEGIN MILEPOINT	END MILEPOINT	W.B. LENGTH	E. B. LENGTH	BERM WIDTH	FILL SLOPE	DITCH SLOPE	DITCH WIDTH	DITCH BACK SLOPE	EMB BENCH	EST. EXCAV. VOL	EST. EMB. VOL	DETAIL SHEET FIGURE REF.	CHANNEL LINING CLASS II (TONS)	GEOTEX. FABRIC TYPE IV (SQ.YD)	REMARKS
11.325	11.340		80	2	3:1				N	0	40	FIG. 1			
11.374	11.404		160	2	3:1				N	0	16	FIG. 1			
11.573	11.613	210		2	4:1				N	0	32	FIG. 1			
11.573	11.633		320	2	4:1				N	0	76	FIG. 1			
11.639	11.705	345		2		4:1	3	3:1		7	12	FIG. 8			
11.705	11.812	565		2	3:1				N	5	61	FIG. 1			
11.900	11.970	370		2		4:1	4	2:1		57	4	FIG. 8			
11.970	12.040	370		2	4:1				N	2	103	FIG. 1			TRANSITION EMB. TO 2:1 AT CULVERT
12.014	12.135		642	2	4:1				N	0	235	FIG. 1			TRANSITION EMB. TO 2:1 AT CULVERT
12.135	12.298		858	2		4:1	VARIES	VARIES		33	67	FIG. 1			VARY DITCH WIDTH, MIN 3'. VARY BACKSLOPE: 2:1 - 1.5:1
12.112	12.176	340		2	4:1				N	0	102	FIG. 1			
12.176	12.261	450		2		4:1	4	2:1	N	55	31	FIG. 1/8			TRANSITION TO 4:1 FILL SLOPE AT MP 12.261
12.272	12.295	120		2		4:1	4	4:1	N	52	4	FIG. 8			
12.295	12.361	350		2	4:1				N	0	40	FIG. 1			
12.361	12.446	450		2	4:1				N	138	13	FIG. 8			
12.305	12.446		745	2	4:1				N	0	73	FIG. 1			
12.480	12.495	80		2	3:1				N	58	67	FIG. 2			2:1 FILL @ CULVERT
12.480	12.495		80	2	3:1				Y	133	165	FIG. 2			2:1 FILL @ CULVERT
12.515	12.577	330		2	4:1				N	0	17	FIG. 1/8			
12.515	12.577		330	2		4:1	4	3:1		96	4	FIG. 8			RT BACKSLOPE 3:1 (DES.)
12.661	12.700	205		2	4:1				N	0	14	FIG. 1			
12.661	12.723		325	2	4:1				N	0	97	FIG. 1			
12.776	12.785	50		2	4:1				Y	11	35	FIG. 1/2			3:1 SLOPE @ H.W.
12.776	12.785		50	2	4:1				N	0	6	FIG. 1			CLEAN DITCH, CONST 2' SHLD BERM, 3:1 SLOPE @ H.W.
12.884	12.903		100	2		4:1	4	4:1		14	2	FIG. 8			
13.100	13.183	440		2	4:1				N	0	71	FIG. 1			
13.210	13.267		300	2	3:1				Y	243	386	FIG. 9			CONST. DITCH AT TOE OF SLOPE, 2:1 SLOPE AT BRIDGE
13.290	13.328	200								0	0	FIG. 1			CLIP BACK SOD FROM SHLDR. TO IMPROVE SURF. DRAINAGE
13.519	13.545	140		2	4:1*				Y	300	361	FIG. 2			CONST. 2' BERM, CONST 4' AT 4:1, *TIE REST DOWN AT 2:1
13.519	13.612		490	2	4:1					0	24	FIG. 8			Const min width ditch at bottom slope to ensure drainage
13.673	13.695	120		2	4:1*				Y	160	209	FIG. 2			CONST. 2' BERM, CONST 4' AT 4:1, *TIE REST DOWN AT 2:1
13.673	13.695		120	2					N	0	11	FIG. 1			
13.877	13.960		435	2	4:1*				N	0	137	FIG. 1			MP 13.92 CONST 4:1 FILL SLOPE TO 10' W., *TIE REST AT 2:1
13.954	14.025	375		2	4:1				N	0	31	FIG. 1			
14.047	14.206	840		2	4:1				N	0	177.58	FIG. 1			TRANSITION TO 2:1 AT BEGINNING OF GUARDRAIL
14.197	14.206		50	2	4:1				N	0	27	FIG. 1			TRANSITION TO 2:1 AT BEGINNING OF GUARDRAIL
14.307	14.366	308		2		4:1	4	2:1		94	11	FIG. 8			
14.371	14.541	900		2	4:1				N	0	87	FIG. 1			TRANSITION TO 2:1 AT MP 14.527
14.482	14.577		505	2	4:1				N	0	56	FIG. 1			FILL SLOPE 2:1 FROM MP 14.517 TO MP 14.536
14.584	14.667		440	2	4:1				N	0	116	FIG. 2			
14.600	14.662	325		2	4:1				N	0	28	FIG. 1			
14.727	14.755	147		2	4:1				N	0	10	FIG. 1			
14.761	14.782	110		2	4:1				N	0	18	FIG. 1			
14.823	14.880		300	2	4:1				N	0	49	FIG. 1			
14.857	14.880	120		1	4:1				N	0	60	FIG. 1			
		14,590								1,458	3,186				TOTAL

RCBC EXTENSION ESTIMATE OF QUANTITIES			
3'X2' RCBC STATION 729+50.26 INLET & OUTLET			
BID ITEM CODE	08003	24694ED	24695ED
BID ITEM	FOUNDATION PREPARATION	BOX CULVERT	BOX CULVERT HEADWALL
UNIT	LS	LF	EA
RCBC TOTALS	1	16	2
6'X3' RCBC STATION 785+51.92 INLET & OUTLET			
BID ITEM CODE	08003	24694ED	24695ED
BID ITEM	FOUNDATION PREPARATION	BOX CULVERT	BOX CULVERT HEADWALL
UNIT	LS	LF	EA
RCBC TOTALS	1	16	2
<p>STRUCTURE QUANTITIES ARE NOT CARRIED ON THE GENERAL SUMMARY.</p> <p>SEE DRAINAGE SUMMARY FOR CLEAN CULVERT ITEMS.</p>			

County	Item No.	Sheet
MARION	4-9018.00	-

TYPICAL SECTION

EXISTING KY 84
MP 11.30 TO MP 15.00



NOTE: COMPLETE ASPHALT BASE TOP LAYER TO MATCH EXISTING PAVEMENT GRADE. DO NOT PLACE FINAL ASPHALT SURFACING LAYER UNTIL TRAFFIC HAS BEEN APPLIED TO THE ASPHALT BASE LAYERS FOR A MINIMUM DURATION OF 14 DAYS. MILL AND INLAY THE ASPHALT SURFACE. THE TOP 1 1/4\"/>

FOR PIPE EXTENSIONS REQUIRING A TRENCH CAP, ONLY REMOVE AND CAP THE PORTION OF THE LANE REQUIRED TO COMPLETE THE REPAIR. MILL AND INLAY THE SURFACE LAYER THE FULL WIDTH OF THE AFFECTED LANE.

NOT TO SCALE

KY 84
TYPICAL SECTIONS

County	Item No.
MARION	4-9018.00



LEGEND	
	ROADSIDE REGRADING
	APPROXIMATE EXISTING R/W
	PROPOSED GUARDRAIL
	PROPOSED DRAINAGE STRUCTURE WORK
	CRIBBING AND SHOULDER IMPROVEMENT



KY 84
DETAIL SHEETS
SHEET 1 OF 21

County	Item No.
MARION	4-9018.00



REMOVE 2 HEADWALLS
REMOVE 8 LF OF PIPE
SAFELOAD PIPE 2 CY

CONSTRUCT 51 LF OF 18\" PIPE
& 2-18\" SLOPED AND MITERED HEADWALLS

595+00

PT 593+91.95

MP 11.2

MP 11.3

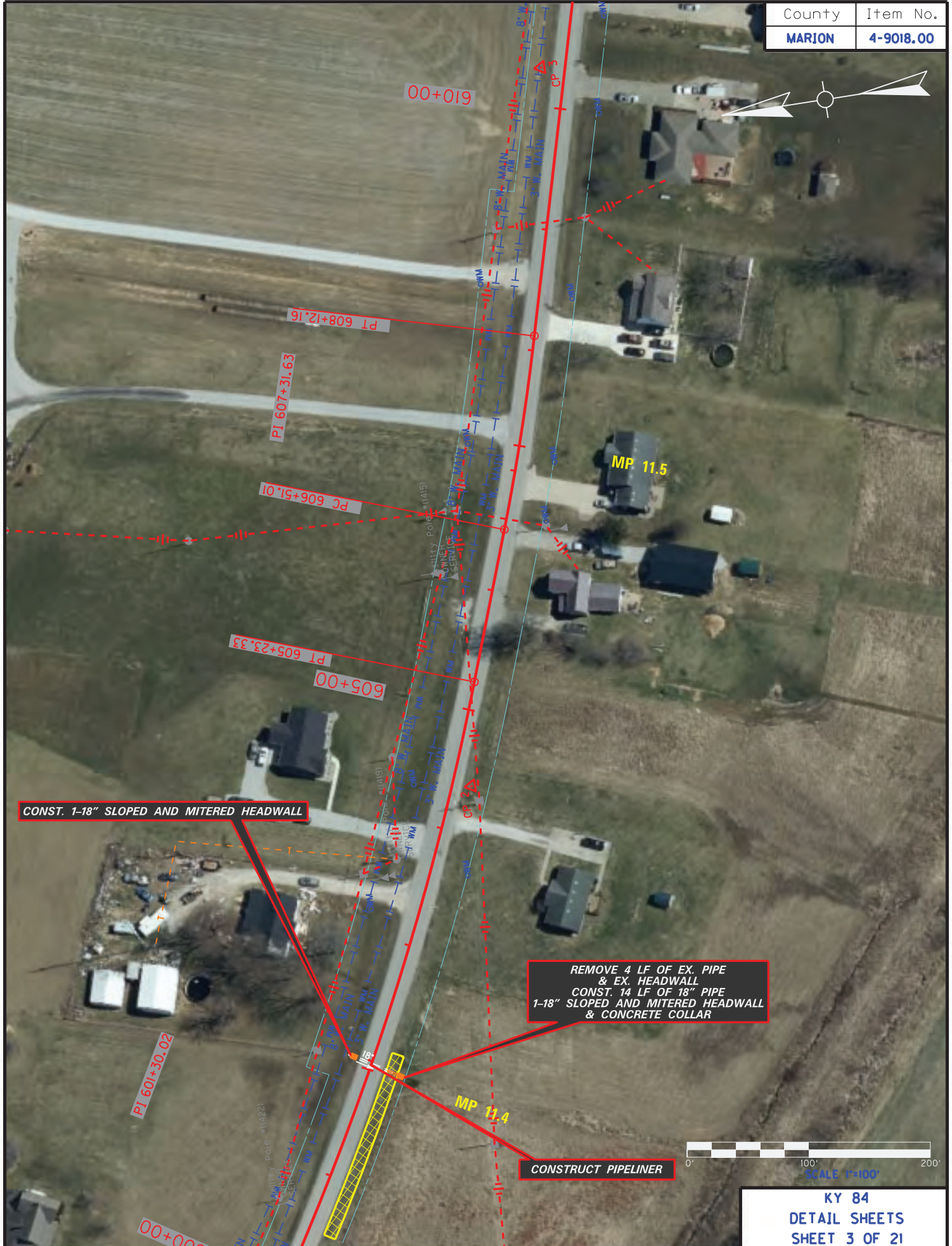
590+00

PC 590+05.13



KY 84
DETAIL SHEETS
SHEET 2 OF 21

County	Item No.
MARION	4-9018.00



CONST. 1-18" SLOPED AND MITERED HEADWALL

**REMOVE 4 LF OF EX. PIPE & EX. HEADWALL
CONST. 14 LF OF 18" PIPE
1-18" SLOPED AND MITERED HEADWALL
& CONCRETE COLLAR**

CONSTRUCT PIPELINER



**KY 84
DETAIL SHEETS
SHEET 3 OF 21**

County	Item No.
MARION	4-9018.00



REMOVE 4' PIPE
& EX. HEADWALL
CONST. 16 LF OF 24" PIPE
1-24" SLOPED AND MITERED HEADWALL
& CONCRETE COLLAR

CONST. 11 LF OF 24" PIPE
1-24" SLOPED AND MITERED HEADWALL
& DUAL WALL ADAPTER FITTING

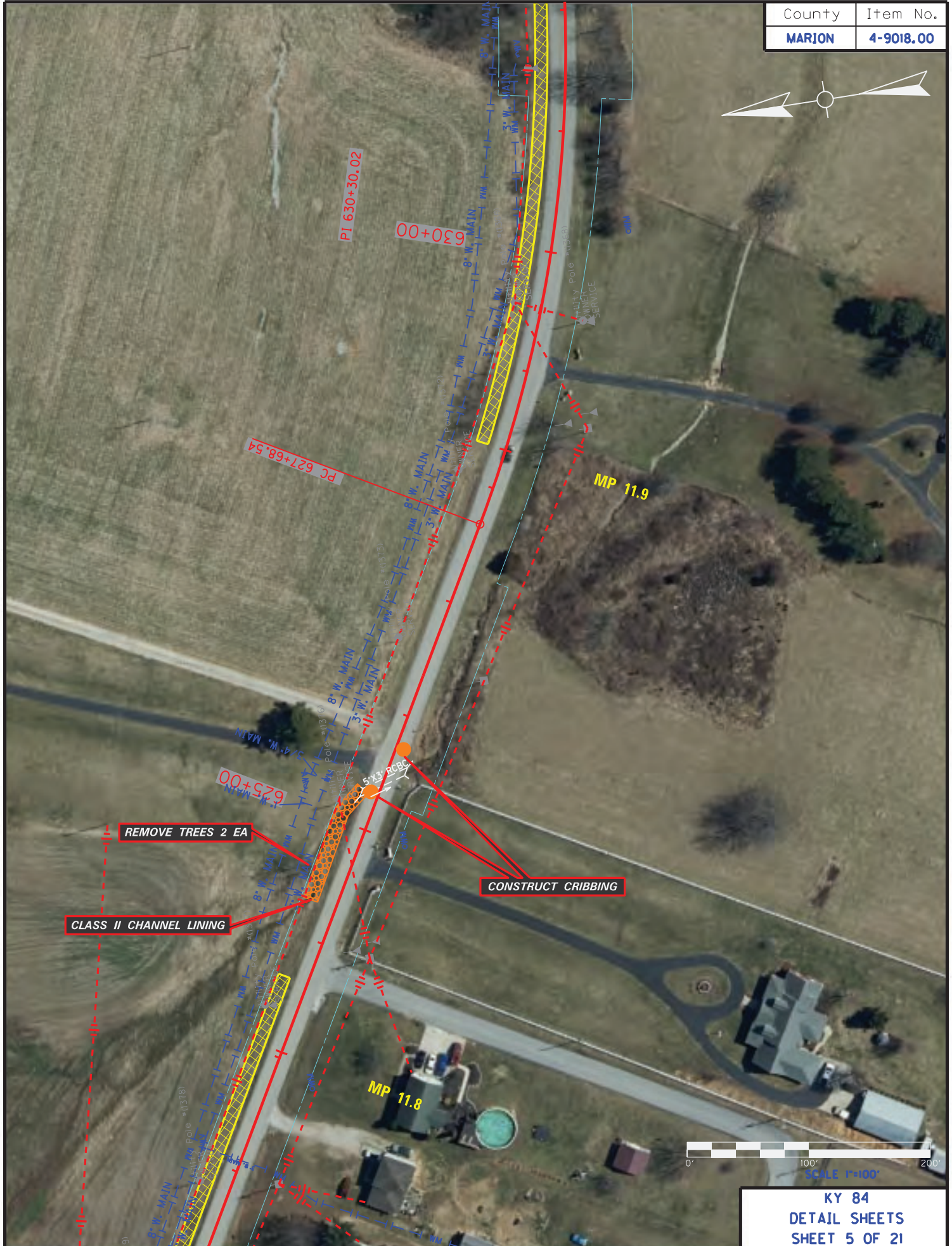
MP 11.6

CONSTRUCT PIPELINER



KY 84
DETAIL SHEETS
SHEET 4 OF 21

County	Item No.
MARION	4-9018.00



KY 84
DETAIL SHEETS
SHEET 5 OF 21

County	Item No.
MARION	4-9018.00



REMOVE 4' PIPE
& EX. HEADWALL
CONST. 12 LF OF 24" PIPE
1-24" SLOPED AND MITERED HEADWALL
CONCRETE COLLAR
& CLASS II CHANNEL LINING

CONST. 10 LF OF 24" PIPE
1-24" SLOPED AND MITERED HEADWALL
& DUAL WALL ADAPTER FITTING
& CLASS II CHANNEL LINING

REMOVE AND REPLACE
50 LF OF FENCE

CONSTRUCT PIPELINER

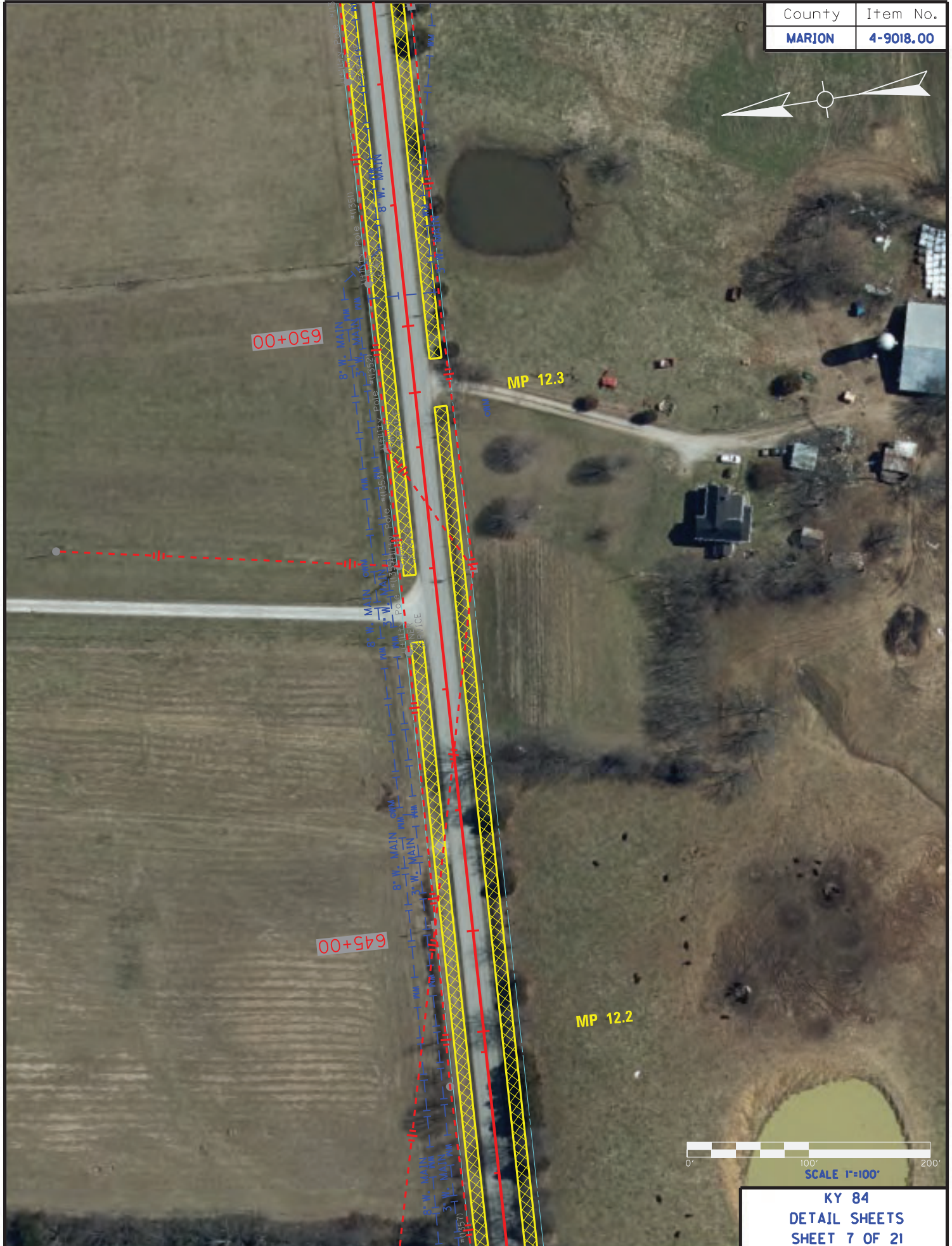
PLACE GUARDRAIL

PLACE GUARDRAIL



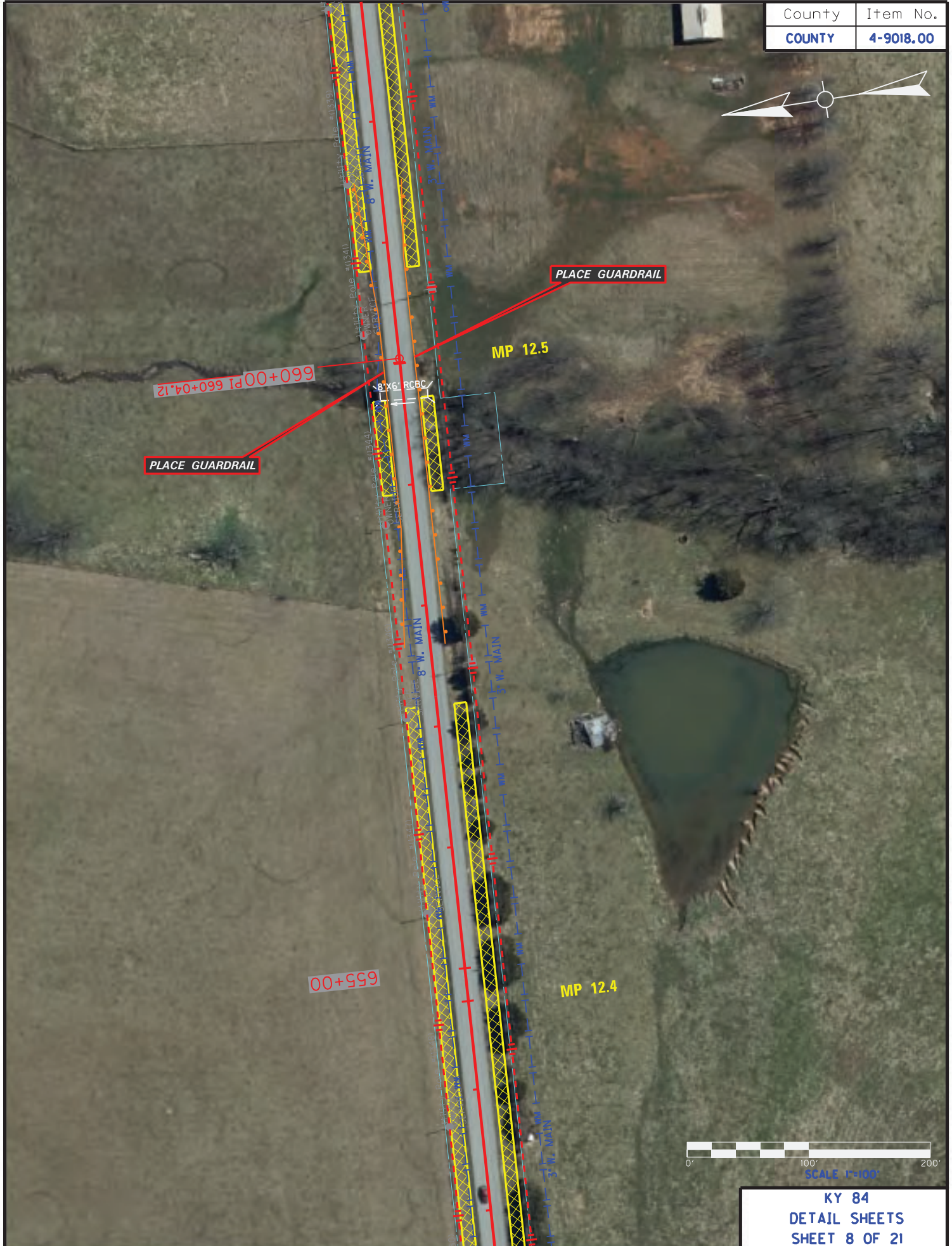
SCALE 1"=100'
KY 84
DETAIL SHEETS
SHEET 6 OF 22

County	Item No.
MARION	4-9018.00



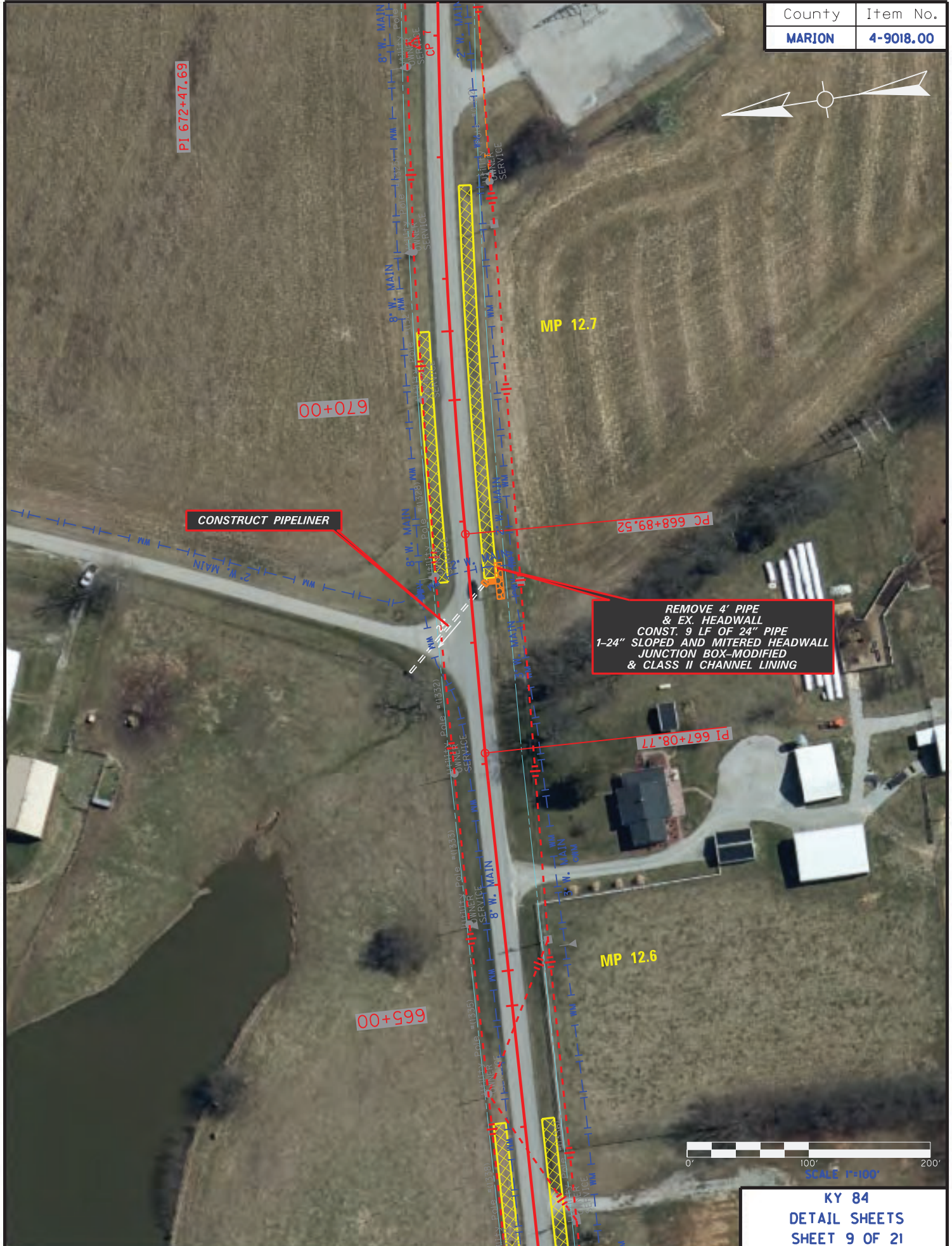
**KY 84
DETAIL SHEETS
SHEET 7 OF 21**

County	Item No.
COUNTY	4-9018.00



**KY 84
DETAIL SHEETS
SHEET 8 OF 21**

County	Item No.
MARION	4-9018.00



PI 672+47.69

670+00

CONSTRUCT PIPELINER

PC 668+89.52

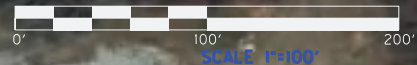
REMOVE 4' PIPE
& EX. HEADWALL
CONST. 9 LF OF 24" PIPE
1-24" SLOPED AND MITERED HEADWALL
JUNCTION BOX-MODIFIED
& CLASS II CHANNEL LINING

PI 667+08.77

665+00

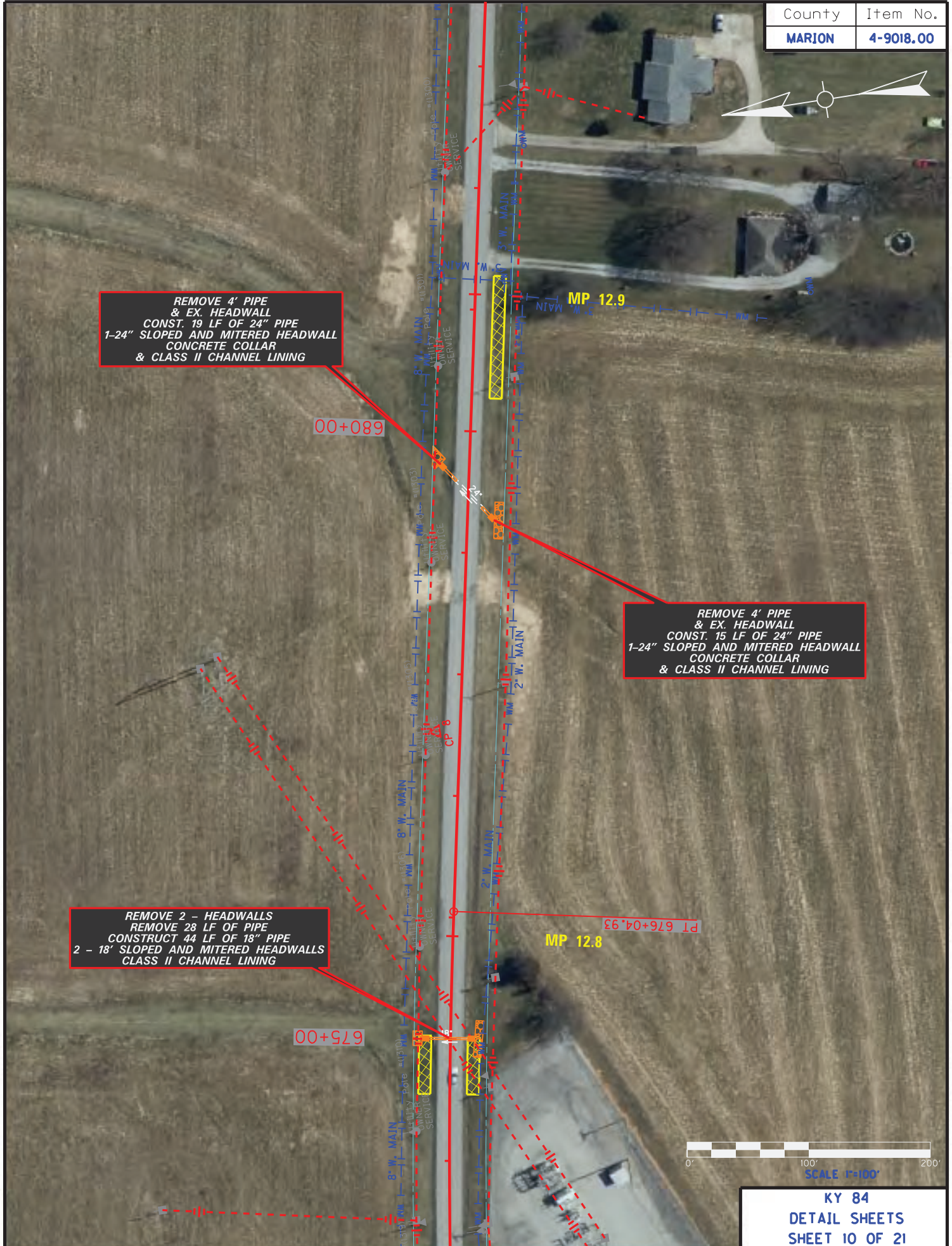
MP 12.6

MP 12.7



KY 84
DETAIL SHEETS
SHEET 9 OF 21

County	Item No.
MARION	4-9018.00



**REMOVE 4' PIPE
& EX. HEADWALL
CONST. 19 LF OF 24" PIPE
1-24" SLOPED AND MITERED HEADWALL
CONCRETE COLLAR
& CLASS II CHANNEL LINING**

00+089

**REMOVE 4' PIPE
& EX. HEADWALL
CONST. 15 LF OF 24" PIPE
1-24" SLOPED AND MITERED HEADWALL
CONCRETE COLLAR
& CLASS II CHANNEL LINING**

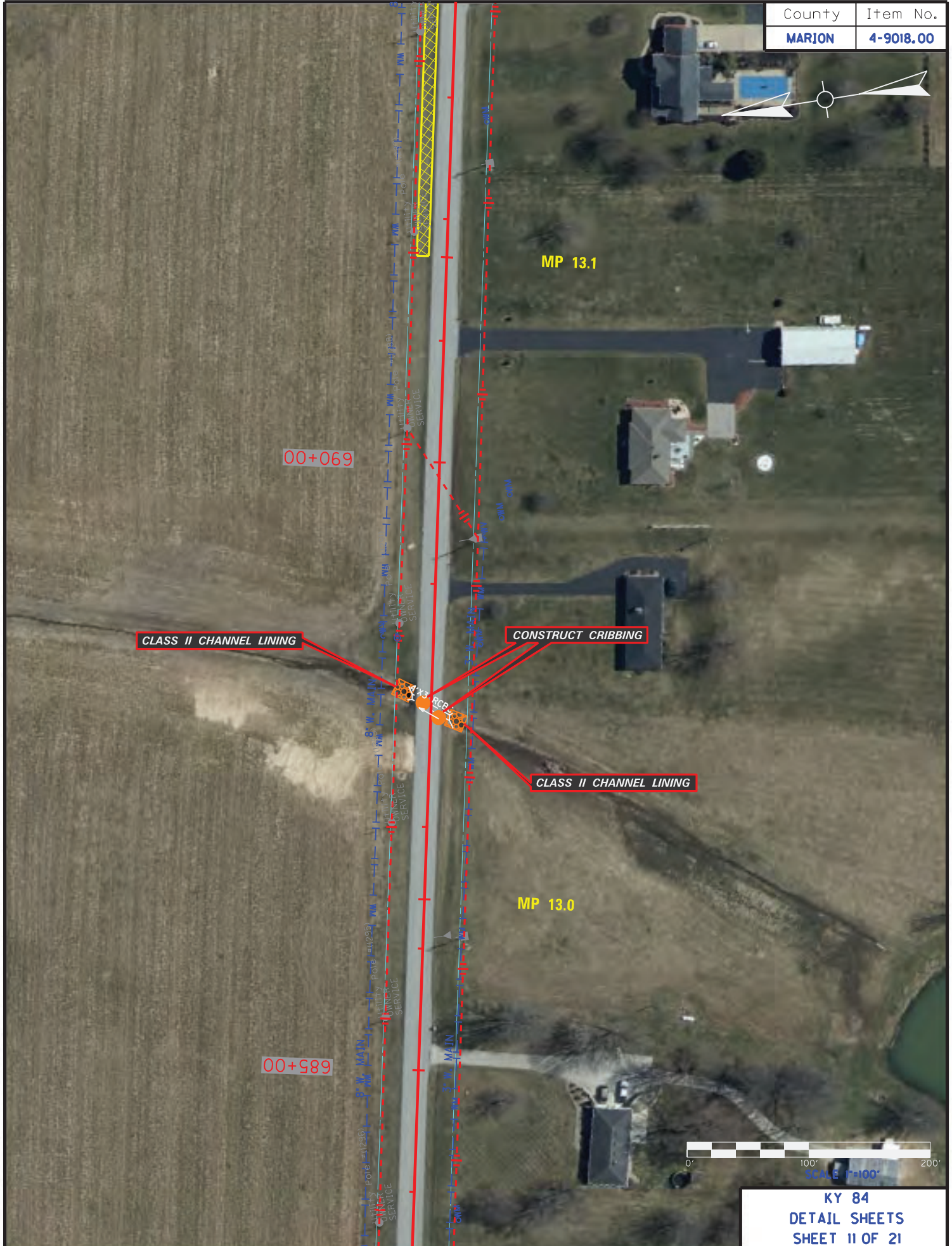
**REMOVE 2 - HEADWALLS
REMOVE 28 LF OF PIPE
CONSTRUCT 44 LF OF 18" PIPE
2 - 18' SLOPED AND MITERED HEADWALLS
CLASS II CHANNEL LINING**

675+00



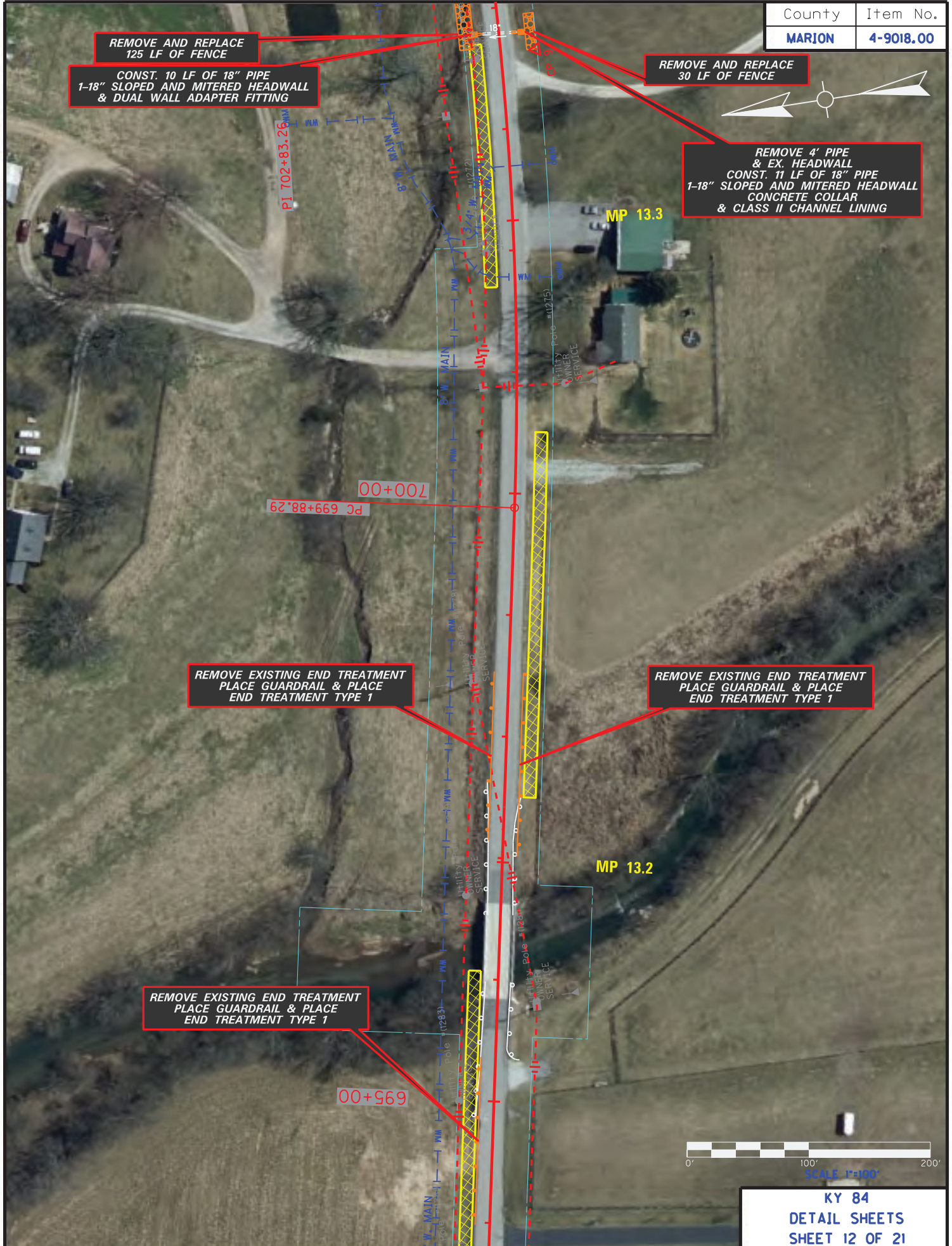
**KY 84
DETAIL SHEETS
SHEET 10 OF 21**

County	Item No.
MARION	4-9018.00



**KY 84
DETAIL SHEETS
SHEET 11 OF 21**

County	Item No.
MARION	4-9018.00



REMOVE AND REPLACE
125 LF OF FENCE

CONST. 10 LF OF 18" PIPE
1-18" SLOPED AND MITERED HEADWALL
& DUAL WALL ADAPTER FITTING

REMOVE AND REPLACE
30 LF OF FENCE

REMOVE 4' PIPE
& EX. HEADWALL
CONST. 11 LF OF 18" PIPE
1-18" SLOPED AND MITERED HEADWALL
CONCRETE COLLAR
& CLASS II CHANNEL LINING

REMOVE EXISTING END TREATMENT
PLACE GUARDRAIL & PLACE
END TREATMENT TYPE 1

REMOVE EXISTING END TREATMENT
PLACE GUARDRAIL & PLACE
END TREATMENT TYPE 1

REMOVE EXISTING END TREATMENT
PLACE GUARDRAIL & PLACE
END TREATMENT TYPE 1



KY 84
DETAIL SHEETS
SHEET 12 OF 21

County	Item No.
MARION	4-9018.00



REMOVE AND REPLACE
50 LF OF FENCE

REMOVE 4' PIPE
& EX. HEADWALL
CONST. 12 LF OF 18" PIPE
1-18" SLOPED AND MITERED HEADWALL
CONCRETE COLLAR
& CLASS II CHANNEL LINING

REMOVE 4' PIPE
& EX. HEADWALL
CONST. 12 LF OF 18" PIPE
1-18" SLOPED & MITERED HEADWALL
CONCRETE COLLAR
& CLASS II CHANNEL LINING

REMOVE AND REPLACE
50 LF OF FENCE

CONST. 5 LF OF 36" PIPE
1-36" PIPE CULVERT HEADWALL
& SPECIAL JUNC. BOX
& CLASS II CHANNEL LINING

REMOVE AND REPLACE
125 LF OF FENCE

CLASS II CHANNEL LINING



SCALE 1"=100'
KY 84
DETAIL SHEETS
SHEET 13 OF 21

County	Item No.
MARION	4-9018.00



REMOVE 8' PIPE
& EX. HEADWALL
CONST. 16 LF OF 18" PIPE
1-18" SLOPED AND MITERED HEADWALL
& CONCRETE COLLAR

REMOVE AND REPLACE
125 LF OF FENCE

REMOVE 4' PIPE
& EX. HEADWALL
CONST. 14 LF OF 18" PIPE
1-18" SLOPED AND MITERED HEADWALL
CONCRETE COLLAR
& CLASS II CHANNEL LINING

REMOVE AND REPLACE
50 LF OF FENCE

REMOVE 29' PIPE
& 2 EX. HEADWALL
CONST. 41 LF OF 18" PIPE
2-18" SLOPED AND MITERED HEADWALL
& CLASS II CHANNEL LINING



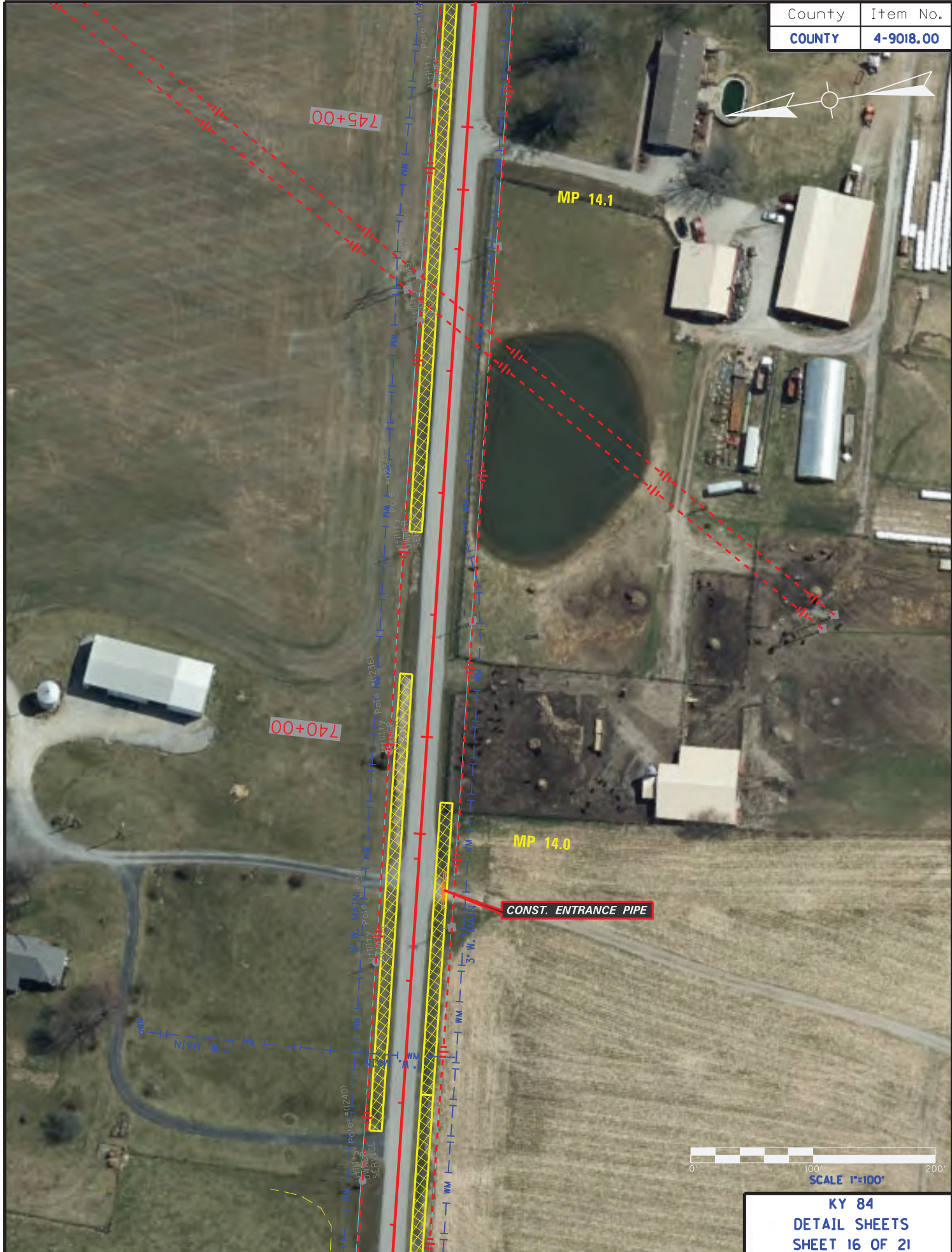
KY 84
DETAIL SHEETS
SHEET 14 OF 21

County	Item No.
MARION	4-9018.00



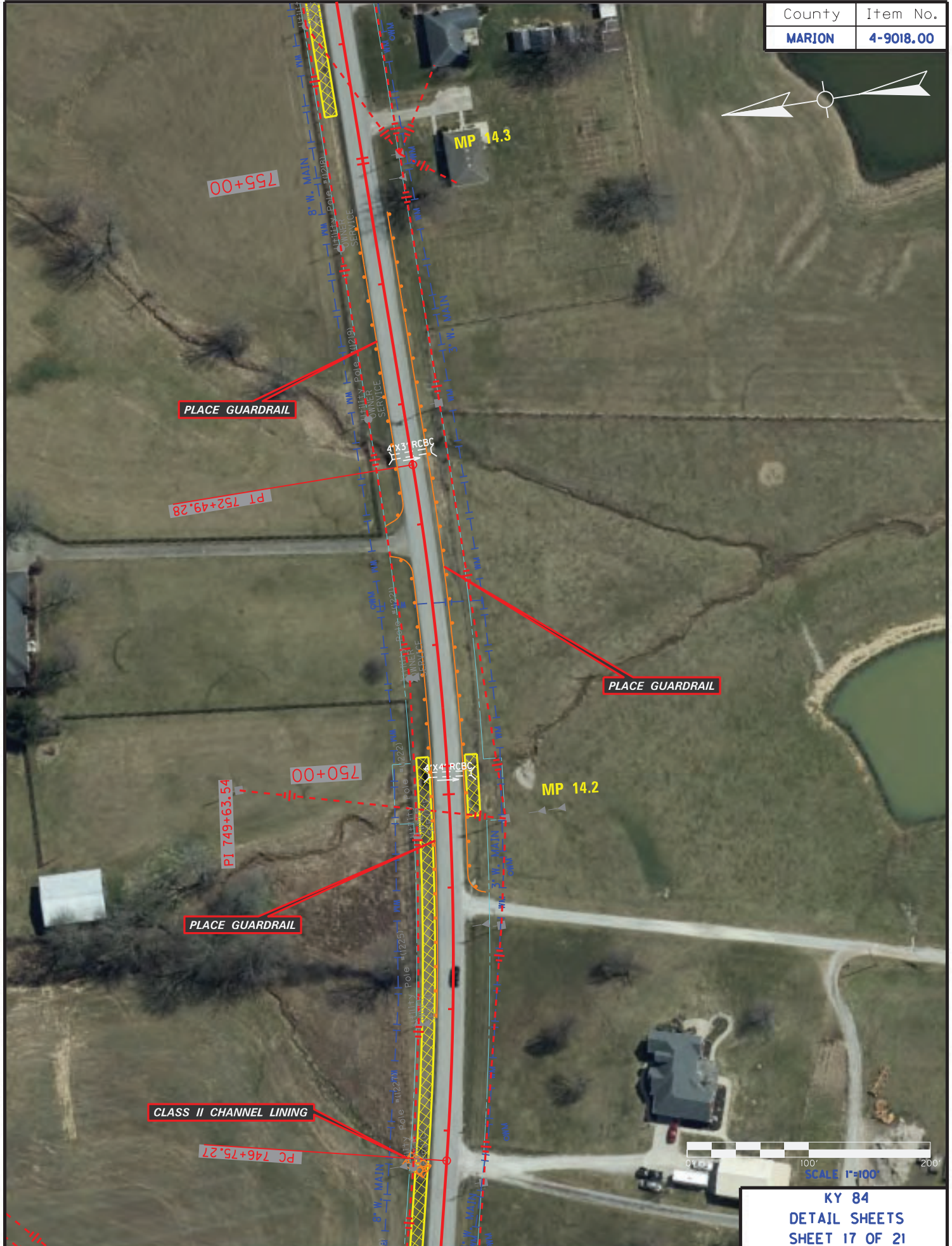
KY 84
DETAIL SHEETS
SHEET 15 OF 21

County	Item No.
COUNTY	4-9018.00



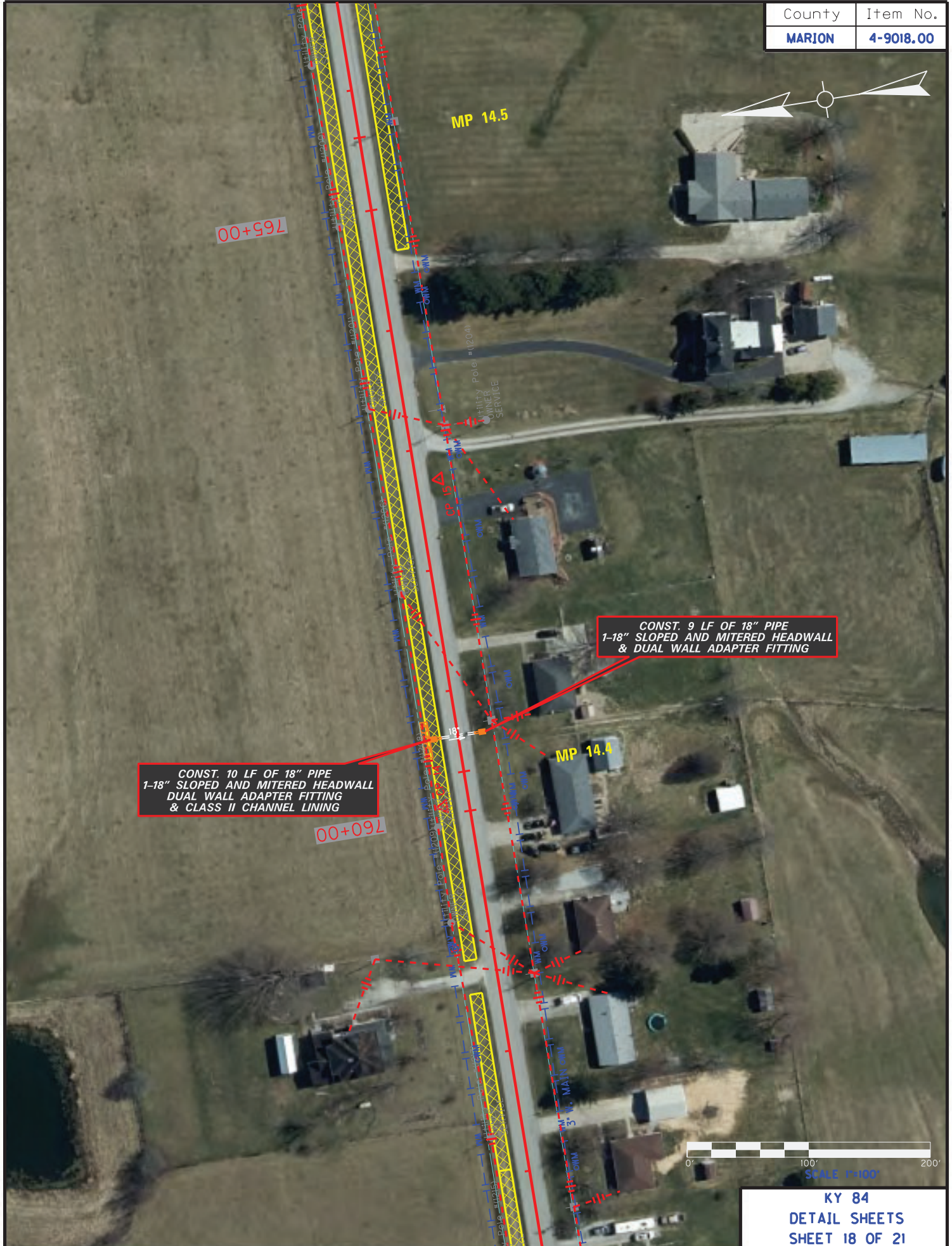
KY 84
DETAIL SHEETS
SHEET 16 OF 21

County	Item No.
MARION	4-9018.00



**KY 84
DETAIL SHEETS
SHEET 17 OF 21**

County	Item No.
MARION	4-9018.00



CONST. 10 LF OF 18" PIPE
1-18" SLOPED AND MITERED HEADWALL
DUAL WALL ADAPTER FITTING
& CLASS II CHANNEL LINING

CONST. 9 LF OF 18" PIPE
1-18" SLOPED AND MITERED HEADWALL
& DUAL WALL ADAPTER FITTING

KY 84
DETAIL SHEETS
SHEET 18 OF 21

County	Item No.
MARION	4-9018.00



CONST. 9 LF OF 18" PIPE
1-18" SLOPED AND MITERED HEADWALL
& DUAL WALL ADAPTER FITTING

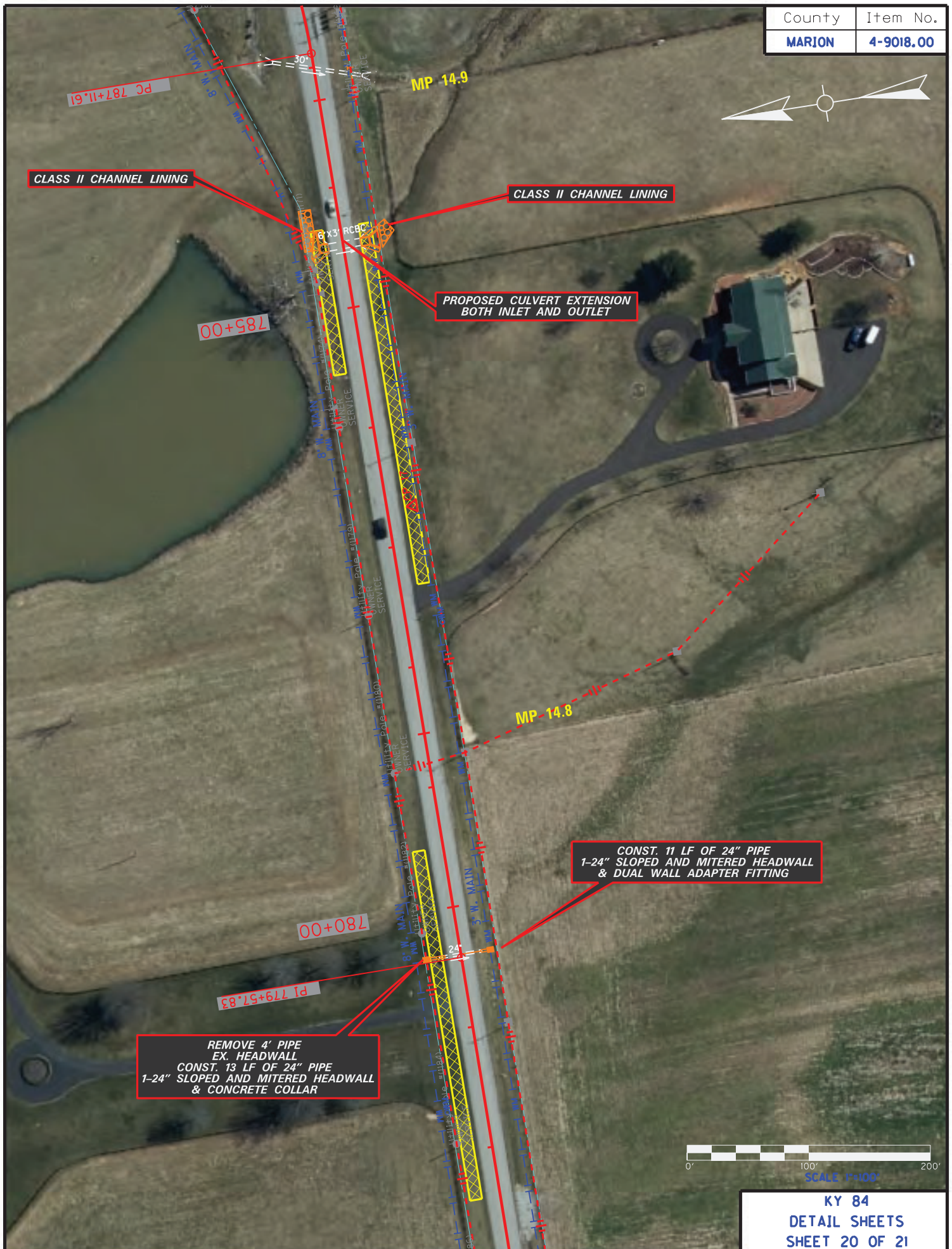
REMOVE 4' PIPE
& EX. HEADWALL
CONST. 11 LF OF 18" PIPE
1-18" SLOPED AND MITERED HEADWALL
CONCRETE COLLAR
& CLASS II CHANNEL LINING

REMOVE TREES - 4 EA



KY 84
DETAIL SHEETS
SHEET 19 OF 21

County	Item No.
MARION	4-9018.00



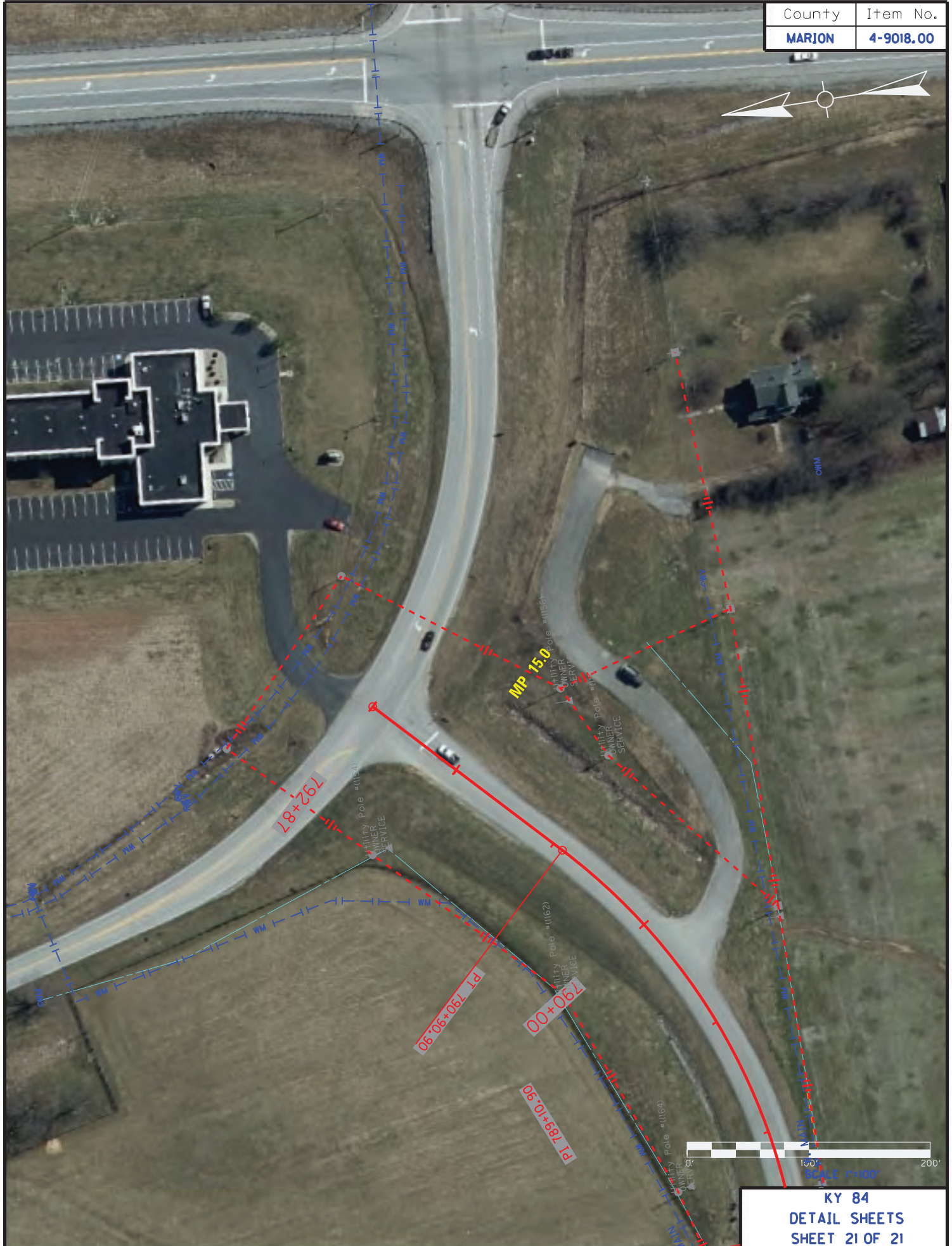
REMOVE 4' PIPE
EX. HEADWALL
CONST. 13 LF OF 24" PIPE
1-24" SLOPED AND MITERED HEADWALL
& CONCRETE COLLAR

CONST. 11 LF OF 24" PIPE
1-24" SLOPED AND MITERED HEADWALL
& DUAL WALL ADAPTER FITTING



KY 84
DETAIL SHEETS
SHEET 20 OF 21

County	Item No.
MARION	4-9018.00

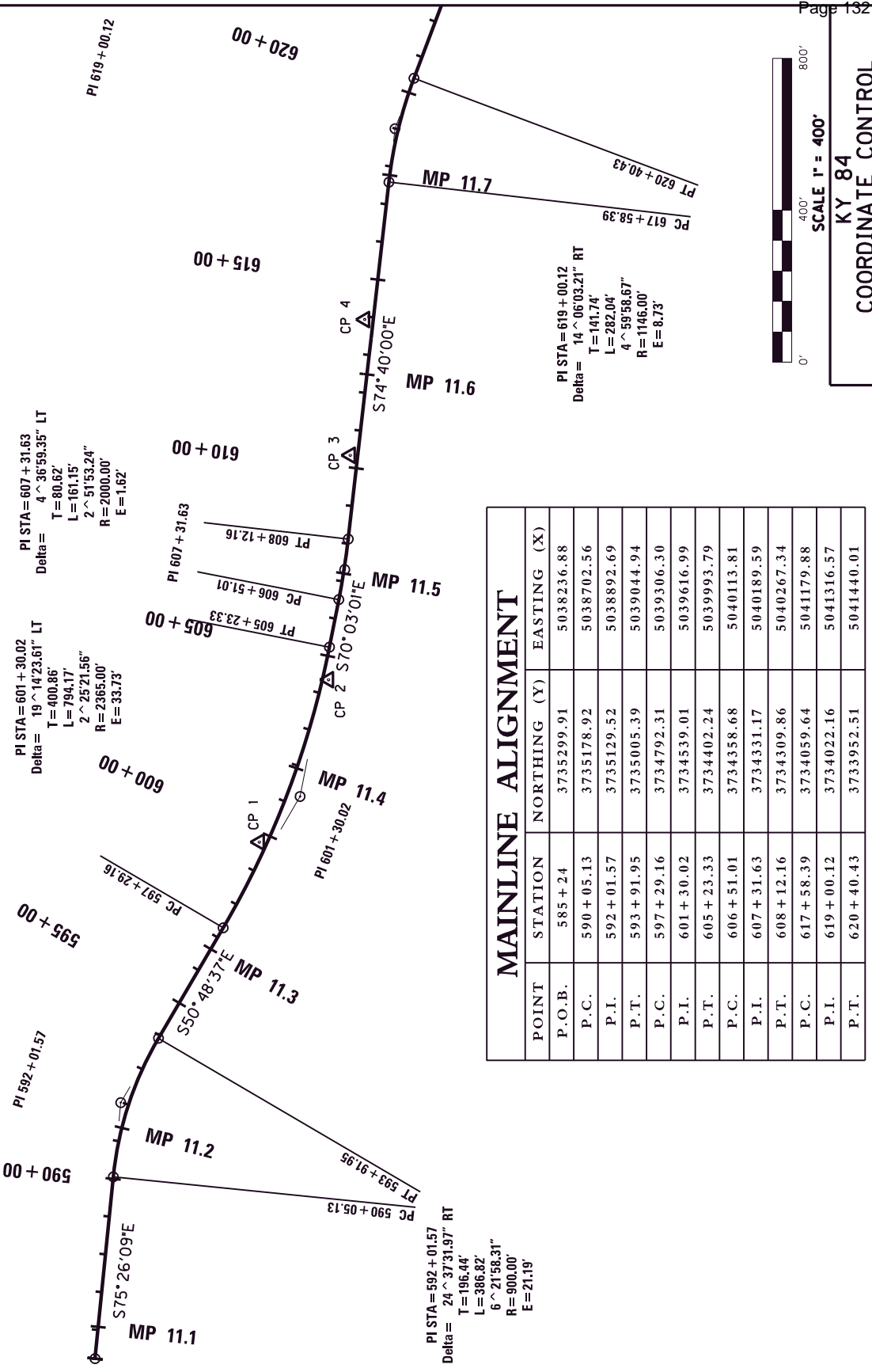


**KY 84
DETAIL SHEETS
SHEET 21 OF 21**

County	Item No.	Sheet
MARION	4-9018	-

COORDINATE CONTROL POINTS

POINT	DESCRIPTION	State Plane Coordinates			STATION	OFFSET
		NORTH (Y)	EAST (X)	ELEV. (Z)		
CP 1	IRON PIN & CAP	3734663.574	5039515.088	755.845	599 + 74.80	-19.51
CP 2	IRON PIN & CAP	3734417.75	5039909.585	753.687	604 + 39.41	15.65
CP 3	IRON PIN & CAP	3734270.667	5040484.507	747.722	610 + 31.96	-19.63
CP 4	IRON PIN & CAP	3734178.094	5040832.407	750.607	613 + 91.96	-22.35



MAINLINE ALIGNMENT

POINT	STATION	NORTHING (Y)	EASTING (X)
P.O.B.	585 + 24	3735299.91	5038236.88
P.C.	590 + 05.13	3735178.92	5038702.56
P.I.	592 + 01.57	3735129.52	5038892.69
P.T.	593 + 91.95	3735005.39	5039044.94
P.C.	597 + 29.16	3734792.31	5039306.30
P.I.	601 + 30.02	3734539.01	5039616.99
P.T.	605 + 23.33	3734402.24	5039993.79
P.C.	606 + 51.01	3734358.68	5040113.81
P.I.	607 + 31.63	3734331.17	5040189.59
P.T.	608 + 12.16	3734309.86	5040267.34
P.C.	617 + 58.39	3734059.64	5041179.88
P.I.	619 + 00.12	3734022.16	5041316.57
P.T.	620 + 40.43	3733952.51	5041440.01

KY 84
COORDINATE CONTROL
585+24 TO 620+00

County	Item No.	Sheet
MARION	4-9018	-

COORDINATE CONTROL POINTS

POINT	DESCRIPTION	State Plane Coordinates			STATION	OFFSET
		NORTH (Y)	EAST (X)	ELEV. (Z)		
CP 5	IRON PIN & CAP	3733448.182	5043186.968	714.301	639+05.56	-23.56
CP 6	IRON PIN & CAP	3733433.322	5043336.865	716.651	640+55.88	-15.75

PI STA=630+30.02
 Delta = $26^{\circ}44'34.36''$ LT
 T=261.48
 L=513.43
 $5^{\circ}12'31.35''$
 R=1100.00'
 E=30.65'



MAINLINE ALIGNMENT

POINT	STATION	NORTHING (Y)	EASTING (X)
P.T.	620+40.43	3733952.51	5041440.01
P.C.	627+68.54	3733594.70	5042074.15
P.I.	630+30.02	3733466.20	5042301.87
P.T.	632+81.97	3733453.92	5042563.06



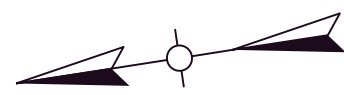
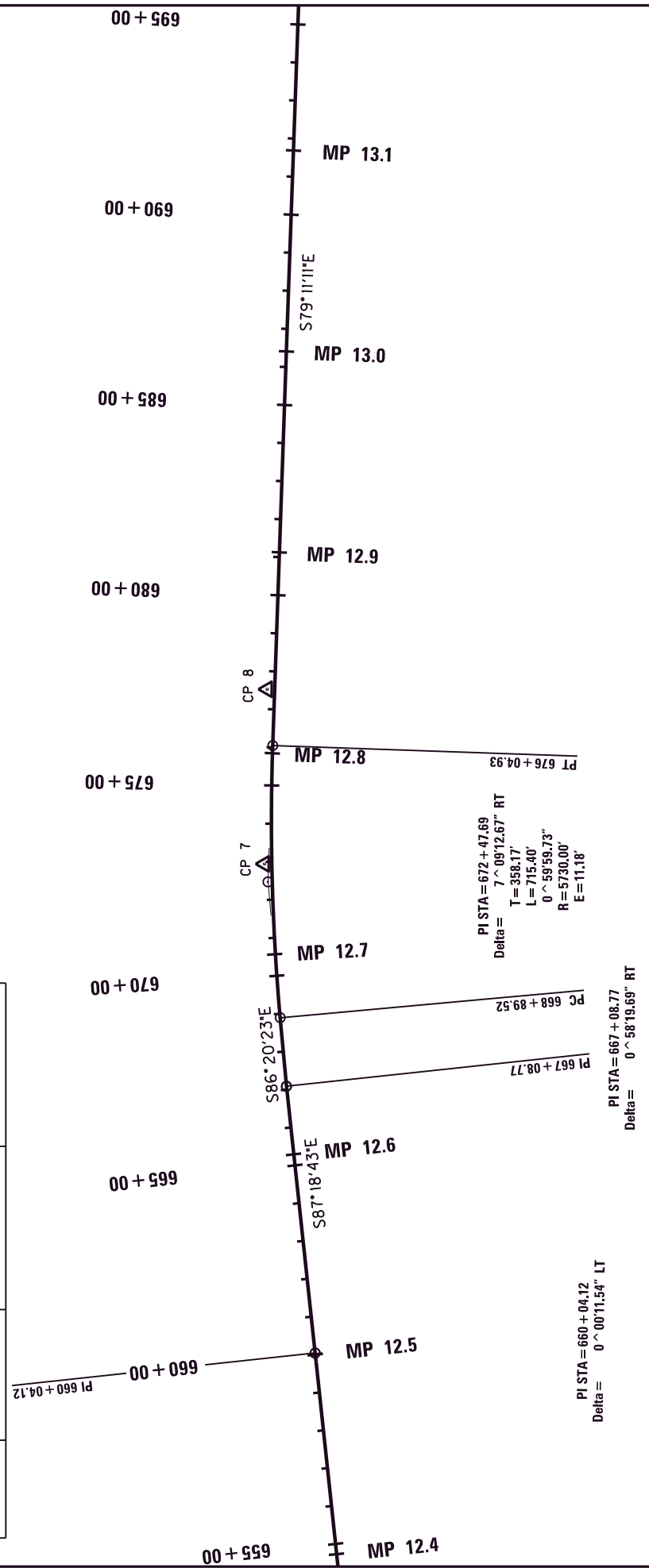
KY 84
COORDINATE CONTROL
620+00 TO 655+00

County	Item No.	Sheet
MARION	4-9018	-

MAINLINE ALIGNMENT

POINT	STATION	NORTHING (Y)	EASTING (X)
P.I.	660 + 04.12	3733326.11	5045282.22
P.I.	667 + 08.77	3733293.06	5045986.09
P.C.	668 + 89.52	3733281.52	5046166.47
P.I.	672 + 47.69	3733258.66	5046523.91
P.T.	676 + 04.93	3733191.46	5046875.72

PI 672 + 47.69



COORDINATE CONTROL POINTS

POINT	DESCRIPTION	State Plane Coordinates			STATION	OFFSET
		NORTH (Y)	EAST (X)	ELEV. (Z)		
CP 7	IRON PIN & CAP	3733260.674	5046571.81	750.273	672 + 94.41	-18.82
CP 8	IRON PIN & CAP	3733183.076	5047024.163	736.311	677 + 52.31	-19.62

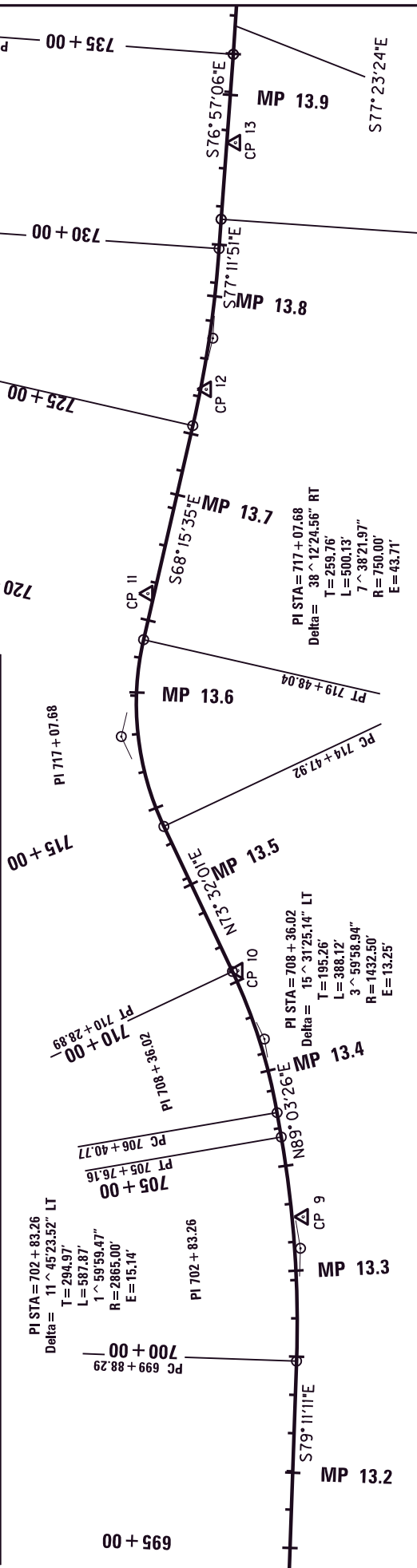


KY 84
COORDINATE CONTROL
655+00 TO 695+00

County	Item No.	Sheet
MARION	4-9018	-

COORDINATE CONTROL POINTS

POINT	DESCRIPTION	State Plane Coordinates			STATION	OFFSET
		NORTH (Y)	EAST (X)	ELEV. (Z)		
CP 9	IRON PIN & CAP	3732669.255	5049586.57	706.468	703 + 62.90	29.03
CP 10	IRON PIN & CAP	3732739.291	5050248.278	716.593	710 + 24.71	13.51
CP 11	IRON PIN & CAP	3732820.144	5051258.262	738.65	720 + 68.14	-16.15
CP 12	IRON PIN & CAP	3732587.78	5051762.265	753.93	726 + 21.89	14.69
CP 13	IRON PIN & CAP	3732413.649	5052387.363	755.335	732 + 69.25	22.48



MAINLINE ALIGNMENT

POINT	STATION	NORTHING (Y)	EASTING (X)
P.C.	699 + 88.29	3732744.30	5049216.76
P.I.	702 + 76.16	3732688.96	5049506.49
P.T.	705 + 76.16	3732693.81	5049801.42
P.C.	706 + 40.77	3732694.88	5049866.02
P.I.	708 + 36.02	3732698.09	5050061.25
P.T.	710 + 28.89	3732753.44	5050248.49
P.C.	714 + 47.92	3732872.21	5050650.34
P.I.	717 + 07.68	3732945.84	5050899.45
P.T.	719 + 48.04	3732849.63	5051140.73
P.C.	725 + 21.70	3732637.14	5051673.59
P.I.	727 + 56.17	3732550.30	5051891.38
P.T.	729 + 89.69	3732498.34	5052120.02
P.I.	730 + 66.75	3732481.26	5052195.16
P.I.	734 + 98.89	3732383.70	5052616.14



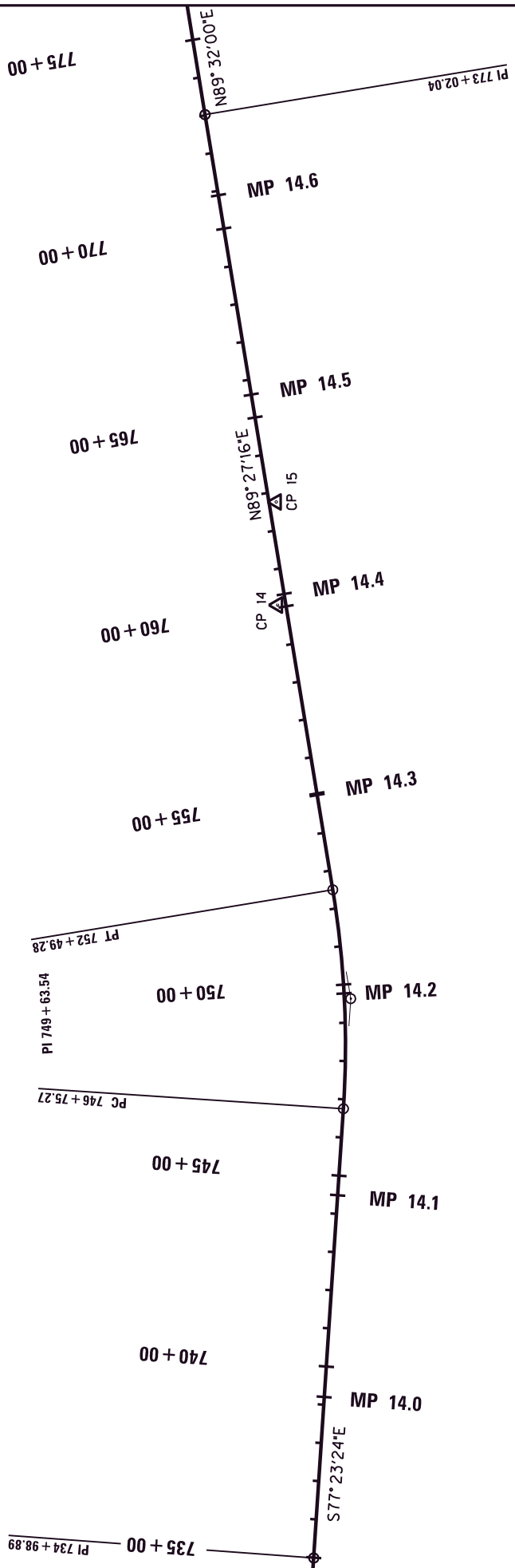
COORDINATE CONTROL
695+00 TO 735+00

County	Item No.	Sheet
MARION	4-9018	-

PI STA = 749 + 63.54
Delta = $13^\circ 09' 19.63''$ LT
T = 288.28'
L = 574.01'
2 \sphericalangle 17' 30.59"
R = 2500.00'
E = 16.57'

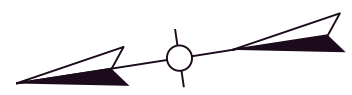
PC 746 + 75.27
PT 752 + 49.28
PI 749 + 63.54

PI STA = 773 + 02.04
Delta = $0^\circ 04' 43.57''$ RT



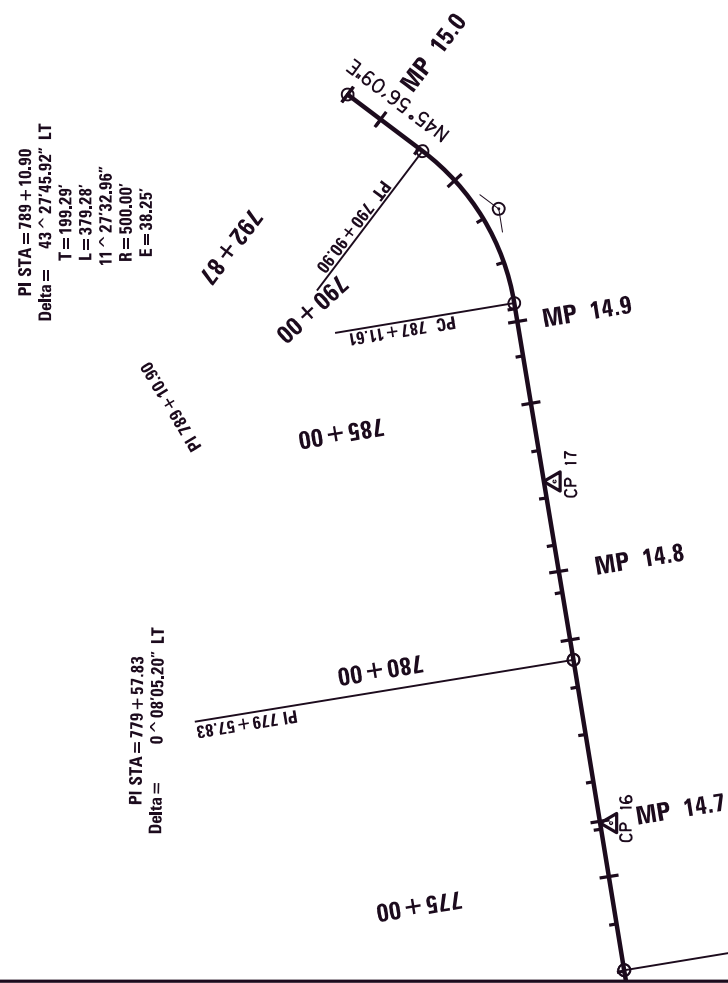
POINT	DESCRIPTION	State Plane Coordinates			STATION	OFFSET
		NORTH (Y)	EAST (X)	ELEV. (Z)		
CP 14	IRON PIN & CAP	3732095.264	5055091.007	791.337	760 + 06.80	-21.36
CP 15	IRON PIN & CAP	3732057.455	5055357.739	792.357	762 + 73.16	18.98

MAINLINE ALIGNMENT			
POINT	STATION	NORTHING (Y)	EASTING (X)
P.C.	746 + 75.27	3732126.88	5053764.14
P.I.	749 + 63.54	3732063.95	5054045.47
P.T.	752 + 49.28	3732066.69	5054333.73
P.I.	773 + 02.59	3732086.23	5056386.40



KY 84
COORDINATE CONTROL
735+00 TO 775+00

County	Item No.	Sheet
MARION	4-9018	-



COORDINATE CONTROL POINTS

POINT	DESCRIPTION	State Plane Coordinates			STATION	OFFSET
		NORTH (Y)	EAST (X)	ELEV. (Z)		
CP 16	IRON PIN & CAP	3732066.31	5056693.71	802.353	776 + 09.18	22.43
CP 17	IRON PIN & CAP	3732073.673	5057415.488	792.353	783 + 30.95	21.82

MAINLINE ALIGNMENT

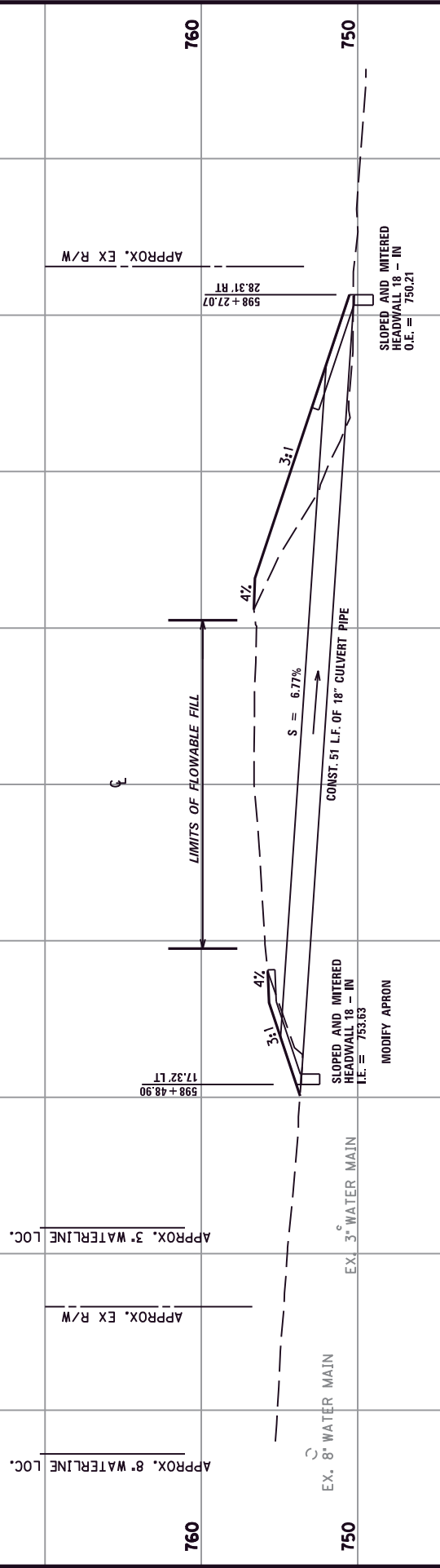
POINT	STATION	NORTHING (Y)	EASTING (X)
P.I.	779 + 57.83	3732091.58	5057042.16
P.C.	787 + 11.61	3732099.49	5057795.90
P.I.	789 + 10.90	3732101.58	5057995.18
P.T.	790 + 90.90	3732240.18	5058138.39
P.O.E.	792 + 86.52	3732376.23	5058278.95



KY 84
COORDINATE CONTROL
775+00 TO 792+86.52

PIPE DRAINAGE SHEET

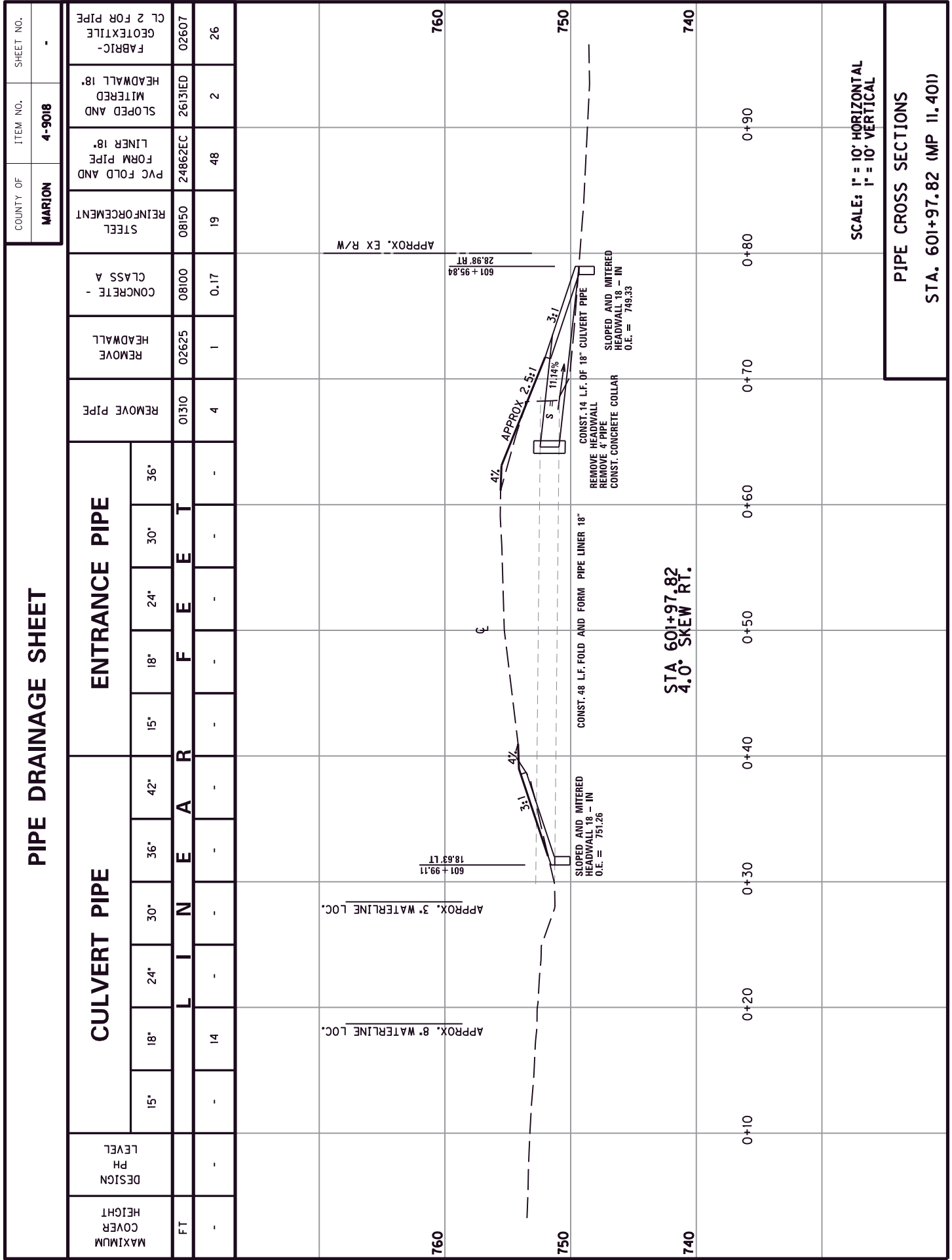
MAXIMUM COVER HEIGHT		DESIGN PH LEVEL		CULVERT PIPE						ENTRANCE PIPE						SLOPED AND MITERED HEADWALL 18 IN	FABRIC-GEOTEXTILE CL 2 FOR PIPE	REMOVE HEADWALL	REMOVE PIPE	COUNTY OF	ITEM NO.	SHEET NO.	
				15"	18"	24"	30"	36"	42"	15"	18"	24"	30"	36"									
760																		MARION	4-9018	-			
760																							
750																							
740																							



**STA. 598+40.50
25.7° SKEW RT.**

SCALE: 1" = 10' HORIZONTAL
1" = 10' VERTICAL

**PIPE CROSS SECTIONS
STA. 598+40.50 (MP 11.333)**



MAXIMUM COVER HEIGHT	DESIGN PH LEVEL	CULVERT PIPE						ENTRANCE PIPE																			
		15"	18"	24"	30"	36"	42"	15"	18"	24"	30"	36"															
FT	-	-	14	-	-	-	-	-	-	-	-	-	4	1	0.17	08100	02625	01310	01310	02625	08100	08150	24862EC	26131ED	02607		

STEEL REINFORCEMENT	PVC FOLD AND FORM PIPE LINER 18"	SLOPED AND MITERED HEADWALL 18"	FABRIC-GEOTEXTILE CL 2 FOR PIPE
48	48	2	26

COUNTY OF	ITEM NO.	SHEET NO.
MARION	4-9018	-

CONCRETE CLASS A	REMOVE HEADWALL	REMOVE PIPE
0.17	1	4

REMOVE HEADWALL	REMOVE PIPE	STEEL REINFORCEMENT	PVC FOLD AND FORM PIPE LINER 18"	SLOPED AND MITERED HEADWALL 18"	FABRIC-GEOTEXTILE CL 2 FOR PIPE
0.17	1	0.17	48	2	26

REMOVE HEADWALL	REMOVE PIPE	STEEL REINFORCEMENT	PVC FOLD AND FORM PIPE LINER 18"	SLOPED AND MITERED HEADWALL 18"	FABRIC-GEOTEXTILE CL 2 FOR PIPE
0.17	1	0.17	48	2	26

REMOVE HEADWALL	REMOVE PIPE	STEEL REINFORCEMENT	PVC FOLD AND FORM PIPE LINER 18"	SLOPED AND MITERED HEADWALL 18"	FABRIC-GEOTEXTILE CL 2 FOR PIPE
0.17	1	0.17	48	2	26

REMOVE HEADWALL	REMOVE PIPE	STEEL REINFORCEMENT	PVC FOLD AND FORM PIPE LINER 18"	SLOPED AND MITERED HEADWALL 18"	FABRIC-GEOTEXTILE CL 2 FOR PIPE
0.17	1	0.17	48	2	26

SCALE: 1" = 10' HORIZONTAL
1" = 10' VERTICAL

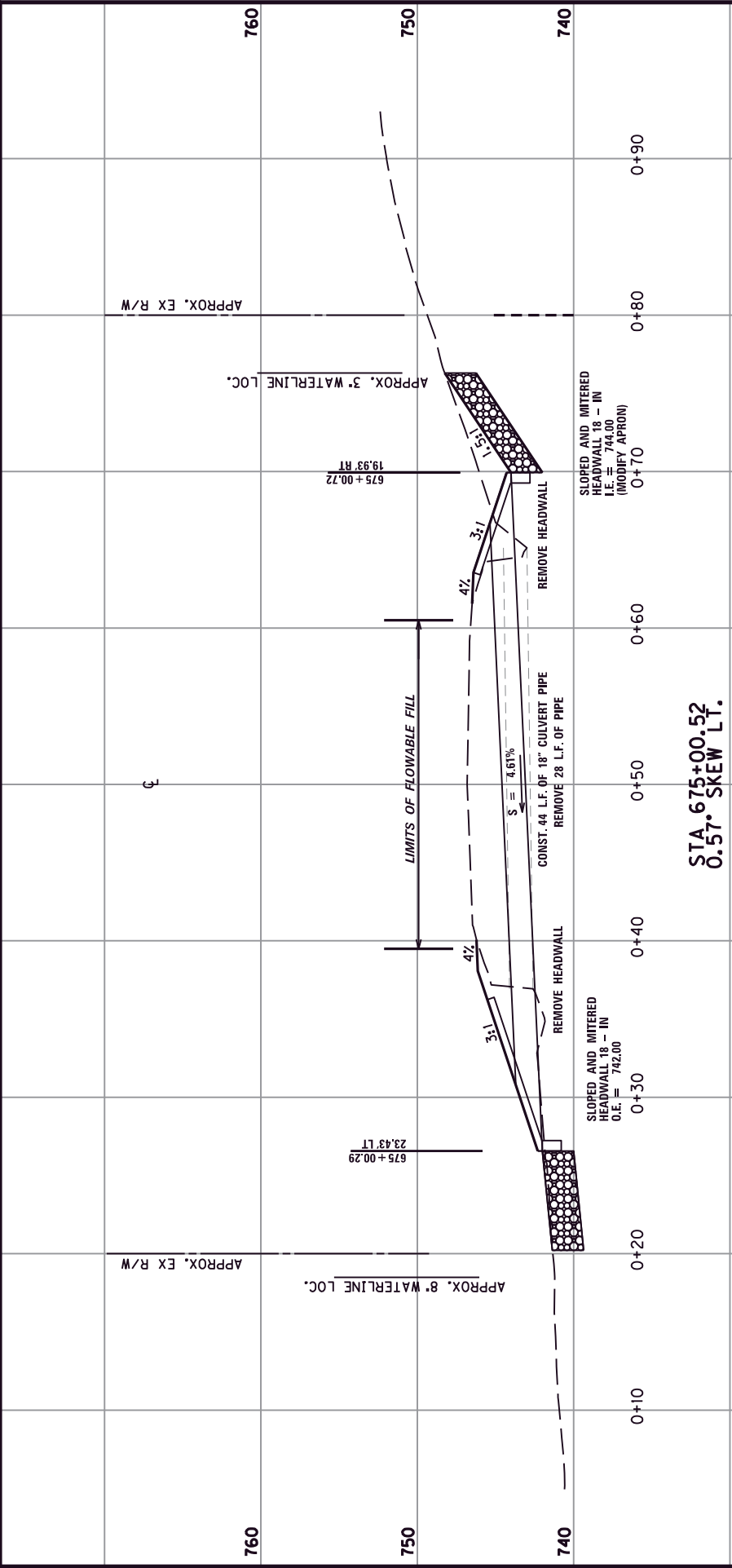
PIPE CROSS SECTIONS
STA. 601+97.82 (MP 11.401)

STA 601+97.82
4.0° SKEW RT.

PIPE DRAINAGE SHEET

COUNTY OF	ITEM NO.	SHEET NO.
MARION	4-9018	-

MAXIMUM COVER HEIGHT	DESIGN PH LEVEL	CULVERT PIPE						ENTRANCE PIPE						REMOVE PIPE	REMOVE HEADWALL	SLOPED AND MITERED HEADWALL 18"	FABRIC-GEOTEXTILE CL 1	FABRIC-GEOTEXTILE CL 2 FOR PIPE	-						
		15'	18'	24'	30'	36'	42'	15'	18'	24'	30'	36'													
FT	-	-	44	-	-	-	-	-	-	-	-	-	-	-	20	2	20	28	28	02607	02602	02607	-	-	-
															20	2	20	28	28	02607	02602	02607	-	-	-

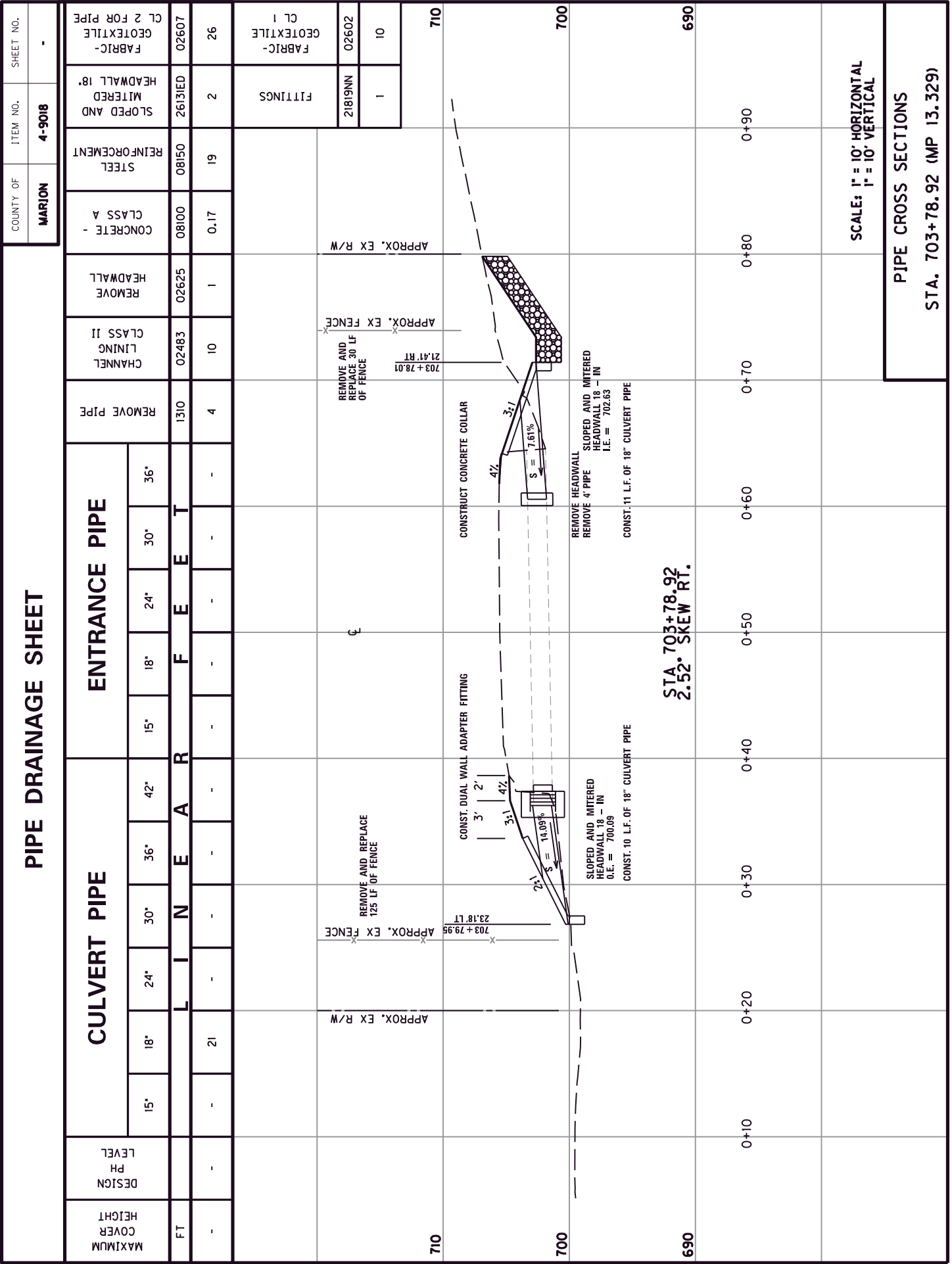


740	0+10	0+20	0+30	0+40	0+50	0+60	0+70	0+80	0+90	740
750										750
760										760

SCALE: 1" = 10' HORIZONTAL
1" = 10' VERTICAL

PIPE CROSS SECTIONS
STA. 675+00.52 (MP 12.784)

STA. 675+00.52
0.57° SKEW LT.

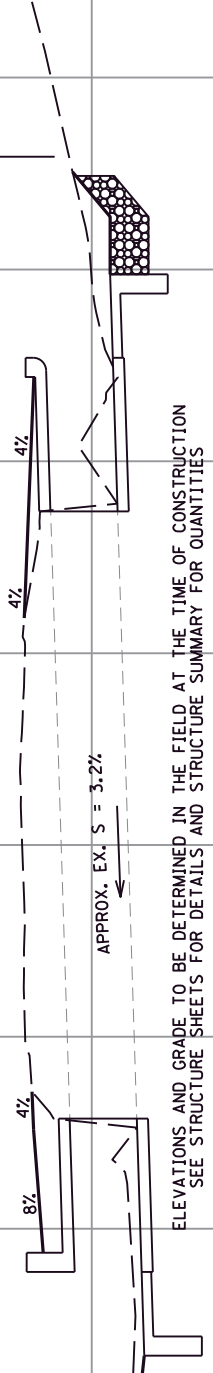


SCALE: 1" = 10' HORIZONTAL
1" = 10' VERTICAL

PIPE CROSS SECTIONS
STA. 703+78.92 (MP 13.329)

PIPE DRAINAGE SHEET												COUNTY OF	ITEM NO.	SHEET NO.			
												MARION	4-9018	-			
MAXIMUM COVER HEIGHT	DESIGN PH LEVEL	CULVERT PIPE						ENTRANCE PIPE						SLOPED AND MITERED HEADWALL-18 IN	SLOPED AND MITERED HEADWALL-18 IN	FABRIC-GEOTEXTILE CL 2 FOR PIPE	
		15'	18'	24'	30'	36'	42'	15'	18'	24'	30'	36'					
FT		L I N E A R F E E T												26132ED	26131ED	02607	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
750																	750
740																	740
730																	730

REMOVE AND REPLACE 50 LF OF FENCE
APPROX. EX FENCE
APPROX. EX R/W



APPROX. EX. S = 3.2%

ELEVATIONS AND GRADE TO BE DETERMINED IN THE FIELD AT THE TIME OF CONSTRUCTION
SEE STRUCTURE SHEETS FOR DETAILS AND STRUCTURE SUMMARY FOR QUANTITIES

STA 729+50.26
29.93° SKEW LT.

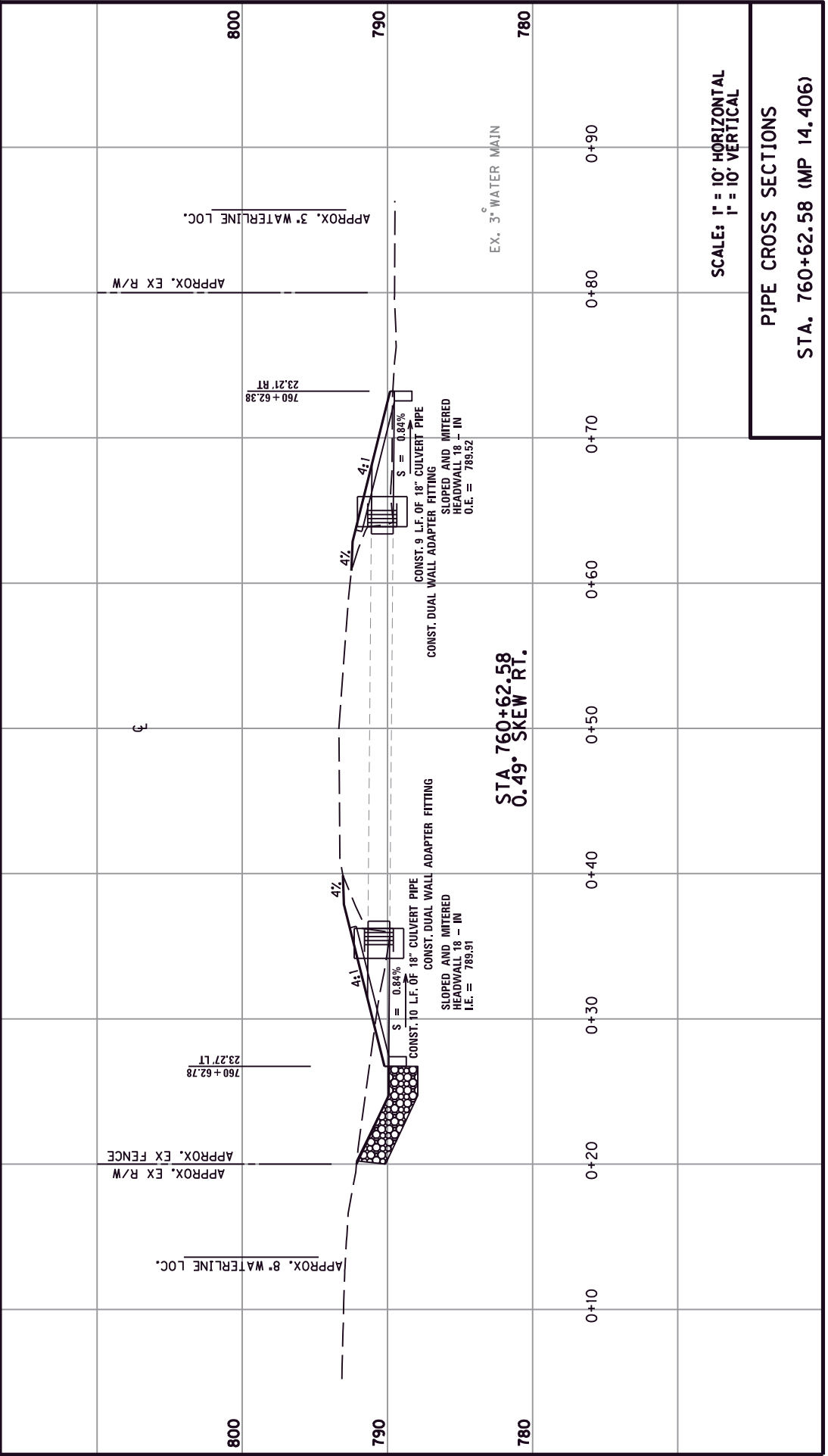
SCALE: 1" = 10' HORIZONTAL
1" = 10' VERTICAL

CULVERT SITUATION SHEET
STA. 729+50.26 (MP 13.816)

PIPE DRAINAGE SHEET

COUNTY OF	ITEM NO.	SHEET NO.
MARION	4-9018	-

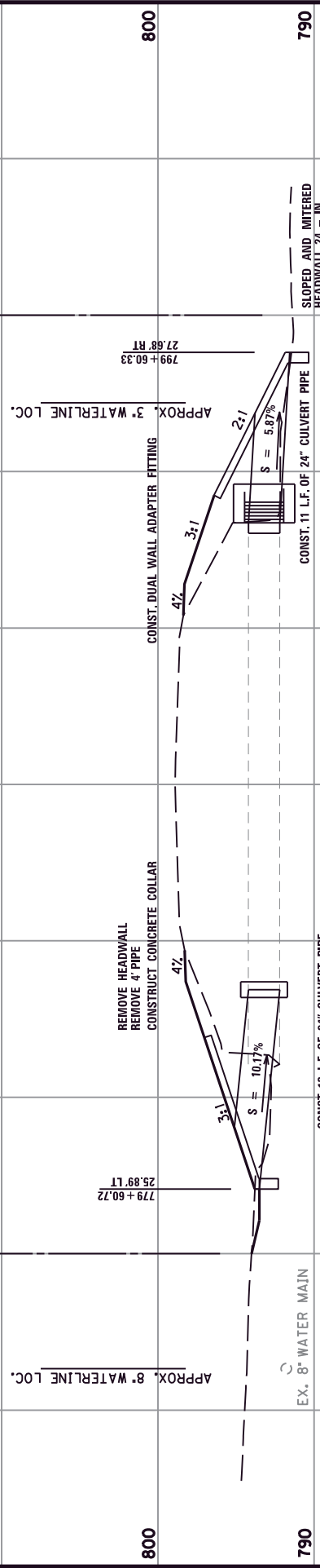
MAXIMUM COVER HEIGHT	DESIGN PH LEVEL	CULVERT PIPE						ENTRANCE PIPE						FITTINGS	SLOPED AND MITERED HEADWALL 18"	FABRIC-GEOTEXTILE CL 2 FOR PIPE	CHANNEL LINING CLASS II	FABRIC-GEOTEXTILE CL 1			
		15"	18"	24"	30"	36"	42"	15"	18"	24"	30"	36"									
FT															21819NN	26132ED	02607	02483	02602	-	-
			19												2	31	10	10			



SCALE: 1" = 10' HORIZONTAL
1" = 10' VERTICAL

PIPE CROSS SECTIONS
STA. 760+62.58 (MP 14.406)

PIPE DRAINAGE SHEET												COUNTY OF	ITEM NO.	SHEET NO.						
												MARION	4-9018	-						
MAXIMUM COVER HEIGHT	DESIGN PH LEVEL	CULVERT PIPE						ENTRANCE PIPE						REMOVE PIPE	REMOVE HEADWALL	CONCRETE - CLASS A	STEEL REINFORCEMENT	SLOPED AND MITERED HEADWALL 24" SLOPED AND MITERED HEADWALL 24"	FABRIC- GEOTEXTILE - CL 2 FOR PIPE	
		15"	18"	24"	30"	36"	42"	15"	18"	24"	30"	36"	01310							02625
FT		-	-	24	-	-	-	-	-	-	-	-	-	4	1	0.22	23	2	39	
800																				
790																				



STA. 779+60.48
0.28° SKEW RT.

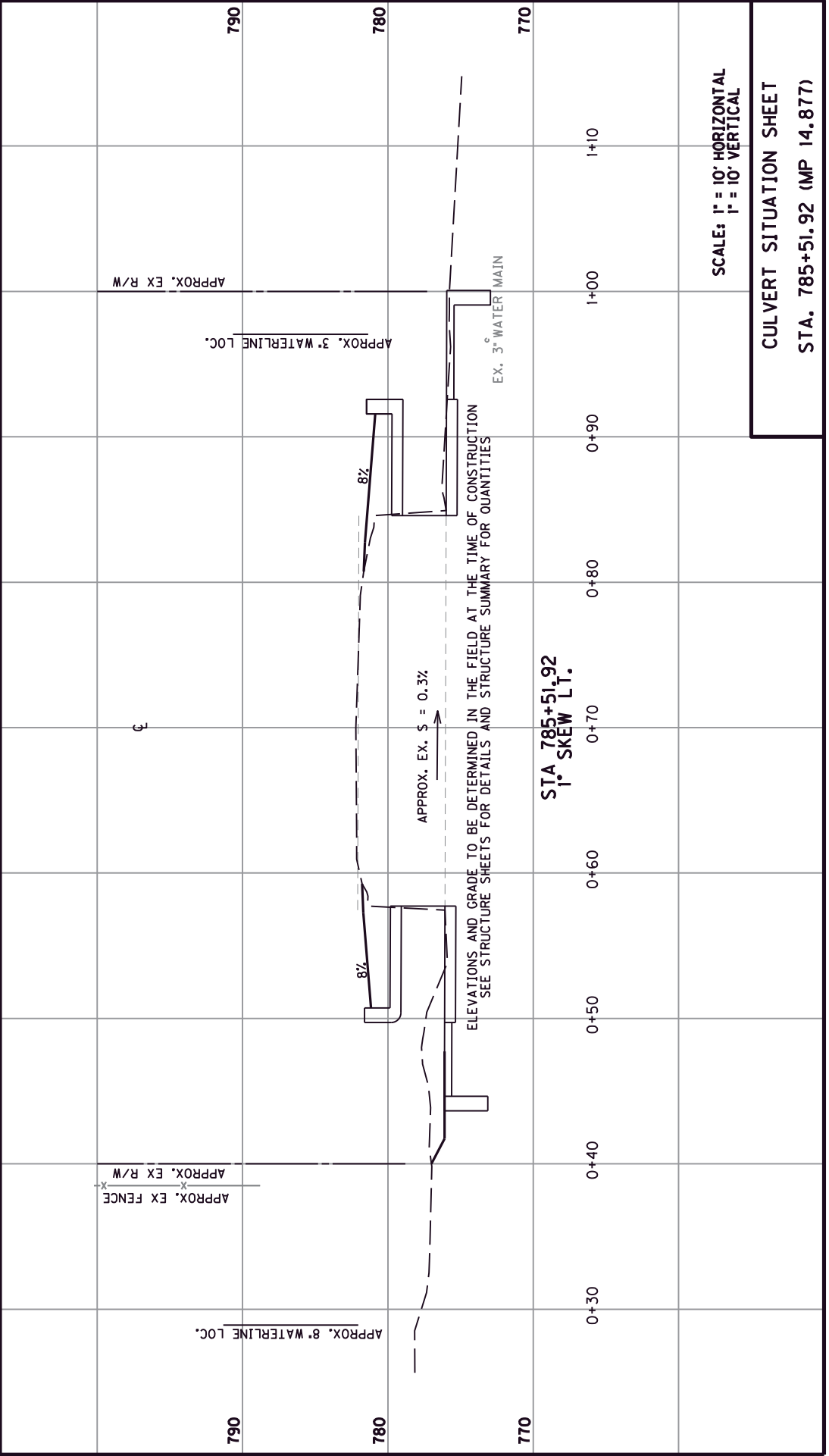
SCALE: 1" = 10' HORIZONTAL
1" = 10' VERTICAL

PIPE CROSS SECTIONS
STA. 779+60.48 (MP 14.765)

PIPE DRAINAGE SHEET

COUNTY OF	ITEM NO.	SHEET NO.
MARION	4-9018	-

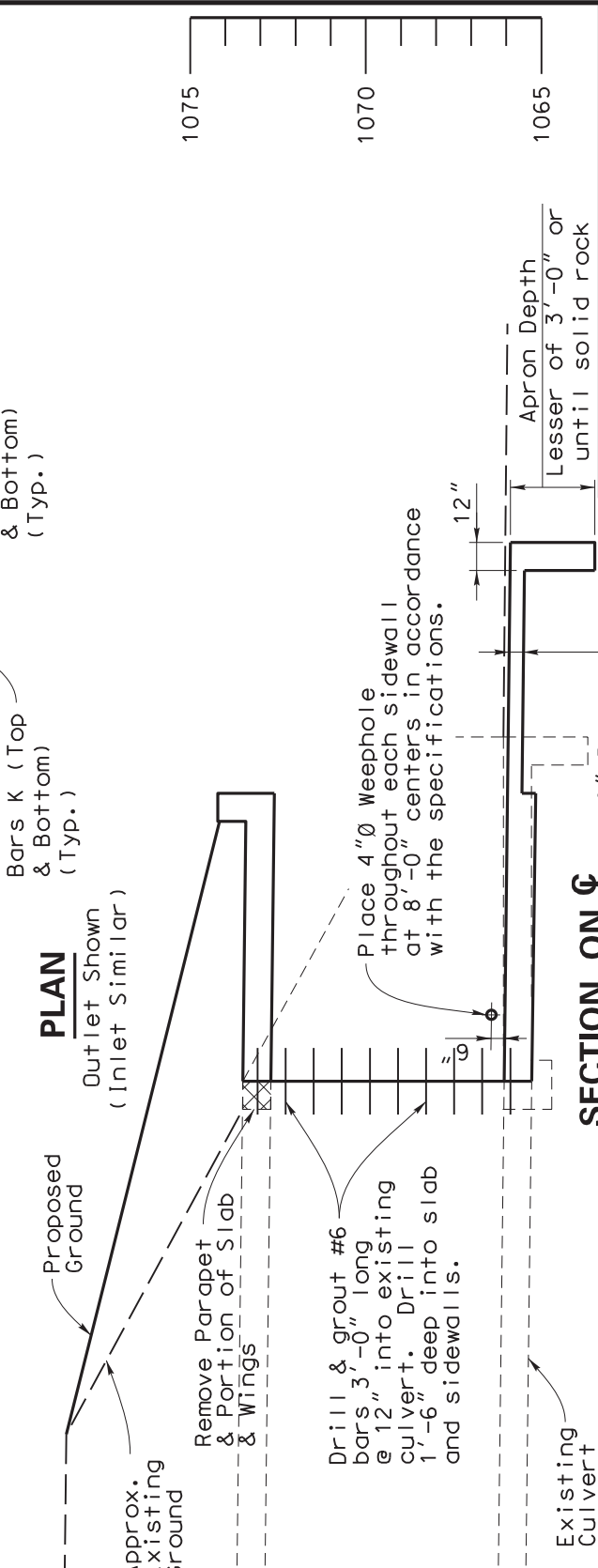
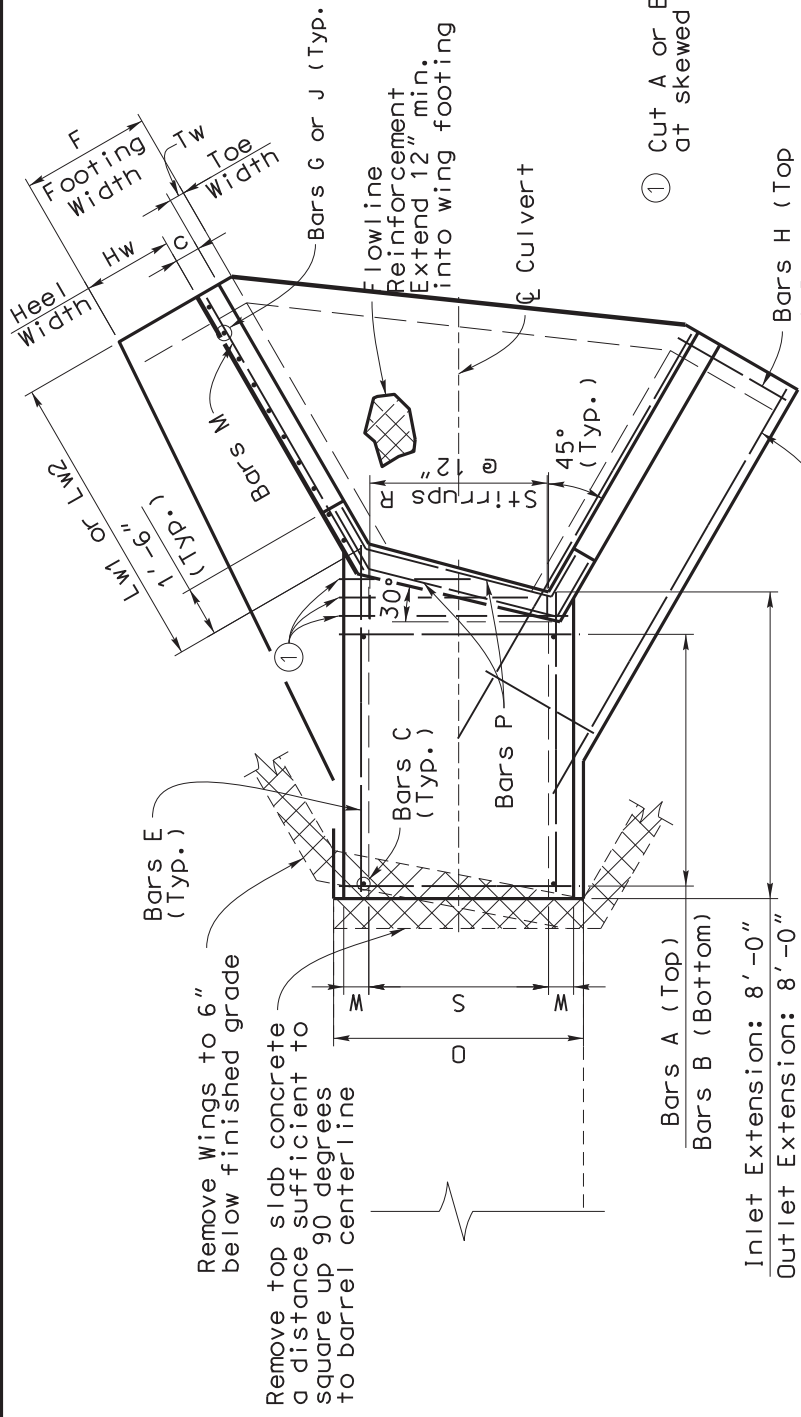
MAXIMUM COVER HEIGHT	DESIGN PH LEVEL	ENTRANCE PIPE						SLOPED AND MITERED HEADWALL-18 IN	SLOPED AND MITERED HEADWALL-18 IN											
		15"	18"	24"	30"	36"	42"			15"	18"	24"	30"	36"						
FT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



CULVERT SITUATION SHEET
STA. 785+51.92 (MP 14.877)

**SCALE: 1" = 10' HORIZONTAL
1" = 10' VERTICAL**

COUNTY OF	ITEM NO.
MARION	4-9018.00



CULVERT EXTENSION
3'X2' RCBC
KY 84 - STA. 729+50.26

GENERAL NOTES

COUNTY OF	ITEM NO.
MARION	4-9018.00

SPECIFICATIONS: References to the Specifications are to the 2012 edition of Kentucky Department of Highways Standard Specifications For Road and Bridge Construction including any current Supplemental Specifications. All references to the AASHTO Specifications are to the eighth edition of the AASHTO LRFD Bridge Design Specifications.

DESIGN LOAD: This structure is designed for KY HL-93 live load. The KY HL-93 live load is arrived at by increasing the standard design truck and lane loads by 25%.

CONCRETE: Use Concrete, Class "A" throughout.

DESIGN STESSES:
FOR CLASS "A" CONCRETE: F'C = 3500 PSI
FOR STEEL REINFORCEMENT: FY = 60000 PSI

WEIGHT OF FILL MATERIAL: The assumed weight of fill material is 120 PSF.
BEVELED EDGES: Bevel all exposed edges 3/4", unless otherwise noted.

SAWCUTTING EXISTING CONCRETE: Prior to the removal of the existing concrete masonry, cut the surface with a concrete saw to a depth of one inch to facilitate a neat line. The cost of cutting concrete shall be included in the unit price bid for Remove Concrete Masonry. Any reinforcement which is to remain (ie: vertical bars in the existing parapets) shall be cut flush with the face of concrete and painted with zinc dust zinc oxide paint conforming to Federal Specification TT-P-641, or bituminous material.

REINFORCEMENT: Dimensions shown from the face of concrete to bars are to center of bars, unless otherwise shown. Spacing of bars is from center to center of bars. Clear distance to face of concrete is 2", unless otherwise noted.

DIMENSIONS: Dimensions are for a normal temperature of 60 degrees Fahrenheit. Layout dimensions are horizontal dimensions.

BEFORE YOU DIG: The contractor can call 1-800-752-6007 toll free a minimum of 2 business days prior to excavation for information on the location of existing utilities. Also, see utility plans.

TEMPORARY SHORING: Temporary sheeting, shoring, cofferdams, and/or a dewatering method may be required for installation of the culvert and footings.

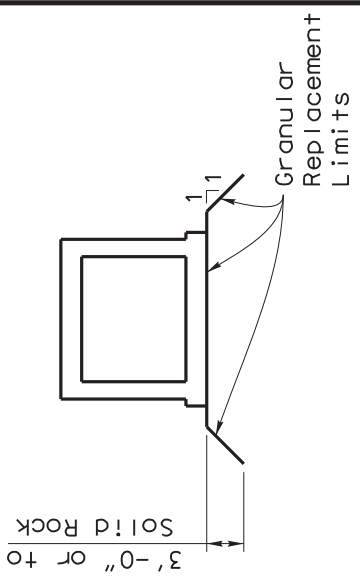
CONSTRUCTION JOINTS: If construction joints are required, locate the construction joint in the field. Place the joint perpendicular to the barrel using either couplers, mechanical splices, or lap splices for the E Bars. Ensure couplers or mechanical splices are capable of transferring 125% of the design yield strength of the bar. No construction joint in the barrel is to be located within 6 ft. of the end of the culvert.

FLOWLINE REINFORCEMENT: Construct the 6-inch paved flowline using #4 steel reinforcement at 18-inch centers in each direction or 6"x6"-D7xD7 deformed welded wire steel fabric. Extend the bars a minimum of 12 inches into wing footings and/or bottom slab.

BONDING TO EXISTING CONCRETE USING STRUCTURAL ADHESIVES: Bond proposed plastic concrete to existing hardened concrete in all locations using a Type V Epoxy Resin or other approved Structural Adhesive as prescribed in section 826 of the specifications. Follow the manufacturer's recommended application instructions.

GRANULAR EMBANKMENT: Excavate and replace soil with Granular Embankment within 3 feet below the bottom of the culvert slab unless solid rock is encountered before this depth. Granular replacement material shall consist of "Granular Embankment," non-erodible only, meeting the material requirements of Section 805 of the Standard Specifications. The maximum size limit for "Granular Embankment" is 4 inches. The excavation for the granular replacement shall extend a minimum width beyond the edges of the footings equal to the replacement depth. The granular replacement shall be placed on a 1H:1V slope or flatter beginning 12" from the base of the footing to the bottom of the excavation. Place Geotextile Fabrics Type IV as a separator between the soil and the granular replacement. The Geotextile Fabric shall be in accordance with Section 214 and 843 of the Standard Specifications for Road and Bridge Construction, current edition.

COMPLETION OF THE STRUCTURE: The Contractor is required to complete the structure in accordance with the plans and specifications. This may include cofferdams, shoring, excavations, backfilling, removal of all or parts of existing structures, phase construction, incidental materials, labor or anything else required to complete the structure.

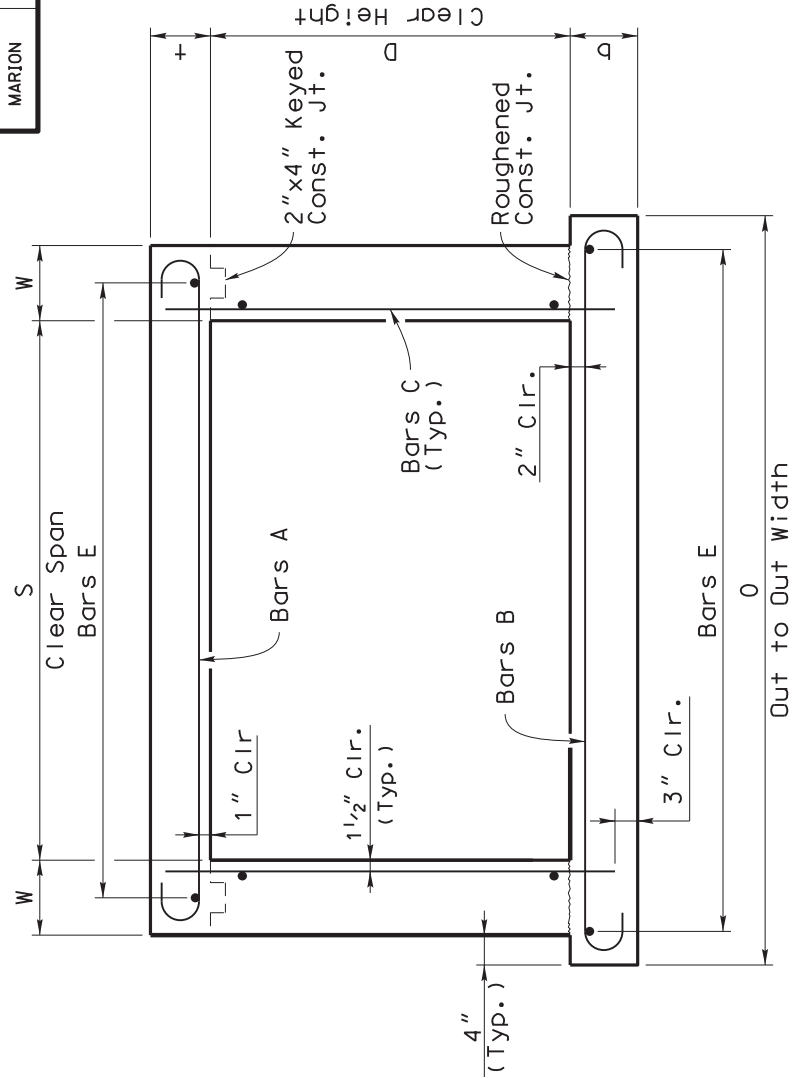


SECTION THROUGH BARREL

Showing Granular Replacement Limits

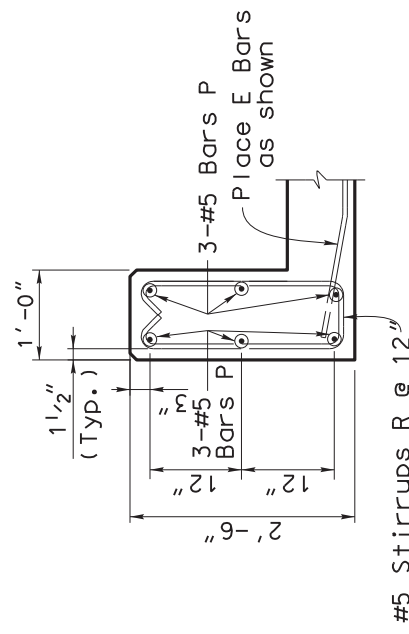
CULVERT EXTENSION 3'X2' RCBC KY 84 - STA. 729+50.26
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COUNTY OF	ITEM NO.
MARION	4-9018.00

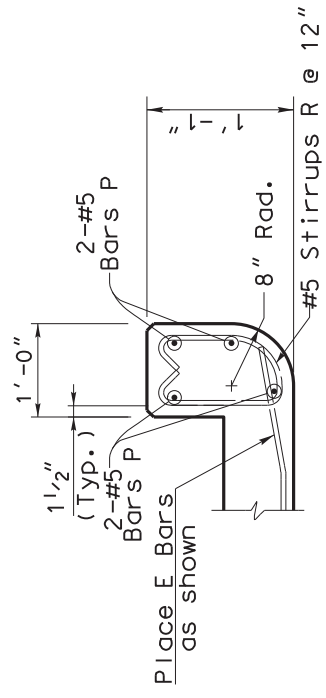


SECTION THRU BARREL

Sto. 729+50.26	
INLET	OUTLET
S	3'-0"
D	2'-0"
O	5'-2"
t	7"
b	7"
W	7"
A	#4 @ 4"
B	#4 @ 4"
C	#4 @ 12"
E	#4 @ 12"



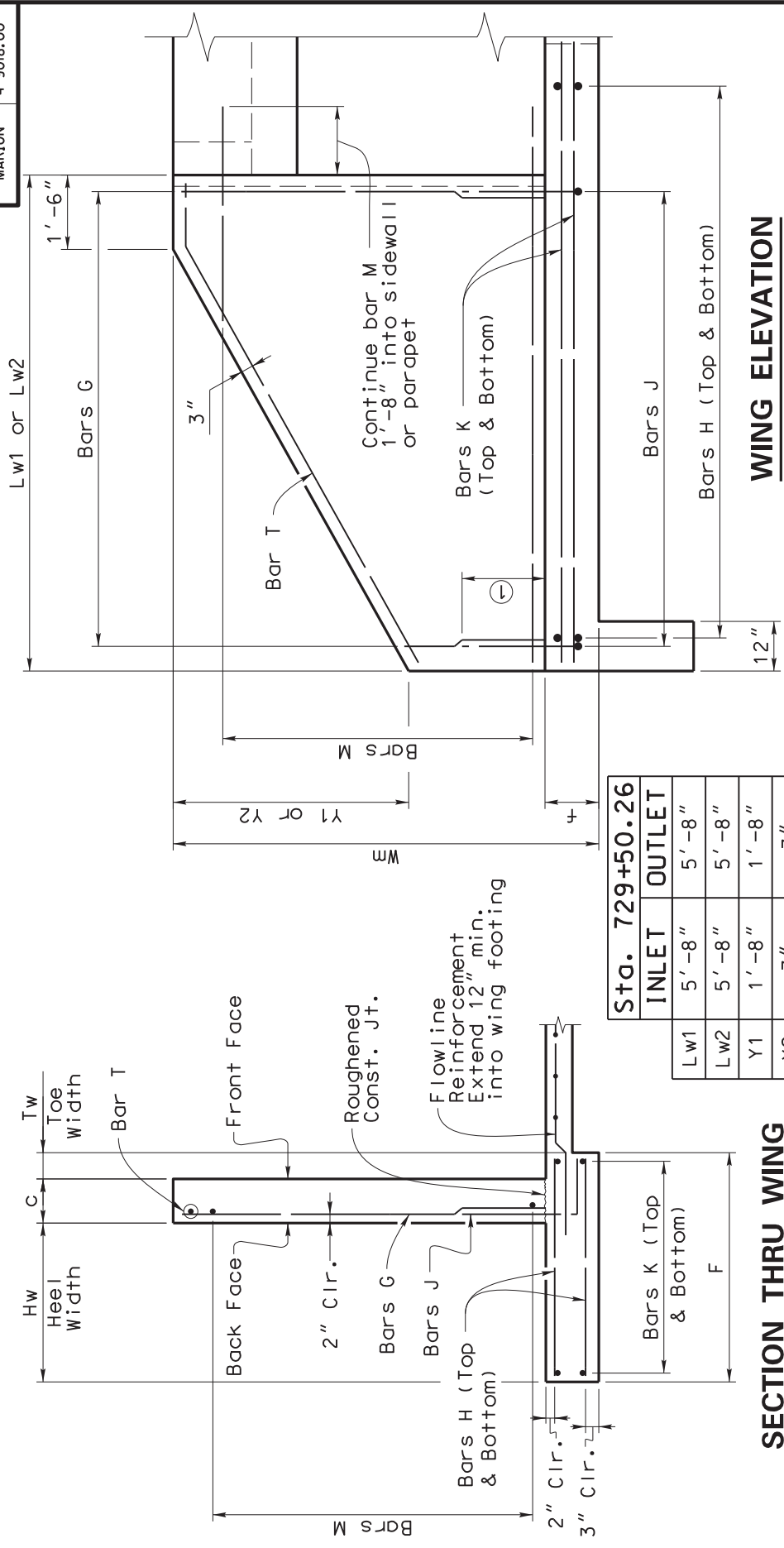
OUTLET PARAPET DETAIL
(normal to parapet)



INLET PARAPET DETAIL
(normal to parapet)

CULVERT EXTENSION
3'X2' RCBC
KY 84 - STA. 729+50.26

COUNTY OF	ITEM NO.
MARION	4-9018.00



Sta. 729+50.26	
INLET	OUTLET
Lw1	5'-8"
Lw2	5'-8"
Y1	1'-8"
Y2	7"
C	1'-0"
F	4'-0"
Tw	6"
Hw	2'-6"
G	#5 @ 12"
H	#5 @ 12"
J	#5 @ 12"
K	#5 @ 12"
M	#5 @ 12"
T	1-#7 Bar
f	1'-0"
Wm	5'-8"

SECTION THRU WING

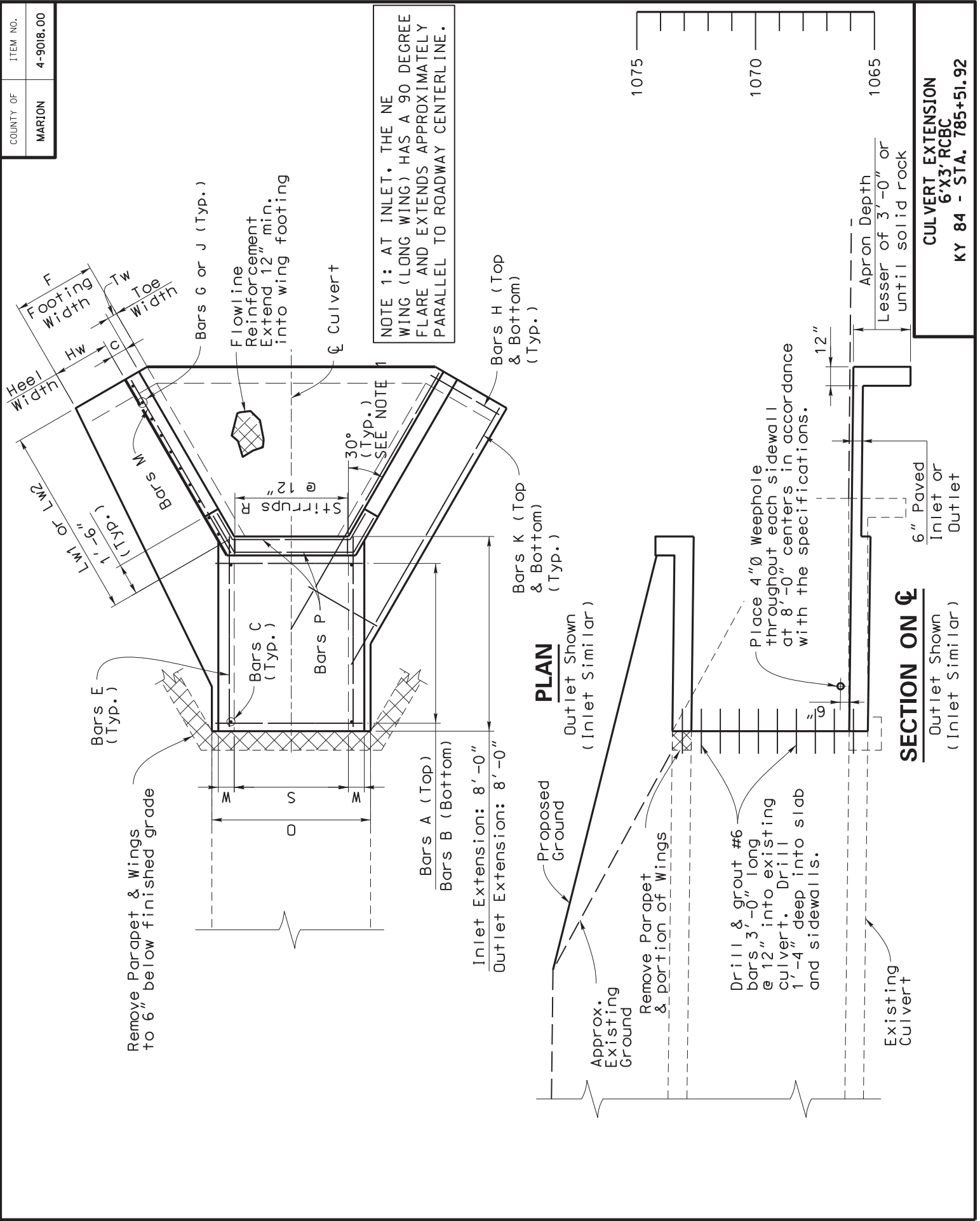
NOTE: Where culvert is not perpendicular to roadway, Lw1/Y1 and Lw2/Y2 refer to dimensions of "Short" and "Long" wings, respectively. The "Long" wing is that which is flared at the least angle with respect to the roadway centerline.

WING ELEVATION

① = 2'-0" Splice for Bars G & J. As an alternative Bars J may be omitted by extending Bars G into footing with a 90° hook to take the place of Bars J.

CULVERT EXTENSION
3'X2' RCBC
KY 84 - STA. 729+50.26

COUNTY OF	ITEM NO.
MARION	4-9018.00



Remove Parapet & Wings to 6" below finished grade

NOTE 1: AT INLET, THE NE WING (LONG WING) HAS A 90 DEGREE FLARE AND EXTENDS APPROXIMATELY PARALLEL TO ROADWAY CENTERLINE.

PLAN
Outlet Shown (Inlet Similar)

SECTION ON Φ
Outlet Shown (Inlet Similar)

CULVERT EXTENSION
6'X3' RCBC
KY 84 - STA. 785+51.92

GENERAL NOTES

COUNTY OF	ITEM NO.
MARION	4-9018.00

SPECIFICATIONS: References to the Specifications are to the 2012 edition of Kentucky Department of Highways Standard Specifications For Road and Bridge Construction including any current Supplemental Specifications. All references to the AASHTO Specifications are to the eighth edition of the AASHTO LRFD Bridge Design Specifications.

DESIGN LOAD: This structure is designed for KY HL-93 live load. The KY HL-93 live load is arrived at by increasing the standard design truck and lane loads by 25%.

CONCRETE: Use Concrete, Class "A" throughout.

DESIGN STESSES:
FOR CLASS "A" CONCRETE: F'C = 3500 PSI
FOR STEEL REINFORCEMENT: FY = 60000 PSI

WEIGHT OF FILL MATERIAL: The assumed weight of fill material is 120 PSF.
BEVELED EDGES: Bevel all exposed edges 3/4", unless otherwise noted.

SAWCUTTING EXISTING CONCRETE: Prior to the removal of the existing concrete masonry, cut the surface with a concrete saw to a depth of one inch to facilitate a neat line. The cost of cutting concrete shall be included in the unit price bid for Remove Concrete Masonry. Any reinforcement which is to remain (ie: vertical bars in the existing parapets) shall be cut flush with the face of concrete and painted with zinc dust zinc oxide paint conforming to Federal Specification TT-P-641, or a bituminous material.

REINFORCEMENT: Dimensions shown from the face of concrete to bars are to center of bars, unless otherwise shown. Spacing of bars is from center to center of bars. Clear distance to face of concrete is 2", unless otherwise noted.

DIMENSIONS: Dimensions are for a normal temperature of 60 degrees Fahrenheit. Layout dimensions are horizontal dimensions.

BEFORE YOU DIG: The contractor can call 1-800-752-6007 toll free a minimum of 2 business days prior to excavation for information on the location of existing utilities. Also, see utility plans.

TEMPORARY SHORING: Temporary sheeting, shoring, cofferdams, and/or a dewatering method may be required for installation of the culvert and footings.

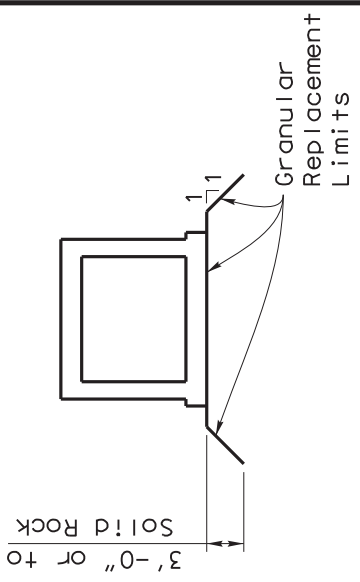
CONSTRUCTION JOINTS: If construction joints are required, locate the construction joint in the field. Place the joint perpendicular to the barrel using either couplers, mechanical splices, or lap splices for the E Bars. Ensure couplers or mechanical splices are capable of transferring 125% of the design yield strength of the bar. No construction joint in the barrel is to be located within 6 ft. of the end of the culvert.

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COMPLETION OF THE STRUCTURE: The Contractor is required to complete the structure in accordance with the plans and specifications. This may include cofferdams, shoring, excavations, backfilling, removal of all or parts of existing structures, phase construction, incidental materials, labor or anything else required to complete the structure.

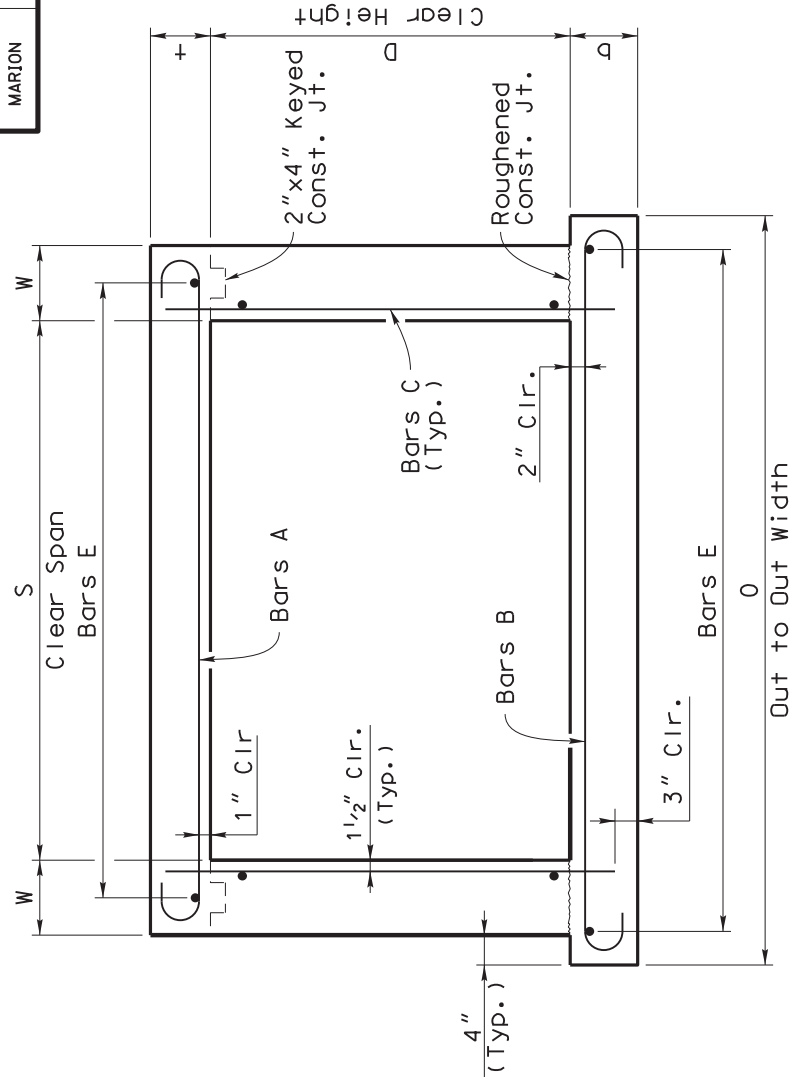


SECTION THROUGH BARREL

Showing Granular Replacement Limits

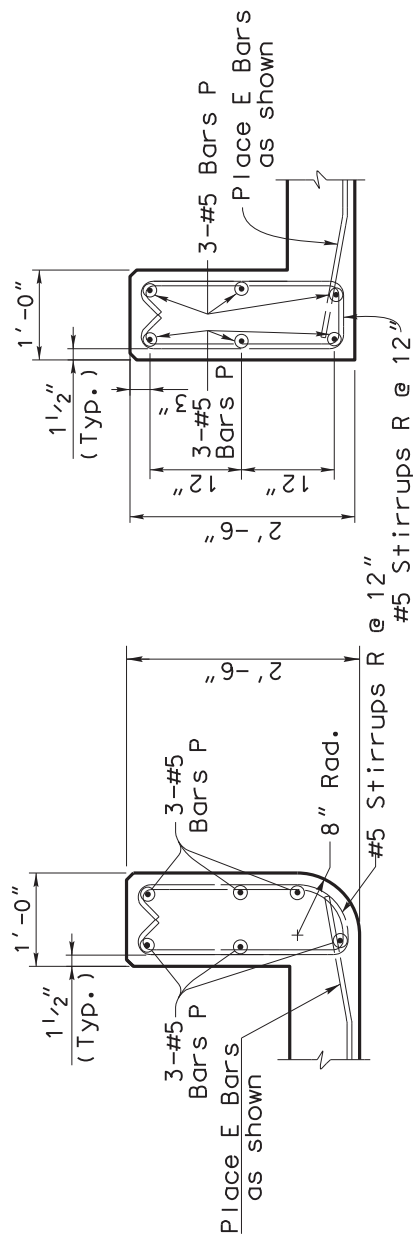
CULVERT EXTENSION
6'X3'RCBC
KY 84 - STA. 785+51.92

COUNTY OF	ITEM NO.
MARION	4-9018.00



SECTION THRU BARREL

Sto. 785+51.92	
INLET	OUTLET
S	6'-0"
D	3'-0"
O	8'-2"
t	9"
b	9"
W	7"
A	#5 @ 5" #5 @ 5"
B	#5 @ 5" #5 @ 5"
C	#4 @ 12" #4 @ 12"
E	#5 @ 12" #5 @ 12"

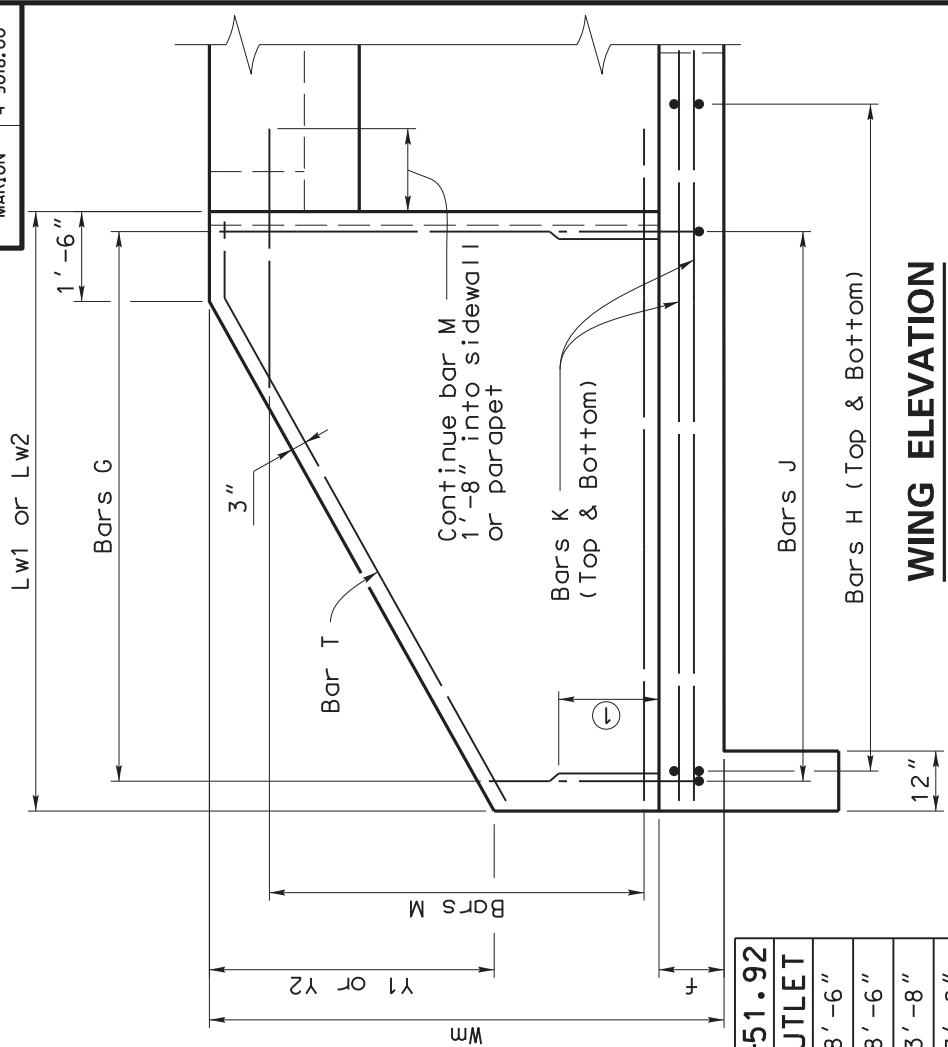


INLET PARAPET DETAIL
(normal to parapet)

OUTLET PARAPET DETAIL
(normal to parapet)

CULVERT EXTENSION
6'X3'RCBC
KY 84 - STA. 785+51.92

COUNTY OF	ITEM NO.
MARION	4-9018.00



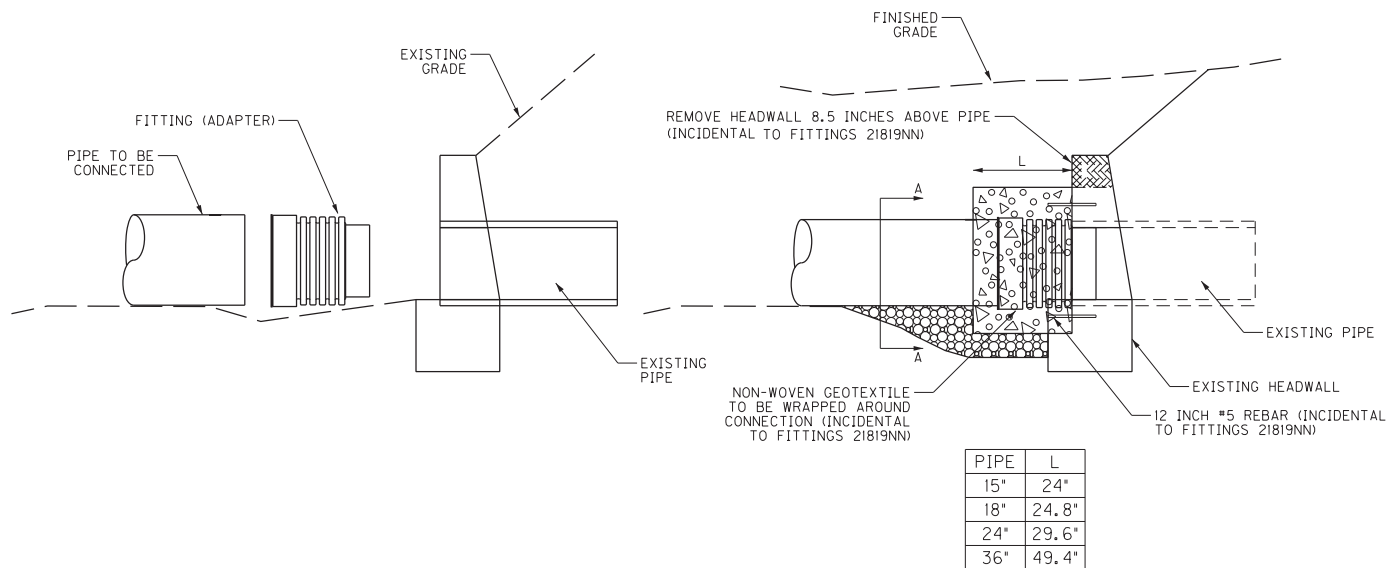
Sta. 785+51.92	
INLET	OUTLET
Lw1 8'-2"	8'-6"
Lw2 12'-0"	8'-6"
Y1 3'-4"	3'-8"
Y2 0"	3'-8"
C 1'-0"	1'-0"
F 5'-6"	4'-6"
Tw 6"	6"
Hw 4'-0"	3'-0"
G #5 @ 12"	#5 @ 12"
H #5 @ 12"	#5 @ 12"
J #5 @ 12"	#5 @ 12"
K #5 @ 12"	#5 @ 12"
M #5 @ 12"	#5 @ 12"
T 1-#7 Bar	1-#7 Bar
f 1'-0"	1'-0"
Wm 7'-0"	7'-0"

SECTION THRU WING

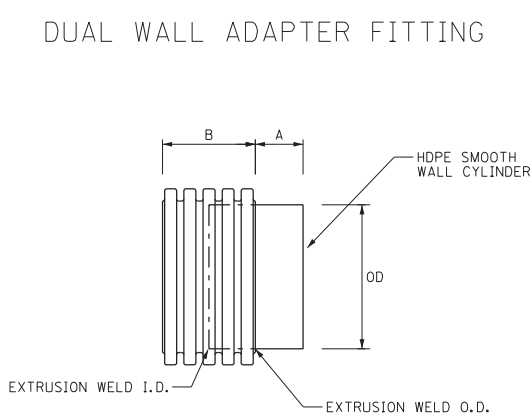
NOTE: Where culvert is not perpendicular to roadway, Lw1/Y1 and Lw2/Y2 refer to dimensions of "Short" and "Long" wings, respectively. The "Long" wing is that which is flared at the least angle with respect to the roadway centerline.

CULVERT EXTENSION
6'X3'RCBC
KY 84 - STA. 785+51.92

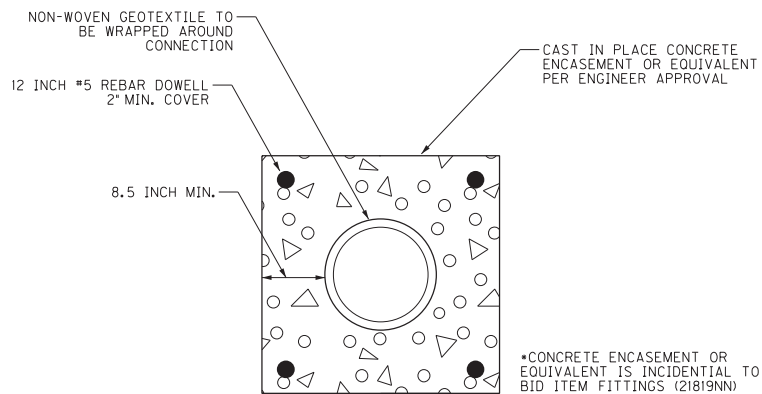
PIPE EXTENSION DUAL WALL ADAPTER FITTING DETAILS APAPTER TO DISSIMILAR MATERIAL



DUAL WALL ADAPTER FITTING

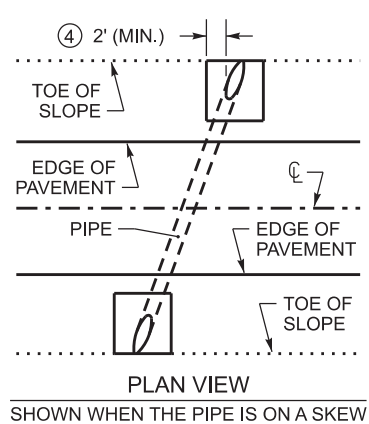
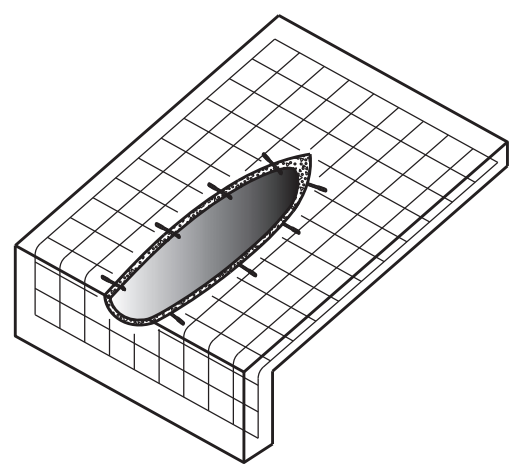
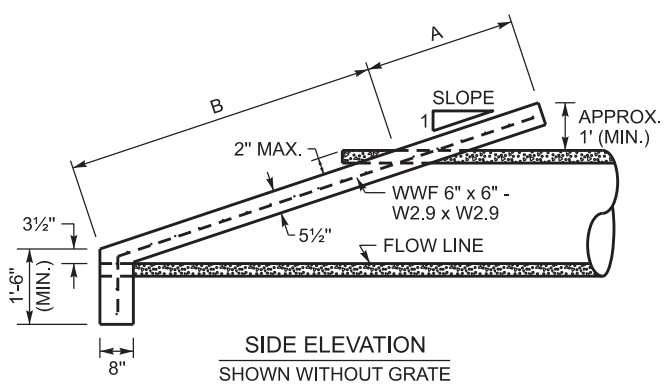
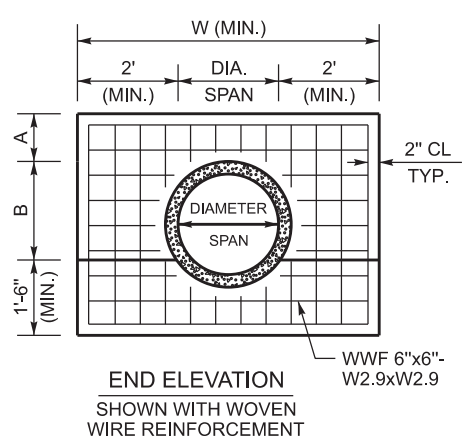


PIPE	A	B	OD
15"	6"	13"	15"
18"	6"	13.4"	18"
24"	8"	15.8"	24"
36"	10"	25.7"	36"



SECTION "A-A"

CAST IN PLACE CONCRETE ENCASEMENT APPROX QUANTITIES	
PIPE	CLASS "A" CONC. (CUYD)
15"	0.82
18"	0.95
24"	1.40
36"	3.29



~ NOTES ~

1. FOR PIPES THAT RECEIVE THE SLOPED & MITERED CONCRETE HEADWALL, THE PIPE LENGTH SHALL BE MEASURED TO THE FURTHEST POINT ALONG THE MITERED END OF THE PIPE.
2. THE EMBANKMENT FILL MATERIAL IS TO BE PLACED, COMPACTED, AND GRADED AROUND THE PIPE BEFORE THE CONCRETE SLOPE PAVING IS PLACED. THE INTENT IS FOR THE SLOPED & MITERED HEADWALL TO MATCH THE FINAL EMBANKMENT SLOPE.
3. THE PIPE SHALL BE MITERED AFTER THE CONCRETE SLOPE PAVING HAS BEEN PLACED AND SUFFICIENTLY CURED. THE PIPE SHOULD BE MITERED AS CLOSE TO FLUSH WITH THE SLOPE PAVING AS POSSIBLE, AND NO HIGHER THAN 2" ABOVE THE SLOPE PAVING. HAND FINISHING AND/OR CUTTING MAY BE NECESSARY.
- ④ WHEN THE PIPE IS ON A SKEW, INSTALL THE HEADWALL AND MITER THE PIPE SO THAT THE CONCRETE SLOPE PAVING IS PERPENDICULAR TO THE ROADWAY. FOR HEADWALLS ON SKEWED PIPES, THE HEADWALL WIDTH, W, SHALL BE WIDENED, AS NEEDED, SO THAT THE OUTSIDE EDGE OF THE CONCRETE SLOPE PAVING IS A MINIMUM OF 2' FROM THE OUTER MOST EDGE OF THE PIPE.
5. THE DIMENSION 'A' IS BASED ON THE FINAL GRADED SLOPE. THE DIMENSION 'B' IS BASED ON CIRCULAR REINFORCED CONCRETE PIPE AT 0° SKEW FOR THE LISTED SLOPE. THE DIMENSION 'W' IS BASED ON THE DIAMETER, OR SPAN, OF THE PIPE. THE FINAL HEADWALL DIMENSIONS AND CONCRETE QUANTITIES MAY VARY BASED ON THE FINAL GRADED SLOPE, PIPE SKEW, AND/OR TYPE OF PIPE.
6. WOVEN WIRE REINFORCEMENT (WWF 6" x 6" - W2.9 x W2.9) IS REQUIRED FOR THE SLOPE PAVING AND TOE WALL. UTILIZE 2" CLEARANCE FROM ALL EDGES.
7. DIMENSIONS AND CONCRETE QUANTITIES SHOWN ARE FOR ONE (1) HEADWALL, INSTALLED ON A PIPE WITH SKEW = 0°.
8. AFTER THE PIPE HAS BEEN MITERED, ANCHOR THE PIPE TO THE CONCRETE SLOPE PAVING BY CORE DRILLING AND INSTALLING 1/2" DIAMETER x 7" LENGTH STEEL WEDGE ANCHORS (3" MINIMUM EMBEDMENT) ON 18" CENTERS ALONG THE SIDES OF THE PIPE. HOLE SIZE & DEPTH, TORQUE, & INSTALLATION PROCEDURES PER RECOMMENDATION OF ANCHOR MANUFACTURE. NOTE: STEEL WEDGE ANCHORS ARE NOT REQUIRED FOR REINFORCED CONCRETE PIPE.
- ⑨ THE FOLLOWING SITUATIONS REQUIRE A HEADWALL WITH A GRATE:
 - 24" DIAMETER PIPE ON GREATER THAN 30° SKEW
 - 30" DIAMETER PIPE ON GREATER THAN 15° SKEW
 - PIPE WITH GREATER THAN 30" DIAMETER.
 - ELLIPTICAL PIPE GREATER THAN 24" EQUIVALENT DIAMETER SEE SHEET 2 FOR GRATE DETAILS
10. ALL BOLTS AND HARDWARE SHALL BE RUST RESISTANT: ZINC PLATED, STAINLESS STEEL, OR STEEL THAT HAS BEEN GALVANIZED IN ACCORDANCE WITH AASHTO M 232.

** DIMENSIONS AND CONCRETE QUANTITIES ARE APPROXIMATE AND ARE LISTED FOR INFORMATIONAL PURPOSES ONLY **

DIMENSIONS AND CONCRETE QUANTITIES (FOR PIPE WITH SKEW = 0°) ④													
PIPE SIZE	3:1 SLOPE				4:1 SLOPE				6:1 SLOPE				GRATE REQUIRED
	A	B	W	CU. YDS. CONCRETE	A	B	W	CU. YDS. CONCRETE	A	B	W	CU. YDS. CONCRETE	
15"	3'	3'-7½"	5'-3"	0.79	4'	4'-8¾"	5'-3"	0.97	6'	6'-11¼"	5'-3"	1.35	NO
18"	3'	4'-5¾"	5'-6"	0.89	4'	5'-10"	5'-6"	1.10	6'	8'-7¼"	5'-6"	1.54	NO
24"	3'	6'-2½"	6'-0"	1.11	4'	8'-1"	6'-0"	1.38	6'	11'-11"	6'-0"	1.93	SEE ⑨
30"	3'	7'-10¼"	6'-6"	1.33	4'	10'-3¾"	6'-6"	1.67	6'	15'-2½"	6'-6"	2.35	SEE ⑨

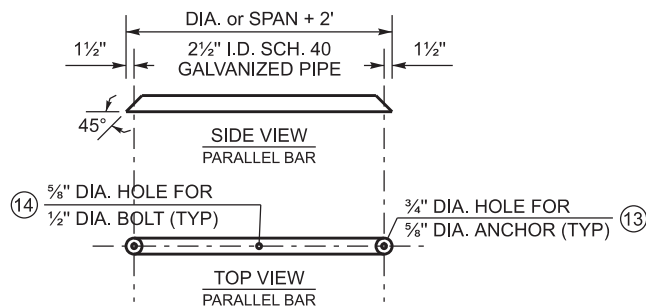
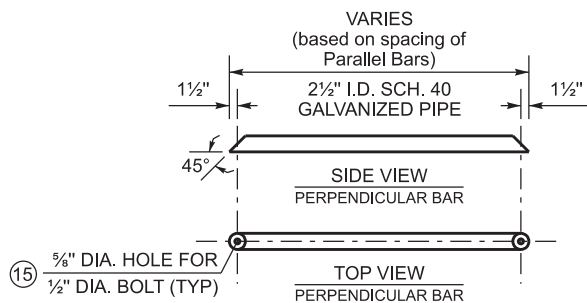
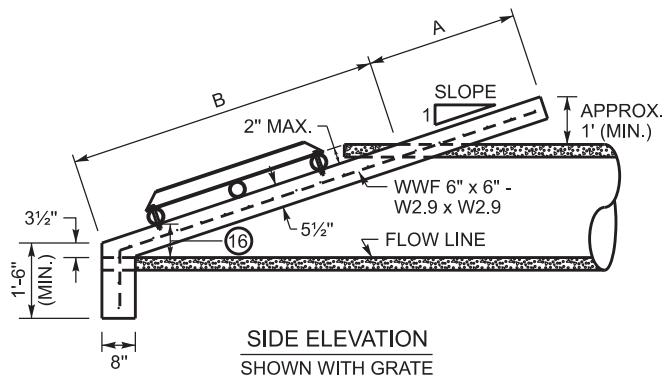
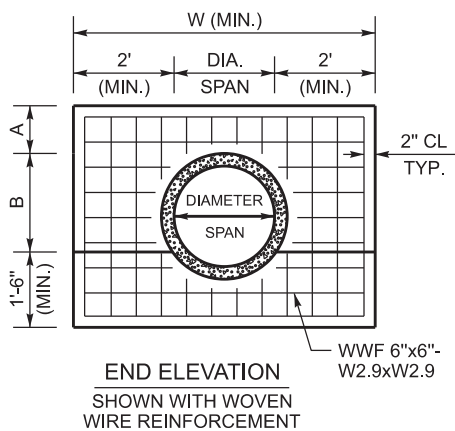
++ SEE SHEET 2 FOR DIMENSIONS OF HEADWALLS FOR PIPE OVER 30" DIAMETER ++

BID ITEM AND UNIT TO BID FOR PIPES BETWEEN 15 - 42 INCHES:
SLOPED & MITERED HEADWALL - _ IN EACH

BID ITEM AND UNIT TO BID FOR PIPES LARGER THAN 42 INCHES:
HEADWALL (SLOPED & MITERED FOR _ INCH PIPE) EACH

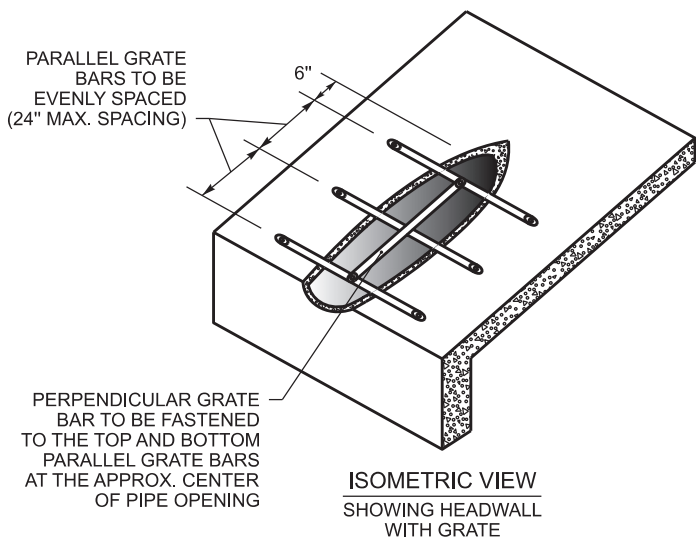
SLOPED & MITERED
CONCRETE HEADWALL
(SHEET 1 OF 2)

NOT TO SCALE



PIPE FOR GRATE DETAILS

SEE NOTE 9 TO DETERMINE IF GRATE IS REQUIRED



~ NOTES ~

SEE SHEET 1 FOR NOTES 1 THRU 8

9. THE FOLLOWING SITUATIONS REQUIRE A HEADWALL WITH GRATE:
 - 24" DIAMETER PIPE ON GREATER THAN 30° SKEW
 - 30" DIAMETER PIPE ON GREATER THAN 15° SKEW
 - PIPE WITH GREATER THAN 30" DIAMETER.
 - ELLIPTICAL PIPE GREATER THAN 24" EQUIVALENT DIAMETER
10. ALL BOLTS AND HARDWARE SHALL BE RUST RESISTANT: ZINC PLATED, STAINLESS STEEL, OR STEEL THAT HAS BEEN GALVANIZED IN ACCORDANCE WITH AASHTO M 232.
11. THE PIPE USED TO CONSTRUCT THE GRATE SHALL BE STEEL, SCHEDULE 40, CONFORMING TO ASTM A53, AND GALVANIZED IN ACCORDANCE WITH AASHTO M 111 AFTER FABRICATION.
12. ANY RAW METAL EXPOSED BY FIELD CUTTING AND/OR DRILLING SHALL BE TREATED WITH A COLD GALVANIZING COMPOUND.
13. FASTEN PARALLEL BARS TO HEADWALL WITH 5/8" DIA. x 4 1/2" LENGTH STEEL WEDGE ANCHORS, MINIMUM EMBEDMENT = 2 3/4" HOLE SIZE AND DEPTH, TORQUE, & INSTALLATION PROCEDURES PER RECOMMENDATION OF ANCHOR MANUFACTURE.
14. CENTER BOLT HOLE SHALL ONLY BE DRILLED IN THE TOP AND BOTTOM PARALLEL BARS.
15. FASTEN THE PERPENDICULAR BAR TO THE TOP AND BOTTOM PARALLEL BARS WITH 1/2" DIA. x 4" LENGTH HEX HEAD BOLTS, HEX HEAD NUTS, & FLAT WASHERS.
16. THE BOTTOM PARALLEL BAR IS TO BE PLACED SO THAT IT IS APPROX. 6" ABOVE THE FLOWLINE OF THE PIPE.

** DIMENSIONS AND CONCRETE QUANTITIES ARE APPROXIMATE AND ARE LISTED FOR INFORMATIONAL PURPOSES ONLY **

DIMENSIONS AND CONCRETE QUANTITIES (FOR PIPE WITH SKEW = 0°) ④													
PIPE SIZE	3:1 SLOPE				4:1 SLOPE				6:1 SLOPE				GRATE REQUIRED
	A	B	W	CU. YDS. CONCRETE	A	B	W	CU. YDS. CONCRETE	A	B	W	CU. YDS. CONCRETE	
36"	3'	9'-7 1/2"	7'-0"	1.57	4'	12'-6 1/2"	7'-0"	1.98	6'	18'-6"	7'-0"	2.80	YES
42"	3'	11'-4"	7'-6"	1.83	4'	14'-9 1/4"	7'-6"	2.31	6'	21'-9 1/2"	7'-6"	3.27	YES
48"	3'	12'-11"	8'-0"	2.07	4'	16'-10"	8'-0"	2.40	6'	24'-10"	8'-0"	3.33	YES

++ SEE SHEET 1 FOR DIMENSIONS OF HEADWALLS FOR PIPE 30" DIAMETER & LESS ++

BID ITEM AND UNIT TO BID FOR PIPES BETWEEN 15 - 42 INCHES:
SLOPED & MITERED HEADWALL - _ IN EACH

BID ITEM AND UNIT TO BID FOR PIPES LARGER THAN 42 INCHES:
HEADWALL (SLOPED & MITERED FOR _ INCH PIPE) EACH

NOT TO SCALE

**SLOPED & MITERED
CONCRETE HEADWALL
(SHEET 2 OF 2)**

FIGURE 1

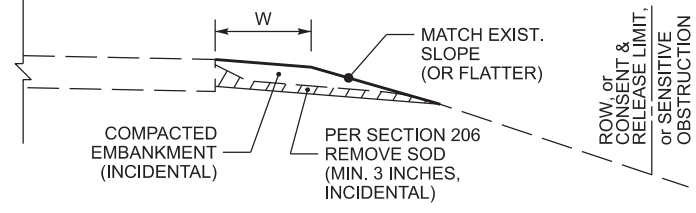


FIGURE 2

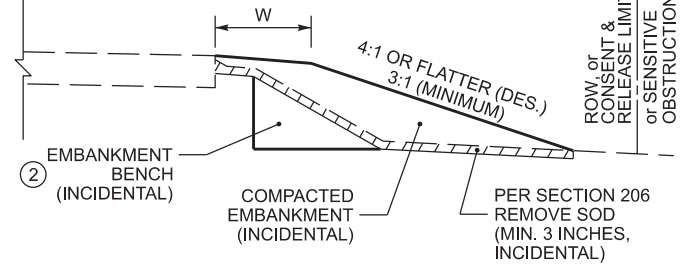


FIGURE 3

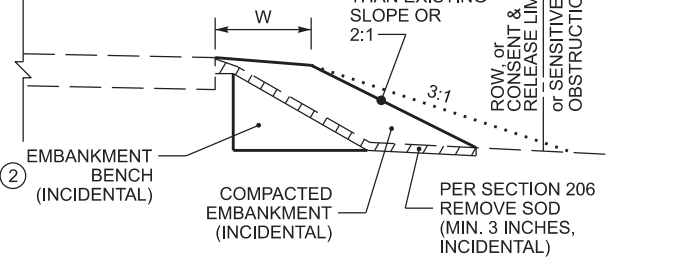


FIGURE 4

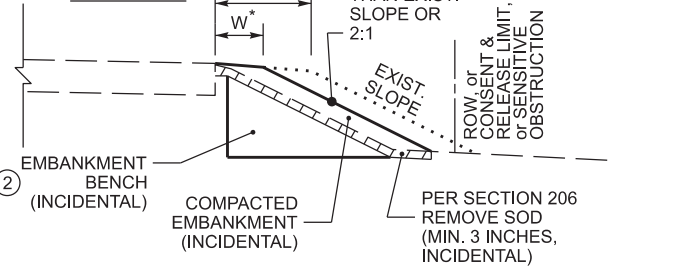


FIGURE 5

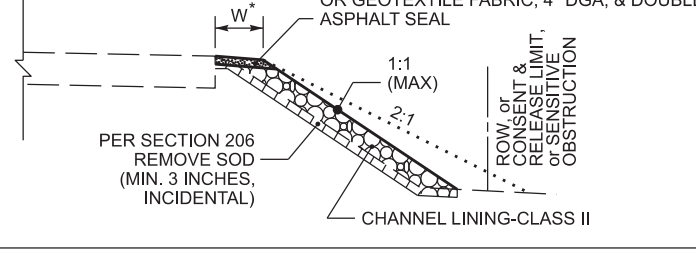
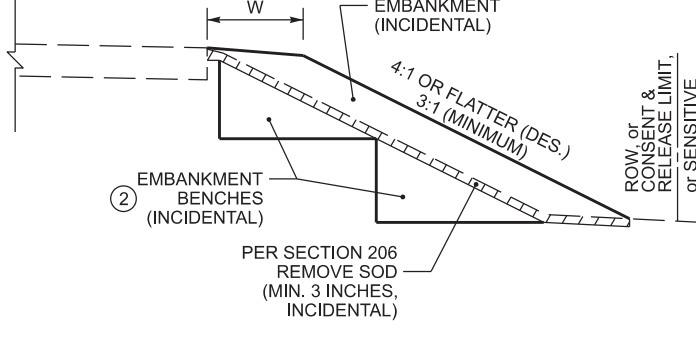


FIGURE 6



~ NOTES ~

- BID ITEM AND UNIT TO BID:
26175EC - ROADSIDE REGRADING - LF
- THE BID ITEM 'ROADSIDE REGRADING' SHALL CONSIST OF ANY AND ALL NECESSARY CLEARING & GRUBBING, GRADING, AND/OR RESHAPING OF THE EXISTING SHOULDER, DITCH, AND/OR ROADSIDE TO ACHIEVE THE PROPOSED SHOULDER, DITCH, AND/OR ROADSIDE DIMENSIONS, AS DETAILED ON THE TYPICAL SECTIONS. FINAL PAYMENT WILL BE BASED ON THE ACTUAL LINEAR FEET OF ROADSIDE REGRADING PERFORMED, AND WILL INCLUDE ALL WORK AND INCIDENTALS NECESSARY TO PERFORM THE ROADSIDE REGRADING ACCORDING TO THESE DETAILS, NOTES, AND ANY OTHER INFORMATION FOUND ELSEWHERE IN THE PROPOSAL OR STANDARD SPECIFICATIONS. IN THE CASE OF A DISCREPANCY, REFER TO SECTION 105.05 OF THE STANDARD SPECIFICATIONS. DEPENDING ON THE EXISTING CONDITIONS ENCOUNTERED, ROADSIDE REGRADING MAY ALSO INCLUDE, BUT IS NOT LIMITED TO:
 - PROVIDING ADDITIONAL EARTH MATERIAL AND GRADING, SHAPING, AND COMPACTING THE EARTH MATERIAL TO ACHIEVE THE DIMENSIONS SHOWN ON THE TYPICAL SECTIONS. COMPACT MATERIAL ACCORDING TO SECTION 206 OF THE STANDARD SPECIFICATIONS.
 - NOTE: ADDITIONAL EARTH MATERIAL PROVIDED SHALL BE SUITABLE FOR VEGETATION GROWTH.
 - EXCAVATING AND REMOVING EXCESS MATERIAL TO ACHIEVE THE DIMENSIONS SHOWN ON THE TYPICAL SECTIONS
 - EMBANKMENT BENCHING
 - EMBANKMENT BENCHING WILL BE REQUIRED WHEN THE EXISTING GROUNDLINE HAS AN INCLINE GREATER THAN 15% (APPROX. 6:1). ANY AND ALL REQUIRED EMBANKMENT BENCHING SHALL BE INCIDENTAL TO THE BID ITEM 'ROADSIDE REGRADING'. THE FOLLOWING ARE GUIDELINES FOR EMBANKMENT BENCHING USED IN CONJUNCTION WITH THE BID ITEM 'ROADSIDE REGRADING':
 - THE TYPICAL HEIGHT (OR RISE) IS 1' TO 6'
 - THE TYPICAL WIDTH (OR RUN) WILL VARY BASED ON THE HEIGHT OF THE BENCH
 - MULTIPLE SMALL BENCHES MAY BE USED, AND MAY BE MORE ADVANTAGEOUS AS THIS WILL REQUIRE PROCESSING LESS EARTHWORK AND MAY HELP AVOID ANY EXISTING UNDERGROUND UTILITIES.
 - AS SHOWN IN FIGURE 1, IN SOME SITUATIONS, MINOR SHOULDERING, WITH MINIMAL ADDITIONAL EARTH MATERIAL, MAY BE ALL THAT IS REQUIRED TO RESHAPE THE EARTH SHOULDER TO THE PROPOSED WIDTH AND BRING IT FLUSH WITH THE EDGE OF PAVEMENT.
 - AS SHOWN IN FIGURE 2, MOST SITUATIONS WILL REQUIRE ADDITIONAL EARTH MATERIAL TO ACHIEVE THE PROPOSED EARTH SHOULDER WIDTH. IT IS DESIRED THAT THE RESULTING FILL SLOPE BE INSTALLED AS FLAT AS POSSIBLE AND SHALL REMAIN WITHIN THE RIGHT-OF-WAY AND/OR ANY CONSENT & RELEASE AREAS OBTAINED BY KYTC NOTED IN THE PROPOSAL, WHILE ALSO AVOIDING ANY SENSITIVE OBSTRUCTIONS.
 - AS SHOWN IN FIGURE 3, IF A 3:1 FILL SLOPE WILL RESULT IN THE TOE OF SLOPE EXTENDING BEYOND THE RIGHT-OF-WAY OR OUTSIDE OF A CONSENT & RELEASE AREA OBTAINED BY KYTC NOTED IN THE PROPOSAL, OR WILL IMPACT A SENSITIVE OBSTRUCTION, THEN THE FILL SLOPE MAY BE INSTALLED STEEPER THAN 3:1, BUT NO STEEPER THAN THE EXISTING FILL SLOPE, OR A 2:1, WHICHEVER IS FLATTER.
 - AS SHOWN IN FIGURE 4, IF MATCHING THE EXISTING FILL SLOPE OR INSTALLING A 2:1 FILL SLOPE (WHICHEVER IS FLATTER) STILL RESULTS IN THE TOE OF SLOPE EXTENDING BEYOND THE RIGHT-OF-WAY OR OUTSIDE OF A CONSENT & RELEASE AREA OBTAINED BY KYTC NOTED IN THE PROPOSAL, OR STILL IMPACTS A SENSITIVE OBSTRUCTION, THEN THE PROPOSED EARTH SHOULDER WIDTH MAY BE REDUCED SO THAT THE RESULTING TOE OF SLOPE WILL REMAIN WITHIN THE RIGHT-OF-WAY OR CONSENT & RELEASE AREA, AND/OR NOT IMPACT THE SENSITIVE OBSTRUCTION.
 - AS SHOWN IN FIGURE 5, IF THE EXISTING FILL SLOPE IS STEEPER THAN 2:1 AND THERE IS NOT ENOUGH SPACE TO INSTALL A 2:1 FILL SLOPE WITHOUT EXTENDING BEYOND THE RIGHT-OF-WAY OR A CONSENT & RELEASE AREA OBTAINED BY KYTC NOTED IN THE PROPOSAL AND/OR IMPACTING A SENSITIVE OBSTRUCTION, THEN CLASS II CHANNEL LINING MAY BE INSTALLED ALONG THE STEEP EXISTING SLOPE IN ORDER TO ESTABLISH A WIDTH OF AGGREGATE SHOULDER. THESE LOCATIONS WILL BE NOTED IN THE PROPOSAL. THE CHANNEL LINING IS TO BE CAPPED WITH GEOTEXTILE FABRIC CLASS 1 AND 4" OF CRUSHED STONE BASE OR 4" OF DGA WITH DOUBLE ASPHALT SEAL COAT.
 - AS SHOWN IN FIGURE 6, AS THE HEIGHT OF THE FILL INCREASES, MULTIPLE EMBANKMENT BENCHES MAY BE REQUIRED. REFER TO NOTE ② FOR MORE INFORMATION ABOUT EMBANKMENT BENCHING.
- SEE SHEET 2 FOR NOTES 9 THRU 13

ROADSIDE REGRADING
AND EMBANKMENT
BENCHING DETAILS
(SHEET 1 OF 2)

NOT TO SCALE

FIGURE 7

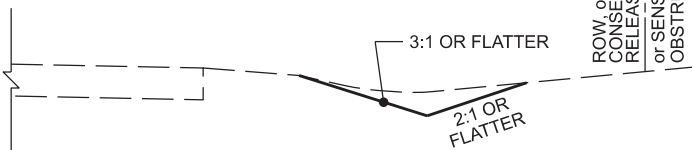


FIGURE 8

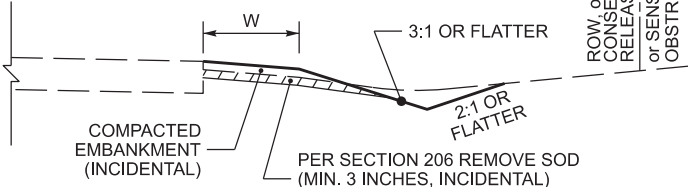


FIGURE 9

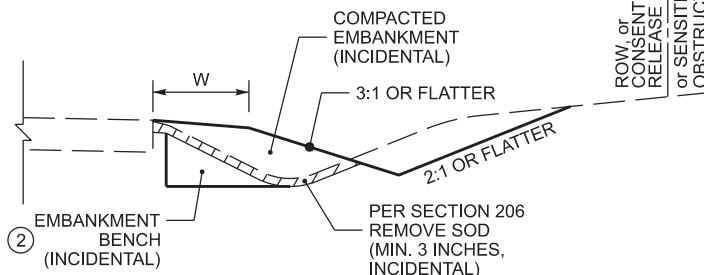


FIGURE 10

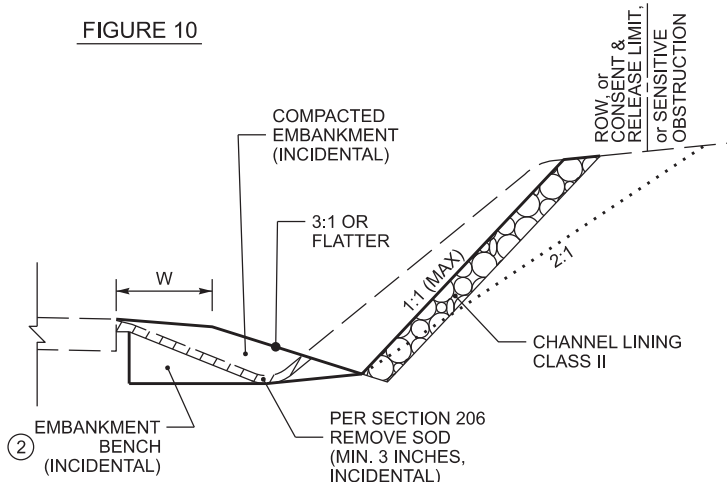
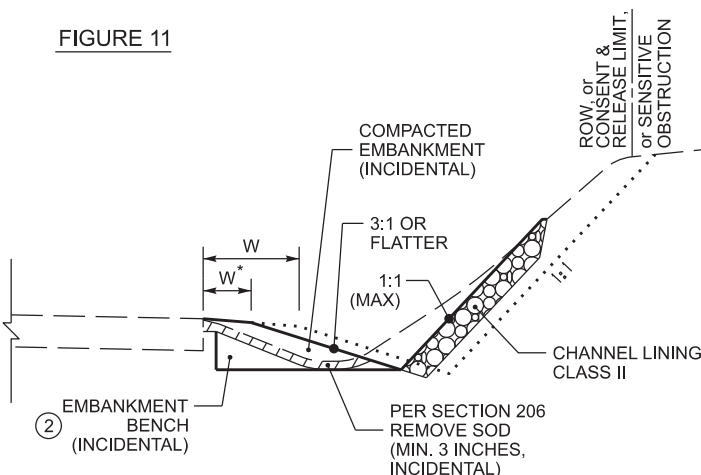


FIGURE 11



~ NOTES ~

BID ITEM AND UNIT TO BID:
 26175EC - ROADSIDE REGRADING - LF

1. THE BID ITEM 'ROADSIDE REGRADING' SHALL CONSIST OF ANY AND ALL NECESSARY CLEARING & GRUBBING, GRADING, AND/OR RESHAPING OF THE EXISTING SHOULDER, DITCH, AND/OR ROADSIDE TO ACHIEVE THE PROPOSED SHOULDER, DITCH, AND/OR ROADSIDE DIMENSIONS, AS DETAILED ON THE TYPICAL SECTIONS. FINAL PAYMENT WILL BE BASED ON THE ACTUAL LINEAR FEET OF ROADSIDE REGRADING PERFORMED, AND WILL INCLUDE ALL WORK AND INCIDENTALS NECESSARY TO PERFORM THE ROADSIDE REGRADING ACCORDING TO THESE DETAILS, NOTES, AND ANY OTHER INFORMATION FOUND ELSEWHERE IN THE PROPOSAL OR STANDARD SPECIFICATIONS. IN THE CASE OF A DISCREPANCY, REFER TO SECTION 105.05 OF THE STANDARD SPECIFICATIONS. DEPENDING ON THE EXISTING CONDITIONS ENCOUNTERED, ROADSIDE REGRADING MAY ALSO INCLUDE, BUT IS NOT LIMITED TO:

- PROVIDING ADDITIONAL EARTH MATERIAL AND GRADING, SHAPING, AND COMPACTING THE EARTH MATERIAL TO ACHIEVE THE DIMENSIONS SHOWN ON THE TYPICAL SECTIONS. COMPACT MATERIAL ACCORDING TO SECTION 206 OF THE STANDARD SPECIFICATIONS.
- NOTE: ADDITIONAL EARTH MATERIAL PROVIDED SHALL BE SUITABLE FOR VEGETATION GROWTH.
- EXCAVATING AND REMOVING EXCESS MATERIAL TO ACHIEVE THE DIMENSIONS SHOWN ON THE TYPICAL SECTIONS
- EMBANKMENT BENCHING

② EMBANKMENT BENCHING WILL BE REQUIRED WHEN THE EXISTING GROUNDLINE HAS AN INCLINE GREATER THAN 15% (APPROX. 6:1). ANY AND ALL REQUIRED EMBANKMENT BENCHING SHALL BE INCIDENTAL TO THE BID ITEM 'ROADSIDE REGRADING'. THE FOLLOWING ARE GUIDELINES FOR EMBANKMENT BENCHING USED IN CONJUNCTION WITH THE BID ITEM 'ROADSIDE REGRADING':

- THE TYPICAL HEIGHT (OR RISE) IS 1' TO 6'
- THE TYPICAL WIDTH (OR RUN) WILL VARY BASED ON THE HEIGHT OF THE BENCH
- MULTIPLE SMALL BENCHES MAY BE USED, AND MAY BE MORE ADVANTAGEOUS AS THIS WILL REQUIRE PROCESSING LESS EARTHWORK AND MAY HELP AVOID ANY EXISTING UNDERGROUND UTILITIES.

SEE SHEET 1 FOR NOTES 3. THRU 8.

9. AS SHOWN IN FIGURE 7, IN SOME SITUATIONS, ALL THAT MAY BE REQUIRED IS TO CLEAN OUT THE EXISTING DITCH AND RESHAPE IT TO THE PROPOSED DIMENSIONS. THE MATERIAL EXCAVATED FROM THE DITCH MAY BE RE-USED ELSEWHERE ON THE PROJECT, PROVIDED THE ENGINEER DETERMINES THE MATERIAL REMOVED FROM THE DITCH IS SUITABLE FOR THE INTENDED RE-USE.

10. AS SHOWN IN FIGURE 8, IN SOME SITUATIONS, THE DITCH AND SHOULDER MAY ONLY NEED MINOR REGRADING AND/OR RESHAPING. THE MATERIAL EXCAVATED FROM THE DITCH MAY BE USED TO RESHAPE THE EARTH SHOULDER, PROVIDED THE ENGINEER DETERMINES THE MATERIAL REMOVED FROM THE DITCH IS SUITABLE FOR SHOULDERING. IF THE MATERIAL IS NOT SUITABLE, ADDITIONAL EARTH MATERIAL MAY BE REQUIRED.

11. AS SHOWN IN FIGURE 9, IN MOST SITUATIONS, REGRADING AND RESHAPING THE ROADSIDE TO ACHIEVE THE PROPOSED SHOULDER, DITCH, AND/OR ROADSIDE DIMENSIONS WILL RESULT IN MOVING THE DITCH FURTHER AWAY FROM THE ROADWAY. IT IS DESIRED THAT DITCH FOSLOPES BE 3:1 OR FLATTER AND DITCH BACKSLOPES BE 2:1 OR FLATTER. IT IS ALSO DESIRED THAT THE NEW DITCH BACKSLOPE REMAIN WITHIN THE RIGHT-OF-WAY AND/OR ANY CONSENT & RELEASE AREAS OBTAINED BY KYTC NOTED IN THE PROPOSAL, WHILE ALSO AVOIDING ANY SENSITIVE OBSTRUCTIONS.

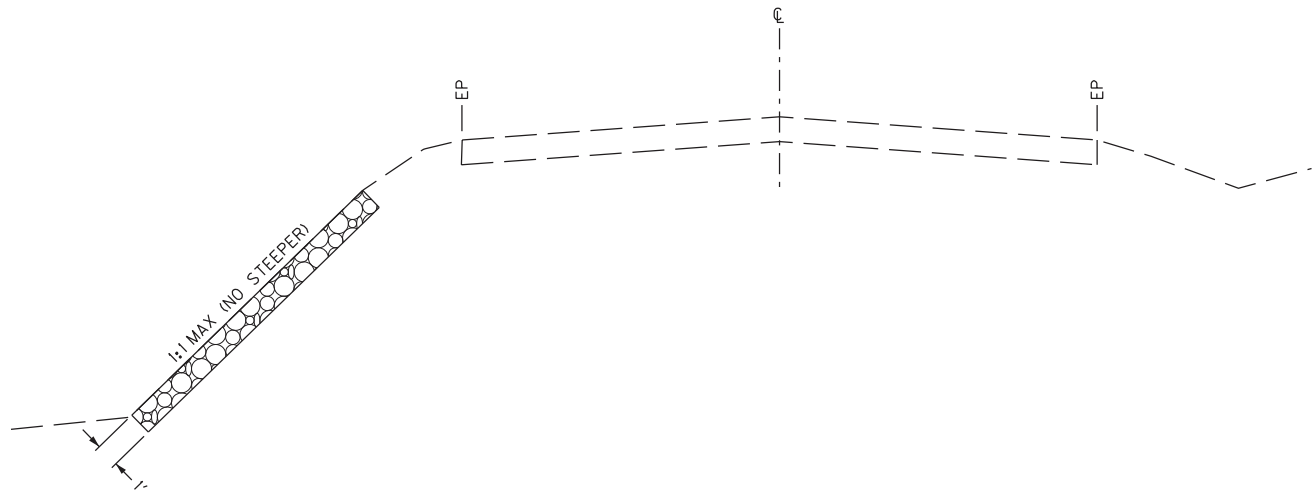
12. AS SHOWN IN FIGURE 10, IF INSTALLING A 2:1 DITCH BACKSLOPE WILL RESULT IN THE TOP OF CUT EXTENDING BEYOND THE RIGHT-OF-WAY OR OUTSIDE OF ANY CONSENT & RELEASE AREA OBTAINED BY KYTC NOTED IN THE PROPOSAL, AND/OR IMPACTING A SENSITIVE OBSTRUCTION, THEN THE DITCH BACKSLOPE MAY BE INSTALLED STEEPER THAN 2:1, UP TO 1:1 MAXIMUM. IN THIS SITUATION, THE DITCH BACKSLOPE SHALL HAVE CLASS II CHANNEL LINING INSTALLED FOR SLOPE PROTECTION.

13. AS SHOWN IN FIGURE 11, IF USING A 1:1 DITCH BACKSLOPE STILL RESULTS IN THE TOP OF CUT EXTENDING BEYOND THE RIGHT-OF-WAY OR OUTSIDE ANY CONSENT & RELEASE AREA OBTAINED BY KYTC NOTED IN THE PROPOSAL, AND/OR STILL IMPACTS A SENSITIVE OBSTRUCTION, THEN THE PROPOSED EARTH SHOULDER WIDTH MAY BE REDUCED SO THAT THE STEEP DITCH BACKSLOPE CAN BE INSTALLED WITHIN THE RIGHT-OF-WAY AND/OR TO AVOID A SENSITIVE OBSTRUCTION.

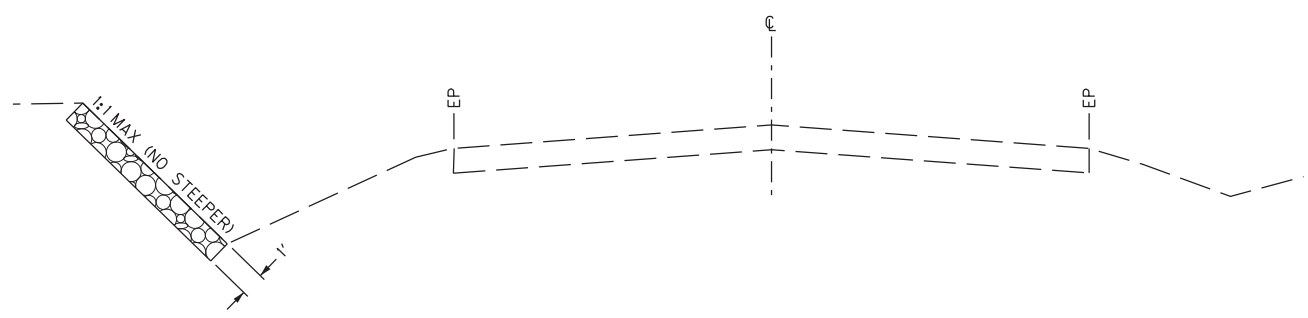
ROADSIDE REGRADING
 AND EMBANKMENT
 BENCHING DETAILS
 (SHEET 2 OF 2)

NOT TO SCALE

COUNTY OF	ITEM NO.	SHEET NO.



PROTECTION DETAIL FOR EMBANKMENT FILL SLOPE



PROTECTION DETAIL FOR DITCH BACKSLOPE

NOTES:

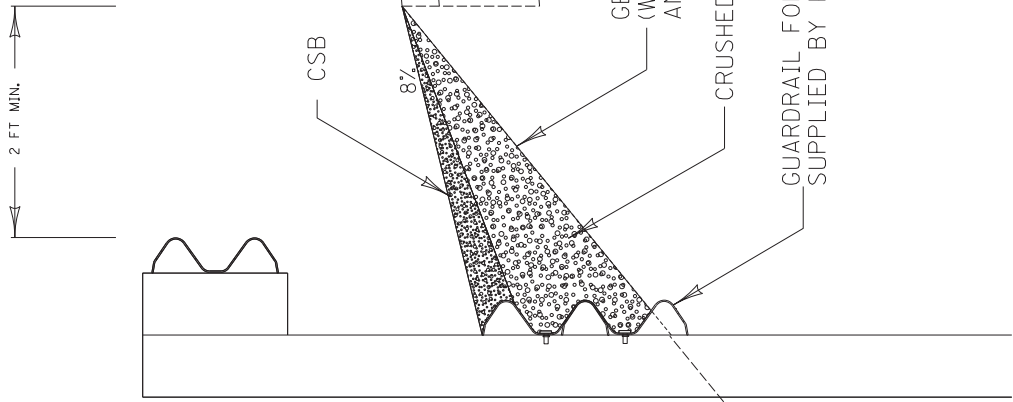
1. SEE CHANNEL LINING SUMMARY FOR APPROXIMATE LOCATIONS OF SLOPE PROTECTION.
2. FINAL LOCATIONS TO BE DETERMINED BY THE ENGINEER.
3. EXCAVATION IS INCIDENTAL TO THE PLACEMENT OF THE CHANNEL LINING.

SLOPE PROTECTION DETAILS

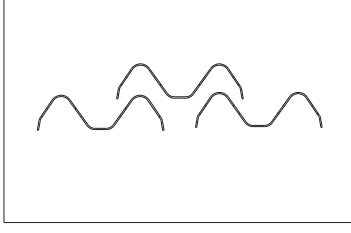
COUNTY OF	ITEM NO.	SHEET NO.

CRIBBING

Contractor can utilize the existing guardrail being removed along the project, or may pick up guardrail at the Bailey Bridge lot in Frankfort to use for cribbing to stabilize the unpaved shoulder. Holes shall be drilled into new guardrail posts in order to bolt cribbing. The bid item "CRIBBING" shall pay for pick up, delivery, placement, and attachment of the cribbing guardrail to the new guardrail posts as well as any excavation required to place the cribbing.



EXTRA LENGTH GUARDRAIL POSTS
 (Modify Post Length To Avoid Damage To Culvert, where applicable)



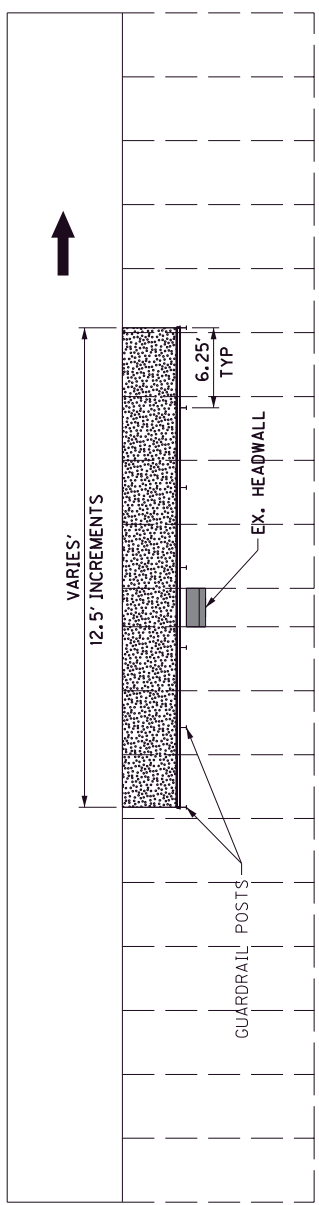
CRIBBING OVERLAP
 DETAIL

GUARDRAIL CRIBBING

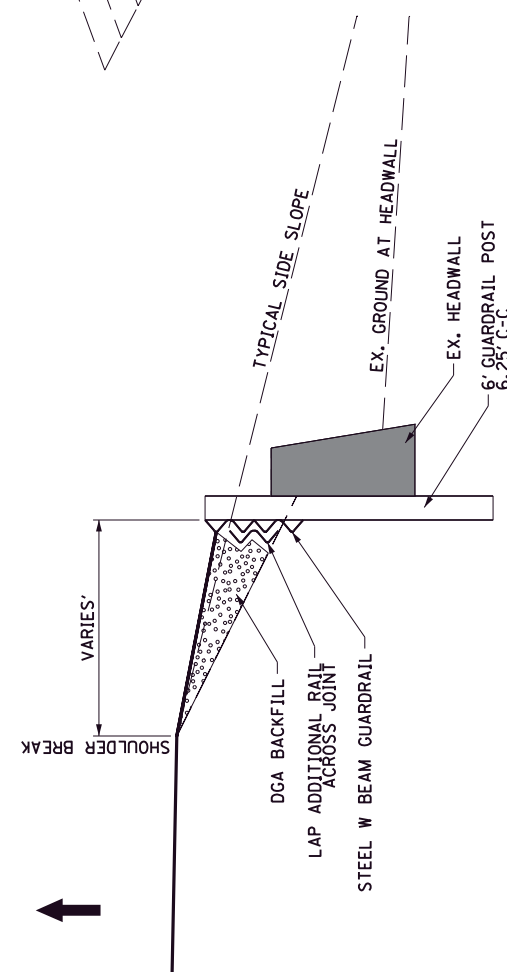
County	Item No.	Sheet
MARION	4-9018.00	-

CRIBBING DETAIL

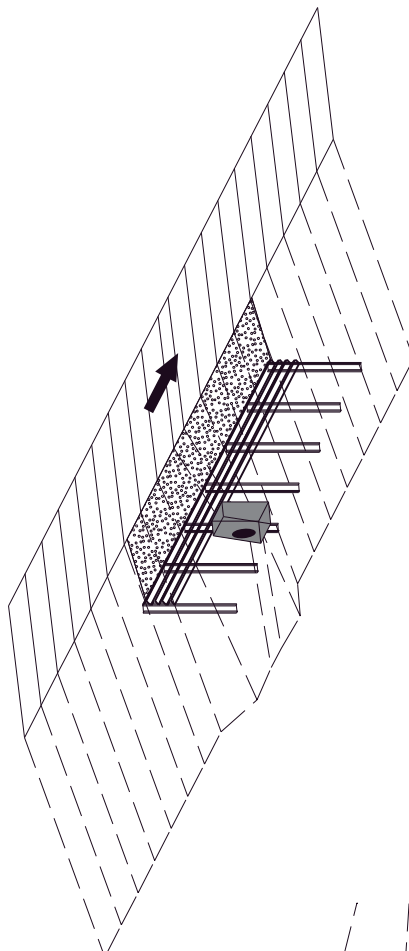
SHOULDER IMPROVEMENT USING CRIBBING KY 84



PLAN VIEW



CROSS SECTION



OBLIQUE VIEW

THIS DETAIL IS INTENDED TO BE USED TO ELIMINATE A SHOULDER EDGE DROPOFF IN A LOCAL AREA SUCH AS A CULVERT OR RCBC HEADWALL THAT CANNOT PRACTICALLY BE REPLACED OR RECEIVE A CULVERT EXTENSION AND DOES NOT HAVE AN EXISTING OR PROPOSED GUARDRAIL BARRIER. CONSTRUCT THE RETAINING STRUCTURE AT LOCATIONS LISTED OR AT LOCATIONS AS DIRECTED BY THE ENGINEER. THE OFFSET TO THE FACE OF THE PROPOSED CRIBBING AND THE LENGTH TO BE DETERMINED AT THE TIME OF CONSTRUCTION. SUGGESTED LOCATIONS AND LENGTHS ARE PROVIDED, HOWEVER THE ENGINEER RESERVES THE RIGHT TO ADD, REMOVE, OR MODIFY LOCATIONS, MODIFY THE LENGTHS AND OFFSETS OF INSTALLATIONS.

THE CONTRACTOR CAN UTILIZE THE EXISTING GUARDRAIL BEING REMOVED WITHIN THE PROJECT, OR MAY PICK UP GUARDRAIL AT THE BAILEY BRIDGE LOT IN FRANKFORT TO FOR CRIBBING. NEW 6' GUARDRAIL POSTS ARE TO BE PROVIDED BY THE CONTRACTOR. CONNECT THE GUARDRAIL TO THE POSTS BY DRILLING ADDITIONAL HOLES IN THE POSTS AND CONNECT WITH TYPICAL GUARDRAIL HARDWARE. THE CONTRACTOR MAY USE USED POSTS AT THE DISCRETION OF THE ENGINEER IF THE POSTS REMOVED FROM EXISTING GUARDRAIL ON THE PROJECT ARE IN SATISFACTORY CONDITION, OR IF GOOD USED POSTS ARE AVAILABLE AT THE BAILEY BRIDGE LOT.

THE BID ITEM "CRIBBING" SHALL BE FULL COMPENSATION FOR THE PICK UP AND DELIVERY OF USED MATERIALS FROM THE PROJECT OR FROM THE BAILEY BRIDGE LOT AND PROVIDING NEW POSTS AND HARDWARE IF USED MATERIALS ARE NOT AVAILABLE. PLACEMENT OF POSTS BY DRIVING OR DIGGING POST HOLES, DRILLING POSTS AND ATTACHING CRIBBING, EXCAVATION AND PLACEMENT OF BACKFILL MATERIALS, DGA BASE FOR BACKFILL WILL BE PAID IN ACCORDANCE WITH THE SPECIFICATIONS. CRIBBING WILL BE MEASURED AS THE SQUARE FEET OF THE GUARDRAIL RAIL COMPONENTS FORMING THE RETAINING STRUCTURE. THE ADDITIONAL LAP RAIL ACROSS THE JOINTS WILL NOT BE MEASURED FOR PAYMENT.

NOT TO SCALE

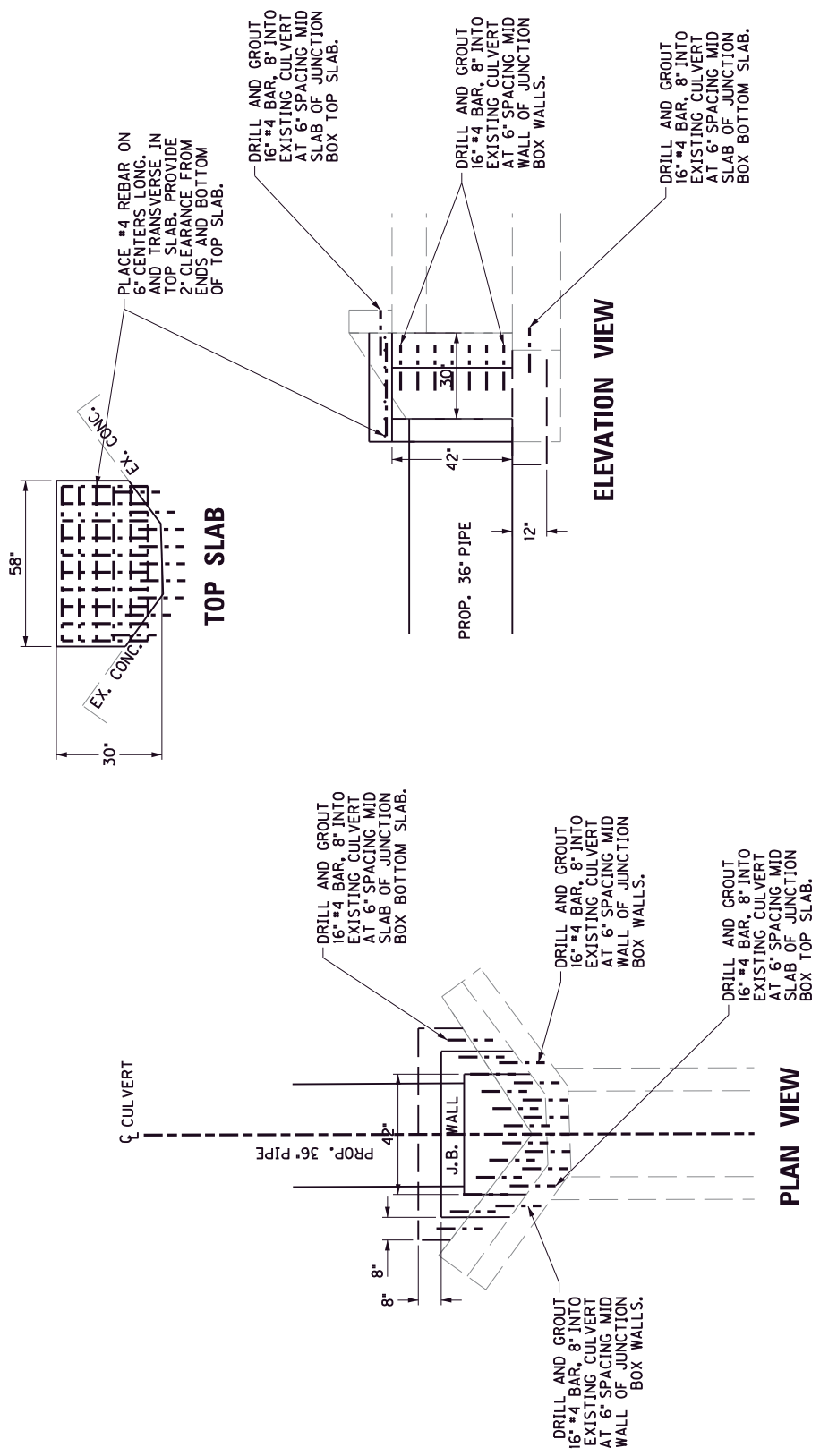
KY 84

**CRIBBING DETAIL
WITHOUT GUARDRAIL BARRIER**

County	Item No.	Sheet
MARION	4-9018.00	-

JUNCTION BOX - SPECIAL

CULVERT EXTENSION MP 13.439



NOTE: JUNCTION BOX-SPECIAL INCLUDES ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO EXCAVATE ADJACENT TO THE EXISTING CULVERT HEADWALL, PLACE REINFORCEMENT AS DETAILED, AND DRILL AND GROUT PROPOSED 1/2 INCH DOWELS INTO THE EXISTING WINGS, FORM AND CAST CLASS A CONCRETE AS DETAILED. CONCRETE SHALL BE CLASS A CONCRETE AND ALL REINFORCEMENT SHALL BE #4 GRADE 60 REINFORCEMENT. DRILL AND GROUT #4 DOWELS MINIMUM 8" INTO THE EXISTING CONCRETE HEADWALL AT 6" SPACING AT MID SLAB OF THE BOTTOM SLAB, MID SLAB OF THE TOP SLAB, AND MID WALL OF PROPOSED WALLS. CLASS A CONCRETE AND STEEL REINFORCEMENT ARE INCIDENTAL TO THE PAY ITEM JUNCTION BOX - SPECIAL.

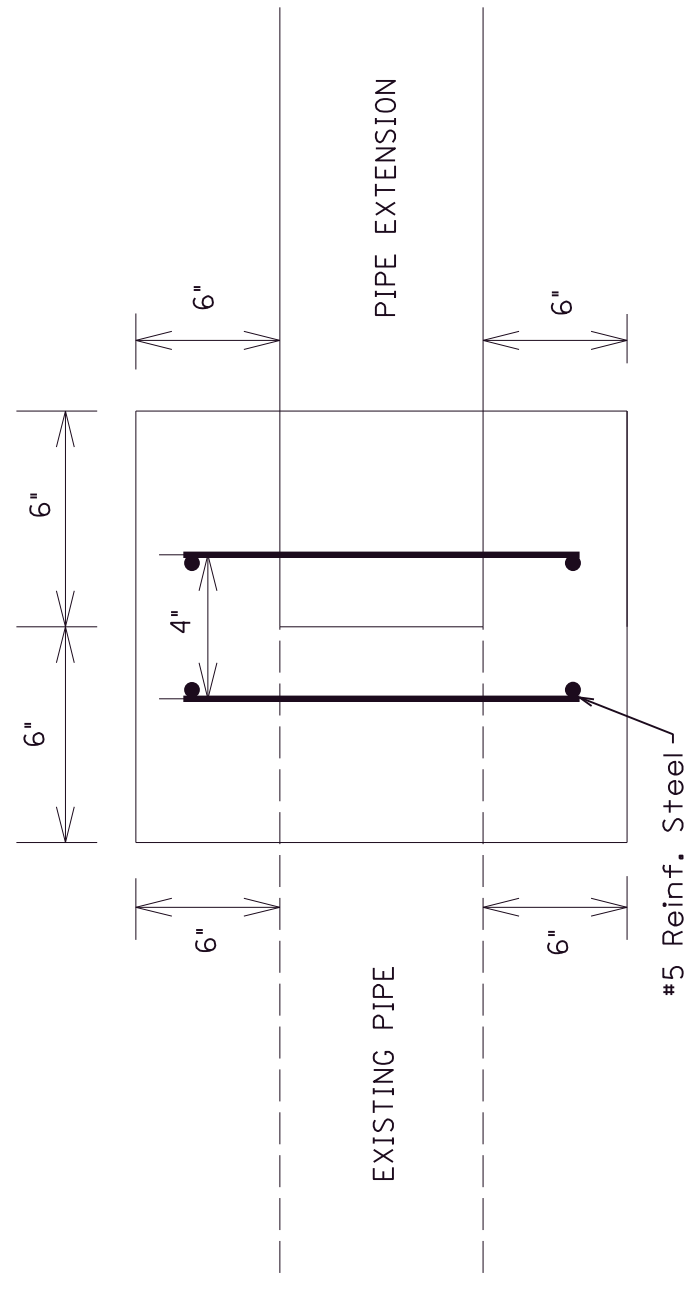
USE APPROVED REBAR GROUT ADHESIVE LISTED IN KYTC LIST OF APPROVED MATERIALS.

KY 84
JUNCTION BOX - SPECIAL
DETAIL SHEET

County	Item No.	Sheet
MARION	4-9018.00	-

PIPE COLLAR DETAIL

KY 84
MP 11.3 TO MP 15.0



SIZE	CONCRETE	STEEL
15 IN	0.15 CY	16 LB
18 IN	0.17 CY	19 LB
24 IN	0.22 CY	23 LB
30 IN	0.28 CY	27 LB
36 IN	0.34 CY	31 LB

KY 84
PIPE COLLAR DETAIL

NOT TO SCALE



**TWO LANE ROADWAY
PAVEMENT CROSS-SECTION**

TRAVELED WAY	TYPE OF PAVEMENT STRIPING	NON-STATE PRIMARY ROUTES			STATE PRIMARY ROUTES	
		< 1000 ADT	>= 1000 ADT	ANY ADT	WIDTH	MATERIAL*
< 16' ④	EDGE LINE STRIPES ONLY	4"	4"	6"	PAINT	THERMO (ASHPALT) TYPE I TAPE (CONCRETE)
16' TO < 20'	EDGE LINE STRIPES ONLY OR CENTERLINE STRIPE ONLY	4"	4"	6"	PAINT	THERMO (ASHPALT) TYPE I TAPE (CONCRETE)
>= 20' ③	CENTERLINE AND EDGE LINE STRIPES	4" ⑤	6"	6"	PAINT	THERMO (ASHPALT) TYPE I TAPE (CONCRETE)

*OTHER DURABLE NON-WATERBORNE MARKINGS MAY BE USED WITH APPROVAL FROM THE DIVISION OF TRAFFIC OPERATIONS.

~ NOTES ~

1. INSTALL PAVEMENT STRIPING ON TWO LANE, TWO WAY ROADWAYS AS DETAILED IN THE ABOVE TABLE AND IN ACCORDANCE WITH THE PAVEMENT MARKINGS AND DELINEATION CHAPTER OF THE TRAFFIC OPERATIONS GUIDANCE MANUAL. CONTACT THE DIVISION OF TRAFFIC OPERATIONS FOR ADDITIONAL GUIDANCE IF NECESSARY.
2. THE TRAVELED WAY IS THE PORTION OF ROADWAY FOR THE MOVEMENT OF VEHICLES, EXCLUSIVE OF THE SHOULDERS.
3. ON TWO LANE, TWO WAY ROADWAYS THAT HAVE A TOTAL PAVEMENT WIDTH (W) THAT IS 20 FT OR GREATER, BUT LESS THAN 22 FT, EDGE LINE RUMBLE STRIPS ARE NOT A STANDARD APPLICATION, BUT THEY MAY BE INSTALLED. THE DIVISION OF TRAFFIC OPERATIONS IS AVAILABLE TO ASSIST WITH THE DETERMINATION OF WHETHER OR NOT TO INSTALL EDGE LINE RUMBLE STRIPS ON PAVEMENT WIDTHS LESS THAN 22 FT, AS WELL AS THE DIMENSION AND PLACEMENT DETAILS OF THE RUMBLE STRIPS AND PAVEMENT STRIPING.
- ON TWO LANE, TWO WAY ROADWAYS THAT HAVE A TOTAL PAVEMENT WIDTH (W) THAT IS 22 FT OR GREATER, BUT LESS THAN 34 FT, INSTALL PAVEMENT STRIPING AS DETAILED IN THE ABOVE TABLE AND IN CONJUNCTION WITH CENTERLINE AND EDGE LINE RUMBLE STRIPS AS DETAILED ON TPR-120.
- ON TWO LANE, TWO WAY ROADWAYS THAT HAVE A TOTAL PAVEMENT WIDTH (W) THAT IS 34 FT OR GREATER, INSTALL PAVEMENT STRIPING AS DETAILED IN THE ABOVE TABLE AND IN CONJUNCTION WITH CENTERLINE AND SHOULDER RUMBLE STRIPS AS DETAILED ON TPR-125.
4. EDGE LINES MAY BE OMITTED FROM ROADWAYS WITH A TRAVELED WAY WIDTH LESS THAN 15 FEET WITH THE APPROVAL OF THE DIVISION OF TRAFFIC OPERATIONS.
5. EDGE LINES MAY BE OMITTED ON NON-STATE PRIMARY ROUTES WITH A TRAVELED WAY WIDTH GREATER THAN OR EQUAL TO 20 FEET AND AN ADT LESS THAN 1,000.
6. EDGE LINES MAY BE OMITTED, BASED ON ENGINEERING JUDGMENT, IN AREAS WHERE THE PAVEMENT EDGE IS DELINEATED BY PHYSICAL OBJECTS SUCH AS CURBS, PARKING SPACES, OR OTHER MARKINGS. EDGE LINES SHOULD BE INSTALLED ON ROADWAYS WITH CURB AND GUTTER IF THE POSTED SPEED LIMIT IS 45 MPH OR GREATER.

DRAWING NOT TO SCALE
USE WITH CUR. STD. DWGS.
TPR-120 & TPR-125

DATE: 06-09-21
DRAWN BY: [Signature]
CHECKED BY: [Signature]

ITEM NO. XX-XXXXXX
COUNTY OF XXXXXXXXX
SHEET NO. XXXX
ROAD

DRAWING TITLE: SEPIA 017 - PAVEMENT STRIPING DETAILS FOR TWO LANE TWO WAY ROADWAYS
FILE NAME: C:\PW\GRAVITY\CWILLERBINGER\0185998\SEPA017.DGN

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

USER: cwiller@engr.com
DATE PLOTTED: 8/10/25 9:53:17 AM

GUARDRAIL DELIVERY VERIFICATION SHEET

Contract Id: _____

Contractor: _____

Section Engineer: _____

District & County: _____

<u>DESCRIPTION</u>	<u>UNIT</u>	<u>QTY LEAVING PROJECT</u>	<u>QTY RECEIVED@BB YARD</u>
GUARDRAIL (Includes End treatments & crash cushions)	LF	_____	_____
STEEL POSTS	EACH	_____	_____
STEEL BLOCKS	EACH	_____	_____
WOOD OFFSET BLOCKS	EACH	_____	_____
BACK UP PLATES	EACH	_____	_____
CRASH CUSHION	EACH	_____	_____
NUTS, BOLTS, WASHERS	BAG/BCKT	_____	_____
DAMAGED RAIL TO MAINT. FACILITY	LF	_____	_____
DAMAGED POSTS TO MAINT. FACILITY	EACH	_____	_____

***Required Signatures before Leaving Project Site**

Printed Section Engineer's Representative _____ & Date _____

Signature Section Engineer's Representative _____ & Date _____

Printed Contractor's Representative _____ & Date _____

Signature Contractor's Representative _____ & Date _____

***Required Signatures after Arrival at Bailey Bridge Yard (All material on truck must be counted & the quantity received column completed before signatures)**

Printed Bailey Bridge Yard Representative _____ & Date _____

Signature Bailey Bridge Yard Representative _____ & Date _____

Printed Contractor's Representative _____ & Date _____

Signature Contractor's Representative _____ & Date _____

**Payment for the bid item remove guardrail will be based upon the quantities shown in the Bailey Bridge Yard received column. Payment will not be made for guardrail removal until the guardrail verification sheets are electronically submitted to the Section Engineer by the Bailey Bridge Yard Representative.

Completed Form Submitted to Section Engineer Date: _____ By: _____

PART II
SPECIFICATIONS AND STANDARD DRAWINGS

SPECIFICATIONS REFERENCE

Any reference in the plans or proposal to previous editions of the *Standard Specifications for Road and Bridge Construction* and *Standard Drawings* are superseded by *Standard Specifications for Road and Bridge Construction, Edition of 2019* and *Standard Drawings, Edition of 2020*.

SUPPLEMENTAL SPECIFICATIONS

The contractor shall use the Supplemental Specifications that are effective at the time of letting.
The Supplemental Specifications can be found at the following link:

<http://transportation.ky.gov/Construction/Pages/Kentucky-Standard-Specifications.aspx>

2020 STANDARD DRAWINGS THAT APPLY

**ROADWAY
~ BARRIERS ~**

TYPICAL BARRIER INSTALLATIONS

TYPICAL GUARDRAIL INSTALLATIONS.....	RBI-001-12
TYPICAL GUARDRAIL INSTALLATIONS.....	RBI-002-07
INSTALLATION OF GUARDRAIL END TREATMENT TYPE 1	RBI-004-06

GUARDRAIL HARDWARE

STEEL BEAM GUARDRAIL (W-BEAM)	RBR-001-13
GUARDRAIL COMPONENTS	RBR-005-11
GUARDRAIL TERMINAL SECTIONS	RBR-010-06
STEEL GUARDRAIL POSTS	RBR-015-06
GUARDRAIL SYSTEM TRANSITION	RBR-018
GUARDRAIL END TREATMENT TYPE 1	RBR-020-07
GUARDRAIL END TREATMENT TYPE 3	RBR-030-05
GUARDRAIL END TREATMENT TYPE 3 ALTERNATE ANCHOR	RBR-032
DELINEATORS FOR GUARDRAIL.....	RBR-005-01

~ DRAINAGE ~

PAVED DITCHES, FLUME INLETS AND CHANNEL LININGS

CHANNEL LINING CLASS II AND III	RDD-040-05
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PIPE AND BOX CULVERT HEADWALLS

PIPE CULVERT HEADWALLS 0 DEGREE SKEW.....	RDH-110-02
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TYPICAL DRAINAGE INSTALLATIONS

CULVERT, ENTRANCE & STORM SEWER PIPE TYPES & COVER HEIGHTS (12" – 24" PIPE)	RDI-001-10
CULVERT, ENTRANCE & STORM SEWER PIPE TYPES & COVER HEIGHTS (27" – 42" PIPE)	RDI-002-05
PIPE BEDDING FOR CULVERTS, ENTRANCE, AND STORM SEWER PIPE	RDI-020-10
PIPE BEDDING FOR CULVERTS, ENTRANCE, AND STORM SEWER, REINFORCED CONC. PIPE	RDI-021-01
PIPE BEDDING, TRENCH CONDITION	RDI-025-06
PIPE BEDDING, TRENCH CONDITION, REINFORCED CONC. PIPE	RDI-026-01
COATINGS, LININGS AND PAVINGS FOR NON-STRUCTURAL PLATE PIPE	RDI-035-02
EROSION CONTROL BLANKET SLOPE INSTALLATION.....	RDI-040-01
EROSION CONTROL BLANKET CHANNEL INSTALLATION	RDI-041-01

Standard Drawings That Apply
Page 2 of 2

MISCELLANEOUS DRAINAGE

SECURITY DEVICES FOR FRAMES, GRATES AND LIDS	RDX-160-06
TEMPORARY SILT FENCE.....	RDX-210-03
SILT TRAP - TYPE A.....	RDX-220-05
SILT TRAP - TYPE B.....	RDX-225-01
SILT TRAP - TYPE C.....	RDX-230-01

~ GENERAL ~

MISCELLANEOUS STANDARDS

MISCELLANEOUS STANDARDS.....	RGX-001-06
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~ PERMANENT ~

MARKERS

PAVEMENT STRIPING DETAILS FOR TWO LANE TWO WAY ROADWAYS.....	Sepia 017
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~ TEMPORARY ~

TRAFFIC CONTROL

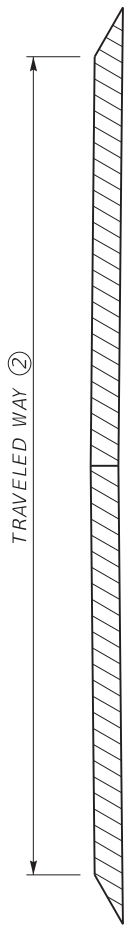
LANE CLOSURE TWO-LANE HIGHWAY.....	TTC-100-05
SHOULDER CLOSURE	TTC-135-03
AUTOMATED FLAGGING ASSISTANCE DEVICES.....	TTC-165

DEVICES

PAVEMENT CONDITION WARNING SIGNS	TTD-125-03
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STRIPING OPERATIONS

MOBILE OPERATION FOR PAINT STRIPING CASE II.....	TTS-105-02
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TWO LANE ROADWAY
PAVEMENT CROSS-SECTION

TRAVELED WAY	TYPE OF PAVEMENT STRIPING	NON-STATE PRIMARY ROUTES			STATE PRIMARY ROUTES	
		WIDTH	MATERIAL	WIDTH	MATERIAL	ANY ADT
< 16'	EDGELINE STRIPES ONLY	4"	PAINT	4"	PAINT	6" THERMO (ASHPALT) TYPE I TAPE (CONCRETE)
16' TO < 20'	EDGELINE STRIPES ONLY OR CENTERLINE STRIPE ONLY	4"	PAINT	4"	PAINT	6" THERMO (ASHPALT) TYPE I TAPE (CONCRETE)
>=20'	CENTERLINE AND EDGELINE STRIPES	4" ⑤	PAINT	6"	PAINT	6" THERMO (ASHPALT) TYPE I TAPE (CONCRETE)

*OTHER DURABLE NON-WATERBORNE MARKINGS MAY BE USED WITH APPROVAL FROM THE DIVISION OF TRAFFIC OPERATIONS.

~ NOTES ~

1. INSTALL PAVEMENT STRIPING ON TWO LANE, TWO WAY ROADWAYS AS DETAILED IN THE ABOVE TABLE AND IN ACCORDANCE WITH THE PAVEMENT MARKINGS AND DELINEATION CHAPTER OF THE TRAFFIC OPERATIONS GUIDANCE MANUAL. CONTACT THE DIVISION OF TRAFFIC OPERATIONS FOR ADDITIONAL GUIDANCE IF NECESSARY.
- ② THE TRAVELED WAY IS THE PORTION OF ROADWAY FOR THE MOVEMENT OF VEHICLES, EXCLUSIVE OF THE SHOULDERS.
- ③ ON TWO LANE, TWO WAY ROADWAYS THAT HAVE A TOTAL PAVEMENT WIDTH (W) THAT IS 20 FT OR GREATER, BUT LESS THAN 22 FT, EDGELINE RUMBLE STRIPS ARE NOT A STANDARD APPLICATION, BUT THEY MAY BE INSTALLED. THE DIVISION OF TRAFFIC OPERATIONS IS AVAILABLE TO ASSIST WITH THE DETERMINATION OF WHETHER OR NOT TO INSTALL EDGELINE RUMBLE STRIPS ON PAVEMENT WIDTHS LESS THAN 22 FT, AS WELL AS THE DIMENSION AND PLACEMENT DETAILS OF THE RUMBLE STRIPS AND PAVEMENT STRIPING.
- ON TWO LANE, TWO WAY ROADWAYS THAT HAVE A TOTAL PAVEMENT WIDTH (W) THAT IS 22 FT OR GREATER, BUT LESS THAN 34 FT, INSTALL PAVEMENT STRIPING AS DETAILED IN THE ABOVE TABLE AND IN CONJUNCTION WITH CENTERLINE AND EDGELINE RUMBLE STRIPS AS DETAILED ON TPR-120.
- ON TWO LANE, TWO WAY ROADWAYS THAT HAVE A TOTAL PAVEMENT WIDTH (W) THAT IS 34 FT OR GREATER, INSTALL PAVEMENT STRIPING AS DETAILED IN THE ABOVE TABLE AND IN CONJUNCTION WITH CENTERLINE AND SHOULDER RUMBLE STRIPS AS DETAILED ON TPR-125.
- ④ EDGELINES MAY BE OMITTED FROM ROADWAYS WITH A TRAVELED WAY WIDTH LESS THAN 16 FEET WITH THE APPROVAL OF THE DIVISION OF TRAFFIC OPERATIONS.
- ⑤ EDGELINES MAY BE OMITTED ON NON-STATE PRIMARY ROUTES WITH A TRAVELED WAY WIDTH GREATER THAN OR EQUAL TO 20 FEET AND AN ADT LESS THAN 1,000.
6. EDGELINES MAY BE OMITTED, BASED ON ENGINEERING JUDGMENT, IN AREAS WHERE THE PAVEMENT EDGE IS DELINEATED BY PHYSICAL OBJECTS SUCH AS CURBS, PARKING SPACES, OR OTHER MARKINGS. EDGELINES SHOULD BE INSTALLED ON ROADWAYS WITH CURB AND GUTTER IF THE POSTED SPEED LIMIT IS 45 MPH OR GREATER.

DRAWING NOT TO SCALE
USE WITH CUR. STD. DWGS.
TPR-120 & TPR-125

KENTUCKY
DEPARTMENT OF HIGHWAYS

PAVEMENT STRIPING
DETAILS FOR TWO LANE
TWO WAY ROADWAYS

SUBMITTED: 06-09-21
DIVISION DIRECTOR: [Signature]
017

PART III

EMPLOYMENT, WAGE AND RECORD REQUIREMENTS

**TRANSPORTATION CABINET
DEPARTMENT OF HIGHWAYS**

**LABOR AND WAGE REQUIREMENTS
APPLICABLE TO OTHER THAN FEDERAL-AID SYSTEM PROJECTS**

- I. Application
- II. Nondiscrimination of Employees (KRS 344)

I. APPLICATION

1. These contract provisions shall apply to all work performed on the contract by the contractor with his own organization and with the assistance of workmen under his immediate superintendence and to all work performed on the contract by piecework, station work or by subcontract. The contractor's organization shall be construed to include only workmen employed and paid directly by the contractor and equipment owned or rented by him, with or without operators.

2. The contractor shall insert in each of his subcontracts all of the stipulations contained in these Required Provisions and such other stipulations as may be required.

3. A breach of any of the stipulations contained in these Required Provisions may be grounds for termination of the contract.

3. If the contractor is in control of apprenticeship or other training or retraining, including on-the-job training programs, he shall not discriminate against an individual because of his race, color, religion, national origin, sex, disability or age forty (40) and over, in admission to, or employment in any program established to provide apprenticeship or other training.

4. The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representative of the contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment. The contractor will take such action with respect to any subcontract or purchase order as the administrating agency may direct as a means of enforcing such provisions, including sanctions for non-compliance.

Revised: January 25, 2017

II. NONDISCRIMINATION OF EMPLOYEES

**AN ACT OF THE KENTUCKY
GENERAL ASSEMBLY TO PREVENT
DISCRIMINATION IN EMPLOYMENT
KRS CHAPTER 344
EFFECTIVE JUNE 16, 1972**

The contract on this project, in accordance with KRS Chapter 344, provides that during the performance of this contract, the contractor agrees as follows:

1. The contractor shall not fail or refuse to hire, or shall not discharge any individual, or otherwise discriminate against an individual with respect to his compensation, terms, conditions, or privileges of employment, because of such individual's race, color, religion, national origin, sex, disability or age (forty and above); or limit, segregate, or classify his employees in any way which would deprive or tend to deprive an individual of employment opportunities or otherwise adversely affect his status as an employee, because of such individual's race, color, religion, national origin, sex, disability or age forty (40) and over. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.

2. The contractor shall not print or publish or cause to be printed or published a notice or advertisement relating to employment by such an employer or membership in or any classification or referral for employment by the employment agency, indicating any preference, limitation, specification, or discrimination, based on race, color, religion, national origin, sex, or age forty (40) and over, or because the person is a qualified individual with a disability, except that such a notice or advertisement may indicate a preference, limitation, or specification based on religion, national origin, sex, or age forty (40) and over, or because the person is a qualified individual with a disability, when religion, national origin, sex, or age forty (40) and over, or because the person is a qualified individual with a disability, is a bona fide occupational qualification for employment.

EXECUTIVE BRANCH CODE OF ETHICS

In the 1992 regular legislative session, the General Assembly passed and Governor Brereton Jones signed Senate Bill 63 (codified as KRS 11A), the Executive Branch Code of Ethics, which states, in part:

KRS 11A.040 (7) provides:

No present or former public servant shall, within six (6) months following termination of his office or employment, accept employment, compensation, or other economic benefit from any person or business that contracts or does business with, or is regulated by, the state in matters in which he was directly involved during the last thirty-six (36) months of his tenure. This provision shall not prohibit an individual from returning to the same business, firm, occupation, or profession in which he was involved prior to taking office or beginning his term of employment, or for which he received, prior to his state employment, a professional degree or license, provided that, for a period of six (6) months, he personally refrains from working on any matter in which he was directly involved during the last thirty-six (36) months of his tenure in state government. This subsection shall not prohibit the performance of ministerial functions, including but not limited to filing tax returns, filing applications for permits or licenses, or filing incorporation papers, nor shall it prohibit the former officer or public servant from receiving public funds disbursed through entitlement programs.

KRS 11A.040 (9) states:

A former public servant shall not represent a person or business before a state agency in a matter in which the former public servant was directly involved during the last thirty-six (36) months of his tenure, for a period of one (1) year after the latter of:

- a) The date of leaving office or termination of employment; or
- b) The date the term of office expires to which the public servant was elected.

This law is intended to promote public confidence in the integrity of state government and to declare as public policy the idea that state employees should view their work as a public trust and not as a way to obtain private benefits.

If you have worked for the executive branch of state government within the past six months, you may be subject to the law's prohibitions. The law's applicability may be different if you hold elected office or are contemplating representation of another before a state agency.

Also, if you are affiliated with a firm which does business with the state and which employs former state executive-branch employees, you should be aware that the law may apply to them.

In case of doubt, the law permits you to request an advisory opinion from the Executive Branch Ethics Commission, 1025 Capital Center Drive, Suite 104, Frankfort, Kentucky 40601; telephone (502) 564-7954.

Revised: May 23, 2022

Kentucky Equal Employment Opportunity Act of 1978

The requirements of the Kentucky Equal Employment Opportunity Act of 1978 (KRS 45.560-45.640) shall apply to this Contract. The apparent low Bidder will be required to submit EEO forms to the Division of Construction Procurement, which will then forward to the Finance and Administration Cabinet for review and approval. No award will become effective until all forms are submitted and EEO/CC has certified compliance. The required EEO forms are as follows:

- EEO-1: Employer Information Report
- Affidavit of Intent to Comply
- Employee Data Sheet
- Subcontractor Report

These forms are available on the Finance and Administration's web page under ***Vendor Information, Standard Attachments and General Terms*** at the following address:
<https://www.eProcurement.ky.gov>.

Bidders currently certified as being in compliance by the Finance and Administration Cabinet may submit a copy of their approval letter in lieu of the referenced EEO forms.

For questions or assistance please contact the Finance and Administration Cabinet by email at **finance.contractcompliance@ky.gov** or by phone at 502-564-2874.

EMPLOYEE RIGHTS UNDER THE FAIR LABOR STANDARDS ACT

THE UNITED STATES DEPARTMENT OF LABOR WAGE AND HOUR DIVISION

FEDERAL MINIMUM WAGE

\$7.25

 PER HOUR

BEGINNING JULY 24, 2009

OVERTIME PAY At least 1½ times your regular rate of pay for all hours worked over 40 in a workweek.

CHILD LABOR An employee must be at least **16** years old to work in most non-farm jobs and at least **18** to work in non-farm jobs declared hazardous by the Secretary of Labor.

Youths **14** and **15** years old may work outside school hours in various non-manufacturing, non-mining, non-hazardous jobs under the following conditions:

No more than

- **3** hours on a school day or **18** hours in a school week;
- **8** hours on a non-school day or **40** hours in a non-school week.

Also, work may not begin before **7 a.m.** or end after **7 p.m.**, except from June 1 through Labor Day, when evening hours are extended to **9 p.m.** Different rules apply in agricultural employment.

TIP CREDIT Employers of “tipped employees” must pay a cash wage of at least \$2.13 per hour if they claim a tip credit against their minimum wage obligation. If an employee’s tips combined with the employer’s cash wage of at least \$2.13 per hour do not equal the minimum hourly wage, the employer must make up the difference. Certain other conditions must also be met.

ENFORCEMENT The Department of Labor may recover back wages either administratively or through court action, for the employees that have been underpaid in violation of the law. Violations may result in civil or criminal action.

Employers may be assessed civil money penalties of up to \$1,100 for each willful or repeated violation of the minimum wage or overtime pay provisions of the law and up to \$11,000 for each employee who is the subject of a violation of the Act’s child labor provisions. In addition, a civil money penalty of up to \$50,000 may be assessed for each child labor violation that causes the death or serious injury of any minor employee, and such assessments may be doubled, up to \$100,000, when the violations are determined to be willful or repeated. The law also prohibits discriminating against or discharging workers who file a complaint or participate in any proceeding under the Act.

ADDITIONAL INFORMATION

- Certain occupations and establishments are exempt from the minimum wage and/or overtime pay provisions.
- Special provisions apply to workers in American Samoa and the Commonwealth of the Northern Mariana Islands.
- Some state laws provide greater employee protections; employers must comply with both.
- The law requires employers to display this poster where employees can readily see it.
- Employees under 20 years of age may be paid \$4.25 per hour during their first 90 consecutive calendar days of employment with an employer.
- Certain full-time students, student learners, apprentices, and workers with disabilities may be paid less than the minimum wage under special certificates issued by the Department of Labor.

For additional information:



1-866-4-USWAGE

(1-866-487-9243)

TTY: 1-877-889-5627



WWW.WAGEHOUR.DOL.GOV

PART IV
INSURANCE

Refer to
Kentucky Standard Specifications for Road and Bridge Construction,
current edition

PART V
BID ITEMS

PROPOSAL BID ITEMS

234202

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Report Date 1/19/23

Section: 0001 - PAVING

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0010	00001		DGA BASE	217.00	TON		\$	
0020	00212		CL2 ASPH BASE 1.00D PG64-22	39.00	TON		\$	
0030	00301		CL2 ASPH SURF 0.38D PG64-22	140.00	TON		\$	
0040	02676		MOBILIZATION FOR MILL & TEXT (MARION KY 84)	1.00	LS		\$	
0050	02677		ASPHALT PAVE MILLING & TEXTURING	135.00	TON		\$	
0060	24970EC		ASPHALT MATERIAL FOR TACK NON- TRACKING	1.00	TON		\$	

Section: 0002 - ROADWAY

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0070	01987		DELINEATOR FOR GUARDRAIL BI DIRECTIONAL WHITE	55.00	EACH		\$	
0080	02014		BARRICADE-TYPE III	4.00	EACH		\$	
0090	02259		FENCE-TEMP	560.00	LF		\$	
0100	02268		REMOVE & REPLACE FENCE (48 IN WOVEN WIRE AND 1 STRAND BARBED WIRE)	335.00	LF		\$	
0110	02268		REMOVE & REPLACE FENCE (48 IN WOVEN WIRE AND 2 STRAND BARBED WIRE)	50.00	LF		\$	
0120	02268		REMOVE & REPLACE FENCE (5 STRAND BARBED WIRE)	125.00	LF		\$	
0130	02268		REMOVE & REPLACE FENCE (6 STRAND BARBED WIRE)	50.00	LF		\$	
0140	02360		GUARDRAIL TERMINAL SECTION NO 1	3.00	EACH		\$	
0150	02367		GUARDRAIL END TREATMENT TYPE 1	10.00	EACH		\$	
0160	02373		GUARDRAIL END TREATMENT TYPE 3	4.00	EACH		\$	
0170	02381		REMOVE GUARDRAIL	150.00	LF		\$	
0180	02399		EXTRA LENGTH GUARDRAIL POST	256.00	EACH		\$	
0190	02460		REMOVE TREES OR STUMPS	6.00	EACH		\$	
0200	02562		TEMPORARY SIGNS	500.00	SQFT		\$	
0210	02650		MAINTAIN & CONTROL TRAFFIC (MARION KY 84)	1.00	LS		\$	
0220	02671		PORTABLE CHANGEABLE MESSAGE SIGN	2.00	EACH		\$	
0230	02703		SILT TRAP TYPE A	4.00	EACH		\$	
0240	02704		SILT TRAP TYPE B	4.00	EACH		\$	
0250	02705		SILT TRAP TYPE C	4.00	EACH		\$	
0260	02706		CLEAN SILT TRAP TYPE A	4.00	EACH		\$	
0270	02707		CLEAN SILT TRAP TYPE B	4.00	EACH		\$	
0280	02708		CLEAN SILT TRAP TYPE C	4.00	EACH		\$	
0290	02726		STAKING (MARION KY 84)	1.00	LS		\$	
0300	03236		CRIBBING	1,550.00	SQFT		\$	
0310	05950		EROSION CONTROL BLANKET	16,300.00	SQYD		\$	
0320	05952		TEMP MULCH	2,500.00	SQYD		\$	
0330	05953		TEMP SEEDING AND PROTECTION	2,500.00	SQYD		\$	
0340	05963		INITIAL FERTILIZER	.90	TON		\$	

PROPOSAL BID ITEMS

234202

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Report Date 1/19/23

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0350	05964		MAINTENANCE FERTILIZER	.60	TON		\$	
0360	05989		SPECIAL SEEDING CROWN VETCH	1,956.00	SQYD		\$	
0370	05992		AGRICULTURAL LIMESTONE	10.20	TON		\$	
0380	06510		PAVE STRIPING-TEMP PAINT-4 IN	2,480.00	LF		\$	
0390	21802EN		G/R STEEL W BEAM-S FACE (7 FT POST)	2,642.50	LF		\$	
0400	24402EC		DURABLE WATERBORNE MARKING-4 IN Y	2,480.00	LF		\$	
0410	26175EC		ROADSIDE REGRADING	14,590.00	LF		\$	
0420	40030		TEMPORARY SILT FENCE	5,000.00	LF		\$	

Section: 0003 - DRAINAGE

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0430	00440		ENTRANCE PIPE-15 IN	30.00	LF		\$	
0440	00462		CULVERT PIPE-18 IN	289.00	LF		\$	
0450	00464		CULVERT PIPE-24 IN	138.00	LF		\$	
0460	00468		CULVERT PIPE-36 IN	5.00	LF		\$	
0470	01212		PIPE CULVERT HEADWALL-36 IN	1.00	EACH		\$	
0480	01310		REMOVE PIPE	132.00	LF		\$	
0490	01651		JUNCTION BOX-MOD	1.00	EACH		\$	
0500	01653		JUNCTION BOX-SPECIAL	1.00	EACH		\$	
0510	02483		CHANNEL LINING CLASS II	661.00	TON		\$	
0520	02484		CHANNEL LINING CLASS III	100.00	TON		\$	
0530	02602		FABRIC-GEOTEXTILE CLASS 1	666.00	SQYD		\$	
0540	02607		FABRIC-GEOTEXTILE CLASS 2 FOR PIPE	579.00	SQYD	\$2.00	\$	\$1,158.00
0550	02625		REMOVE HEADWALL	21.00	EACH		\$	
0560	02690		SAFELOADING	2.00	CUYD		\$	
0570	08003		FOUNDATION PREPARATION (3'X2' RCBC, STA 729+50.26)	1.00	LS		\$	
0580	08003		FOUNDATION PREPARATION (6'X3' RCBC, STA 785+51.92)	1.00	LS		\$	
0590	08100		CONCRETE-CLASS A	2.85	CUYD		\$	
0600	08150		STEEL REINFORCEMENT	309.00	LB		\$	
0610	20465EC		CLEAN CULVERT	1.00	LS		\$	
0620	21819NN		FITTINGS	8.00	EACH		\$	
0630	23484EC		PIPE LINER ACCEPTANCE TESTING (MARION KY 84)	1.00	LS		\$	
0640	23956EC		PIPE REPAIR	5.00	EACH		\$	
0650	24543EC		CLEAN PIPE	203.00	LF		\$	
0660	24694ED		BOX CULVERT (3'X2' RCBC, STA 729+50.26)	16.00	LF		\$	
0670	24694ED		BOX CULVERT (6'X3' RCBC, STA 785+51.92)	16.00	LF		\$	
0680	24695ED		BOX CULVERT HEADWALL (3'X2' RCBC, STA 729+50.26)	2.00	EACH		\$	
0690	24695ED		BOX CULVERT HEADWALL (6'X3' RCBC, STA 785+51.92)	2.00	EACH		\$	
0700	24862EC		PVC FOLD AND FORM PIPE LINER-18 IN	48.00	LF		\$	
0710	24863EC		PVC FOLD AND FORM PIPE LINER-24 IN	209.00	LF		\$	
0720	26131ED		SLOPED AND MITERED HEADWALL-18 IN	20.00	EACH		\$	

PROPOSAL BID ITEMS

234202

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Report Date 1/19/23

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0730	26132ED		SLOPED AND MITERED HEADWALL-24 IN	11.00	EACH		\$	

Section: 0004 - DEMOBILIZATION

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0740	02569		DEMOBILIZATION	1.00	LS		\$	