CALL NO. 100

CONTRACT ID. 251115

MARSHALL COUNTY

FED/STATE PROJECT NUMBER NHPP 0241(095)

DESCRIPTION I-24

WORK TYPE ASPHALT REHAB WITH GRADE & DRAIN

PRIMARY COMPLETION DATE 9/4/2026

LETTING DATE: August 21,2025

Sealed Bids will be received electronically through the Bid Express bidding service until 10:00 AM EASTERN DAYLIGHT TIME August 21,2025. Bids will be publicly announced at 10:00 AM EASTERN DAYLIGHT TIME.

NO PLANS ASSOCIATED WITH THIS PROJECT.

DBE CERTIFICATION REQUIRED - 5%

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

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PART I

SCOPE OF WORK

ADMINISTRATIVE DISTRICT - 01

CONTRACT ID - 251115

NHPP 0241(095)

COUNTY - MARSHALL

PCN - DE07900242515
NHPP 0241(095)

I-24 I-24 ASPHALT PAVEMENT REHAB MILL & FILL, A DISTANCE OF 02.58 MILES.ASPHALT REHAB WITH BRIDGE (S) SYP NO. 01-20034.00.

GEOGRAPHIC COORDINATES LATITUDE 37:00:54.00 LONGITUDE 88:18:23.00

ADT 37,500

COMPLETION DATE(S):

COMPLETED BY 09/04/2026 APPLIES TO ENTIRE CONTRACT

CONTRACT NOTES

INSURANCE

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

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 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/construction-procurement). 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 state agency certifies that it is in compliance with the provisions of KRS 45A.150, "Access to contractor's books, documents, papers, records, or other evidence directly pertinent to the contract." The Contractor, as defined in KRS 45A.030, 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 agreement for the purpose of financial audit or program review. 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. Records and other prequalification information confidentially disclosed as part of the bid process shall not be deemed as directly pertinent to the agreement and shall be exempt from disclosure as provided in KRS 61.878(1)(c).

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.

SPECIAL NOTE – BUY AMERICA REQUIREMENTS AND BUILD AMERICA, BUY AMERICA (BABA) ACT 05/05/2025

1.0 BUY AMERICA REQUIREMENT.

Follow the "Buy America" provisions as required by 23 U.S.C. § 313 and 23 C.F.R. § 635.410. Except as expressly provided herein all manufacturing processes of steel or iron materials including but not limited to structural steel, guardrail materials, corrugated steel, culvert pipe, structural plate, prestressing strands, and steel reinforcing bars shall occur in the United States of America, including the application of:

- Coating,
- Galvanizing,
- Painting, and
- Other coating that protects or enhances the value of steel or iron products.

The following are exempt, unless processed or refined to include substantial amounts of steel or iron material, and may be used regardless of source in the domestic manufacturing process for steel or iron material:

- Pig iron,
- Processed, pelletized, and reduced iron ore material, or
- Processed alloys.

The Contractor shall submit a certification stating that all manufacturing processes involved with the production of steel or iron materials occurred in the United States.

Produce, mill, fabricate, and manufacture in the United States of America all aluminum components of bridges, tunnels, and large sign support systems, for which either shop fabrication, shop inspection, or certified mill test reports are required as the basis of acceptance by the Department.

Use foreign materials only under the following conditions:

1) When the materials are not permanently incorporated into the project; or
2) When the delivered cost of such materials used does not exceed 0.1 percent of the total Contract amount or $2,500.00, whichever is greater.

The Contractor shall submit to the Engineer the origin and value of any foreign material used.

2.0 – BUILD AMERICA, BUY AMERICA (BABA)

Contractor shall comply with the Federal Highway Administration (FHWA) Buy America Requirement in 23 C.F.R. § 635.410 and all relevant provisions of the Build America, Buy America Act (BABA), contained within the Infrastructure Investment and Jobs Act, Pub. L. No. 117-58, §§ 70901-52 enacted November 15, 2021. The BABA requires iron, steel, manufactured products, and construction materials used in infrastructure projects funded by federal financial assistance to be produced in the United States. Comply with 2 C.F.R § 184.

BABA permits FHWA participation in the Contract only if domestic steel and iron will be used on the Project. To be considered domestic, all steel and iron used, and all products manufactured from steel and iron must be produced in the United States and all manufacturing processes, including application of a coating, for these materials must occur in the United States. Coating includes all processes that protect or enhance the value of the material to which the coating is applied. This requirement does not preclude a minimal use of foreign steel and iron materials, provided the cost of such materials does not exceed 0.1% of the total contract amount under the Contract or $2,500.00 whichever is greater.

BABA permits FHWA participation in the Contract only if all "construction materials" as defined in the Act are made in the United States. The Buy America preference applies to the following construction materials incorporated into infrastructure projects: non-ferrous metals; plastic and polymer-based products (including polyvinylchloride, composite building materials, and polymers used in fiber optic cables); glass (including optic glass); Fiber optic cable; optical fiber; lumber; engineered wood; and drywall. Contractor will be

required to use construction materials produced in the United States on this Project. The Contractor shall submit a certification stating that all construction materials are certified to be BABA compliant.

3.0 FINAL RULE – FHWA'S BUY AMERICA REGULATION TO TERMINATE GENERAL APPLICABILITY WAIVER FOR MANUFACTURED PRODUCTS

- **March 17, 2025** (effective date): For all Federal-aid projects obligated on or after March 15, 2025, all iron or steel products, as defined in § 635.410(c)(1)(iii), must comply with FHWA's Buy America requirements for steel and iron in § 635.410(b). In addition, for all Federal-aid projects obligated on or after March 15, 2025, per § 635.410(c)(2), articles, materials, and supplies should be classified as an iron or steel product, a manufactured product, or another product as specified by law or in 2 CFR part 184 (such other products specified by law or in 2 CFR part 184 include "excluded materials" and "construction materials"); an article, material, or supply must not be considered to fall into multiple categories.
- **October 1, 2025:** The final assembly requirement will become effective for Federal-aid projects obligated on or after October 1, 2025. This means that, for manufactured product to be Buy America compliant, for Federal-aid projects obligated on or after October 1, 2025, final assembly of the manufactured product must occur in the United States.
- **October 1, 2026:** The 55 percent requirement will become effective for Federal-aid projects obligated on or after October 1, 2026. This means that, for manufactured product to be Buy America-compliant, for Federal-aid projects obligated on or after October 1, 2026, all manufactured products permanently incorporated into the project must both be manufactured in the United States (satisfy the final assembly requirement) and have the cost of the components of the manufactured product that are mined, produced, or manufactured in the United States be greater than 55 percent of the total cost of all components of the manufactured product (satisfy the 55 percent requirement).

4.0 – ADDITIONAL REQUIREMENTS

The Contractor has completed and submitted, or shall complete and submit, to the Cabinet a Buy America/ Build America, Buy America Certificate prior to the Cabinet issuing the notice to proceed, in the format below. After submittal, the Contractor is bound by its original certification.

A false certification is a criminal act in violation of 18 U.S.C. § 1001. The Contractor has the burden of proof to establish that it's in compliance.

At the Contractor's request, the Cabinet may, but is not obligated to, seek a waiver of Buy America requirements if grounds for the waiver exist under 23 C.F.R. § 635.410(c) or will comply with the applicable Buy America requirements if a waiver of those requirements is not available or not pursued by the Cabinet.

Please refer to the Federal Highway Administration's Buy America webpage for more information.

Buy America - Construction Program Guide - Contract Administration - Construction - Federal Highway Administration (dot.gov)

BUY AMERICA / BUILD AMERICA, BUY AMERICA (ACT) MATERIALS CERTIFICATE OF COMPLIANCE

The Contractor hereby certifies that it will comply with all relevant provisions of the Build America, Buy America Act, contained within the Infrastructure Investment and Jobs Act, Pub. L. NO. 117-58, §§ 70901-52, the requirements of 23 U.S.C. § 313, 23 C.F.R. § 635.410 and 2 C.F.R § 184.

Date Submitted:_____

Contractor:_____

Signature:_____

Printed Name:_____

Title:_____

NOTE: THIS CERTIFICATION IS IN ADDITION TO ANY AND ALL REQUIREMENTS OUTLINED IN THE CURRENT EDITION OF THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND/OR SPECIAL NOTES CONTAINED IN THE PROJECT PROPOSAL.

FEDERAL CONTRACT NOTES

The Kentucky Department of Highways, in accordance with the Regulations of the United States Department of Transportation 23 CFR 635.112 (h), hereby notifies all bidders that failure by a bidder to comply with all applicable sections of the current Kentucky Standard Specifications, including, but not limited to the following, may result in a bid not being considered responsive and thus not eligible to be considered for award:

102.02 Current Rating
102.13 Irregular Bid Proposals
102.09 Proposal Guaranty
102.08 Preparation and Delivery of Proposals
102.14 Disqualification of Bidders

CIVIL RIGHTS ACT OF 1964

The Kentucky Transportation Cabinet, Department of Highways, in accordance with the provisions of Title VI of the Civil Rights Act of 1964 (78 Stat. 252, 42 U.S.C. §§ 2000d to 2000d-4) and the Regulations, hereby notifies all bidders that it will affirmatively ensure that any contract entered into pursuant to this advertisement, disadvantaged business enterprises will be afforded full and fair opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, national origin, sex, age (over 40), religion, sexual orientation, gender identity, veteran status, disability, income- level, or Limited English Proficiency (LEP)in consideration for an award.

NOTICE TO ALL BIDDERS

To report bid rigging activities call: 1-800-424-9071.

The U.S. Department of Transportation (DOT) operates the above toll-free “hotline” Monday through Friday, 8:00 a.m. to 5:00 p.m. eastern time. Anyone with knowledge of possible bid rigging, bidder collusion, or other fraudulent activities should use the “hotline” to report such activities.

The “hotline” is part of the DOT’s continuing effort to identify and investigate highway construction contract fraud and abuse and is operated under the direction of the DOT Inspector General. All information will be treated confidentially and caller anonymity will be respected.

SECOND TIER SUBCONTRACTS

Second tier subcontracts are acceptable per Section 108.01 of the Standard Specifications for Road and Bridge Construction. S u b - Contractors fulfilling a disadvantaged business enterprise goal on a project may enter into a 2nd tier subcontract with a Non-DBE Subcontractor. However, in this instance, none of the work subcontracted to the Non-DBE Contractor will count toward fulfilling the established Disadvantaged Goal for the project.

DISADVANTAGED BUSINESS ENTERPRISE PROGRAM

It is the policy of the Kentucky Transportation Cabinet ("the Cabinet") that Disadvantaged Business Enterprises ("DBE") shall have the opportunity to participate in the performance of highway construction projects financed in whole or in part by Federal Funds in order to create a level playing field for all businesses who wish to contract with the Cabinet. To that end, the Cabinet will comply with the regulations found in 49 CFR Part 26, and the definitions and requirements contained therein shall be adopted as if set out verbatim herein.

The Cabinet, contractors, subcontractors, and sub-recipients shall not discriminate on the basis of race, color, national origin, or sex in the performance of work performed pursuant to Cabinet contracts. The contractor shall carry out applicable requirements of 49 CFR 26 in the award and administration of federally assisted highway construction projects. The contractor will include this provision in all its subcontracts and supply agreements pertaining to contracts with the Cabinet.

Failure by the contractor to carry out these requirements is a material breach of its contract with the Cabinet, which may result in the termination of the contract or such other remedy as the Cabinet deems necessary.

DBE GOAL

The Disadvantaged Business Enterprise (DBE) goal established for this contract, as listed on the front page of the proposal, is the percentage of the total value of the contract.

The contractor shall exercise all necessary and reasonable steps to ensure that Disadvantaged Business Enterprises participate in a least the percent of the contract as set forth above as goals for this contract.

OBLIGATION OF CONTRACTORS

Each contractor prequalified to perform work on Cabinet projects shall designate and make known to the Cabinet a liaison officer who is assigned the responsibility of effectively administering and promoting an active program for utilization of DBEs.

If a formal goal has not been designated for the contract, all contractors are encouraged to consider DBEs for subcontract work as well as for the supply of material and services needed to perform this work.

Contractors are encouraged to use the services of banks owned and controlled by minorities and women.

CERTIFICATION OF CONTRACT GOAL

Contractors shall include the following certification in bids for projects for which a DBE goal has been established. BIDS SUBMITTED WHICH DO NOT INCLUDE CERTIFICATION OF DBE PARTICIPATION WILL NOT BE ACCEPTED. These bids will not be considered for award by the Cabinet and they will be returned to the bidder.

"The bidder certifies that it has secured participation by Disadvantaged Business Enterprises ("DBE") in the amount of _____ percent of the total value of this contract and that the DBE participation is in compliance with the requirements of 49 CFR 26 and the policies of the Kentucky Transportation Cabinet pertaining to the DBE Program."

The certification statement is located in the electronic bid file. All contractors must certify their DBE participation on that page. DBEs utilized in achieving the DBE goal must be certified and prequalified for the work items at the time the bid is submitted.

DBE PARTICIPATION PLAN

Lowest responsive bidders must submit the *DBE Plan/ Subcontractor Request*, form TC 14-35 DBE, within 5 days of the letting. This is necessary before the Awards Committee will review and make a recommendation. **The project will not be considered for award prior to submission and approval of the apparent low bidder's DBE Plan/Subcontractor Request.**

The DBE Participation Plan shall include the following:

1. Name and address of DBE Subcontractor(s) and/or supplier(s) intended to be used in the proposed project;
2. Description of the work each is to perform including the work item, unit, quantity, unit price and total amount of the work to be performed by the individual DBE. The Proposal Line Number, Category Number, and the Project Line Number can be found in the "material listing" on the Construction Procurement website under the specific letting;
3. The dollar value of each proposed DBE subcontract and the percentage of total project contract value this represents. DBE participation may be counted as follows;
   a) If DBE suppliers and manufactures assume actual and contractual responsibility, the dollar value of materials to be furnished will be counted toward the goal as follows:
      - The entire expenditure paid to a DBE manufacturer;
      - 60 percent of expenditures to DBE suppliers that are not manufacturers provided the supplier is a regular dealer in the product involved. A regular dealer must be engaged in, as its principal business and in its own name, the sale of products to the public, maintain an inventory and own and operate distribution equipment; and
      - The amount of fees or commissions charged by the DBE firms for a bona fide service, such as professional, technical, consultant, or managerial services and assistance in the procurement of essential personnel, facilities, equipment, materials, supplies, delivery of materials and supplies or for furnishing bonds, or insurance, providing such fees or commissions are determined to be reasonable and customary.
   b) The dollar value of services provided by DBEs such as quality control testing, equipment repair and maintenance, engineering, staking, etc.;

c) The dollar value of joint ventures. DBE credit for joint ventures will be limited to the dollar amount of the work actually performed by the DBE in the joint venture;
4. Written and signed documentation of the bidder's commitment to use a DBE contractor whose participation is being utilized to meet the DBE goal; and
5. Written and signed confirmation from the DBE that it is participating in the contract as provided in the prime contractor's commitment.

AFTER PROJECT AWARD AND BEFORE NOTICE TO PROCEED/WORK ORDER IS ISSUED (SEE SECTION 103.06, STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION

Prime Contractors awarded a federally funded project with a DBE Goal greater than zero will be required to submit a fully executed DBE Subcontract, along with the attached FHWA 1273 and Certificate of Liability Insurance for each DBE Firm submitted as part of the previously approved DBE Utilization Plan (TC 14-35). A signed quote or purchase order shall be attached when the DBE subcontractor is a material supplier or broker.

The Certificate of Liability Insurance submitted must meet the requirements outlined in Section 107.18 of the Standard Specifications for Road and Bridge Construction.

Changes to ***APPROVED*** DBE Participation Plans must be approved by the Office for Civil Rights & Small Business Development. The Cabinet may consider extenuating circumstances including, but not limited to, changes in the nature or scope of the project, the inability or unwillingness of a DBE to perform the work in accordance with the bid, and/or other circumstances beyond the control of the prime contractor.

CONSIDERATION OF GOOD FAITH EFFORTS REQUESTS

If the DBE participation submitted in the bid by the apparent lowest responsive bidder does not meet or exceed the DBE contract goal, the apparent lowest responsive bidder must submit a Good Faith Effort Package to satisfy the Cabinet that sufficient good faith efforts were made to meet the contract goals prior to submission of the bid. Efforts to increase the goal after bid submission will not be considered in justifying the good faith effort, unless the contractor can show that the proposed DBE was solicited prior to the letting date. DBEs utilized in achieving the DBE goal must be certified and prequalified for the work items at the time the bid is submitted. One complete set (hard copy along with an electronic copy) of this information must be received in the Division of Contract Procurement no later than 12:00 noon of the tenth calendar day after receipt of notification that they are the apparent low bidder.

Where the information submitted includes repetitious solicitation letters it will be acceptable to submit a sample representative letter along with a distribution list of the firms solicited. Documentation of DBE quotations shall be a part of the good faith effort submittal as necessary to demonstrate compliance with the factors listed below which the Cabinet considers in judging good faith efforts. This documentation may include written subcontractors' quotations, telephone log notations of verbal quotations, or other types of quotation documentation.

The Good Faith Effort Package shall include, but may not be limited to information showing evidence of the following:

1. Whether the bidder attended any pre-bid meetings that were scheduled by the Cabinet to inform DBEs of subcontracting opportunities;
2. Whether the bidder provided solicitations through all reasonable and available means;
3. Whether the bidder provided written notice to all DBEs listed in the DBE directory at the time of the letting who are prequalified in the areas of work that the bidder will be subcontracting;
4. Whether the bidder followed up initial solicitations of interest by contacting DBEs to determine with certainly whether they were interested. If a reasonable amount of DBEs within the targeted districts do not provide an intent to quote or no DBEs are prequalified in the subcontracted areas, the bidder must notify the Disadvantaged Enterprise Business Liaison Officer (DEBLO) in the Office for Civil Rights and Small Business Development to give notification of the bidder's inability to get DBE quotes;
5. Whether the bidder selected portions of the work to be performed by DBEs in order to increase the likelihood of meeting the contract goals. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate DBE participation, even when the prime contractor might otherwise perform these work items with its own forces;
6. Whether the bidder provided interested DBEs with adequate and timely information about the plans, specifications, and requirements of the contract;
7. Whether the bidder negotiated in good faith with interested DBEs not rejecting them as unqualified without sound reasons based on a thorough investigation of their capabilities. Any rejection should be so noted in writing with a description as to why an agreement could not be reached;
8. Whether quotations were received from interested DBE firms but were rejected as unacceptable without sound reasons why the quotations were considered unacceptable. The fact that the DBE firm's quotation for the work is not the lowest quotation received will not in itself be considered as a sound reason for rejecting the quotation as unacceptable. The fact that the bidder has the ability and/or desire to perform the contract work with its own forces will not be considered a sound reason for rejecting a DBE quote. Nothing in this provision shall be construed to require the bidder to accept unreasonable quotes in order to satisfy DBE goals;
9. Whether the bidder specifically negotiated with subcontractors to assume part of the responsibility to meet the contract DBE goal when the work to be subcontracted includes potential DBE participation;
10. Whether the bidder made any efforts and/or offered assistance to interested DBEs in obtaining the necessary equipment, supplies, materials, insurance and/or bonding to satisfy the work requirements of the bid proposal; and
11. Any other evidence that the bidder submits which may show that the bidder has made reasonable good faith efforts to include DBE participation.

FAILURE TO MEET GOOD FAITH REQUIREMENT

Where the apparent lowest responsive bidder fails to submit sufficient participation by DBE firms to meet the contract goal and upon a determination by the Good Faith Committee based upon the information submitted that the apparent lowest responsive bidder failed to make sufficient reasonable efforts to meet the contract goal, the bidder will be offered the opportunity to meet in person for administrative reconsideration. The bidder will be notified of the Committee's decision within 24 hours of its decision. The bidder will have 24 hours to request reconsideration of the Committee's decision. The reconsideration meeting will be held within two days of the receipt of a request by the bidder for reconsideration.

The request for reconsideration will be heard by the Office of the Secretary. The bidder will have the opportunity to present written documentation or argument concerning the issue of whether it met the goal or made an adequate good faith effort. The bidder will receive a written decision on the reconsideration explaining the basis for the finding that the bidder did or did not meet the goal or made adequate Good Faith efforts to do so.

The result of the reconsideration process is not administratively appealable to the Cabinet or to the United States Department of Transportation.

The Cabinet reserves the right to award the contract to the next lowest responsive bidder or to rebid the contract in the event that the contract is not awarded to the low bidder as the result of a failure to meet the good faith requirement.

SANCTIONS FOR FAILURE TO MEET DBE REQUIREMENTS OF THE PROJECT

Failure by the prime contractor to fulfill the DBE requirements of a project under contract or to demonstrate good faith efforts to meet the goal constitutes a breach of contract. When this occurs, the Cabinet will hold the prime contractor accountable, as would be the case with all other contract provisions. Therefore, the contractor's failure to carry out the DBE contract requirements shall constitute a breach of contract and as such the Cabinet reserves the right to exercise all administrative remedies at its disposal including, but not limited to the following:

- Suspension of Prequalification;
- Disallow credit toward the DBE goal;
- Withholding progress payments;
- Withholding payment to the prime in an amount equal to the unmet portion of the contract goal; and/or
- Termination of the contract.

PROMPT PAYMENT

The prime contractor will be required to pay the DBE and Non-DBE Subcontractors within seven (7) working days after he or she has received payment from the Kentucky Transportation Cabinet for work performed or materials furnished.

CONTRACTOR REPORTING

All contractors must keep detailed records and provide reports to the Cabinet on their progress in meeting the DBE requirement on any highway contract. These records may include, but shall not be limited to payroll, lease agreements, cancelled payroll checks, executed subcontracting agreements, etc. Prime contractors will be required to complete and submit a ***signed and notarized*** Affidavit of Subcontractor Payment (TC 18-7) and copies of checks for any monies paid to each DBE subcontractor or supplier utilized to meet a DBE goal. These documents must be completed and signed within 7 days of being paid by the Cabinet.

Payment information that needs to be reported includes date the payment is sent to the DBE, check number, Contract ID, amount of payment and the check date. Before Final Payment is made on this contract, the Prime Contractor will certify that all payments were made to the DBE subcontractor and/or DBE suppliers.

******* IMPORTANT *******

Please mail the original, signed and completed TC (18-7) Affidavit of Subcontractor Payment form and all copies of checks for payments listed above to the following address:

Office for Civil Rights and Small Business Development
6th Floor West 200 Mero Street
Frankfort, KY 40622

The prime contractor should notify the KYTC Office for Civil Rights and Small Business Development seven (7) days prior to DBE contractors commencing work on the project. The contact in this office is Mr. Tony Youssefi. Mr. Youssefi's current contact information is email address – tyousseffi@ky.gov and the telephone number is (502) 564-3601.

DEFAULT OR DECERTIFICATION OF THE DBE

If the DBE subcontractor or supplier is decertified or defaults in the performance of its work, and the overall goal cannot be credited for the uncompleted work, the prime contractor may utilize a substitute DBE or elect to fulfill the DBE goal with another DBE on a different work item. If after exerting good faith effort in accordance with the Cabinet's Good Faith Effort policies and procedures, the prime contractor is unable to replace the DBE, then the unmet portion of the goal may be waived at the discretion of the Cabinet.

PROHIBITION ON TELECOMMUNICATIONS EQUIPMENT OR SERVICES

In accordance with the FY 2019 National Defense Authorization Act (NDAA), 2 CFR 200.216, and 2 CFR 200.471, Federal agencies are prohibited, after August 13, 2020, from obligating or expending financial assistance to obtain certain telecommunications and video surveillance services and equipment from specific producers. As a result of these regulations, contractors and subcontractors are prohibited, on projects with federal funding participation, from providing telecommunication or video surveillance equipment, services, or systems produced by:

- Huawei Technologies Company or ZTE Corporation (or any subsidiary or affiliate of such entities)
- Hytera Communications Corporation, Hangzhou Hikvision Digital Technology Company, or Dahua Technology Company (or any subsidiary or affiliate of such entities)

LEGAL REQUIREMENTS AND RESPONSIBILITY TO THE PUBLIC – CARGO PREFERENCE ACT (CPA).

(REV 12-17-15) (1-16)

SECTION 7 is expanded by the following new Article:

102.10 **Cargo Preference Act – Use of United States-flag vessels.**

Pursuant to Title 46CFR Part 381, the Contractor agrees

- To utilize privately owned United States-flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to this contract, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels.
- To furnish within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, 'on-board' commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph 1 of this section to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590.
- To insert the substance of the provisions of this clause in all subcontracts issued pursuant to this contract.

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.

INCIDENTAL SURFACING

The Department has included in the quantities of asphalt mixtures established in the proposal estimated quantities required for resurfacing or surfacing mailbox turnouts, farm field entrances, residential and commercial entrances, curve widening, ramp gores and tapers, and road and street approaches, as applicable. Pave these areas to the limits as shown on Standard Drawing RPM-110-06 or as directed by the Engineer. In the event signal detectors are present in the intersecting streets or roads, pave the crossroads to the right of way limit or back of the signal detector, whichever is the farthest back of the mainline. Surface or resurface these areas as directed by the Engineer. The Department will not measure placing and compacting for separate payment but shall be incidental to the Contract unit price for the asphalt mixtures.

FUEL AND ASPHALT PAY ADJUSTMENT

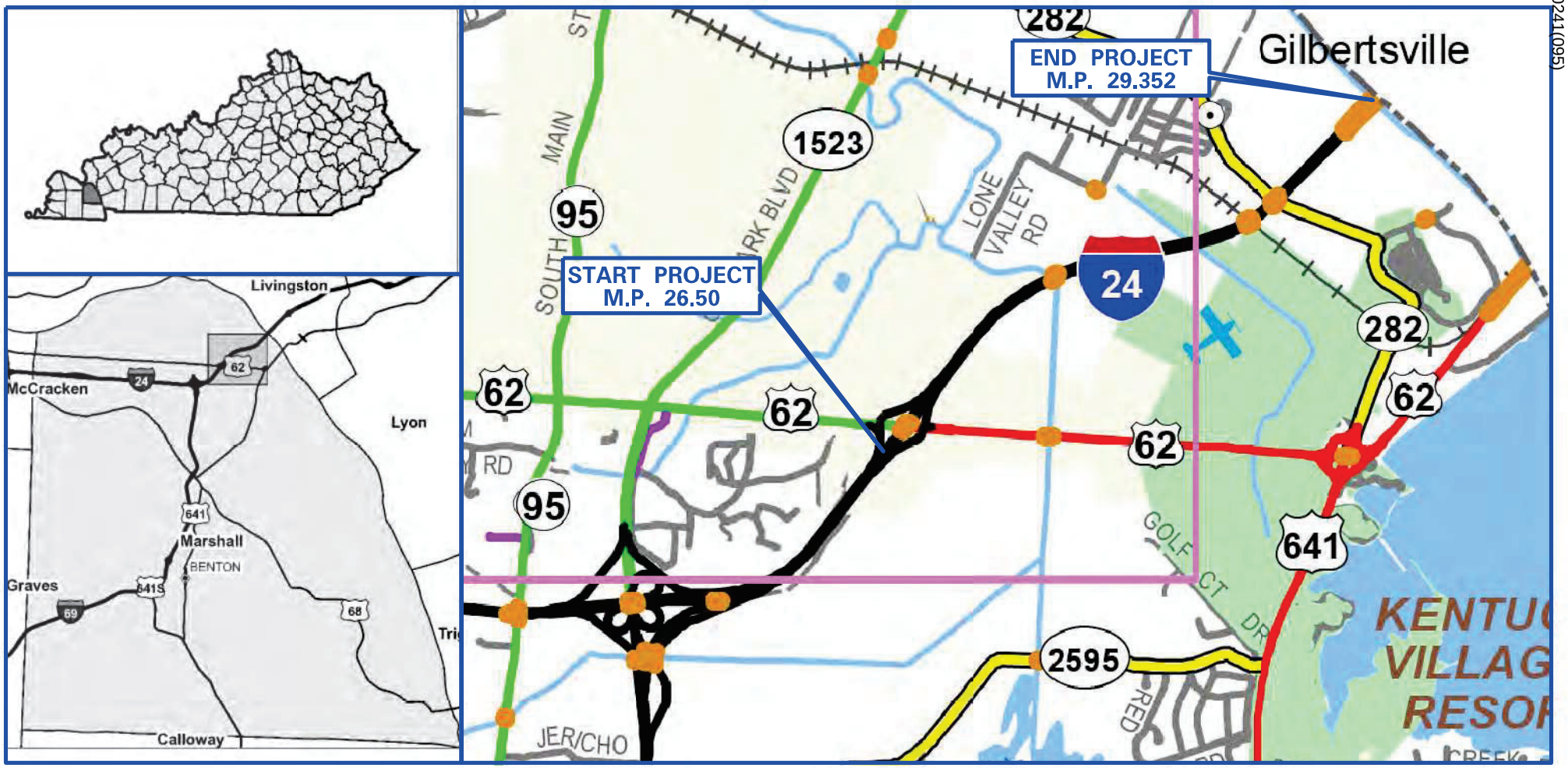
The Department has included the Contract items Asphalt Adjustment and Fuel Adjustment for possible future payments at an established Contract unit price of $1.00. The Department will calculate actual adjustment quantities after work is completed. If existing Contract amount is insufficient to pay all items on the contract with the adjustments, the Department will establish additional monies with a change order.

ASPHALT PAVEMENT RIDE QUALITY CATEGORY A

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

OPTION A

Be advised that the Department will accept compaction of asphalt mixtures furnished for driving lanes and ramps, at 1 inch (25mm) or greater, on this project according to OPTION A in accordance with Section 402 and Section 403 of the current Standard Specifications. The Department will require joint cores as described in Section 402.03.02 for surface mixtures only. The Department will accept compaction of all other asphalt mixtures according to OPTION B.



MARSHALL COUNTY

PROJECT LENGTH: 2.578 MI.
AADT: 35,078 (2023)

PROJECT NUMBER: NHPP 0241(095), FD52 079 0024 026–030

ITEM NUMBER: 1–20034 LETTING DATE: AUGUST 21, 2025

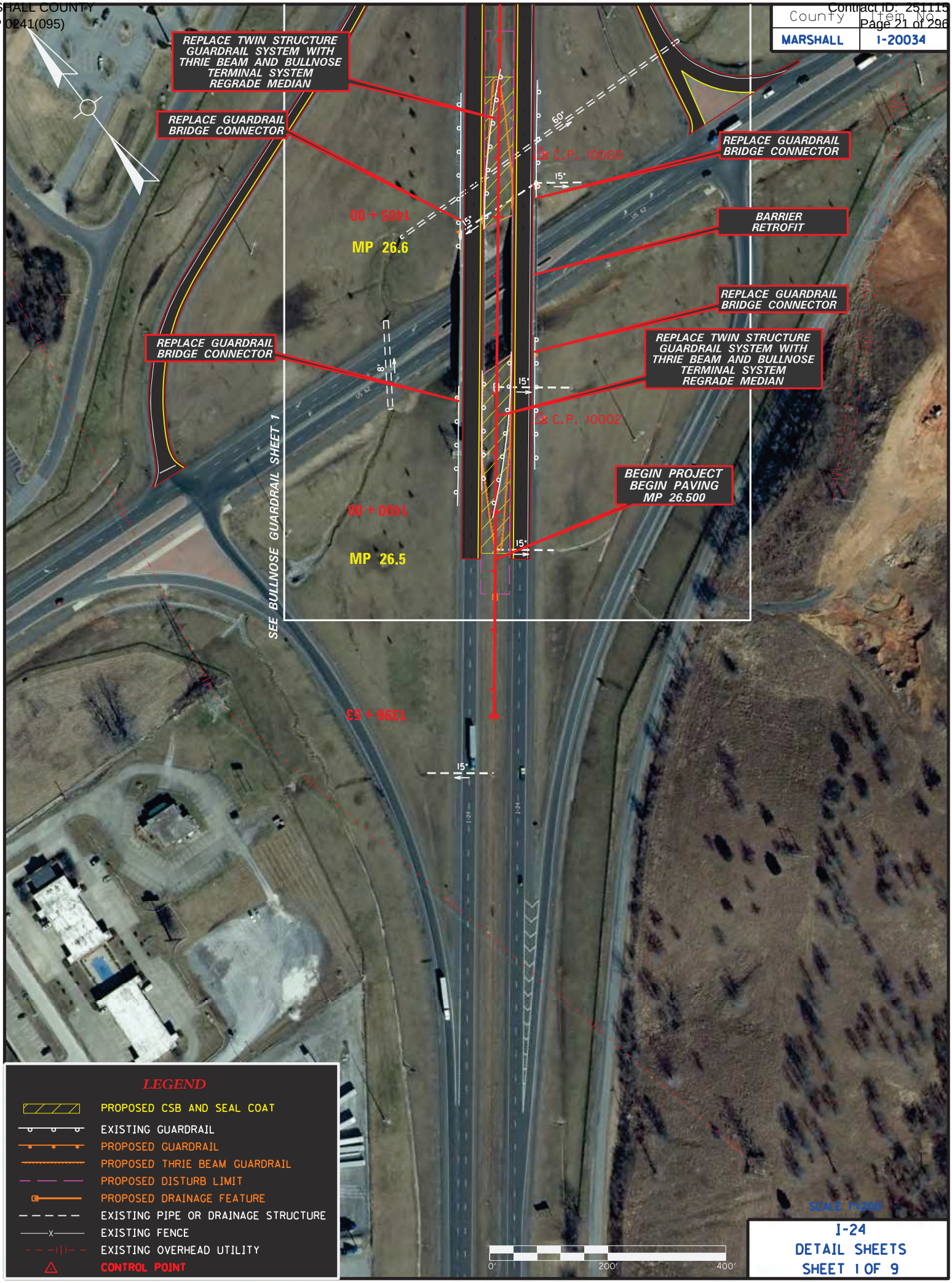
RECOMMENDED BY: ANDRE JOHANNES, P.E. DATE: _____
Project Manager

PLAN APPROVED BY: _____ DATE: _____
State Highway Engineer

FHWA APPROVED BY: _____ DATE: _____

3 HMB Circle, U.S. 460
Frankfort, KY 40601
502-695-9800

County	Item No.
MARSHALL	I-20034



LEGEND

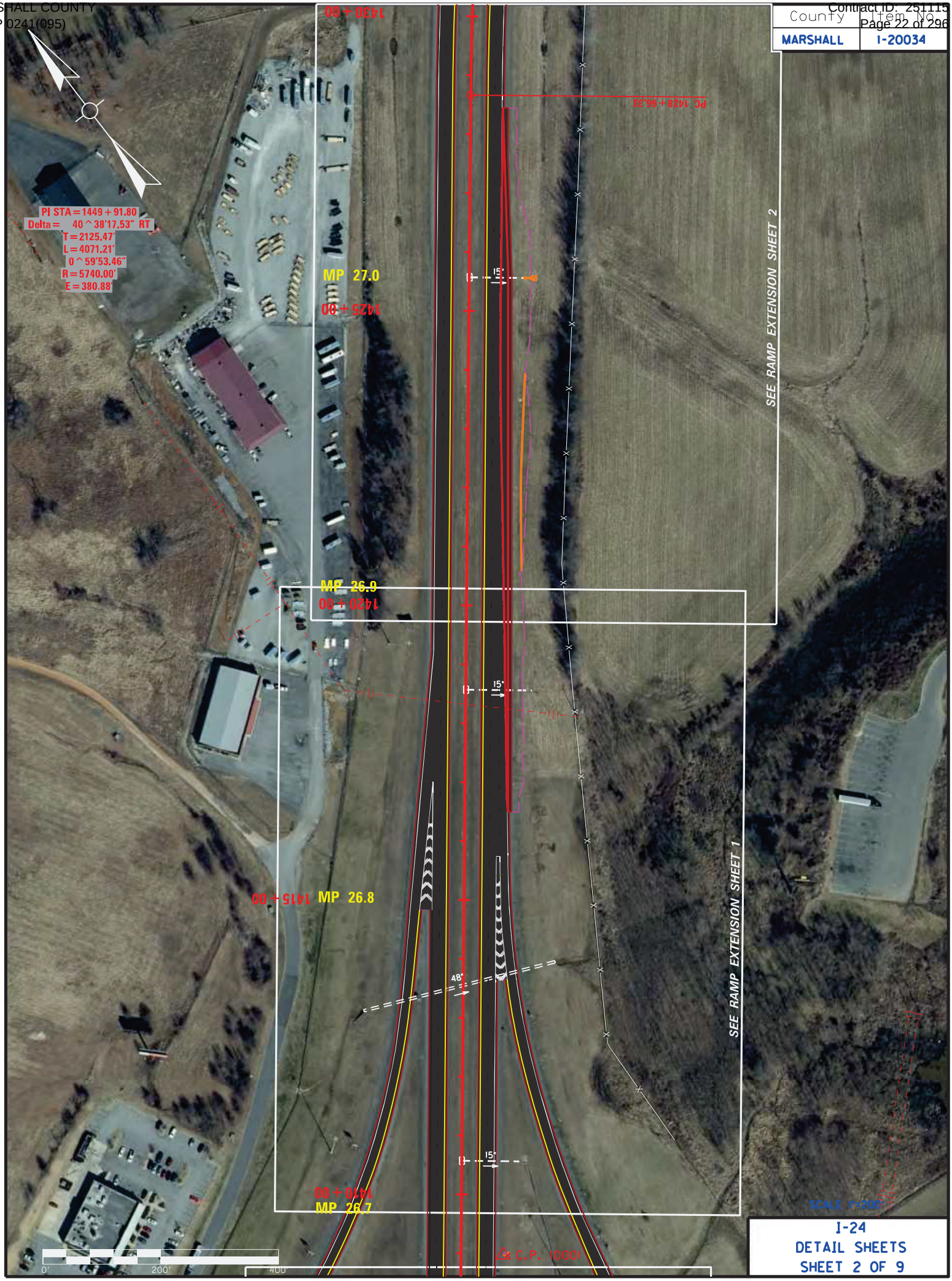
- PROPOSED CSB AND SEAL COAT
- EXISTING GUARDRAIL
- PROPOSED GUARDRAIL
- PROPOSED THRIE BEAM GUARDRAIL
- PROPOSED DISTURB LIMIT
- PROPOSED DRAINAGE FEATURE
- EXISTING PIPE OR DRAINAGE STRUCTURE
- EXISTING FENCE
- EXISTING OVERHEAD UTILITY
- CONTROL POINT

SCALE 1"=200'

0' 200' 400'

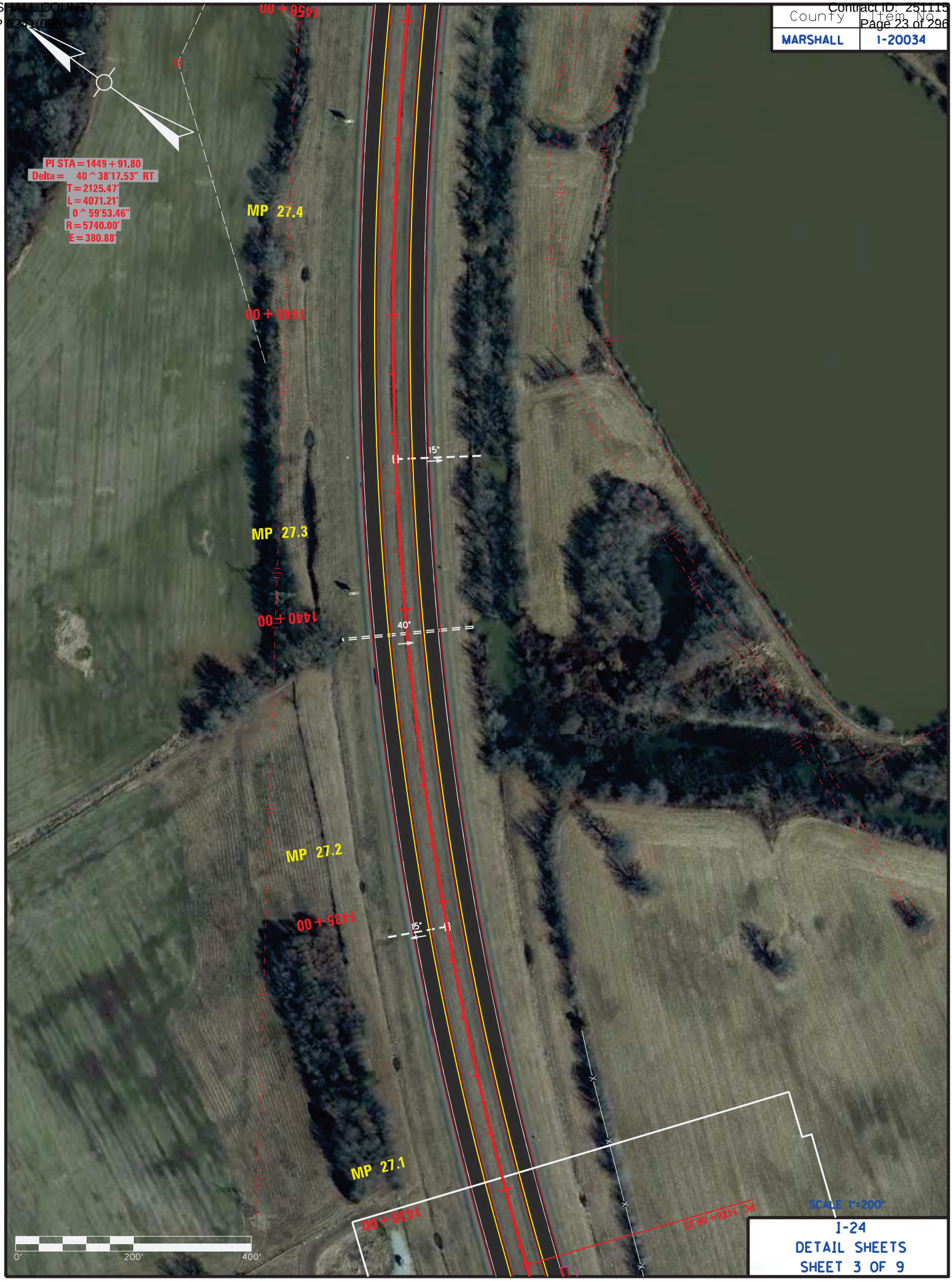
I-24
DETAIL SHEETS
SHEET 1 OF 9

County	Item No.
MARSHALL	I-20034



I-24
DETAIL SHEETS
SHEET 2 OF 9

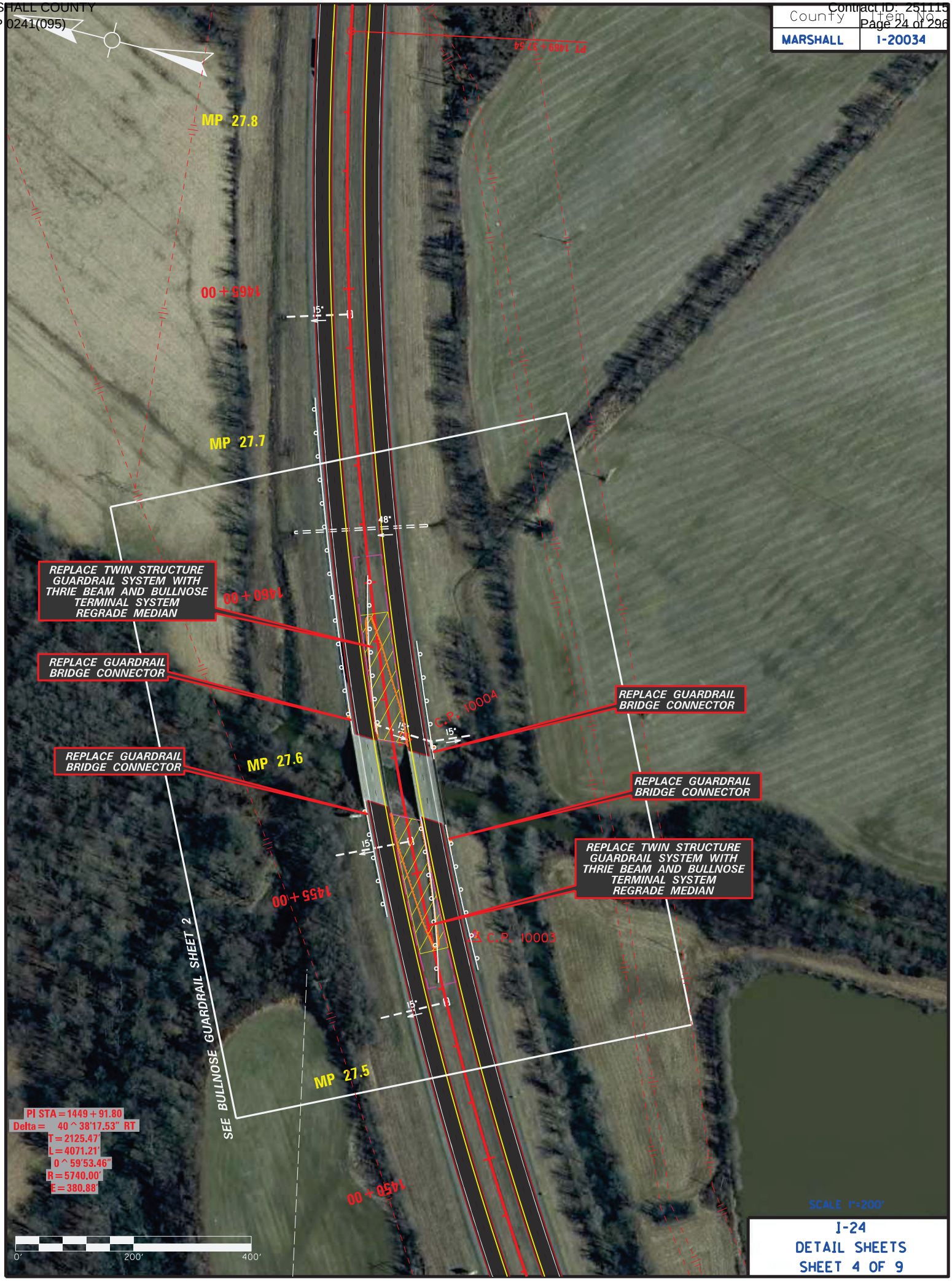
County	Item No.
MARSHALL	I-20034



SCALE 1"=200'

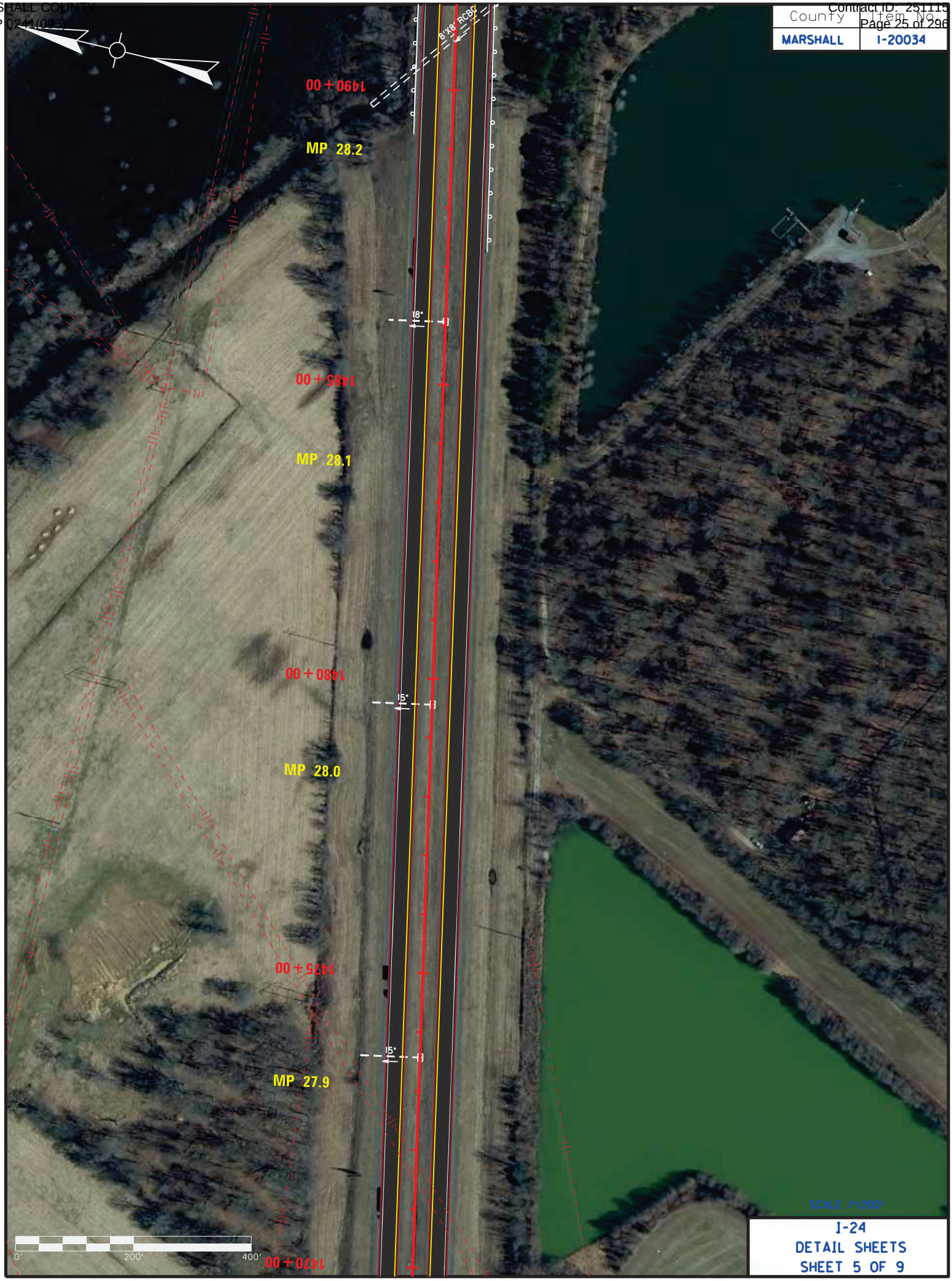
I-24
DETAIL SHEETS
SHEET 3 OF 9

County	Item No.
MARSHALL	I-20034



I-24
DETAIL SHEETS
SHEET 4 OF 9

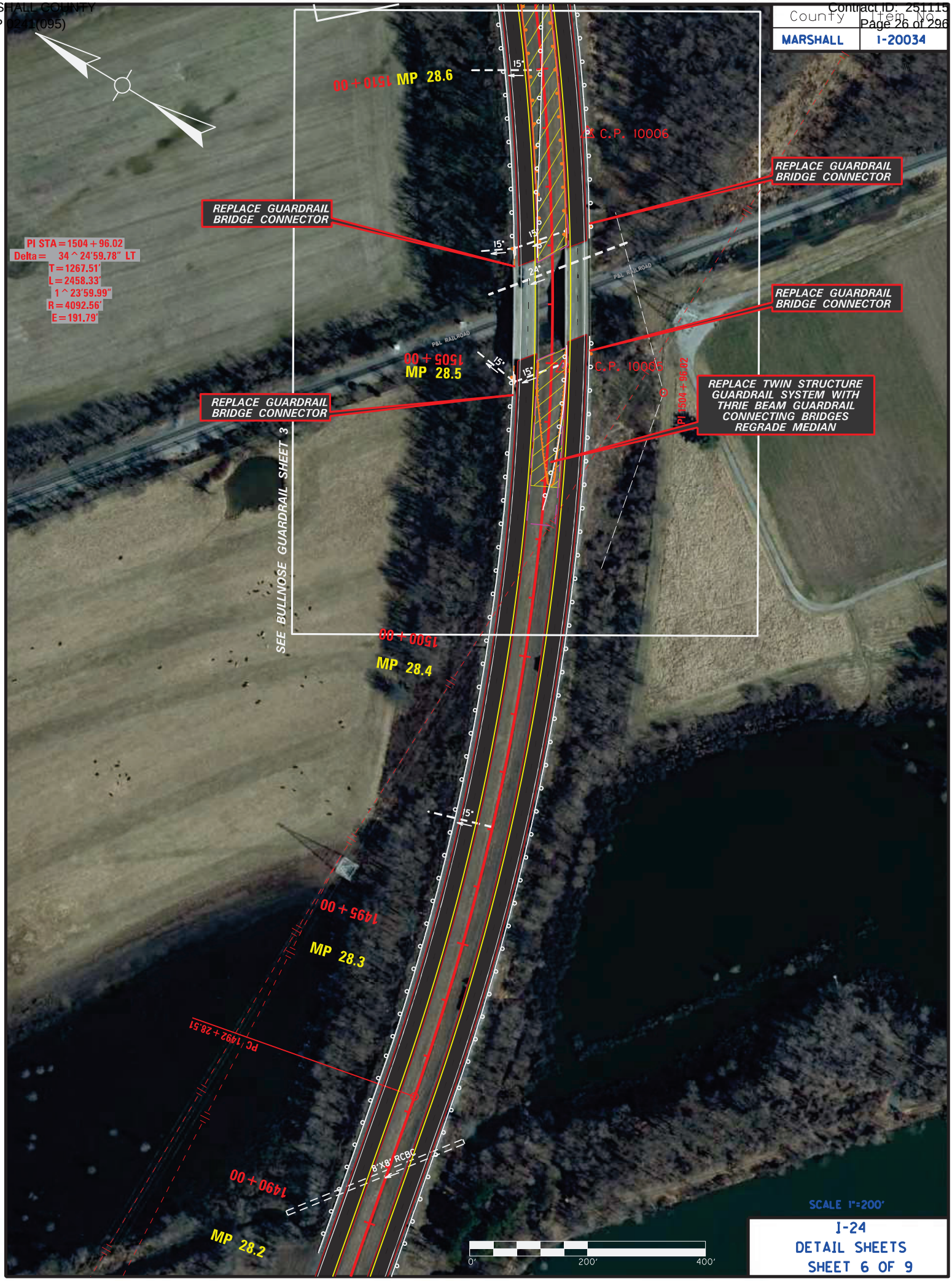
County	Item No.
MARSHALL	I-20034



SCALE 1"=200'

I-24
DETAIL SHEETS
SHEET 5 OF 9

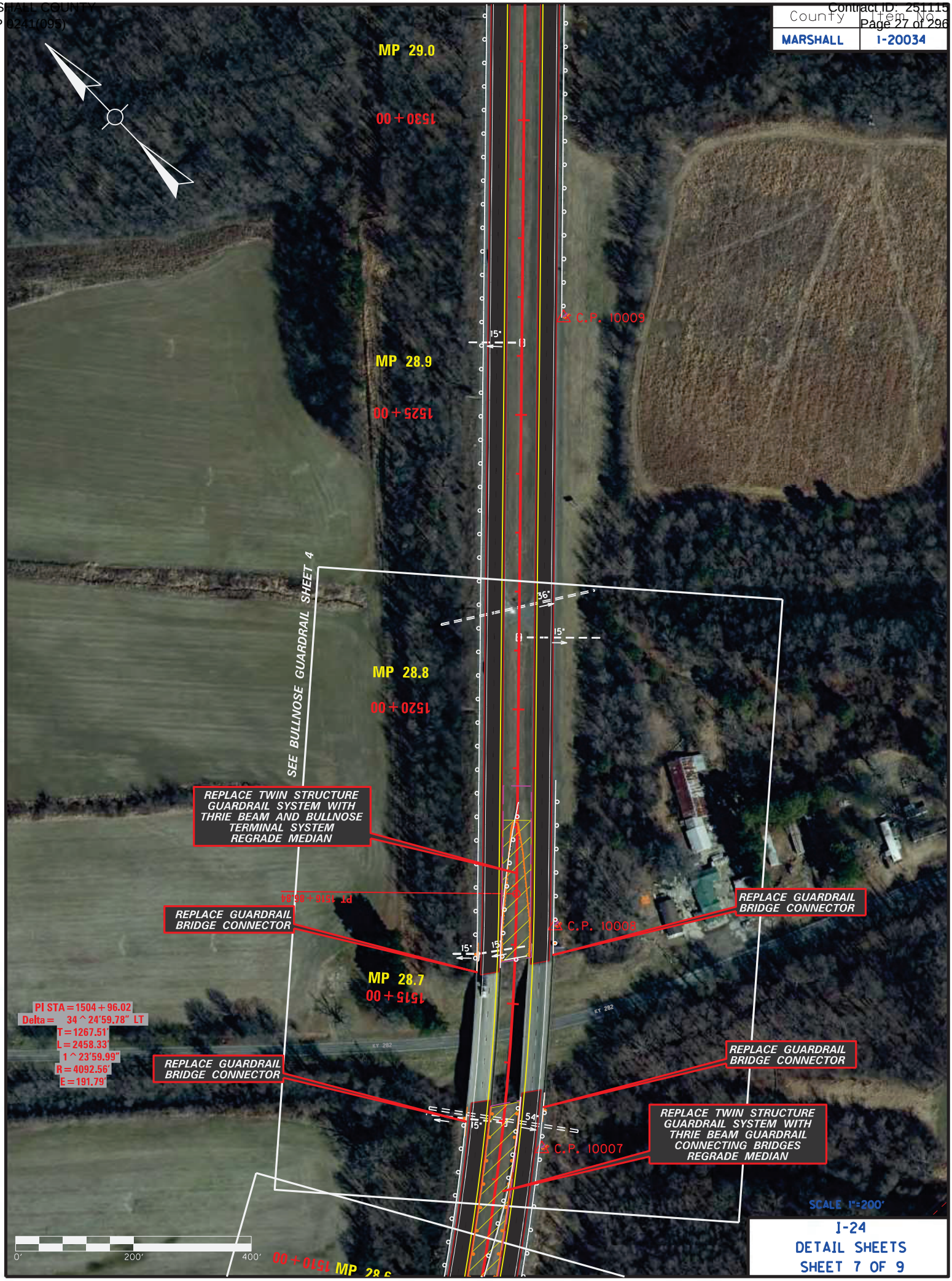
County	Item No.
MARSHALL	I-20034



SCALE 1"=200'

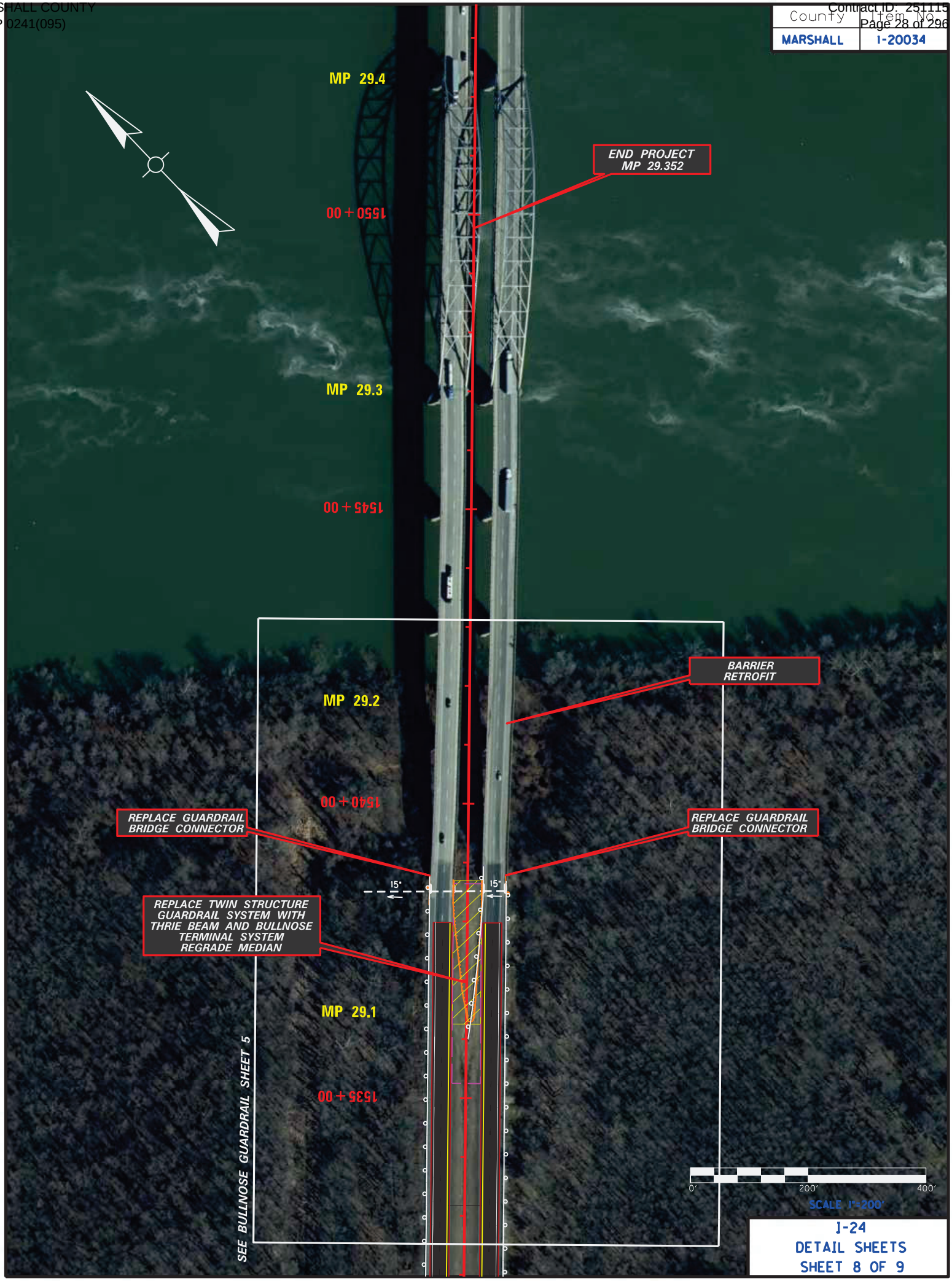
I-24
DETAIL SHEETS
SHEET 6 OF 9

County	Item No.
MARSHALL	I-20034



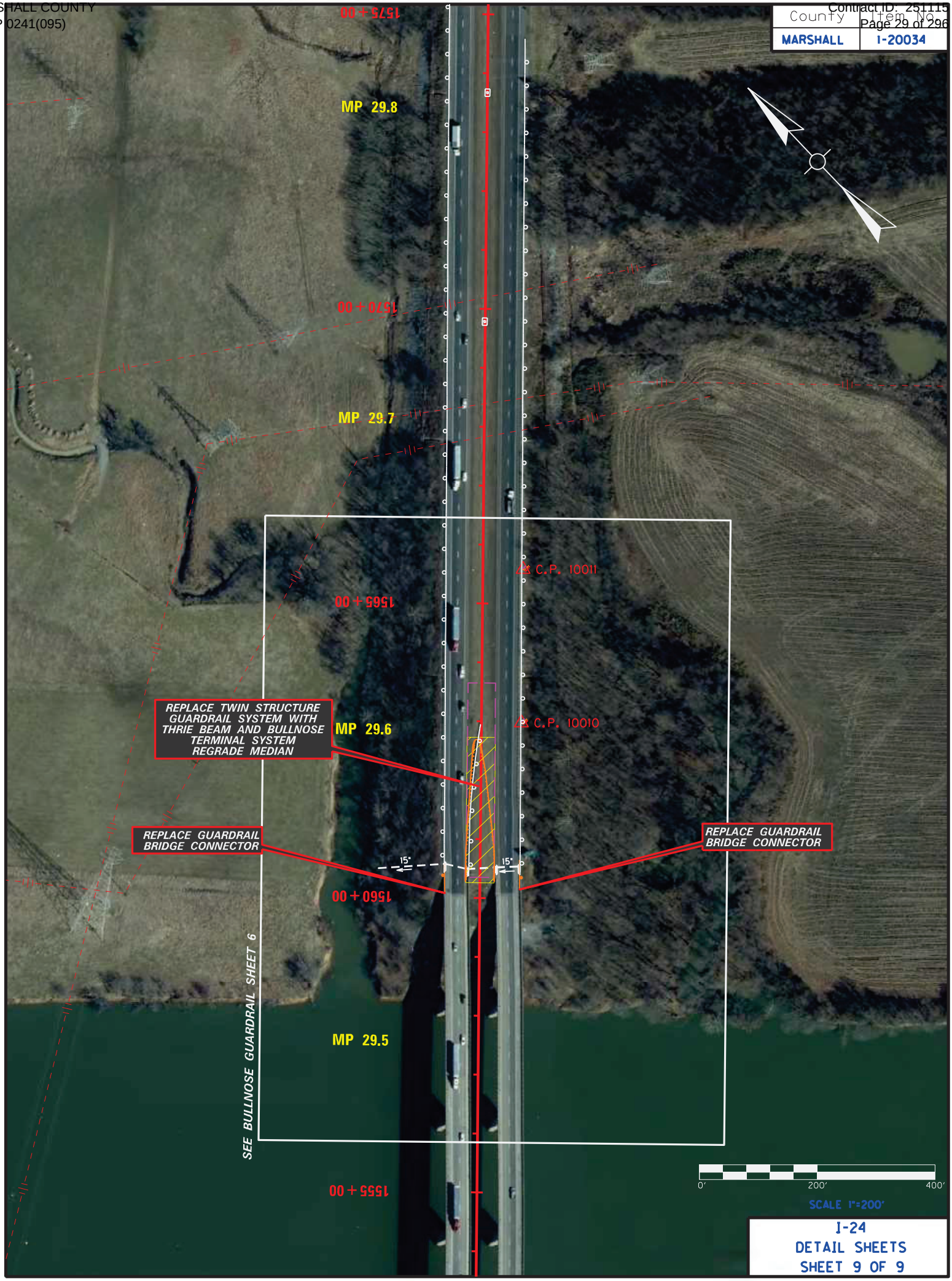
I-24
DETAIL SHEETS
SHEET 7 OF 9

County	Item No.
MARSHALL	I-20034



I-24
DETAIL SHEETS
SHEET 8 OF 9

County	Item No.
MARSHALL	I-20034

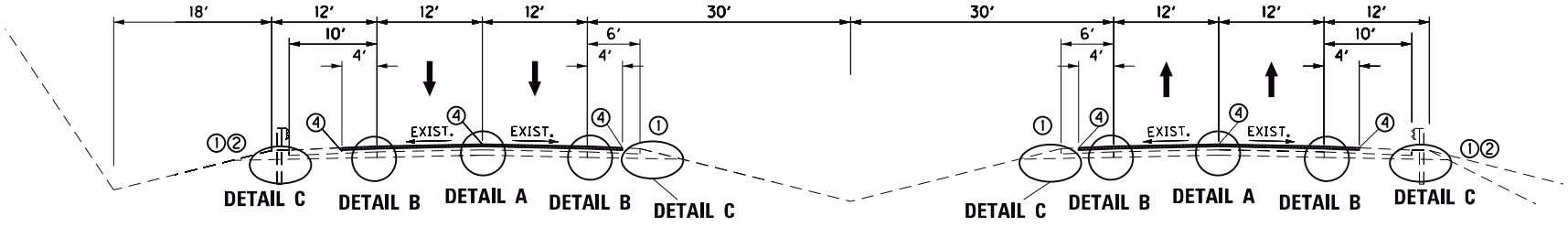


I-24
DETAIL SHEETS
SHEET 9 OF 9

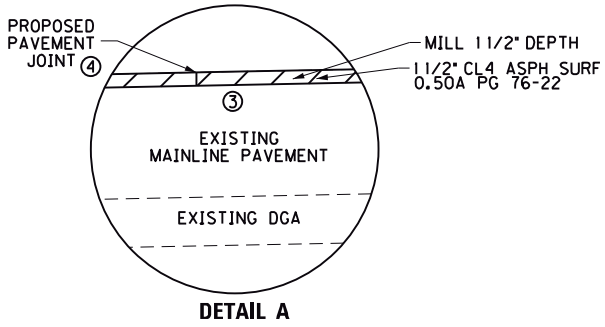
PROPOSED TYPICAL SECTIONS

I–24

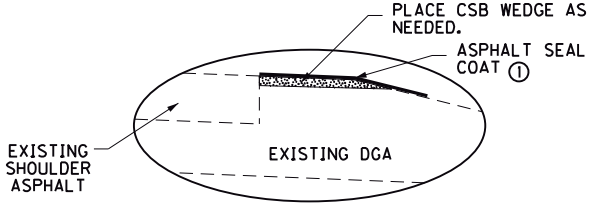
County	Item No.	Sheet
MARSHALL	I-20034	



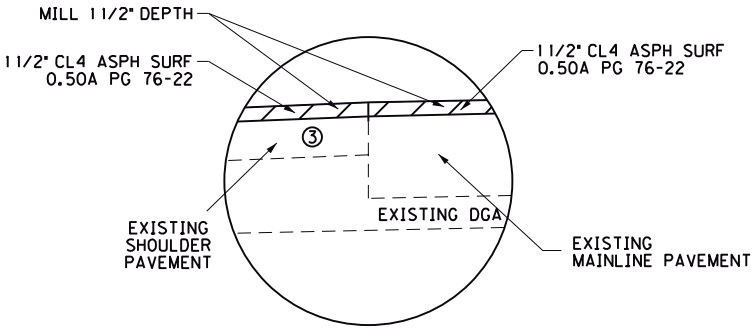
MAINLINE NORMAL SECTION



DETAIL A



DETAIL C



DETAIL B

SURFACING SCHEDULE ③

MAINLINE TRAFFIC LANES AND SHOULDERS

ASPHALT PAVEMENT MILLING AND TEXTURING.....1 1/2" DEPTH
CL4 ASPH SURFACE 0.50A PG76-22.....1 1/2" DEPTH

① ASPHALT SEAL REQUIRED FROM OUTSIDE EDGE OF PAVED SHOULDER TO A POINT 2 FOOT DOWN THE DITCH OR FILL SLOPE (Where Applicable). TWO APPLICATIONS OF THE FOLLOWING :
ASPHALT SEAL COAT ..... 2.4 lbs. / S.Y.
ASPHALT SEAL AGGREGATE ..... 20 lbs. / S.Y.

② EX. STONE SHOULDER 2' WHERE GUARDRAIL IS PRESENT, USE 7' POSTS.

③ APPLY ASPHALT MATERIAL FOR TACK AT A RATE OF 0.7 LBS/SY BETWEEN EACH LAYER OF ASPH. CONCRETE.

④ JOINT ADHESIVE

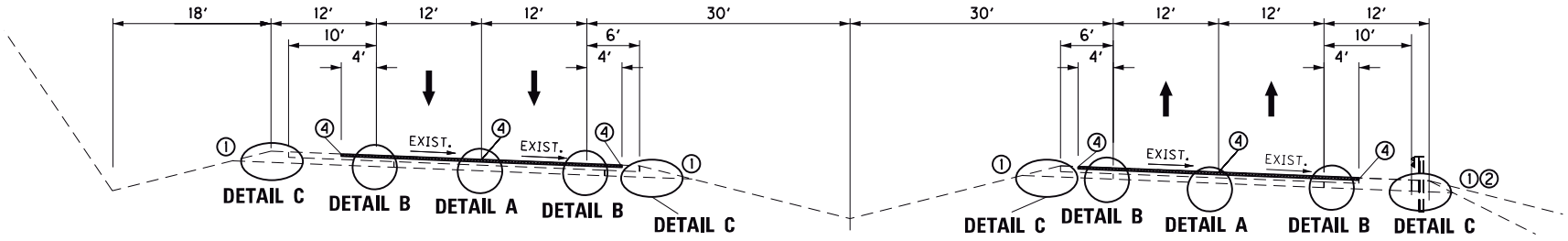
NOT TO SCALE

I-24
TYPICAL SECTIONS

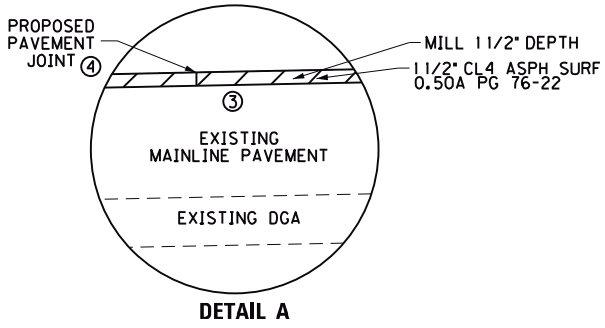
PROPOSED TYPICAL SECTIONS

I–24

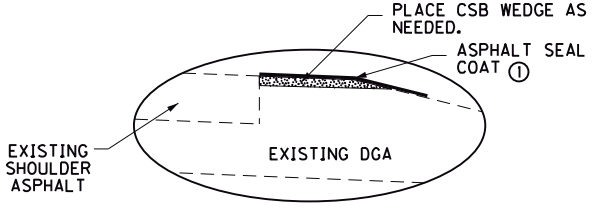
County	Item No.	Sheet
MARSHALL	I-20034	



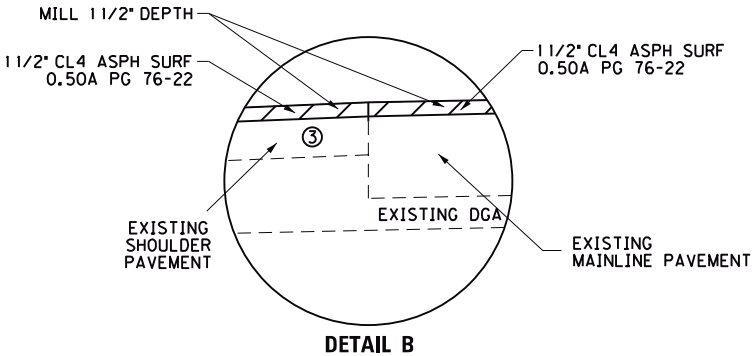
MAINLINE SUPERELEVATED SECTION



DETAIL A



DETAIL C



DETAIL B

SURFACING SCHEDULE ③

MAINLINE TRAFFIC LANES AND SHOULDERS

ASPHALT PAVEMENT MILLING AND TEXTURING.....1 1/2" DEPTH
CL4 ASPH SURFACE 0.50A PG76-22.....1 1/2" DEPTH

① ASPHALT SEAL REQUIRED FROM OUTSIDE EDGE OF PAVED SHOULDER TO A POINT 2 FOOT DOWN THE DITCH OR FILL SLOPE (Where Applicable). TWO APPLICATIONS OF THE FOLLOWING :
ASPHALT SEAL COAT ..... 2.4 lbs. / S.Y.
ASPHALT SEAL AGGREGATE ..... 20 lbs. / S.Y.

② EX. STONE SHOULDER 2' WHERE GUARDRAIL IS PRESENT, USE 7' POSTS.

③ APPLY ASPHALT MATERIAL FOR TACK AT A RATE OF 0.7 LBS/SY BETWEEN EACH LAYER OF ASPH. CONCRETE.

④ JOINT ADHESIVE

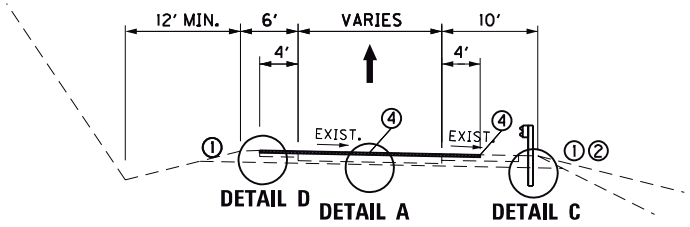
NOT TO SCALE

I-24
TYPICAL SECTIONS

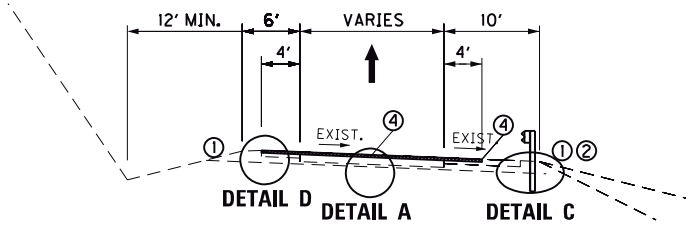
PROPOSED TYPICAL SECTIONS

I–24
INTERCHANGE RAMPS

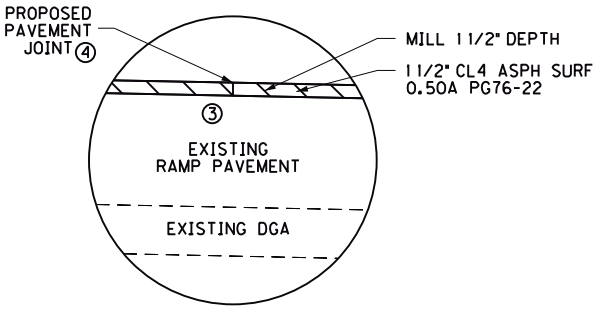
County	Item No.	Sheet
MARSHALL	I-20034	



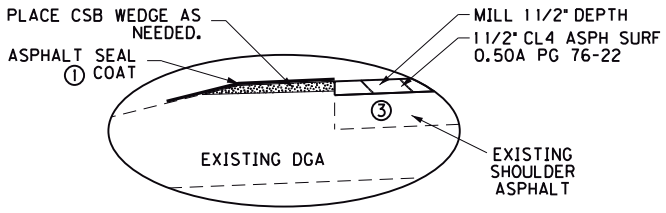
RAMP NORMAL SECTION



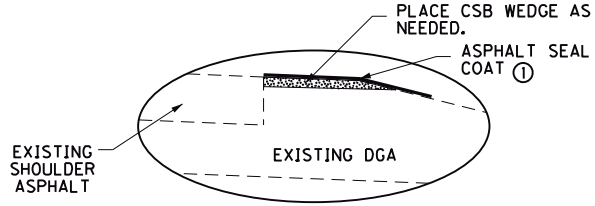
RAMP SUPERELEVATED



DETAIL A



DETAIL D



DETAIL C

SURFACING SCHEDULE ③

RAMP LANE AND SHOULDERS

ASPHALT PAVEMENT MILLING AND TEXTURING.....1 1/2" DEPTH
CL4 ASPH SURFACE 0.50A PG76-22.....1 1/2" DEPTH

① ASPHALT SEAL REQUIRED FROM OUTSIDE EDGE OF PAVED SHOULDER TO A POINT 2 FOOT DOWN THE DITCH OR FILL SLOPE (Where Applicable). TWO APPLICATIONS OF THE FOLLOWING :
ASPHALT SEAL COAT ..... 2.4 lbs. / S.Y.
ASPHALT SEAL AGGREGATE ..... 20 lbs. / S.Y.

② EX. STONE SHOULDER 2' WHERE GUARDRAIL IS PRESENT, USE 7' POSTS.

③ APPLY ASPHALT MATERIAL FOR TACK AT A RATE OF 0.7 LBS/SY BETWEEN EACH LAYER OF ASPH. CONCRETE.

④ JOINT ADHESIVE

NOT TO SCALE

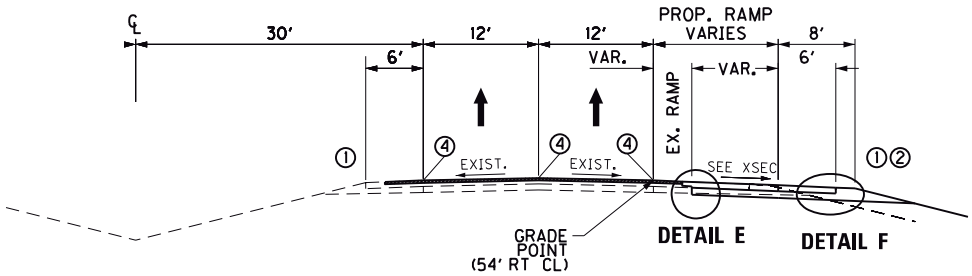
I-24
TYPICAL SECTIONS

PROPOSED TYPICAL SECTIONS

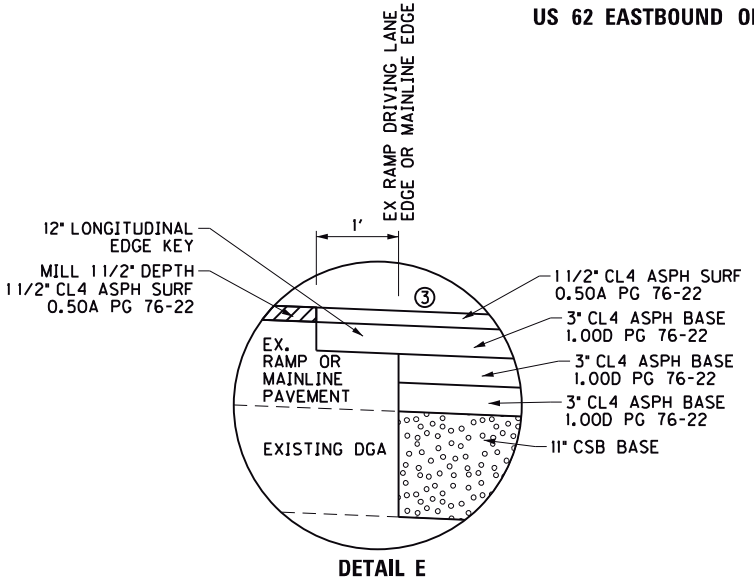
I–24

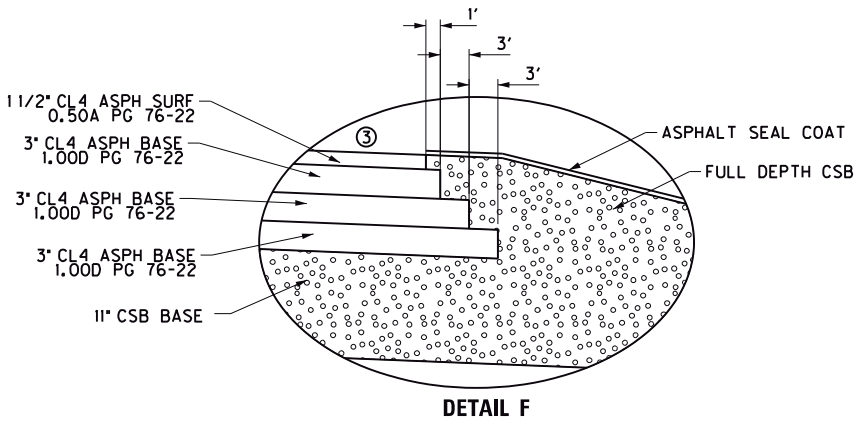
US62 N.B. ON RAMP EXTENSION WIDENING

County	Item No.	Sheet
MARSHALL	I-20034	



US 62 EASTBOUND ON–RAMP ACCELERATION EXTENSION





① ASPHALT SEAL REQUIRED FROM OUTSIDE EDGE OF PAVED SHOULDER TO A POINT 2 FOOT DOWN THE DITCH OR FILL SLOPE (Where Applicable). TWO APPLICATIONS OF THE FOLLOWING :
ASPHALT SEAL COAT ..... 2.4 lbs. / S.Y.
ASPHALT SEAL AGGREGATE ..... 20 lbs. / S.Y.

② EX. STONE SHOULDER 2' WHERE GUARDRAIL IS PRESENT, USE 7' POSTS.

③ APPLY ASPHALT MATERIAL FOR TACK AT A RATE OF 0.7 LBS/SY BETWEEN EACH LAYER OF ASPH. CONCRETE.

④ JOINT ADHESIVE (ALSO PLACE JOINT ADHESIVE BETWEEN RAMP MAINLINE AND SHOULDER IF RAMP SHOULDER IS PLACED SEPARATELY).

SURFACING SCHEDULE ③

RAMP WIDENING MAINLINE & SHOULDERS

CSB BASE.....11" DEPTH
CL4 ASPH BASE 1.00D PG76-22.....3" DEPTH
CL4 ASPH BASE 1.00D PG76-22.....3" DEPTH
CL4 ASPH BASE 1.00D PG76-22.....3" DEPTH
CL4 ASPH SURFACE 0.50A PG76-22.....1 1/2" DEPTH

NOT TO SCALE

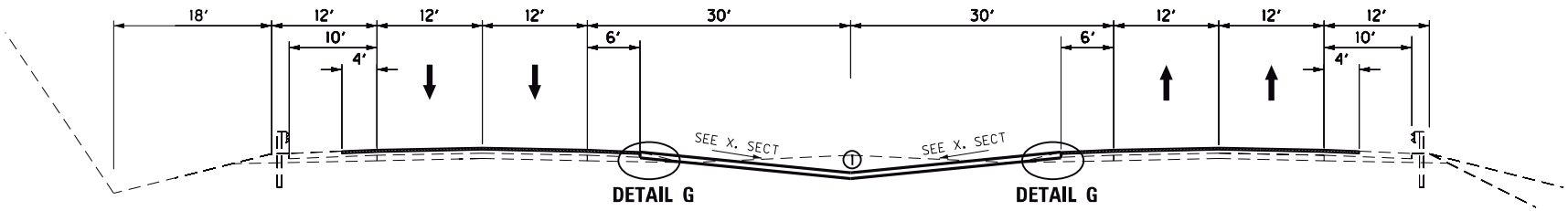
I-24
TYPICAL SECTIONS

MARSHALL COUNTY
NHPP 0241(095)
Contract ID: 251115
Page 33 of 296

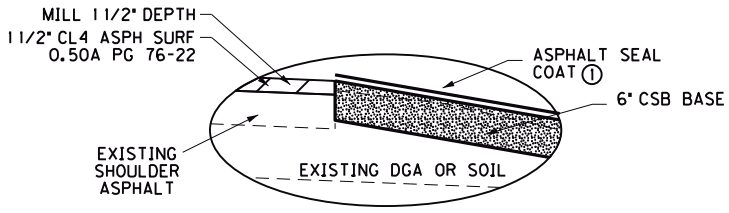
PROPOSED TYPICAL SECTIONS

I–24

County	Item No.	Sheet
MARSHALL	I-20034	



MEDIAN GRADING FOR BULLNOSE TERMINALS



DETAIL G

SURFACING SCHEDULE

MEDIAN GRADING

CSB BASE.....6" DEPTH
ASPHALT SEAL COAT/SEAL AGG.....2 APPL.

(1) ASPHALT SEAL REQUIRED FROM OUTSIDE EDGE OF PAVED SHOULDER INCLUDING FULL WIDTH OF MEDIAN WITH TWO APPLICATIONS OF THE FOLLOWING :
ASPHALT SEAL COAT ..... 2.4 lbs. / S.Y.
ASPHALT SEAL AGGREGATE ..... 20 lbs. / S.Y.

NOTE: PAVING OF MEDIAN GRADING REQUIRED FROM 4' OUTSIDE THE LIMITS OF THE BULLNOSE TERMINALS AND INCLUDING AREAS IN WHICH ACCESS FOR MOWING EQUIPMENT IS ELIMINATED. SEE PLAN SHEETS.

NOT TO SCALE

I-24
TYPICAL SECTIONS

MARSHALL COUNTY
NHPP 0241(095)
Contract ID: 251115
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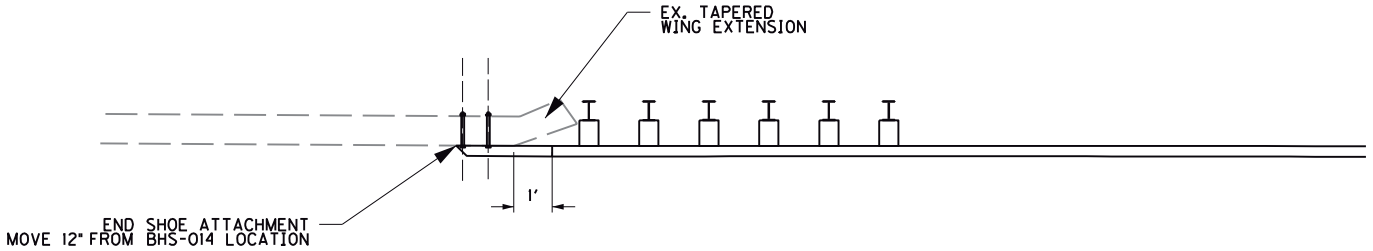
THRIE BEAM TRANSITION DETAIL

County	Item No.	Sheet
MARSHALL	I-20034	-

I–24
THRIE BEAM GUARDRAIL TRANSITION ALTERNATIVE ATTACHMENT DETAIL
OVER CYPRESS CREEK CANAL
OVER P&L RAILWAY
OVER KY 282



ALTERNATIVE THRIE BEAM TRANSITION ATTACHMENT

NOTE: CONSTRUCT THRIE BEAM TRANSITIONS FOR THE STRUCTURES LISTED IN ACCORDANCE WITH THE PLANS AND IN ACCORDANCE WITH BHS-014 EXCEPT MOVE THE POINT OF ATTACHMENT TO THE EXISTING BRIDGE WING APPROXIMATELY 1' TO AVOID A CONFLICT WITH THE FIRST GUARDRAIL POST WITH THE EXISTING TAPERED WING EXTENSION.

I-24
THRIE BEAM GUARDRAIL TRANSITION ATTACHMENT DETAIL

MARSHALL COUNTY
NHPP 0241(095)
Contract ID: 251115
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I-24
MARSHALL COUNTY
ITEM NO. 1-20034 , PAVEMENT REHABILITIATION
MILEPOINT 26.500 TO 29.352
GENERAL SUMMARY

ITEM NUMBER	ITEM		UNIT	QUANTITY
00003	CRUSHED STONE BASE	(1)	TON	8,041
00100	ASPHALT SEAL AGGREGATE	(1)	TON	813
00103	ASPHALT SEAL COAT	(1)	TON	98
00194	LEVELING & WEDGING PG76-22	(1)	TON	500
00219	CL4 ASPH BASE 1.00D PG76-22	(1)	TON	4,987
00335	CL4 ASPH SURF 0.50A PG76-22	(1)	TON	8,723
02676	MOBILIZATION FOR MILL & TEXT	(1)	LS	1
02677	ASPHALT PAVE MILLING & TEXTURING	(1)	TON	12,771
20071EC	JOINT ADHESIVE	(1)	LF	89,455
21289ED	LONGITUDINAL EDGE KEY	(1)	LF	1,195
24970EC	ASPHALT MATERIAL FOR TACK NON-TRACKING	(1)	TON	47
00461	CULVERT PIPE-15 IN	(2)	LF	8
00521	STORM SEWER PIPE-15 IN	(2)	LF	75
01202	PIPE CULVERT HEADWALL-15 IN	(2)	EACH	1
01511	DROP BOX INLET TYPE 5D	(2)	EACH	1
01310	REMOVE PIPE	(2)	LF	4
01717	FILL AND CAP INLET	(2)	EACH	1
01719	ADJUST INLET	(2)	EACH	2
02483	CHANNEL LINING CLASS II	(2)	TON	10
02607	FABRIC-GEOTEXTILE CLASS 2 FOR PIPE	(2)	SQYD	108
02625	REMOVE HEADWALL	(2)	EACH	1
08100	CONCRETE-CLASS A	(2)	CUYD	0.86
01982	DELINEATOR FOR GUARDRAIL MONO DIRECTIONAL WHITE	(3)	EACH	20
01983	DELINEATOR FOR GUARDRAIL MONO DIRECTIONAL YELLOW	(3)	EACH	106
02381	REMOVE GUARDRAIL	(3)	LF	3,912.5
21380ES719	GUARDRAIL THRIE BEAM	(3)	LF	3,786
21802EN	G/R STEEL W BEAM-S FACE (7 FT POST)	(3)	LF	600
25078ED	THRIE BEAM GUARDRAIL TRANSITION TL-3	(3)	EACH	40
26236EC	THRIE BEAM BULLNOSE TERMINAL	(3)	EACH	8
02703	SILT TRAP TYPE A		EACH	8
02704	SILT TRAP TYPE B		EACH	8
02705	SILT TRAP TYPE C		EACH	8
02706	CLEAN SILT TRAP TYPE A		EACH	8
02707	CLEAN SILT TRAP TYPE B		EACH	8
02708	CLEAN SILT TRAP TYPE C		EACH	8
05950	EROSION CONTROL BLANKET		SQYD	7,061

(1) CARRIED OVER FROM PAVING SUMMARY.
(2) CARRIED OVER FROM PIPE DRAINAGE SUMMARY.
(3) CARRIED OVER FROM GUARDRAIL SUMMARY.

I-24
MARSHALL COUNTY
ITEM NO. 1-20034 , PAVEMENT REHABILITIATION
MILEPOINT 26.500 TO 29.352
GENERAL SUMMARY

ITEM NUMBER	ITEM	UNIT	QUANTITY
05952	TEMP MULCH	SQYD	4,707
05963	INITIAL FERTILIZER	TON	0.4
05964	MAINTENANCE FERTILIZER	TON	0.30
05992	AGRICULTURAL LIMESTONE	TON	4.40
40030	TEMPORARY SILT FENCE	LF	2,000
01984	DELINEATOR FOR BARRIER - WHITE	EACH	198
01985	DELINEATOR FOR BARRIER - YELLOW	EACH	272
02003	RELOCATE TEMP CONC BARRIER	LF	5,640
02014	BARRICADE-TYPE III	EACH	10
02562	TEMPORARY SIGNS	SQFT	1,000
02650	MAINTAIN & CONTROL TRAFFIC	LS	1
02671	PORTABLE CHANGEABLE MESSAGE SIGN	EACH	4
02898	RELOCATE CRASH CUSHION	EACH	4
03171	CONCRETE BARRIER WALL TYPE 9T	LF	15,120
06511	PAVE STRIPING-TEMP PAINT-6 IN	LF	169,966
06549	PAVE STRIPING-TEMP REM TAPE-B	LF	4,613
06550	PAVE STRIPING-TEMP REM TAPE-W	LF	2,563
06551	PAVE STRIPING-TEMP REM TAPE-Y	LF	2,050
06585	PAVEMENT MARKER TY IVA-MW TEMP	EACH	2,071
06586	PAVEMENT MARKER TY IVA-MY TEMP	EACH	100
08912	CRASH CUSHION TY VI CLASS T TL3	EACH	9
20411ED	LAW ENFORCEMENT OFFICER	HOUR	600
25075EC	QUEUE PROTECTION VEHICLE	HOUR	600
25117EC	FURNISH QUEUE PROTECTION VEHICLES	MONT	8
26136EC	PORTABLE QUEUE WARNING ALERT SYSTEM	MONT	8
26137EC	QUEUE WARNING PCMS	MONT	32
26138EC	QUEUE WARNING PORTABLE RADAR SENSORS	MONT	32
26237EC	CONNECTED ARROW PANEL	MONT	16
02697	EDGELINE RUMBLE STRIPS	LF	60,282
06401	FLEXIBLE DELINEATOR POST-M/W	EACH	334
06404	FLEXIBLE DELINEATOR POST-M/Y	EACH	48
06542	PAVE STRIPING-THERMO-6 IN W	LF	37,180
06543	PAVE STRIPING-THERMO-6 IN Y	LF	30,141
06546	PAVE STRIPING-THERMO-12 IN W	LF	1,300
06556	PAVE STRIPING-DUR TY 1-6 IN W	LF	7,045
06557	PAVE STRIPING-DUR TY 1-6 IN Y	LF	5,636
06568	PAVE MARKING-THERMO STOP BAR-24IN	LF	30
06613	INLAID PAVEMENT MARKER-B W/R	EACH	376

I-24
MARSHALL COUNTY
ITEM NO. 1-20034 , PAVEMENT REHABILITIATION
MILEPOINT 26.500 TO 29.352
GENERAL SUMMARY

ITEM NUMBER	ITEM	UNIT	QUANTITY
06614	INLAID PAVEMENT MARKER-B Y/R	EACH	29
20208NC	PAVE MARK-PAINT ARROWS	EACH	3
24679ED	PAVE MARK THERMO CHEVRON	SQFT	433
02200	ROADWAY EXCAVATION (6)	CUYD	6,175
02545	CLEARING AND GRUBBING (4)	LS	1
02726	STAKING	LS	1
10020NS	FUEL ADJUSTMENT	DOLL	25,012
10030NS	ASPHALT ADJUSTMENT	DOLL	55,555
24891EC	PAVE MOUNT INFRARED TEMP EQUIPMENT	SQFT	711,693
26233EC	MOBILIZATION - FOR CONCRETE SURFACE TREATMENT	LS	1
26248EC	ELECTRONIC DELIVERY MANAGEMENT SYSTEM-AGG	LS	1
04793	CONDUIT-1 1/4 IN (5)	LF	80
04795	CONDUIT-2 IN (5)	LF	20
04820	TRENCHING AND BACKFILLING (5)	LF	90
04829	PIEZOELECTRIC SENSOR (5)	EACH	4
04830	LOOP WIRE (5)	LF	1,600
04895	LOOP SAW SLOT AND FILL (5)	LF	360
20359NN	GALVANIZED STEEL CABINET (5)	EACH	2
20360ES818	WOOD POST (5)	EACH	4
20391NS835	ELECTRICAL JUNCTION BOX TYPE A (5)	EACH	2
02568	MOBILIZATION	LS	1
02569	DEMOBILIZATION	LS	1

(4) APPROXIMATELY 1.5 ACRES.

(5) CARRIED OVER FROM PLANNING STATION SUMMARY.

(6) EARTHWORK - EXC. - MED GRADING 4,656 CY
- RAMP EXT. 1,519 CY
- TOTAL EXC. 6,175 CY

EARTHWORK - EMB. - MED GRADING 883 CY
- RAMP EXT. 283 CY
- TOTAL EMB. 1,166 CY

I-24
MARSHALL COUNTY
ITEM NO. 1-20034 , PAVEMENT REHABILITIATION
MILEPOINT 26.500 TO 29.352
PAVING SUMMARY

PAVING AREAS (SY)

ITEM	TOTAL	ITEM	TOTAL
MAINLINE & MAINLINE SHOULDERS		SHOULDER WEDGE RESTORATION	
1.5'' ASPH PAVE MILLING & TEXTURING	97,138	.5" AVG THICKNESS CSB BASE	26,765
1.5'' CL4 ASPH SURF 0.50A PG76-22	97,138	ASPHALT SEAL AGGREGATE	26,765
		ASPHALT SEAL COAT	26,765
RAMP MAINLINE AND RAMP SHOULDERS			
1.5'' ASPH PAVE MILLING & TEXTURING	8,591	MEDIAN GRADING	
1.5'' CL4 ASPH SURF 0.50A PG76-22	8,591	6" CSB BASE	13,895
		ASPHALT SEAL AGGREGATE	13,895
RAMP WIDENING MAINLINE & SHOULDERS		ASPHALT SEAL COAT	13,895
11" CSB	1,961		
3" CL4 ASPH BASE 1.00D PG76-22	5,692		
CSB OUTSIDE WEDGE (CY)	598		
SHOULDER STRENGTHENING			
8" ASPH PAVE MILLING & TEXTURING	9,200		
4" CL4 ASPH BASE 1.00D PG76-22	18,400		

PAVING SUMMARY

ITEM CODE	ITEM		UNIT	QUANTITY
00003	CRUSHED STONE BASE		TON	8,041
00100	ASPHALT SEAL AGGREGATE	(1)	TON	813
00103	ASPHALT SEAL COAT	(2)	TON	98
00194	LEVELING & WEDGING PG76-22	(3)	TON	500
00219	CL4 ASPH BASE 1.00D PG76-22		TON	4,987
				-
				-
00335	CL4 ASPH SURF 0.50A PG76-22		TON	8,723
				-
02676	MOBILIZATION FOR MILL & TEXT		LS	1
02677	ASPHALT PAVE MILLING & TEXTURING		TON	12,771
20071EC	JOINT ADHESIVE		LF	89,455
21289ED	LONGITUDINAL EDGE KEY		LF	1,195
24970EC	ASPHALT MATERIAL FOR TACK NON-TRACKING	(4)	TON	47
				-

(1) BASE ON COVERAGE OF 100% OF SHOULDERS AND BASED ON 2 APPLICATIONS OF 20 LBS/SY.
(2) BASED ON COVERAGE OF 100% OF SHOULDERS AND BASED ON 2 APPLICATIONS OF 2.4 LBS/SY.
(3) TO BE USED AS DIRECTED TO RESTORE TEMPLATE AND CORRECT PROFILE IRREGULARITIES.
(4) BASE ON APPLICATION RATE OF 0.7 LBS/SY.

ALL ITEMS CARRIED OVER TO GENERAL SUMMARY

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

I-24
MARSHALL COUNTY
ITEM NO. 1-20034 , PAVEMENT REHABILITIATION
MILEPOINT 26.500 TO 29.352
PIPE SUMMARY

MILEPOINT	CULVERT PIPE-15 IN	STORM SEWER PIPE-15 IN	PIPE CULVERT HEADWALL-15 IN	DROP BOX INLET TYPE 5D	REMOVE PIPE		FILL AND CAP INLET	ADJUST INLET	CHANNEL LINING CLASS II	FABRIC-GEOTEXTILE CLASS 2 FOR PIPE	REMOVE HEADWALL	CONCRETE-CLASS A							REMARKS
ITEM CODE	00461	00521	01202	01511	01310		01717	01719	02483	02607	02625	08100							
UNIT	LF	LF	EACH	EACH	LF		EACH	EACH	TON	SQYD	EACH	CUYD							
26.488		75		1			1			108									
26.555								1											
26.999	8		1		4				10		1	0.86							
27.567								1											
																			19
PROJECT TOTAL	8	75	1	1	4		1	2	10	108	1	0.86							

ALL ITEMS CARRIED OVER TO THE GENERAL SUMMARY.

I-24
MARSHALL COUNTY
ITEM NO. 1-20034 , PAVEMENT REHABILITIATION
MILEPOINT 26.500 TO 29.352
GUARDRAIL SUMMARY

POINT NUMBERS	FROM MILEPOST	TO MILEPOST	DELINEATOR FOR GUARDRAIL MONO DIRECTIONAL WHITE	DELINEATOR FOR GUARDRAIL MONO DIRECTIONAL YELLOW	REMOVE GUARDRAIL		GUARDRAIL THRIE BEAM	G/R STEEL W BEAM-S FACE (7 FT POST)		THRIE BEAM GUARDRAIL TRANSITION TL-3	THRIE BEAM BULLNOSE TERMINAL			DESCRIPTION
ITEM CODE			01982	01983	02381		21380ES719	21802EN		25078ED	26236EC			
UNIT			EACH	EACH	LF		LF	LF		EACH	EACH			
	26.503	26.565		12	487.5		469			2	1			Bullnose terminal for twin structures
	26.546	26.555	1		50			25		1				SB outside
	26.562	26.571	1		50			25		1				NB outside
	26.599	26.609	1		50			25		1				SB Outside
	26.606	26.654		10	275		318			2	1			Bullnose terminal for twin structures
	26.616	26.625	1		50			25		1				NB outside
	27.532	27.577		10	287.5		298			2	1			Bullnose terminal for twin structures
	27.561	27.570	1		50			25		1				NB outside
	27.574	27.583	1		50			25		1				SB outside
	27.592	27.602	1		50			25		1				NB outside
	27.598	27.641		10	275		275			2	1			Bullnose terminal for twin structures
	27.604	27.614	1		50			25		1				SB outside
	28.465	28.508		10	587.5		281			2	1			Bullnose terminal for twin structures
	28.493	28.503	1		50			25		1				SB outside
	28.503	28.513	1		50			25		1				NB outside
	28.535	28.545	1		50			25		1				SB outside
	28.539	28.662		24	312.5		1,188	100		4				Thriebeam inside shoulder
	28.544	28.553	1		50			25		1				NB outside
	28.649	28.659	1		50			25		1				SB outside
	28.656	28.666	1		50			25		1				NB outside
	28.703	28.712	1		50			25		1				SB outside
	28.707	28.751		10	287.5		309			2	1			Bullnose terminal for twin structures
	28.709	28.719	1		50			25		1				NB outside
	29.097	29.142		10	237.5		324			2	1			Bullnose terminal for twin structures
	29.134	29.143	1		50			25		1				SB outside
SHEET TOTAL			17	96	3,600		3,462	525		35	7			

ALL ITEMS CARRIED OVER TO GENERAL SUMMARY.

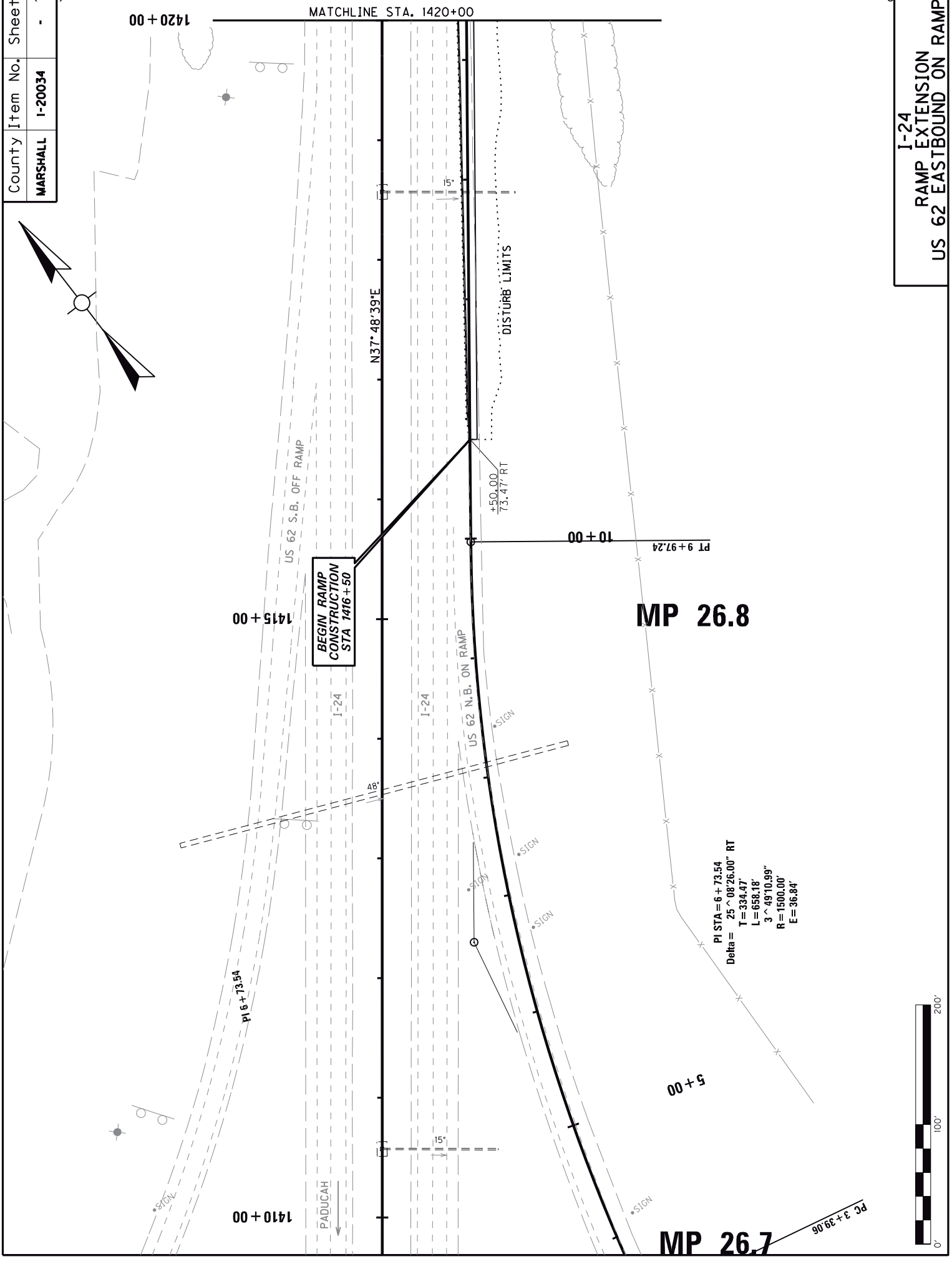
I-24
MARSHALL COUNTY
ITEM NO. 1-20034 , PAVEMENT REHABILITIATION
MILEPOINT 26.500 TO 29.352
GUARDRAIL SUMMARY

POINT NUMBERS	FROM MILEPOST	TO MILEPOST	DELINEATOR FOR GUARDRAIL MONO DIRECTIONAL WHITE	DELINEATOR FOR GUARDRAIL MONO DIRECTIONAL YELLOW	REMOVE GUARDRAIL		GUARDRAIL THRIE BEAM	G/R STEEL W BEAM-S FACE (7 FT POST)		THRIE BEAM GUARDRAIL TRANSITION TL-3	THRIE BEAM BULLNOSE TERMINAL			DESCRIPTION
ITEM CODE			01982	01983	02381		21380ES719	21802EN		25078ED	26236EC			
UNIT			EACH	EACH	LF		LF	LF		EACH	EACH			
	29.134	29.144	1		50			25		1				NB outside
	29.547	29.556	1		50			25		1				SB outside
	29.548	29.558	1		50			25		1				NB outside
	29.551	29.596		10	162.5		324			2	1			Bullnose terminal for twin structures
Sheet Total			3	10	312.5		324	75		5	1			
PROJECT TOTAL			20	106	3,912.5		3,786	600		40	8			

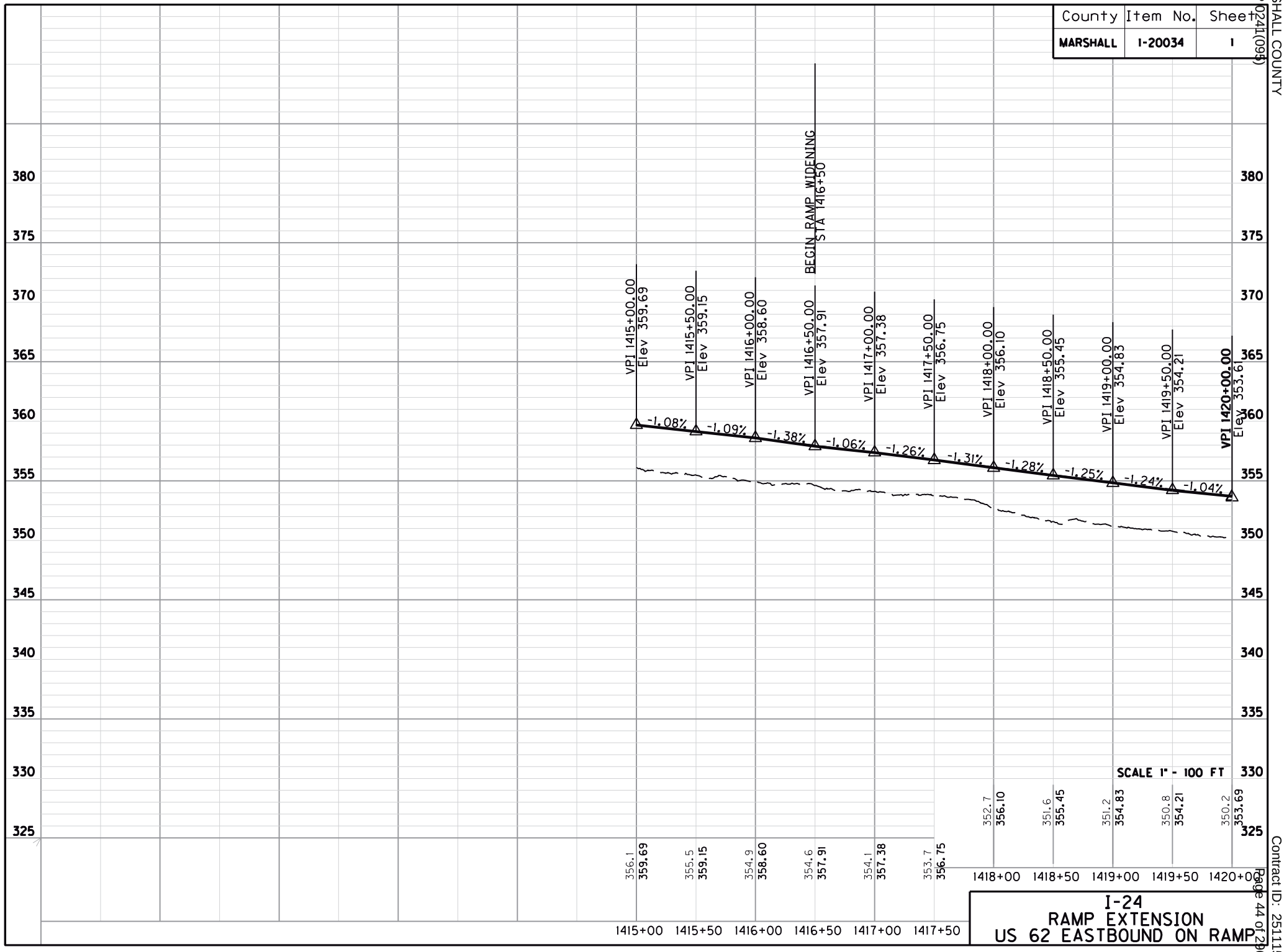
ALL ITEMS CARRIED OVER TO GENERAL SUMMARY.

County	Item No.	Sheet
MARSHALL	1-20034	-

I-24 RAMP EXTENSION US 62 EASTBOUND ON RAMP



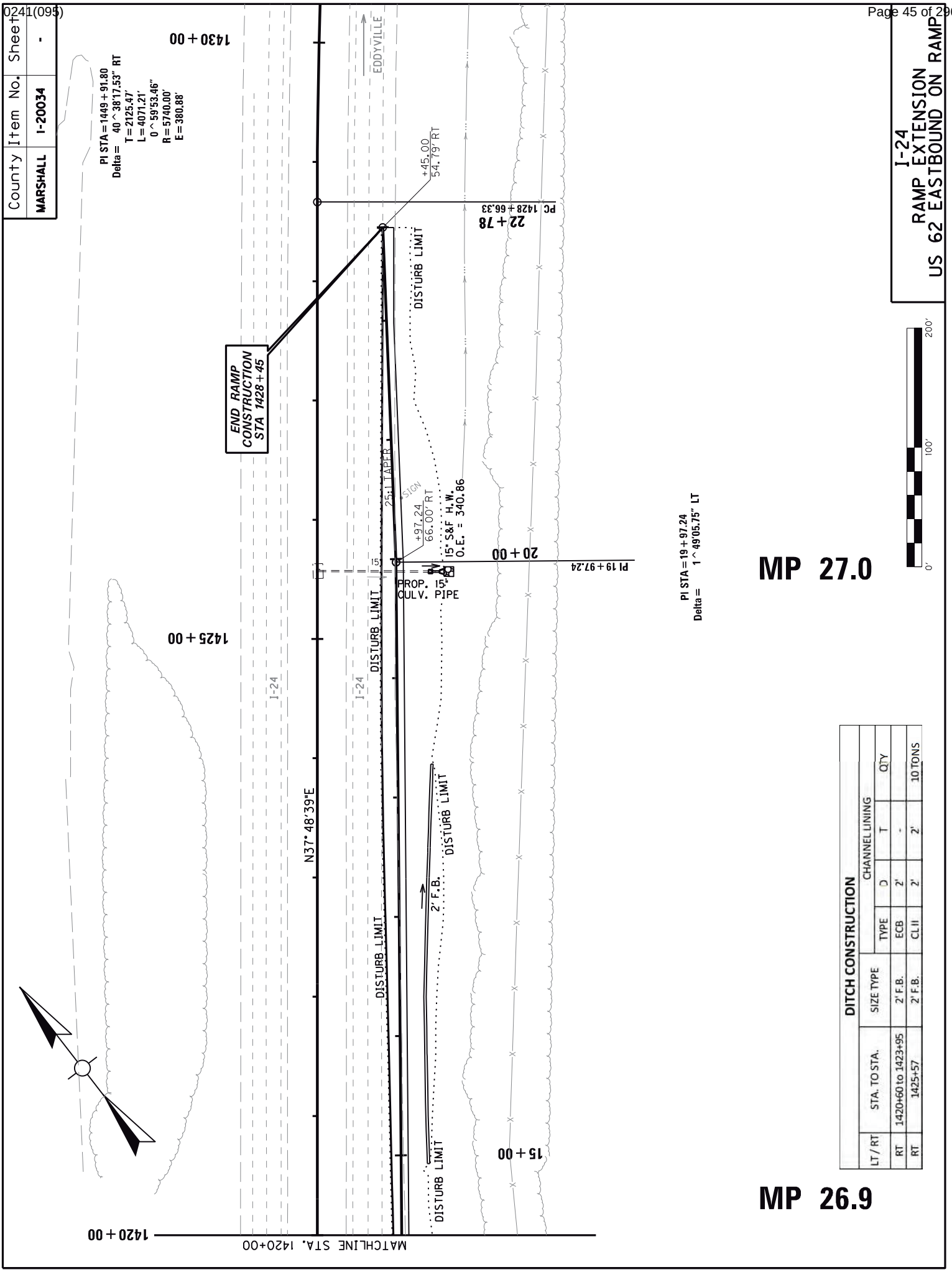
County	Item No.	Sheet
MARSHALL	I-20034	1



I-24
RAMP EXTENSION
US 62 EASTBOUND ON RAMP

County	Item No.	Sheet
MARSHALL	I-20034	-

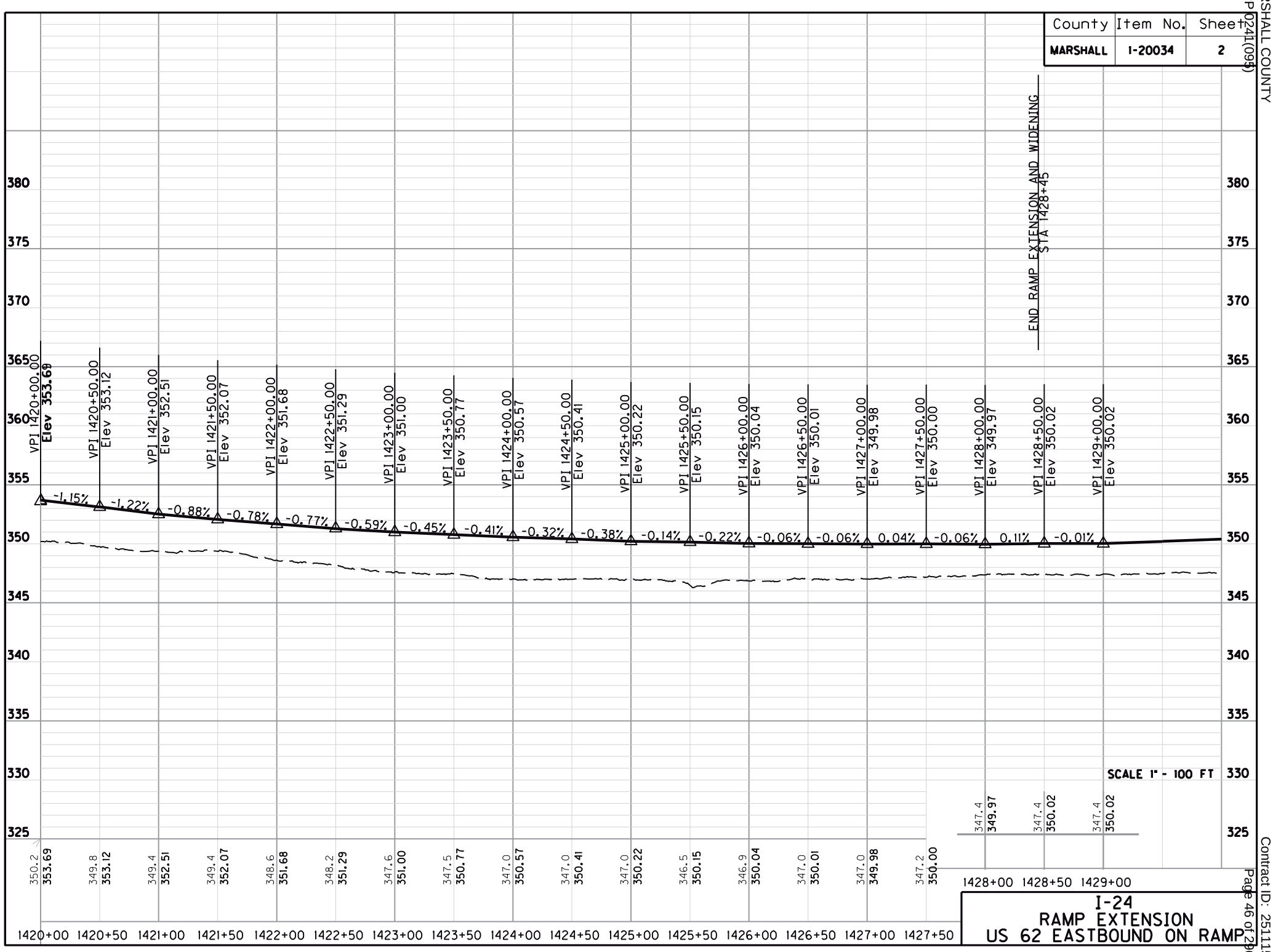
I-24 RAMP EXTENSION US 62 EASTBOUND ON RAMP



DITCH CONSTRUCTION

LT / RT	STA. TO STA.	SIZE TYPE	CHANNEL LINING TYPE	D	T	QTY
RT	1420+60 to 1423+95	2' F.B.	ECB	2'	-	
RT	1425+57	2' F.B.	CL II	2'	2'	10 TONS

County	Item No.	Sheet
MARSHALL	I-20034	2

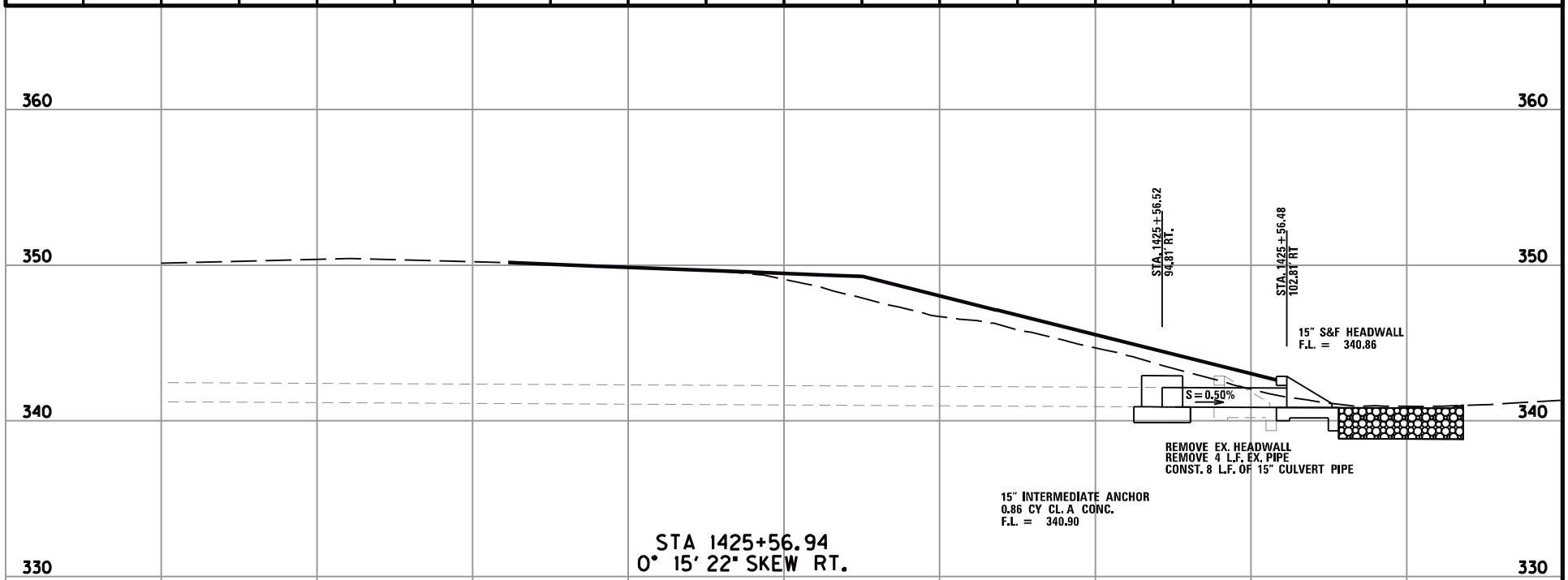


I-24
RAMP EXTENSION
US 62 EASTBOUND ON RAMP

PIPE DRAINAGE SHEET

COUNTY OF	ITEM NO.	SHEET NO.
MARSHALL	I-20034	-

MAXIMUM COVER HEIGHT	DESIGN PH LEVEL	CULVERT PIPE						STORM PIPE					REMOVE PIPE	REMOVE HEADWALL	FABRIC-GEOTEXTILE CL2 FOR PIPE	CONCRETE-CLASS A	-	-	-
		15"	18"	24"	30"	36"	42"	12"	15"	18"	24"	30"							
FT		LINEAR FEET											LIN. FT.	EACH	S.Y.	C.Y.	-	-	-
3	M	8	-	-	-	-	-	-	-	-	-	-	4	1	11	.86	-	-	-



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

I-24
PIPE PROFILES
STA 1425+56.94

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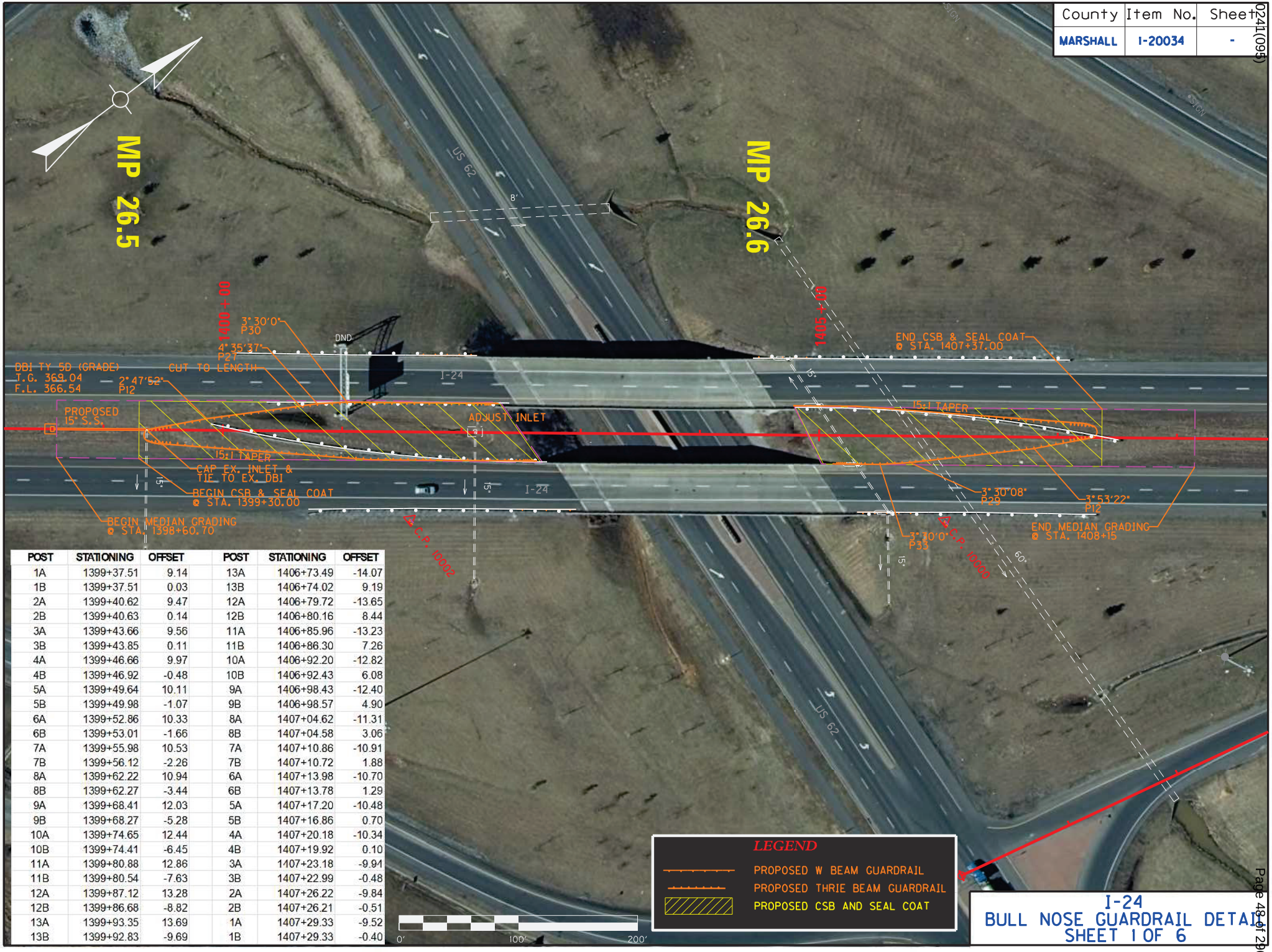
USER: phoward
DATE PLOTTED: July 9, 2025
E-SHEET NAME:
MicroStation v8.11.9.459

County	Item No.	Sheet
MARSHALL	I-20034	-



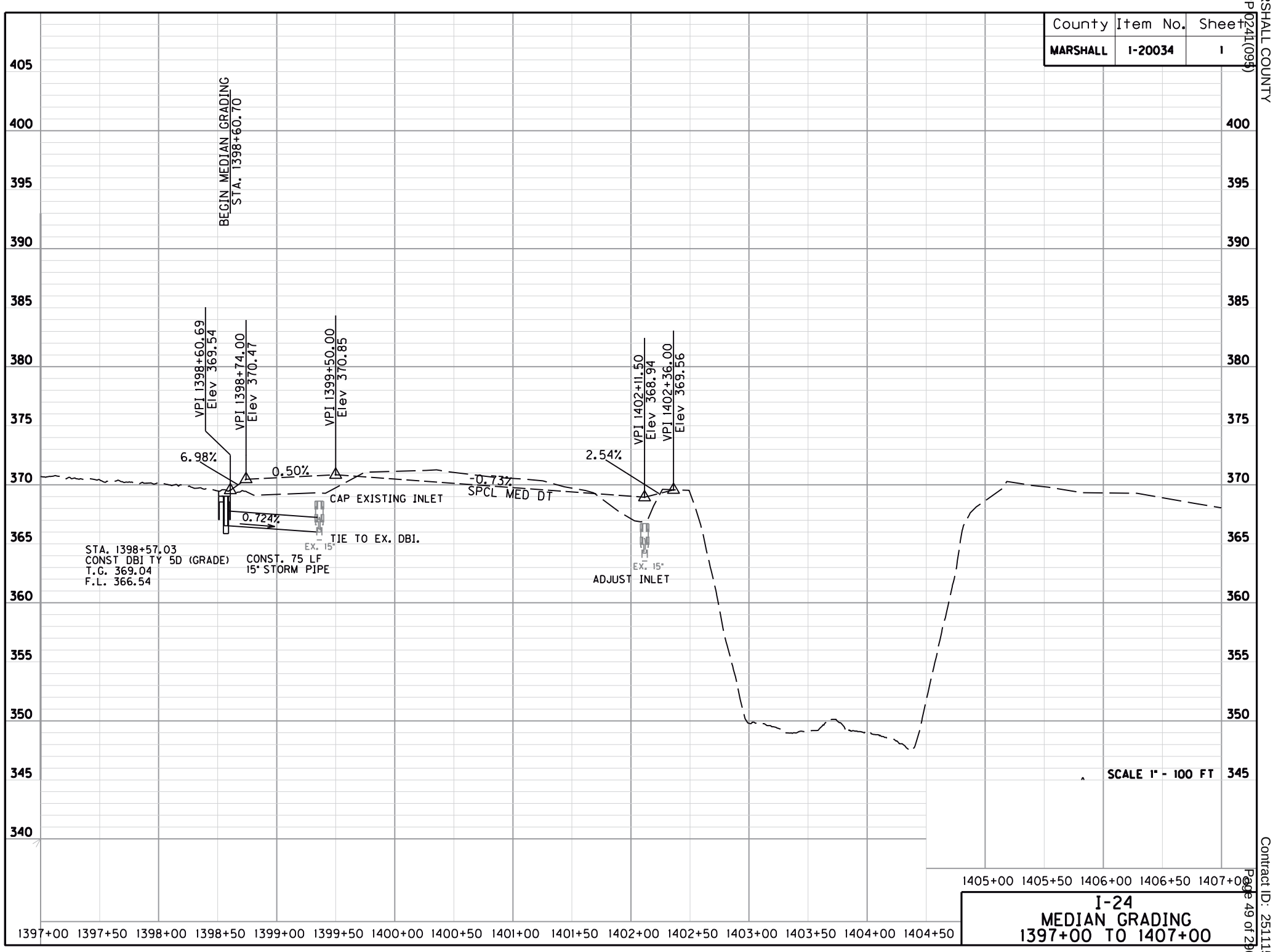
POST	STATIONING	OFFSET	POST	STATIONING	OFFSET
1A	1399+37.51	9.14	13A	1406+73.49	-14.07
1B	1399+37.51	0.03	13B	1406+74.02	9.19
2A	1399+40.62	9.47	12A	1406+79.72	-13.65
2B	1399+40.63	0.14	12B	1406+80.16	8.44
3A	1399+43.66	9.56	11A	1406+85.96	-13.23
3B	1399+43.85	0.11	11B	1406+86.30	7.26
4A	1399+46.66	9.97	10A	1406+92.20	-12.82
4B	1399+46.92	-0.48	10B	1406+92.43	6.08
5A	1399+49.64	10.11	9A	1406+98.43	-12.40
5B	1399+49.98	-1.07	9B	1406+98.57	4.90
6A	1399+52.86	10.33	8A	1407+04.62	-11.31
6B	1399+53.01	-1.66	8B	1407+04.58	3.06
7A	1399+55.98	10.53	7A	1407+10.86	-10.91
7B	1399+56.12	-2.26	7B	1407+10.72	1.88
8A	1399+62.22	10.94	6A	1407+13.98	-10.70
8B	1399+62.27	-3.44	6B	1407+13.78	1.29
9A	1399+68.41	12.03	5A	1407+17.20	-10.48
9B	1399+68.27	-5.28	5B	1407+16.86	0.70
10A	1399+74.65	12.44	4A	1407+20.18	-10.34
10B	1399+74.41	-6.45	4B	1407+19.92	0.10
11A	1399+80.88	12.86	3A	1407+23.18	-9.94
11B	1399+80.54	-7.63	3B	1407+22.99	-0.48
12A	1399+87.12	13.28	2A	1407+26.22	-9.84
12B	1399+86.68	-8.82	2B	1407+26.21	-0.51
13A	1399+93.35	13.69	1A	1407+29.33	-9.52
13B	1399+92.83	-9.69	1B	1407+29.33	-0.40

LEGEND

- PROPOSED W BEAM GUARDRAIL
- PROPOSED THRIE BEAM GUARDRAIL
- PROPOSED CSB AND SEAL COAT

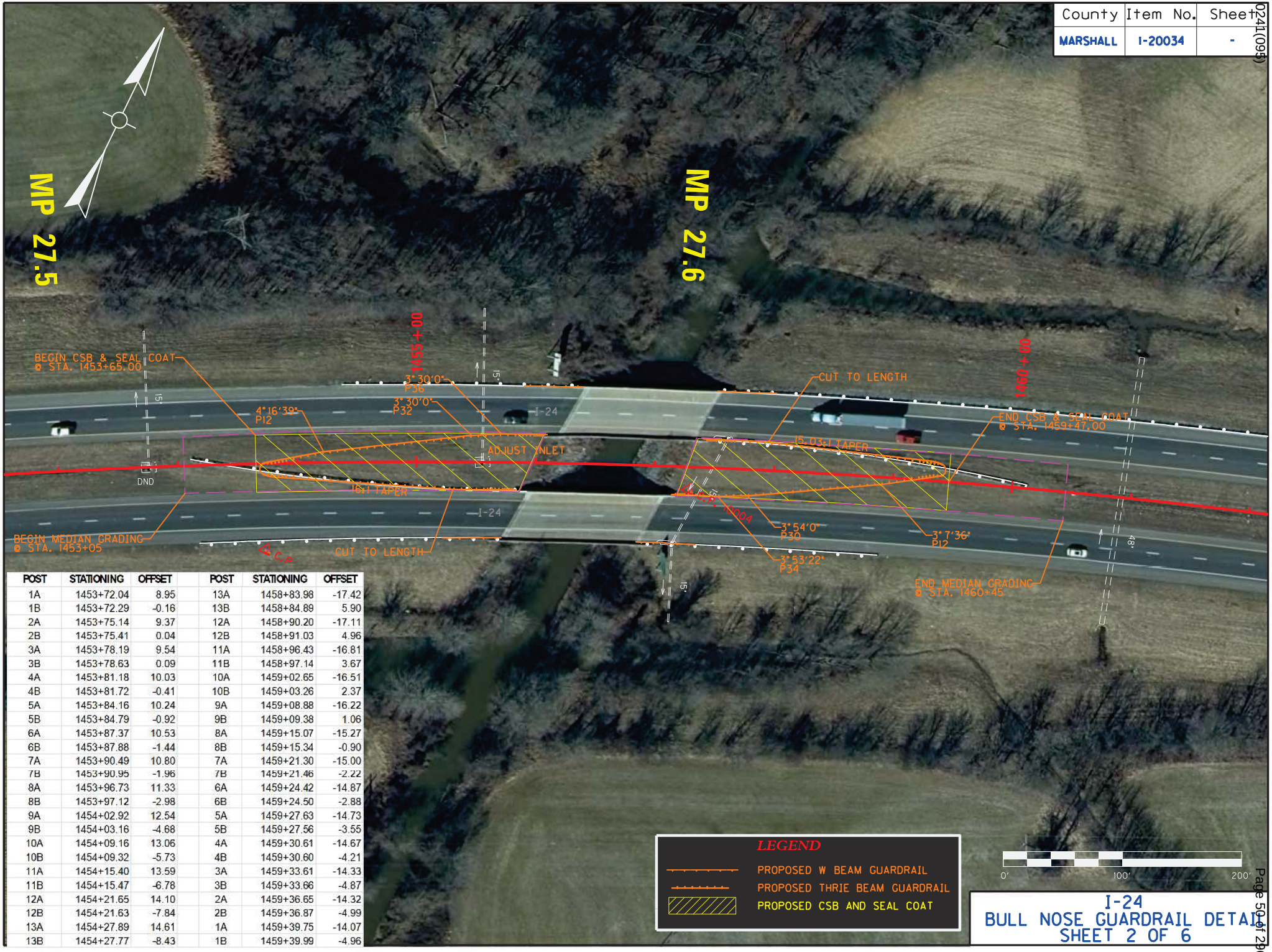
I-24
BULL NOSE GUARDRAIL DETAIL
SHEET 1 OF 6

County	Item No.	Sheet
MARSHALL	I-20034	1



I-24
MEDIAN GRADING
1397+00 TO 1407+00

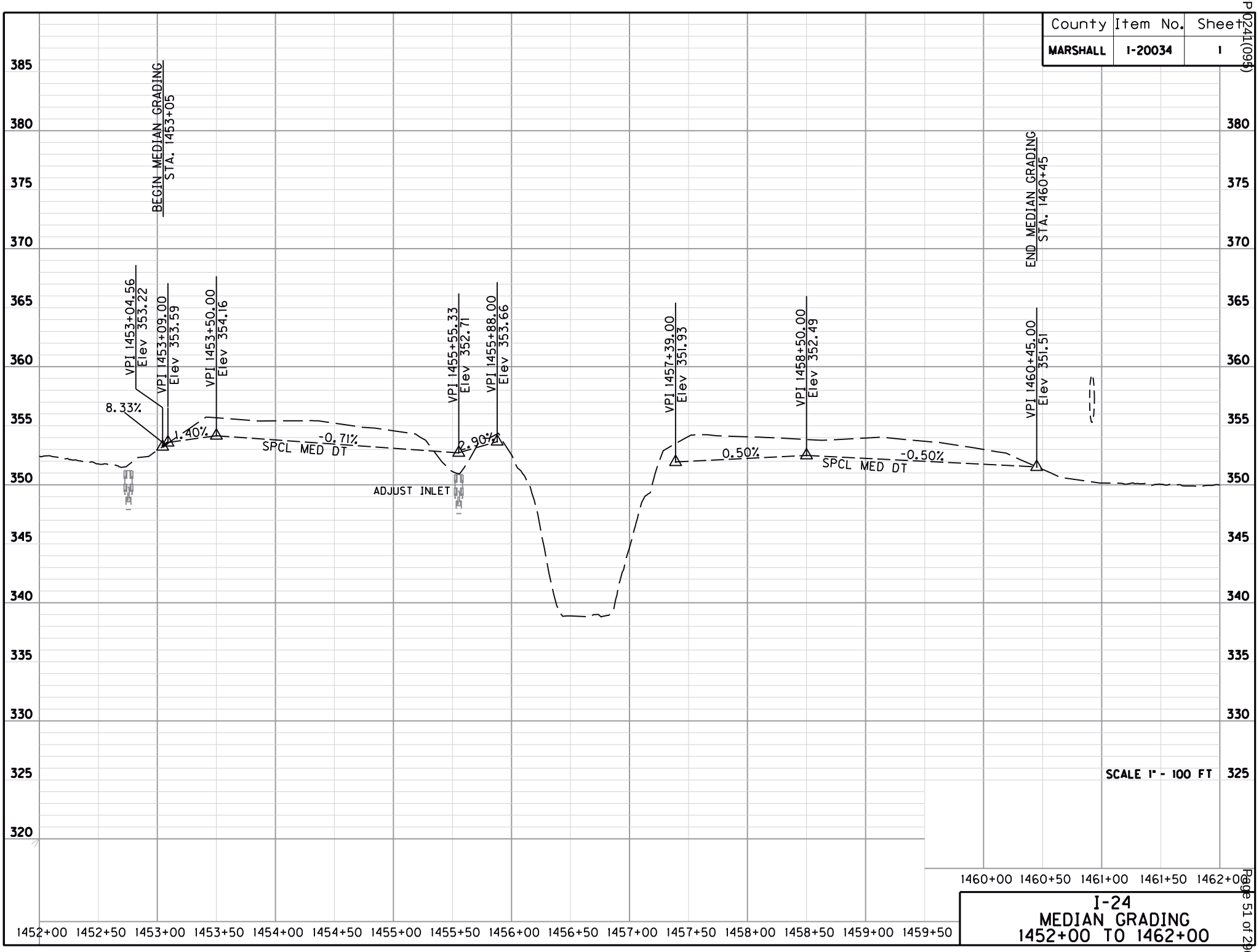
County	Item No.	Sheet
MARSHALL	I-20034	-



POST	STATIONING	OFFSET	POST	STATIONING	OFFSET
1A	1453+72.04	8.95	13A	1458+83.98	-17.42
1B	1453+72.29	-0.16	13B	1458+84.89	5.90
2A	1453+75.14	9.37	12A	1458+90.20	-17.11
2B	1453+75.41	0.04	12B	1458+91.03	4.96
3A	1453+78.19	9.54	11A	1458+96.43	-16.81
3B	1453+78.63	0.09	11B	1458+97.14	3.67
4A	1453+81.18	10.03	10A	1459+02.65	-16.51
4B	1453+81.72	-0.41	10B	1459+03.26	2.37
5A	1453+84.16	10.24	9A	1459+08.88	-16.22
5B	1453+84.79	-0.92	9B	1459+09.38	1.06
6A	1453+87.37	10.53	8A	1459+15.07	-15.27
6B	1453+87.88	-1.44	8B	1459+15.34	-0.90
7A	1453+90.49	10.80	7A	1459+21.30	-15.00
7B	1453+90.95	-1.96	7B	1459+21.46	-2.22
8A	1453+96.73	11.33	6A	1459+24.42	-14.87
8B	1453+97.12	-2.98	6B	1459+24.50	-2.88
9A	1454+02.92	12.54	5A	1459+27.63	-14.73
9B	1454+03.16	-4.68	5B	1459+27.56	-3.55
10A	1454+09.16	13.06	4A	1459+30.61	-14.67
10B	1454+09.32	-5.73	4B	1459+30.60	-4.21
11A	1454+15.40	13.59	3A	1459+33.61	-14.33
11B	1454+15.47	-6.78	3B	1459+33.66	-4.87
12A	1454+21.65	14.10	2A	1459+36.65	-14.32
12B	1454+21.63	-7.84	2B	1459+36.87	-4.99
13A	1454+27.89	14.61	1A	1459+39.75	-14.07
13B	1454+27.77	-8.43	1B	1459+39.99	-4.96

I-24
BULL NOSE GUARDRAIL DETAIL
SHEET 2 OF 6

County	Item No.	Sheet
MARSHALL	I-20034	1



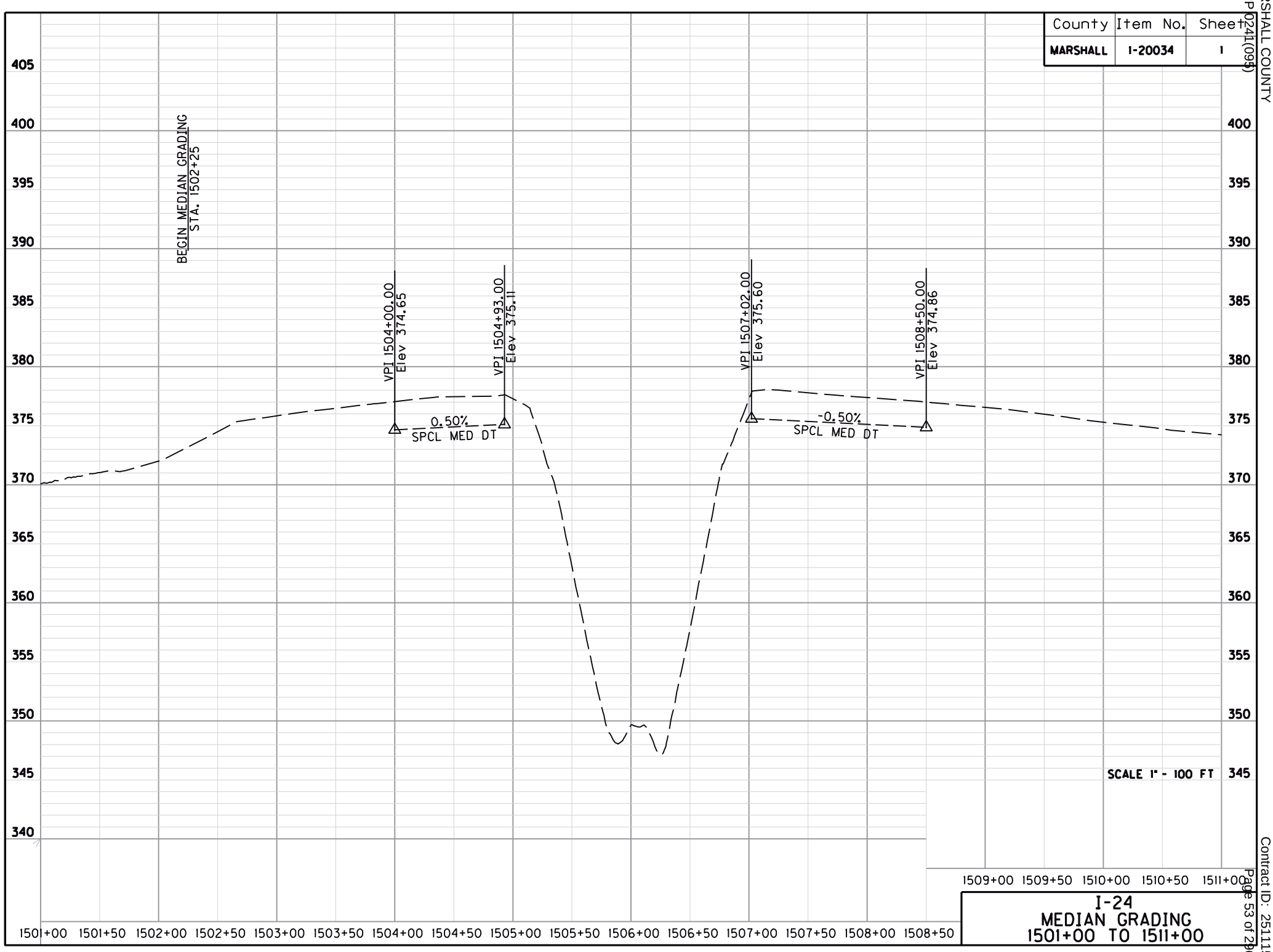
I-24
MEDIAN GRADING
1452+00 TO 1462+00

County	Item No.	Sheet
MARSHALL	I-20034	-

POST	STATIONING	OFFSET
1A	1502+97.12	13.63
1B	1502+96.73	4.53
2A	1503+00.23	13.83
2B	1502+99.85	4.51
3A	1503+03.26	13.80
3B	1503+03.06	4.34
4A	1503+06.27	14.08
4B	1503+06.10	3.63
5A	1503+09.24	14.10
5B	1503+09.14	2.92
6A	1503+12.45	14.19
6B	1503+12.18	2.20
7A	1503+15.57	14.28
7B	1503+15.22	1.49
8A	1503+21.79	14.45
8B	1503+21.31	0.08
9A	1503+28.00	15.31
9B	1503+27.25	-1.97
10A	1503+34.22	15.51
10B	1503+33.35	-3.36
11A	1503+40.44	15.72
11B	1503+39.45	-4.75
12A	1503+46.67	15.94
12B	1503+45.55	-6.12
13A	1503+52.89	16.17
13B	1503+51.68	-7.14

I-24
BULL NOSE GUARDRAIL DETAIL
SHEET 3 of 6

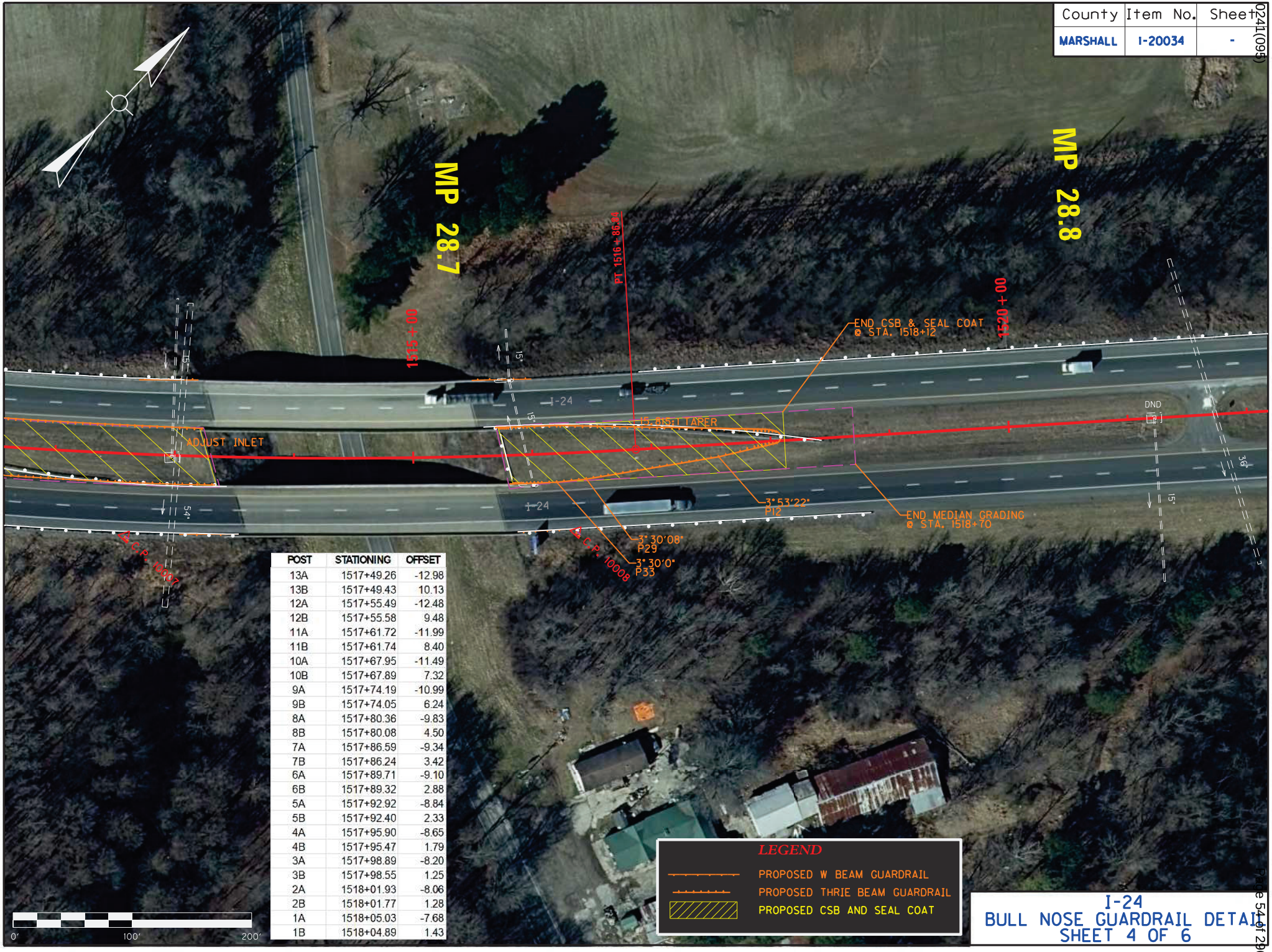
County	Item No.	Sheet
MARSHALL	I-20034	1



SCALE 1" - 100 FT

I-24
MEDIAN GRADING
1501+00 TO 1511+00

County	Item No.	Sheet
MARSHALL	I-20034	-



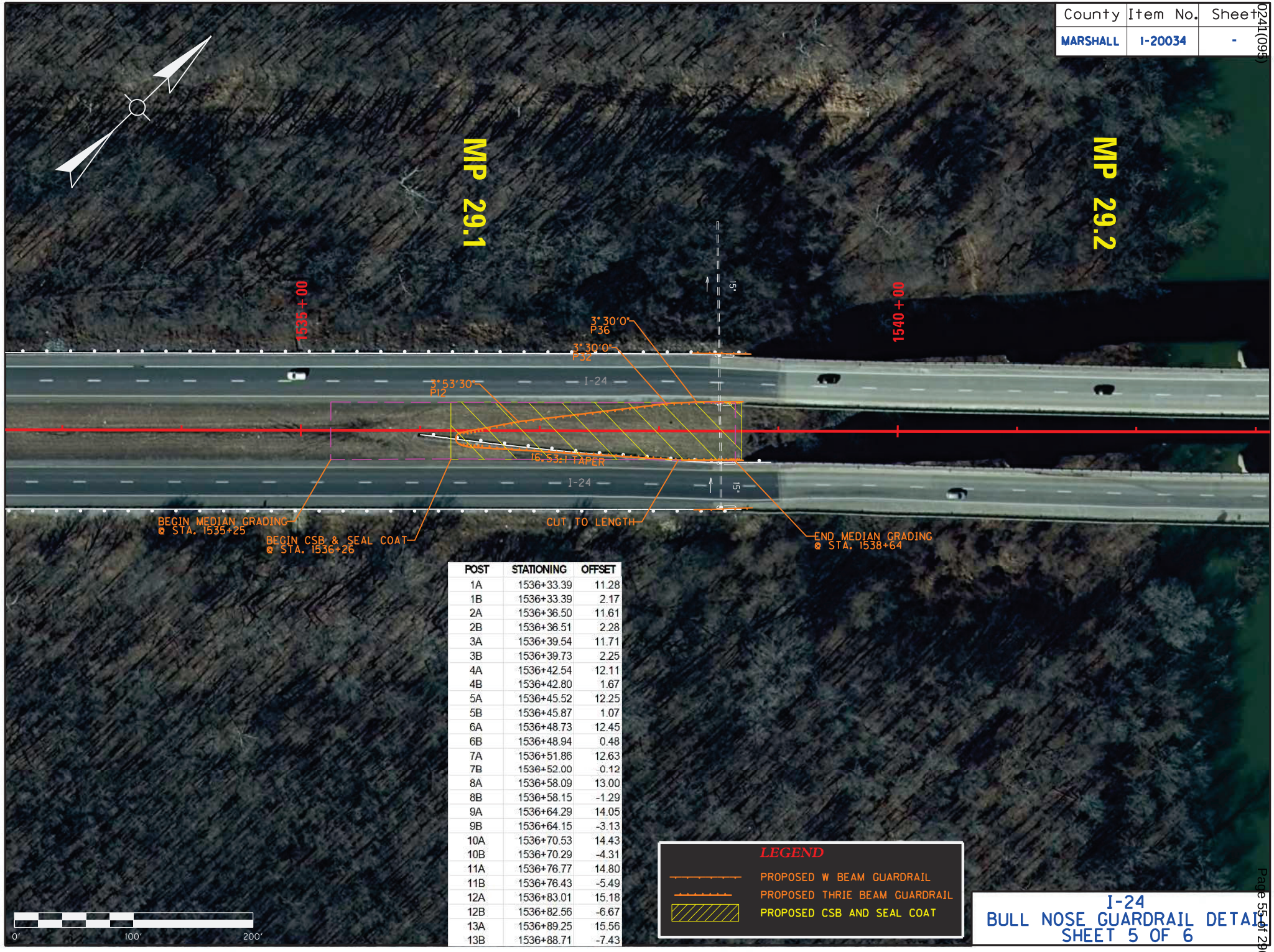
POST	STATIONING	OFFSET
13A	1517+49.26	-12.98
13B	1517+49.43	10.13
12A	1517+55.49	-12.48
12B	1517+55.58	9.48
11A	1517+61.72	-11.99
11B	1517+61.74	8.40
10A	1517+67.95	-11.49
10B	1517+67.89	7.32
9A	1517+74.19	-10.99
9B	1517+74.05	6.24
8A	1517+80.36	-9.83
8B	1517+80.08	4.50
7A	1517+86.59	-9.34
7B	1517+86.24	3.42
6A	1517+89.71	-9.10
6B	1517+89.32	2.88
5A	1517+92.92	-8.84
5B	1517+92.40	2.33
4A	1517+95.90	-8.65
4B	1517+95.47	1.79
3A	1517+98.89	-8.20
3B	1517+98.55	1.25
2A	1518+01.93	-8.06
2B	1518+01.77	1.28
1A	1518+05.03	-7.68
1B	1518+04.89	1.43

LEGEND

- PROPOSED W BEAM GUARDRAIL
- PROPOSED THRIE BEAM GUARDRAIL
- PROPOSED CSB AND SEAL COAT

I-24
BULL NOSE GUARDRAIL DETAIL
SHEET 4 OF 6

County	Item No.	Sheet
MARSHALL	I-20034	-



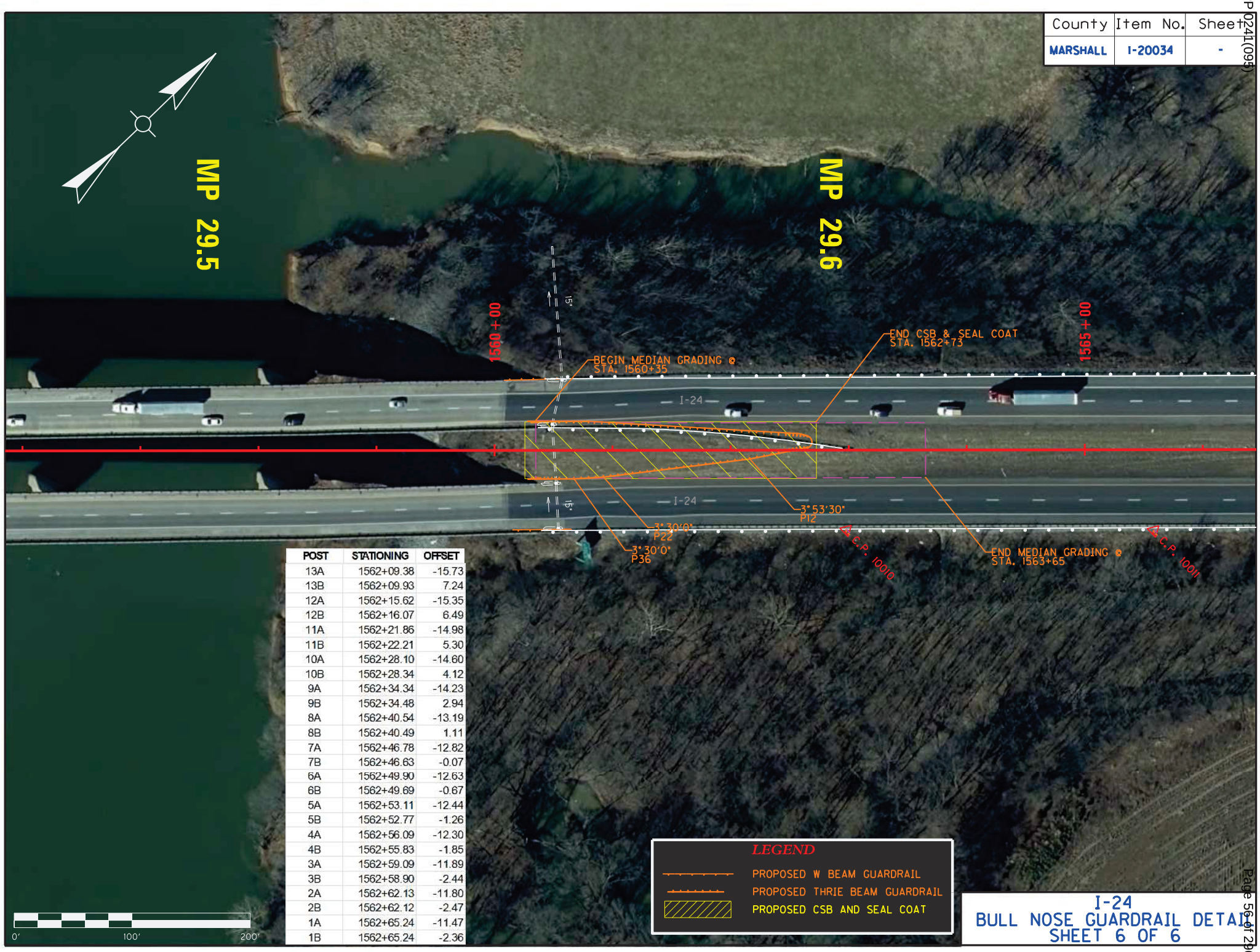
POST	STATIONING	OFFSET
1A	1536+33.39	11.28
1B	1536+33.39	2.17
2A	1536+36.50	11.61
2B	1536+36.51	2.28
3A	1536+39.54	11.71
3B	1536+39.73	2.25
4A	1536+42.54	12.11
4B	1536+42.80	1.67
5A	1536+45.52	12.25
5B	1536+45.87	1.07
6A	1536+48.73	12.45
6B	1536+48.94	0.48
7A	1536+51.86	12.63
7B	1536+52.00	-0.12
8A	1536+58.09	13.00
8B	1536+58.15	-1.29
9A	1536+64.29	14.05
9B	1536+64.15	-3.13
10A	1536+70.53	14.43
10B	1536+70.29	-4.31
11A	1536+76.77	14.80
11B	1536+76.43	-5.49
12A	1536+83.01	15.18
12B	1536+82.56	-6.67
13A	1536+89.25	15.56
13B	1536+88.71	-7.43

LEGEND

- PROPOSED W BEAM GUARDRAIL
- PROPOSED THRIE BEAM GUARDRAIL
- PROPOSED CSB AND SEAL COAT

I-24
BULL NOSE GUARDRAIL DETAIL
SHEET 5 OF 6

County	Item No.	Sheet
MARSHALL	I-20034	-



POST	STATIONING	OFFSET
13A	1562+09.38	-15.73
13B	1562+09.93	7.24
12A	1562+15.62	-15.35
12B	1562+16.07	6.49
11A	1562+21.86	-14.98
11B	1562+22.21	5.30
10A	1562+28.10	-14.60
10B	1562+28.34	4.12
9A	1562+34.34	-14.23
9B	1562+34.48	2.94
8A	1562+40.54	-13.19
8B	1562+40.49	1.11
7A	1562+46.78	-12.82
7B	1562+46.63	-0.07
6A	1562+49.90	-12.63
6B	1562+49.69	-0.67
5A	1562+53.11	-12.44
5B	1562+52.77	-1.26
4A	1562+56.09	-12.30
4B	1562+55.83	-1.85
3A	1562+59.09	-11.89
3B	1562+58.90	-2.44
2A	1562+62.13	-11.80
2B	1562+62.12	-2.47
1A	1562+65.24	-11.47
1B	1562+65.24	-2.36

LEGEND

- PROPOSED W BEAM GUARDRAIL
- PROPOSED THRIE BEAM GUARDRAIL
- PROPOSED CSB AND SEAL COAT

I-24
BULL NOSE GUARDRAIL DETAIL
SHEET 6 OF 6

County	Item No.	Sheet
MARSHALL	I-20034	-

COORDINATE CONTROL POINTS

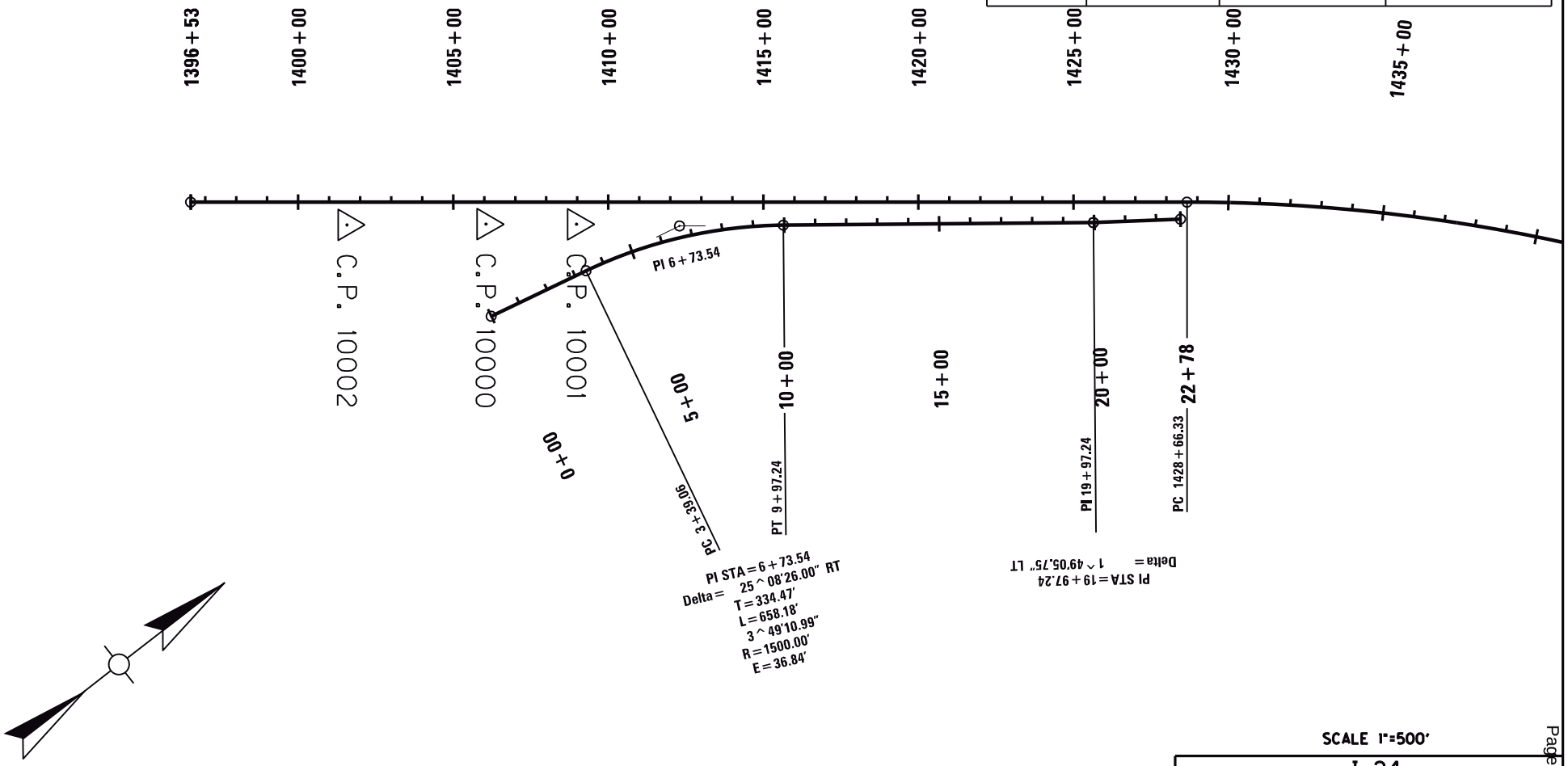
POINT	DESCRIPTION	State Plane Coordinates			STATION	OFFSET
		NORTH (Y)	EAST (X)	ELEV. (Z)		
CP 10000	IRON PIN & CAP	3535195.34	4169657.36	367.40	1406+05.98	70.90
CP 10001	IRON PIN & CAP	3535425.46	4169836.79	365.10	1408+97.78	71.58
CP 10002	IRON PIN & CAP	3534839.45	4169384.49	369.79	1401+57.53	73.51

MAINLINE ALIGNMENT

POINT	STATION	NORTHING (Y)	EASTING (X)
P.O.B.	1396+53.34	3534486.18	4169017.32
P.C.	1428+66.33	3537024.57	4170987.07

RAMP ALIGNMENT

POINT	STATION	NORTHING (Y)	EASTING (X)
P.O.B.	0+00.00	3535026.26	4169902.24
P.C.	3+39.06	3535357.66	4169973.91
P.I.	6+73.54	3535684.58	4170044.60
P.T.	9+97.24	3535950.49	4170247.49
P.I.	19+97.24	3536745.51	4170854.07
P.O.E	22+78.14	3536974.13	4171017.28



SCALE 1"=500'

0' 500' 1000'

I-24
CROSS SLOPE REVISION
COORDINATE CONTROL

MARSHALL COUNTY
NHPP 0241(095)
Contract ID: 251115
Page 57 of 296

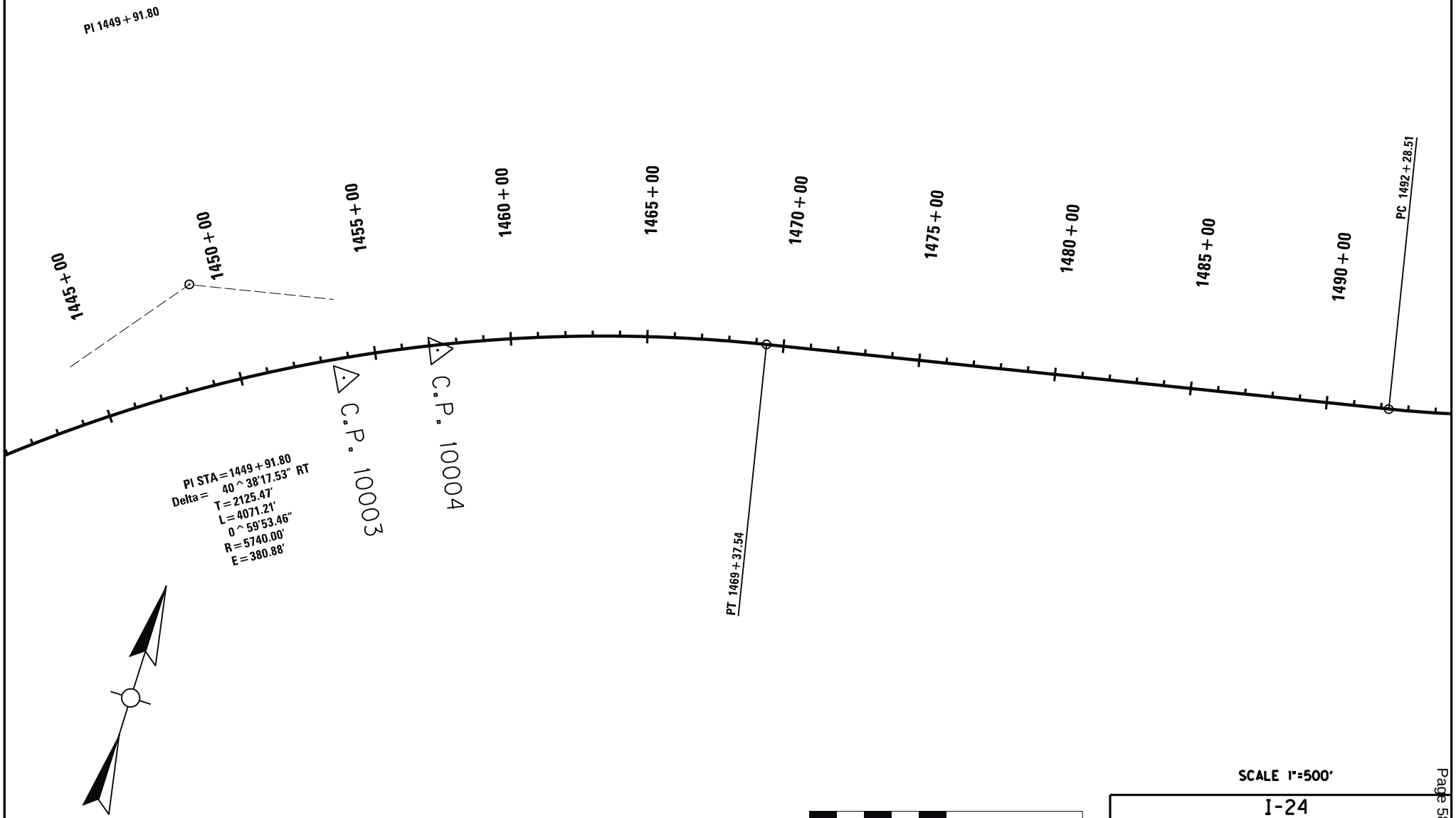
County	Item No.	Sheet
MARSHALL	I-20034	-

COORDINATE CONTROL POINTS

POINT	DESCRIPTION	State Plane Coordinates			STATION	OFFSET
		NORTH (Y)	EAST (X)	ELEV. (Z)		
CP 10003	IRON PIN & CAP	3538547.51	4172932.70	353.51	1453+71.58	72.15
CP 10004	IRON PIN & CAP	3538747.40	4173229.55	354.26	1457+28.35	18.89

MAINLINE ALIGNMENT

POINT	STATION	NORTHING (Y)	EASTING (X)
P.I.	1449+91.80	3538703.77	4172290.10
P.T.	1469+37.54	3539129.37	4174372.52
P.C.	1492+28.51	3539588.11	4176617.10



SCALE 1"=500'

I-24
CROSS SLOPE REVISION
COORDINATE CONTROL

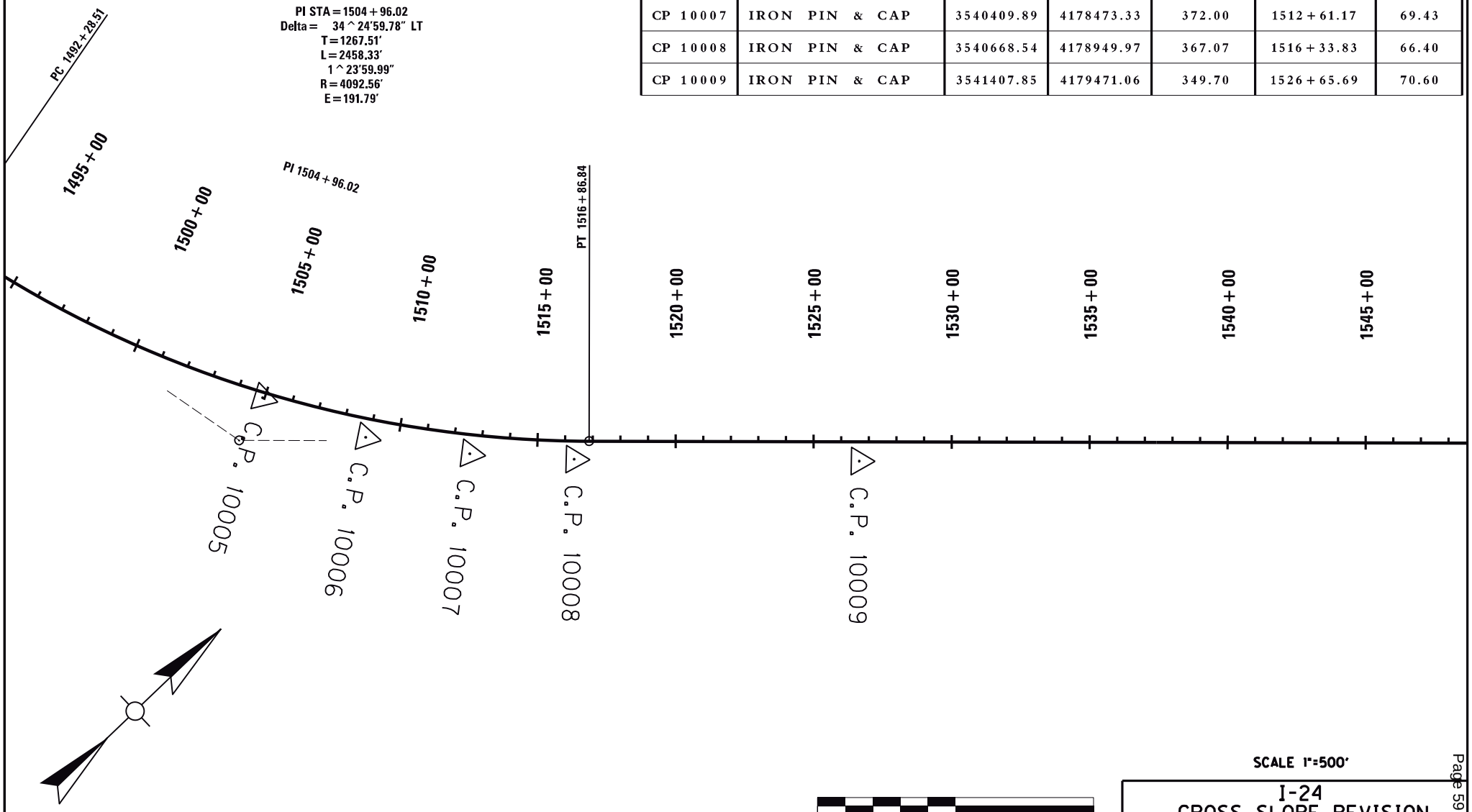
County	Item No.	Sheet
MARSHALL	I-20034	-

MAINLINE ALIGNMENT

POINT	STATION	NORTHING (Y)	EASTING (X)
P.I.	1504+96.02	3539841.92	4177858.93
P.T.	1516+86.84	3540753.19	4178739.94

COORDINATE CONTROL POINTS

POINT	DESCRIPTION	State Plane Coordinates			STATION	OFFSET
		NORTH (Y)	EAST (X)	ELEV. (Z)		
CP 10005	IRON PIN & CAP	3540010.08	4177806.45	377.44	1504+92.42	19.26
CP 10006	IRON PIN & CAP	3540179.59	4178169.03	377.63	1508+85.71	67.69
CP 10007	IRON PIN & CAP	3540409.89	4178473.33	372.00	1512+61.17	69.43
CP 10008	IRON PIN & CAP	3540668.54	4178949.97	367.07	1516+33.83	66.40
CP 10009	IRON PIN & CAP	3541407.85	4179471.06	349.70	1526+65.69	70.60



SCALE 1"=500'

I-24
CROSS SLOPE REVISION
COORDINATE CONTROL

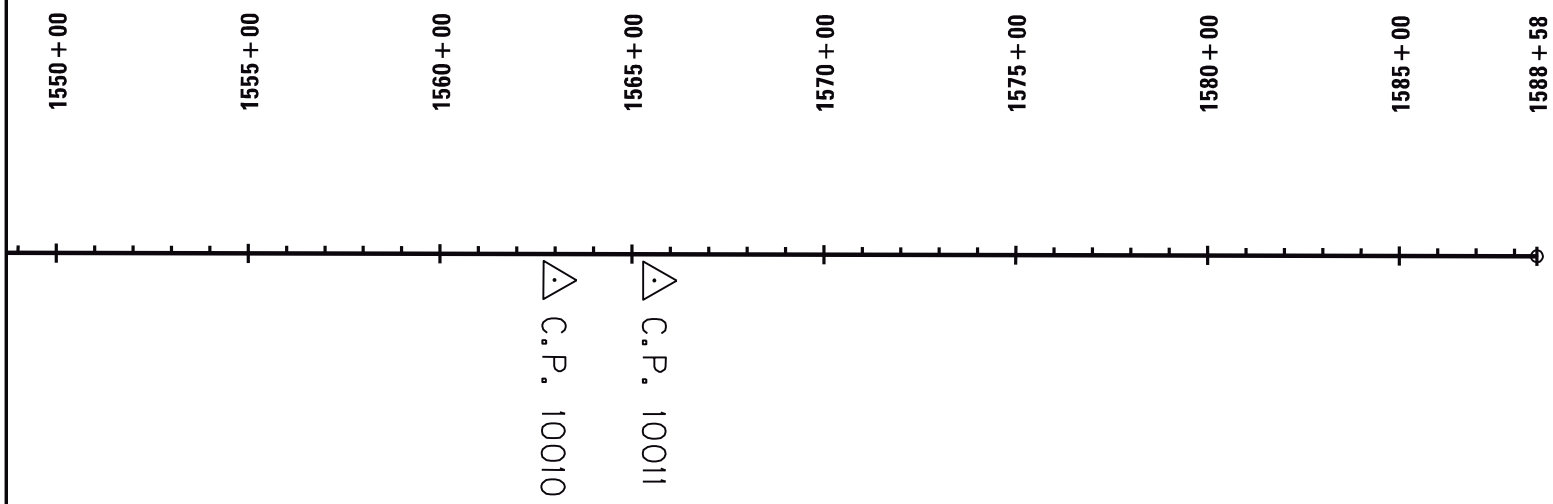
County	Item No.	Sheet
MARSHALL	I-20034	-

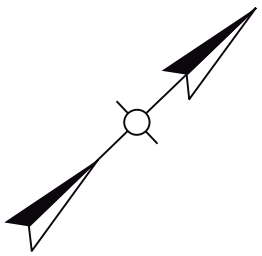
COORDINATE CONTROL POINTS

POINT	DESCRIPTION	State Plane Coordinates			STATION	OFFSET
		NORTH (Y)	EAST (X)	ELEV. (Z)		
CP 10010	IRON PIN & CAP	3544021.22	4181993.70	371.84	1562+97.97	67.78
CP 10011	IRON PIN & CAP	3544208.06	4182175.26	363.27	1565+58.49	68.44

MAINLINE ALIGNMENT

POINT	STATION	NORTHING (Y)	EASTING (X)
P.O.E.	1588+58.43	3545909.17	4183724.67

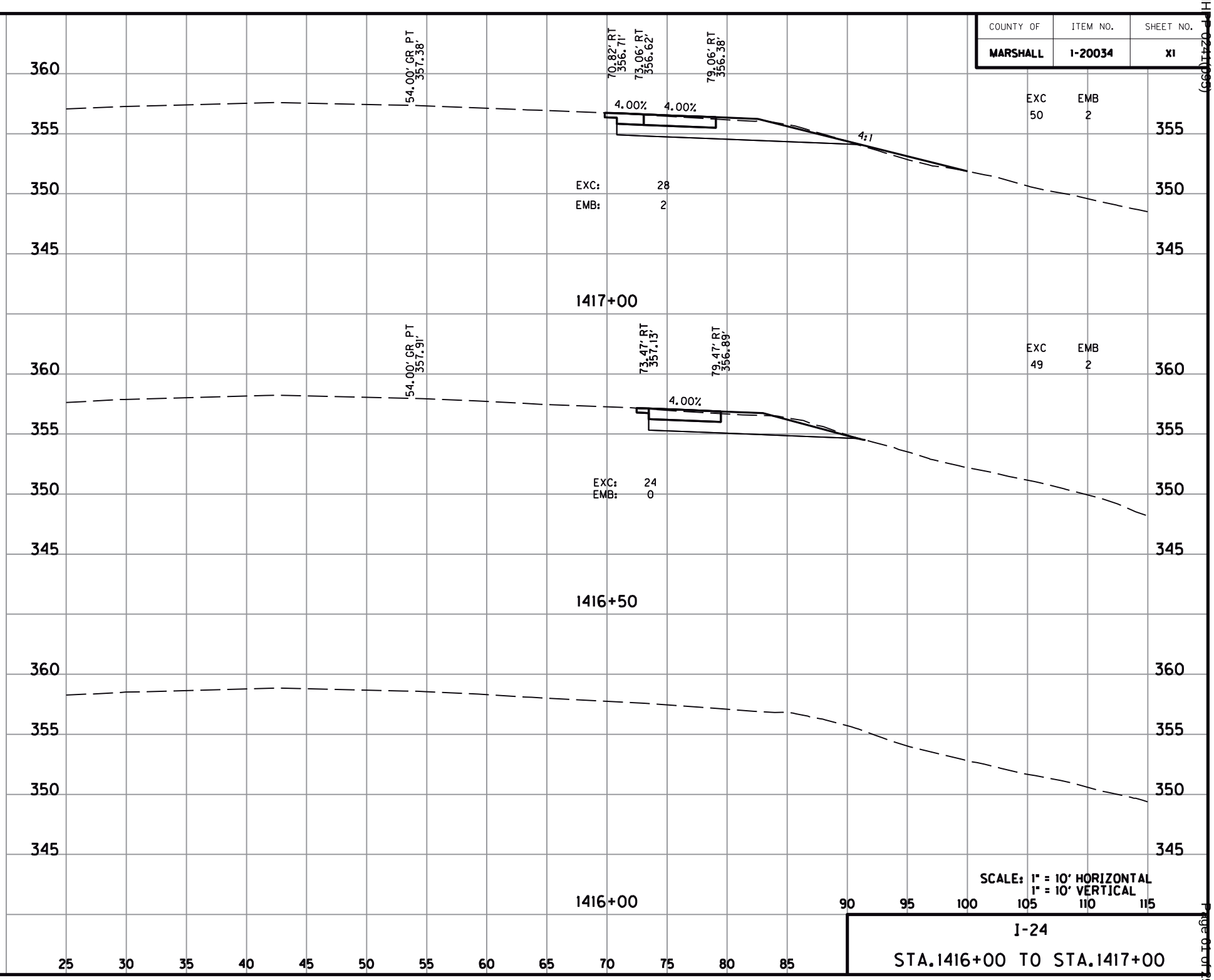




SCALE 1"=500'

I-24
CROSS SLOPE REVISION
COORDINATE CONTROL

COUNTY OF	ITEM NO.	SHEET NO.
MARSHALL	I-20034	XI



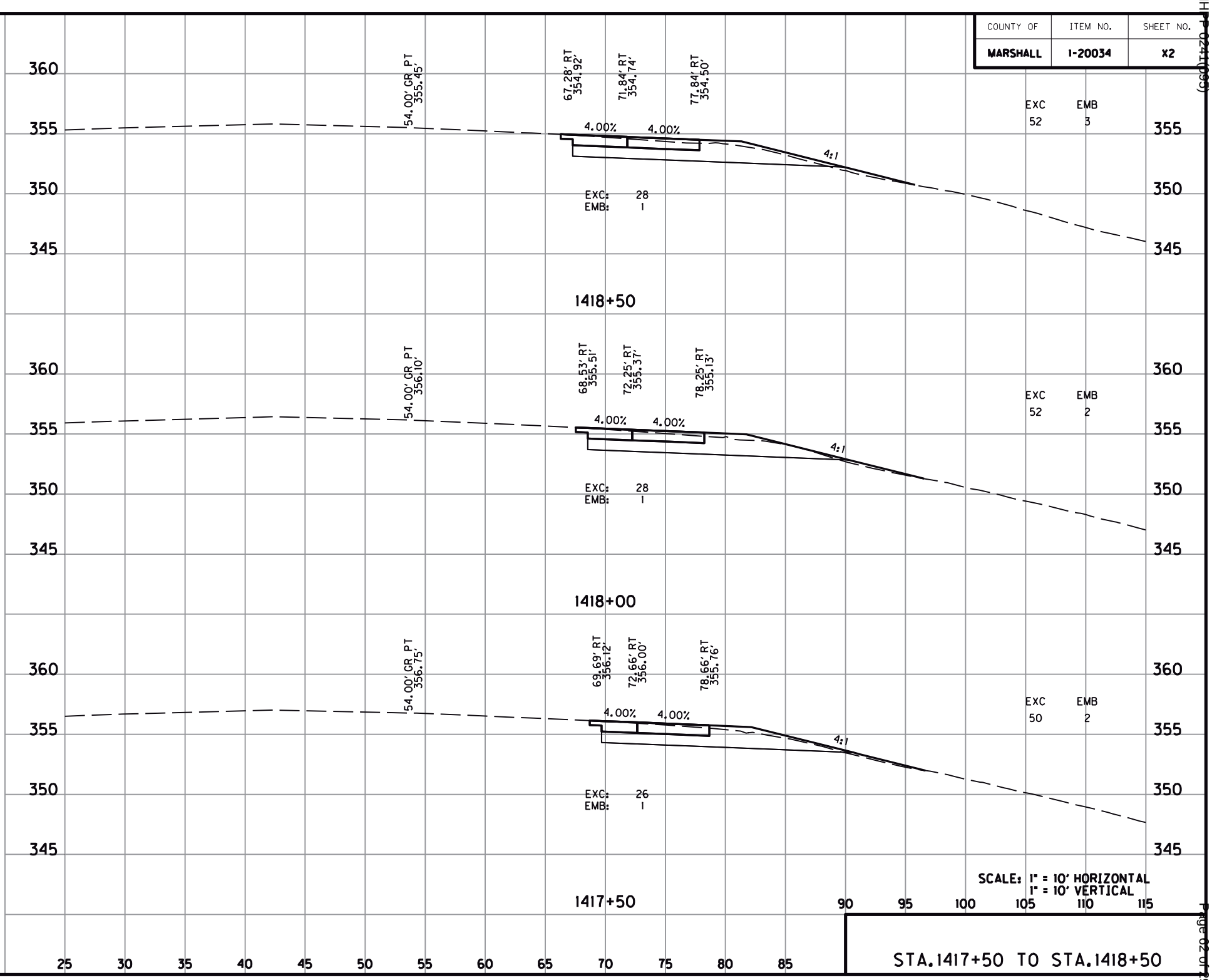
SCALE: 1" = 10' HORIZONTAL
1" = 10' VERTICAL

I-24

STA.1416+00 TO STA.1417+00

FILE NAME: G:\ENGR\HD1478.05 I-24 MARSHALL\CAD\PLAN\CROSS SECTIONS.DGN
USER: kduncan
DATE PLOTTED: July 9, 2025
E-SHEET NAME:
MicroStation v8.11.9.459

COUNTY OF	ITEM NO.	SHEET NO.
MARSHALL	I-20034	X2

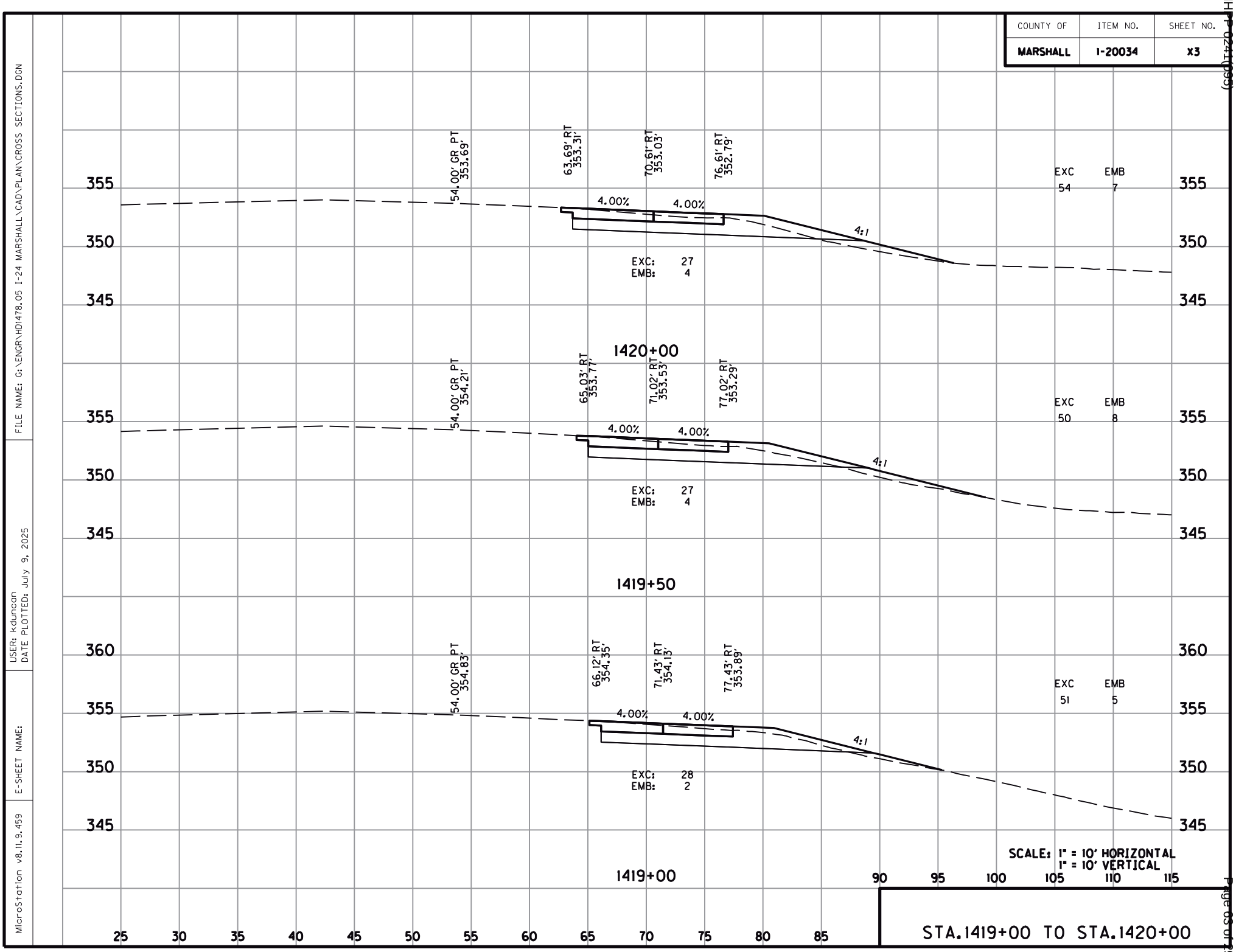


SCALE: 1" = 10' HORIZONTAL
1" = 10' VERTICAL

STA.1417+50 TO STA.1418+50

MicroStation v8.11.9.459 | E-SHEET NAME: | USER: kduncan | DATE PLOTTED: July 9, 2025 | FILE NAME: G:\ENGR\HD1478.05 I-24 MARSHALL\CAD\PLAN\CROSS SECTIONS.DGN

COUNTY OF	ITEM NO.	SHEET NO.
MARSHALL	1-20034	X3

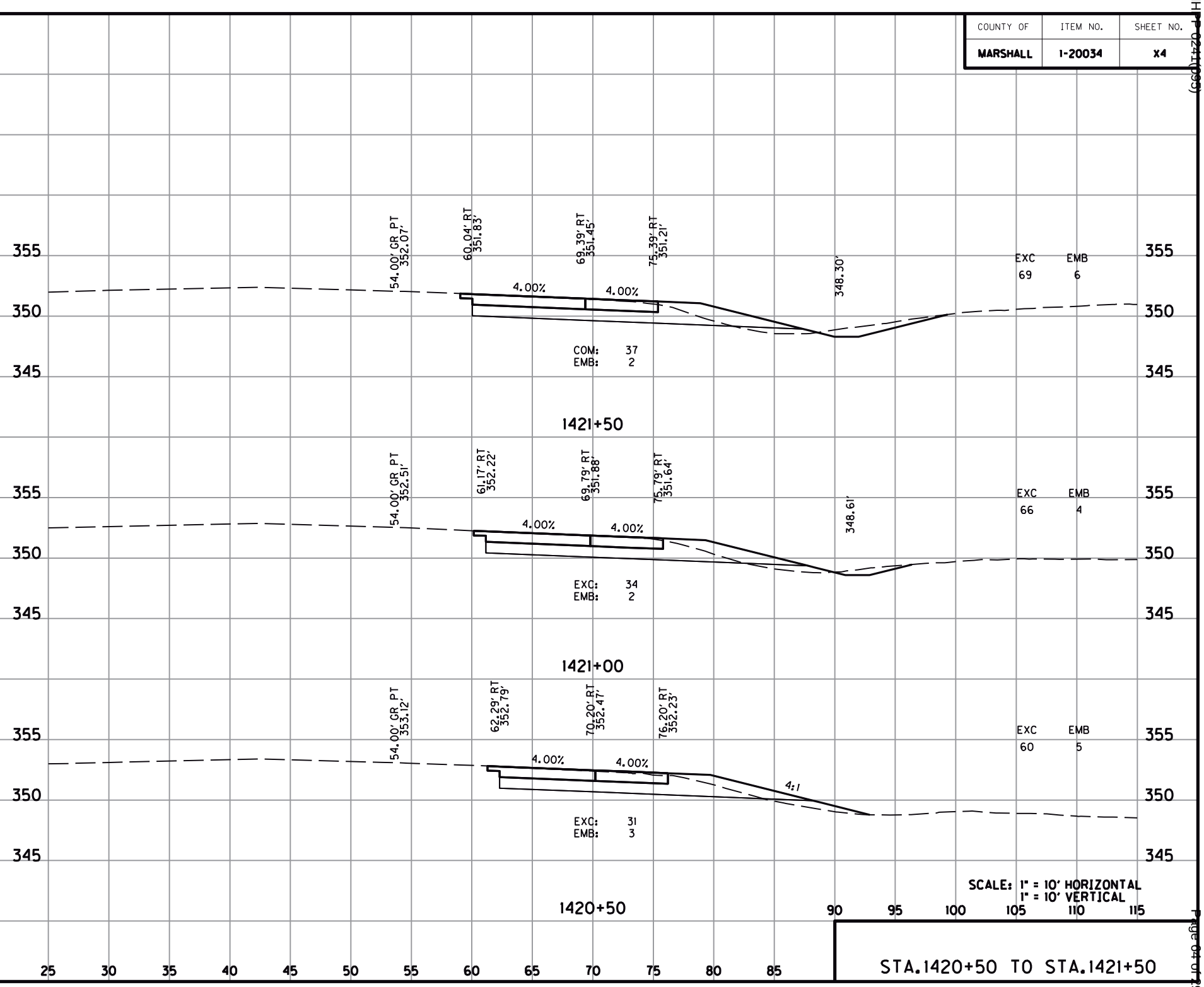


SCALE: 1" = 10' HORIZONTAL
1" = 10' VERTICAL

STA.1419+00 TO STA.1420+00

FILE NAME: G:\ENGR\HD1478.05 I-24 MARSHALL\CAD\PLAN\CROSS SECTIONS.DGN
USER: kduncan
DATE PLOTTED: July 9, 2025
E-SHEET NAME:
MicroStation v8.11.9.459

COUNTY OF	ITEM NO.	SHEET NO.
MARSHALL	1-20034	X4

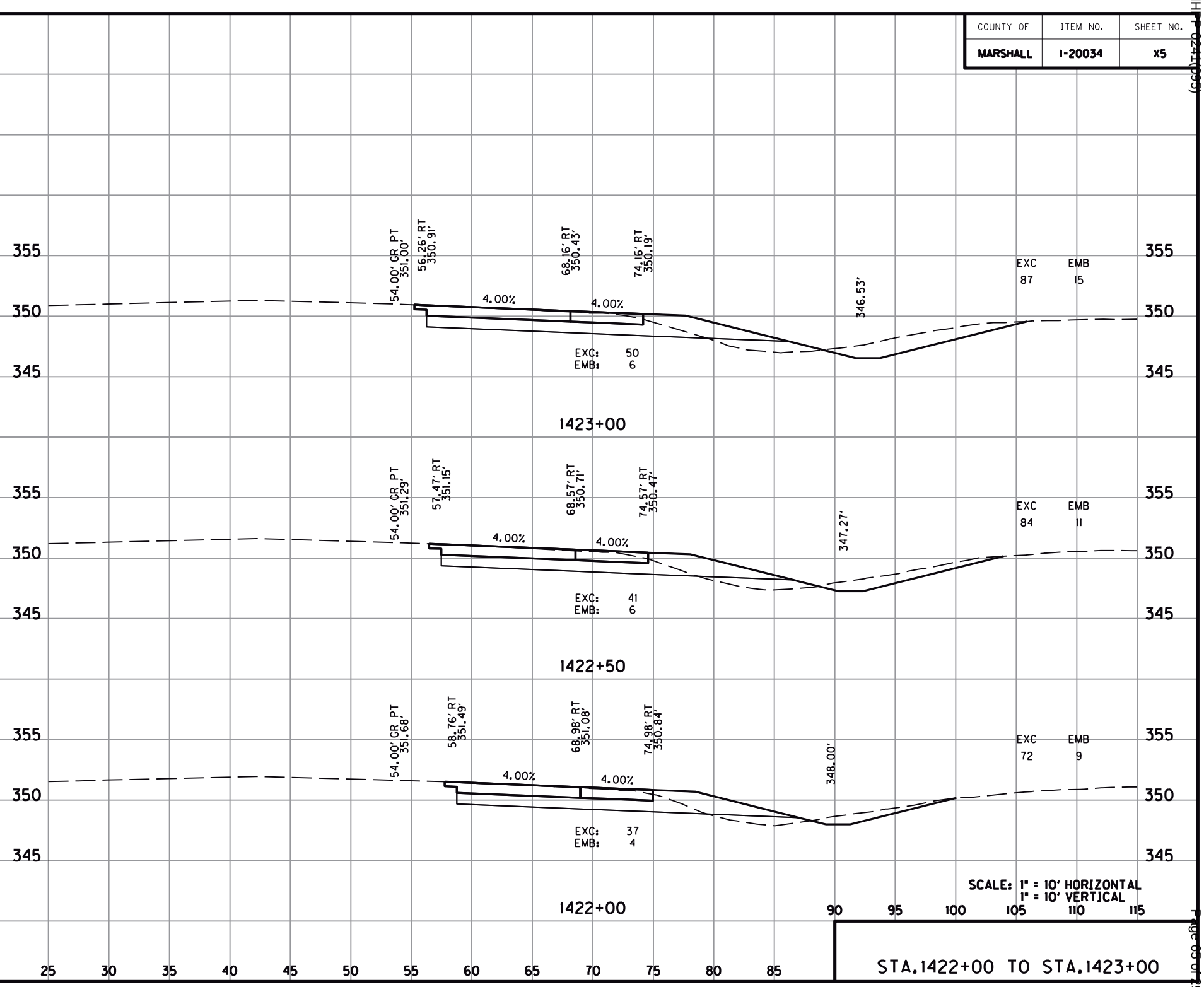


SCALE: 1" = 10' HORIZONTAL
1" = 10' VERTICAL

STA.1420+50 TO STA.1421+50

FILE NAME: G:\ENGR\HD1478.05 I-24 MARSHALL\CAD\PLAN\CROSS SECTIONS.DGN
USER: kduncan
DATE PLOTTED: July 9, 2025
E-SHEET NAME:
MicroStation v8.11.9.459

COUNTY OF	ITEM NO.	SHEET NO.
MARSHALL	I-20034	X5

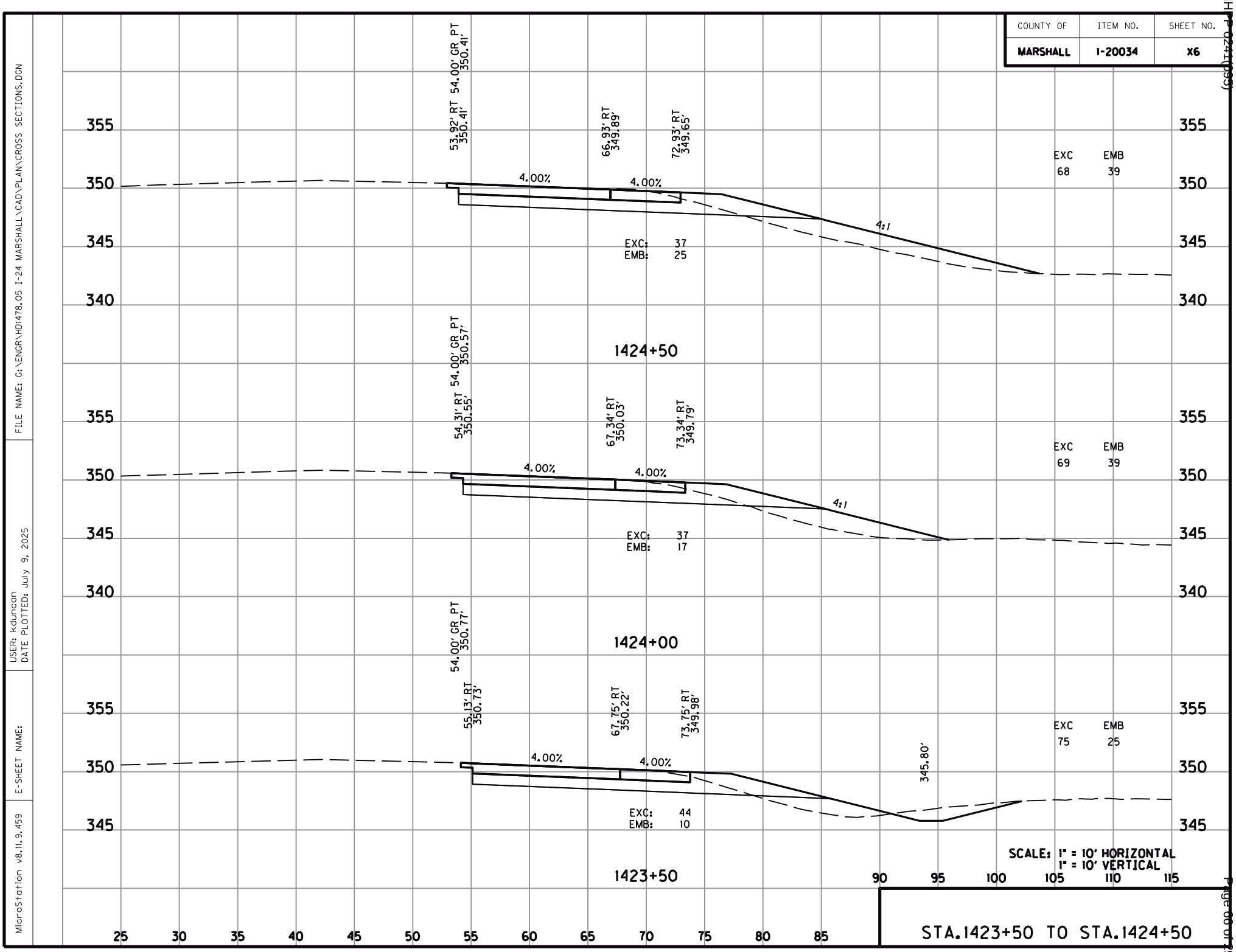


SCALE: 1" = 10' HORIZONTAL
1" = 10' VERTICAL

STA.1422+00 TO STA.1423+00

FILE NAME: G:\ENGR\HD1478.05 I-24 MARSHALL\CAD\PLAN\CROSS SECTIONS.DGN
USER: kduncan
DATE PLOTTED: July 9, 2025
E-SHEET NAME:
MicroStation v8.11.9.459

COUNTY OF	ITEM NO.	SHEET NO.
MARSHALL	1-20034	X6



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

STA.1423+50 TO STA.1424+50

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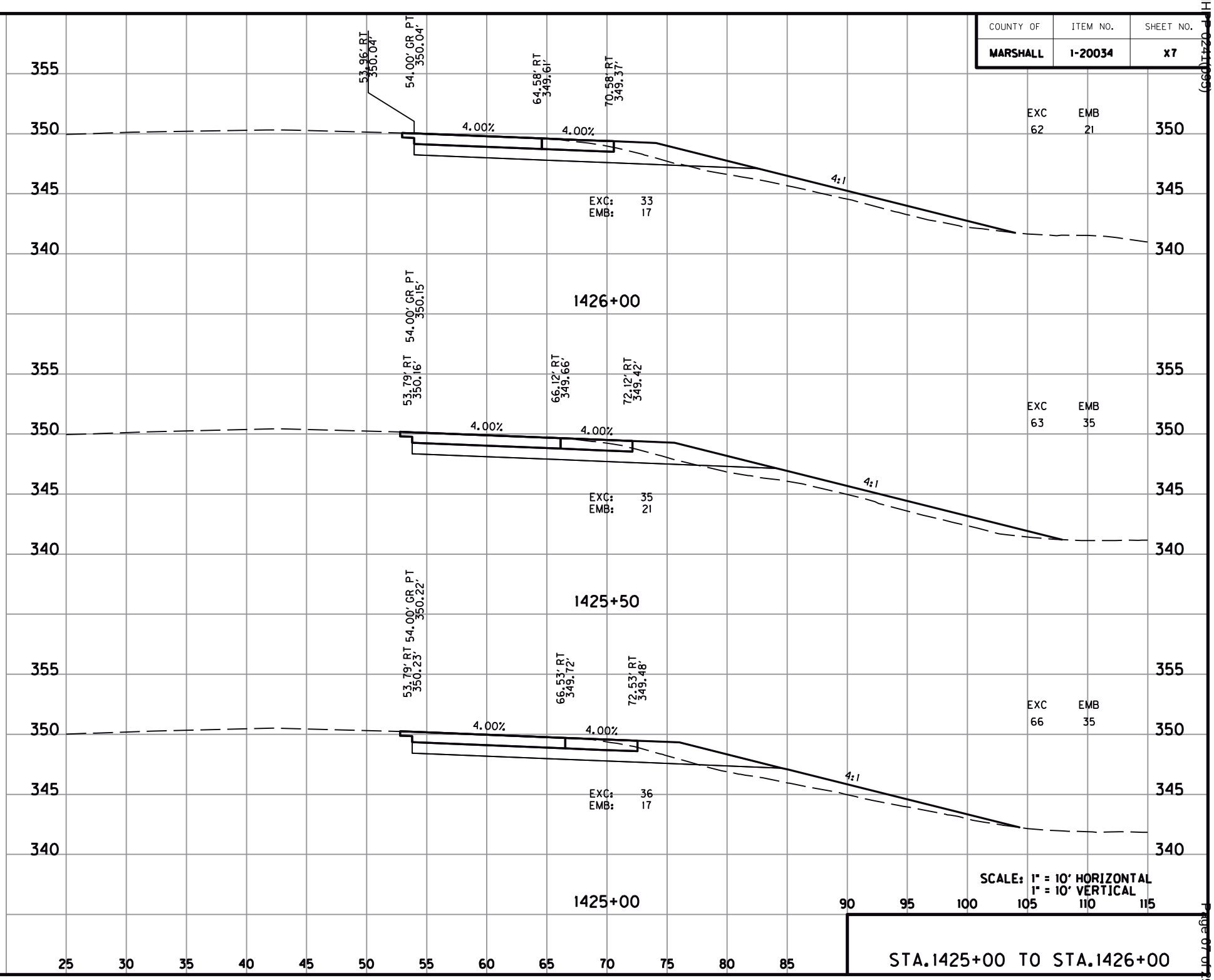
USER: kduncan
DATE PLOTTED: July 9, 2025
E-SHEET NAME:
MicroStation v8.11.9.459

COUNTY OF	ITEM NO.	SHEET NO.
MARSHALL	I-20034	X7



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

STA.1425+00 TO STA.1426+00

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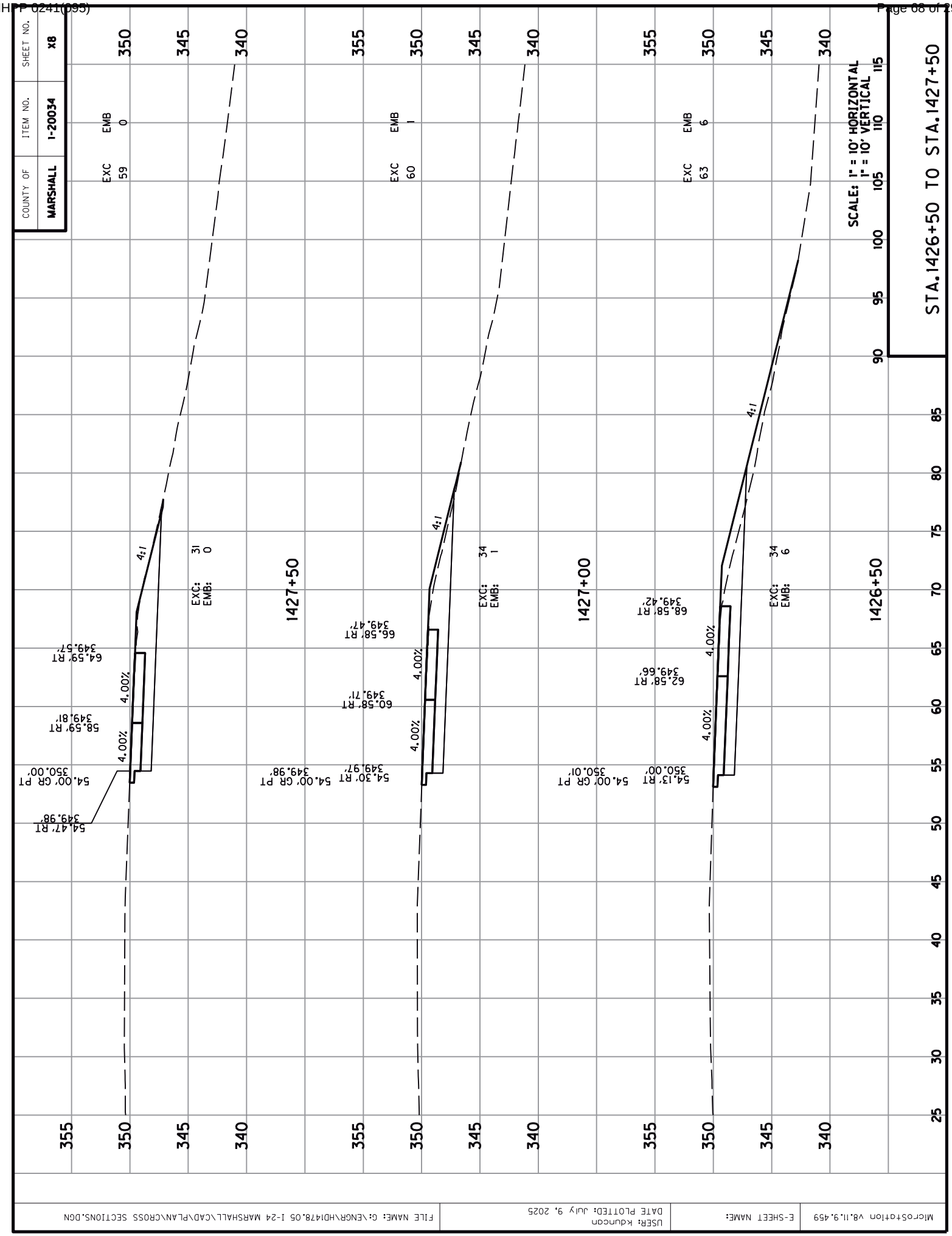
USER: kduncan
DATE PLOTTED: July 9, 2025
E-SHEET NAME:
MicroStation v8.11.9.459


COUNTY OF
MARSHALL
ITEM NO.
I-20034
SHEET NO.
X8
STA.1426+50 TO STA.1427+50
SCALE: 1" = 10' HORIZONTAL
1" = 10' VERTICAL
1426+50
1427+00
1427+50
EXC 63
EMB 6
EXC 60
EMB 1
EXC 59
EMB 0
EXC: 34
EMB: 6
EXC: 34
EMB: 1
EXC: 31
EMB: 0
4:1
4.00%
54.13' RT
350.00'
54.00' GR PT
350.01'
68.58' RT
349.42'
62.58' RT
349.66'
54.30' RT
349.97'
54.00' GR PT
349.98'
60.58' RT
349.71'
66.58' RT
349.47'
64.59' RT
349.57'
58.59' RT
349.81'
54.00' GR PT
350.00'
54.47' RT
349.98'
355
350
345
340
25
30
35
40
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50
55
60
65
70
75
80
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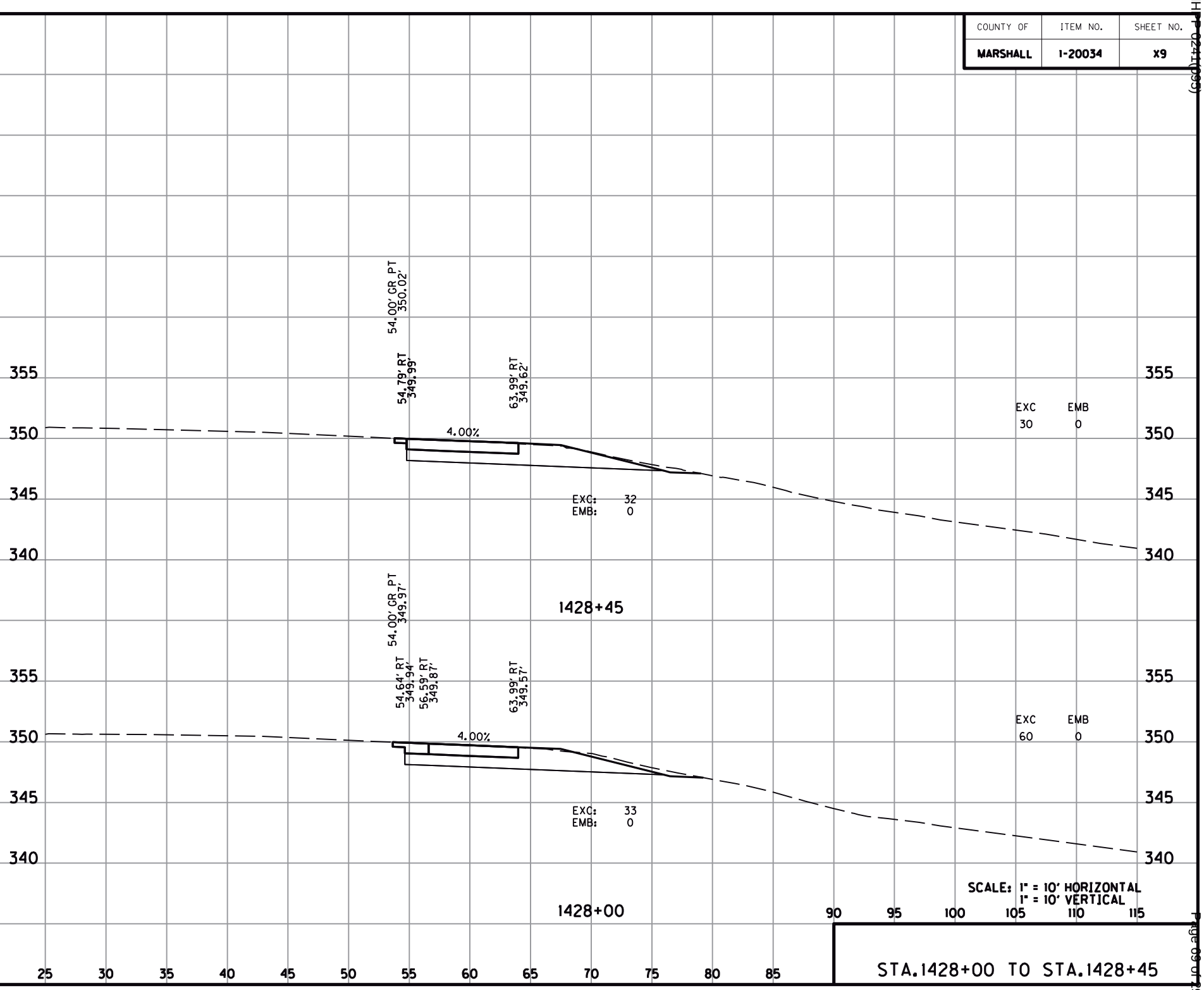
105
110
115
Microstation v8.11.9.459
E-SHEET NAME:
USER: kduncan
DATE PLOTTED: July 9, 2025
FILE NAME: G:\ENGR\HD1478.05 I-24 MARSHALL\CAD\PLAN\CROSS SECTIONS.DGN

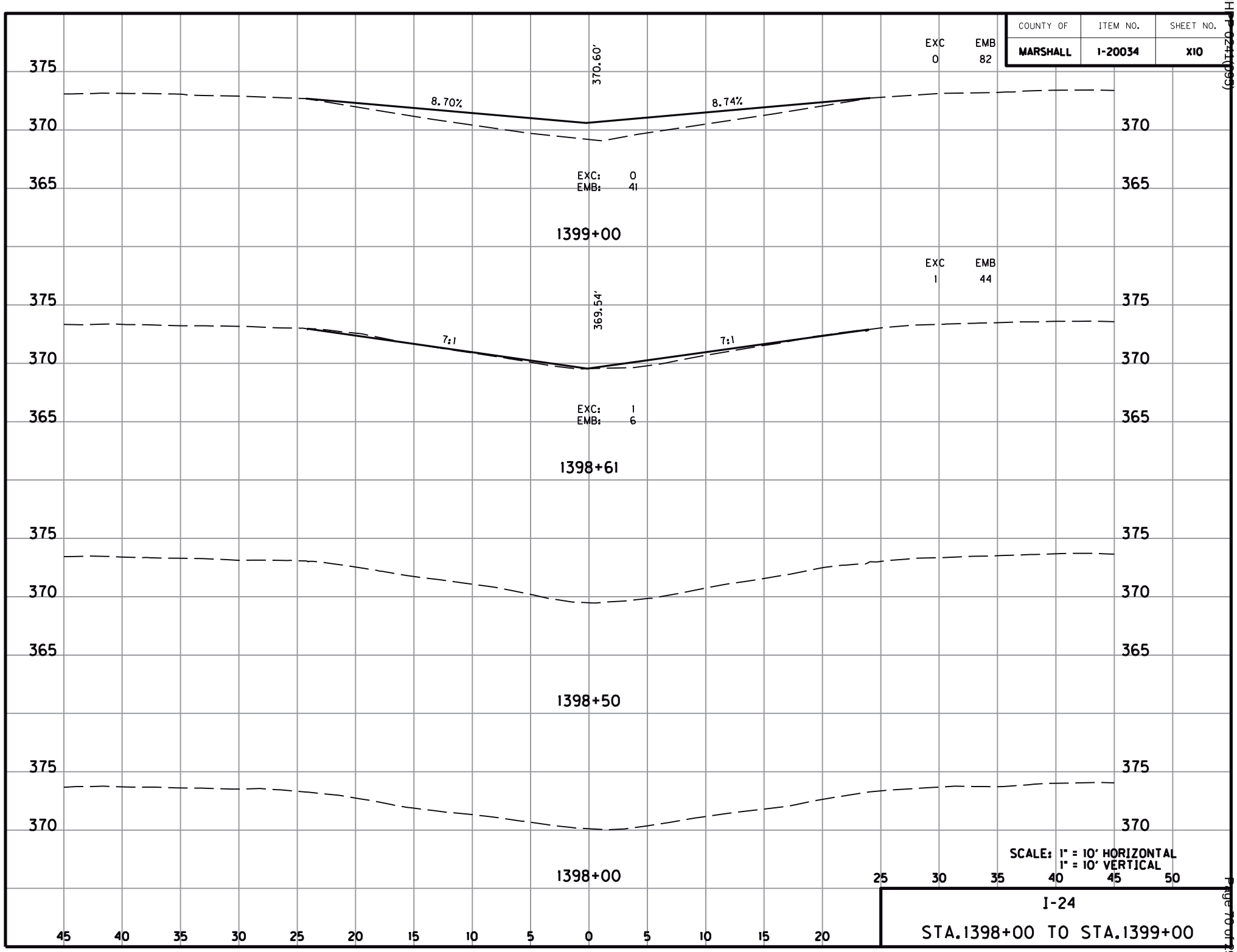
COUNTY OF	ITEM NO.	SHEET NO.
MARSHALL	I-20034	X9



STA.1428+00 TO STA.1428+45

FILE NAME: G:\ENGR\HD1478.05 I-24 MARSHALL\CAD\PLAN\CROSS SECTIONS.DGN
USER: kduncan
DATE PLOTTED: July 9, 2025
E-SHEET NAME:
MicroStation v8.11.9.459

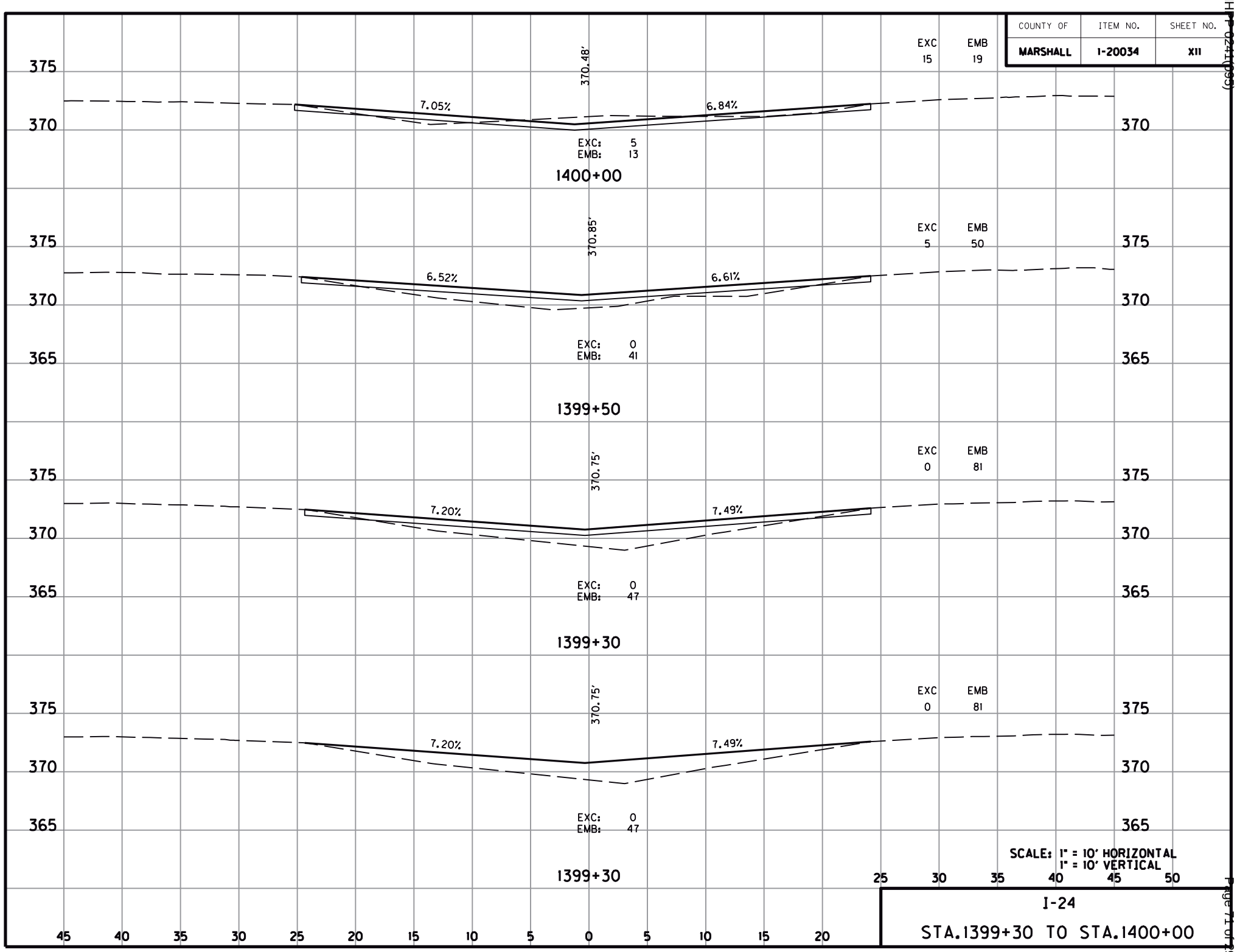
COUNTY OF	ITEM NO.	SHEET NO.
MARSHALL	I-20034	X10



I-24

STA.1398+00 TO STA.1399+00

COUNTY OF	ITEM NO.	SHEET NO.
MARSHALL	I-20034	XII

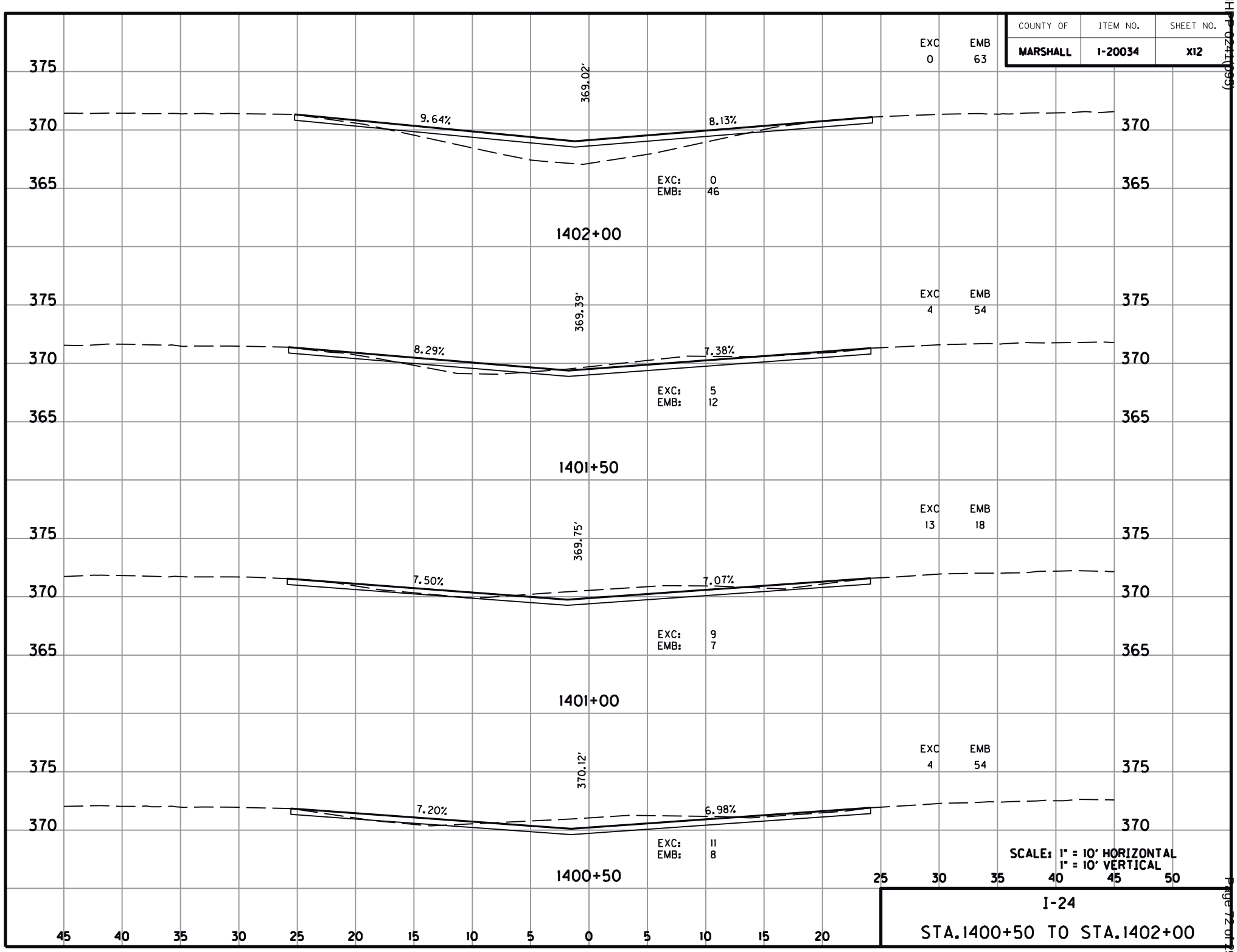


SCALE: 1" = 10' HORIZONTAL
1" = 10' VERTICAL

I-24

STA.1399+30 TO STA.1400+00

COUNTY OF	ITEM NO.	SHEET NO.
MARSHALL	I-20034	X12

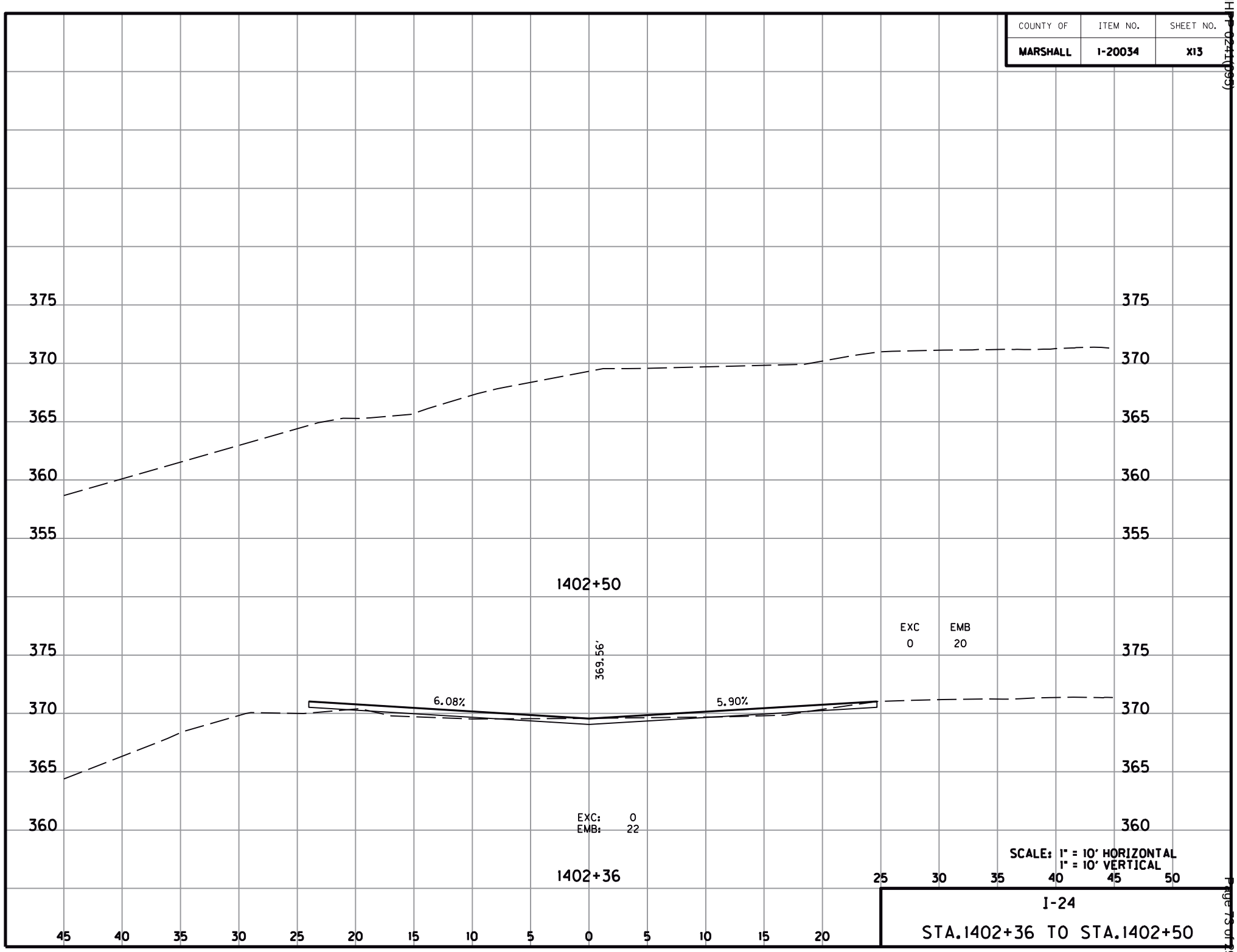


SCALE: 1" = 10' HORIZONTAL
1" = 10' VERTICAL

I-24

STA.1400+50 TO STA.1402+00

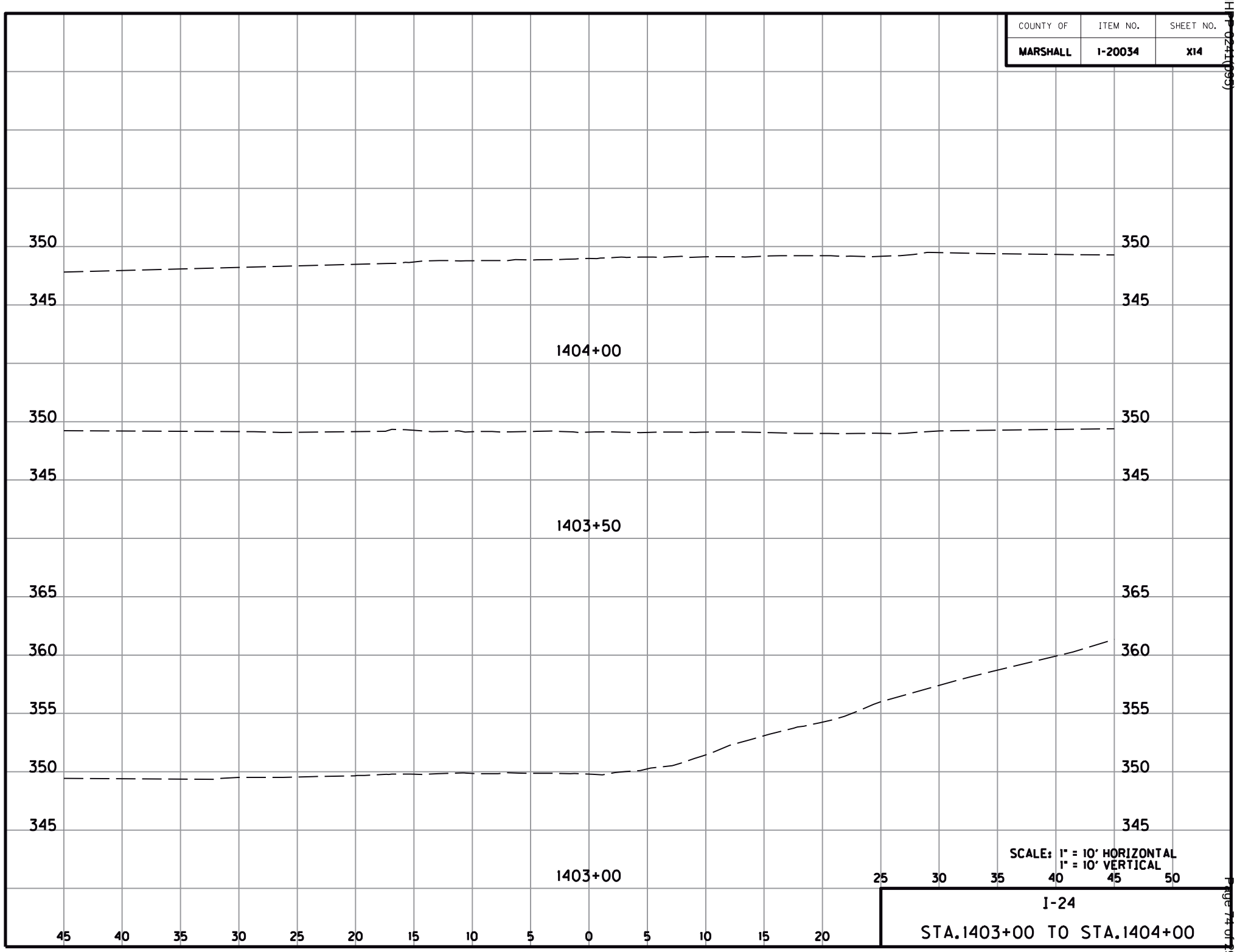
COUNTY OF	ITEM NO.	SHEET NO.
MARSHALL	1-20034	X13



I-24

STA.1402+36 TO STA.1402+50

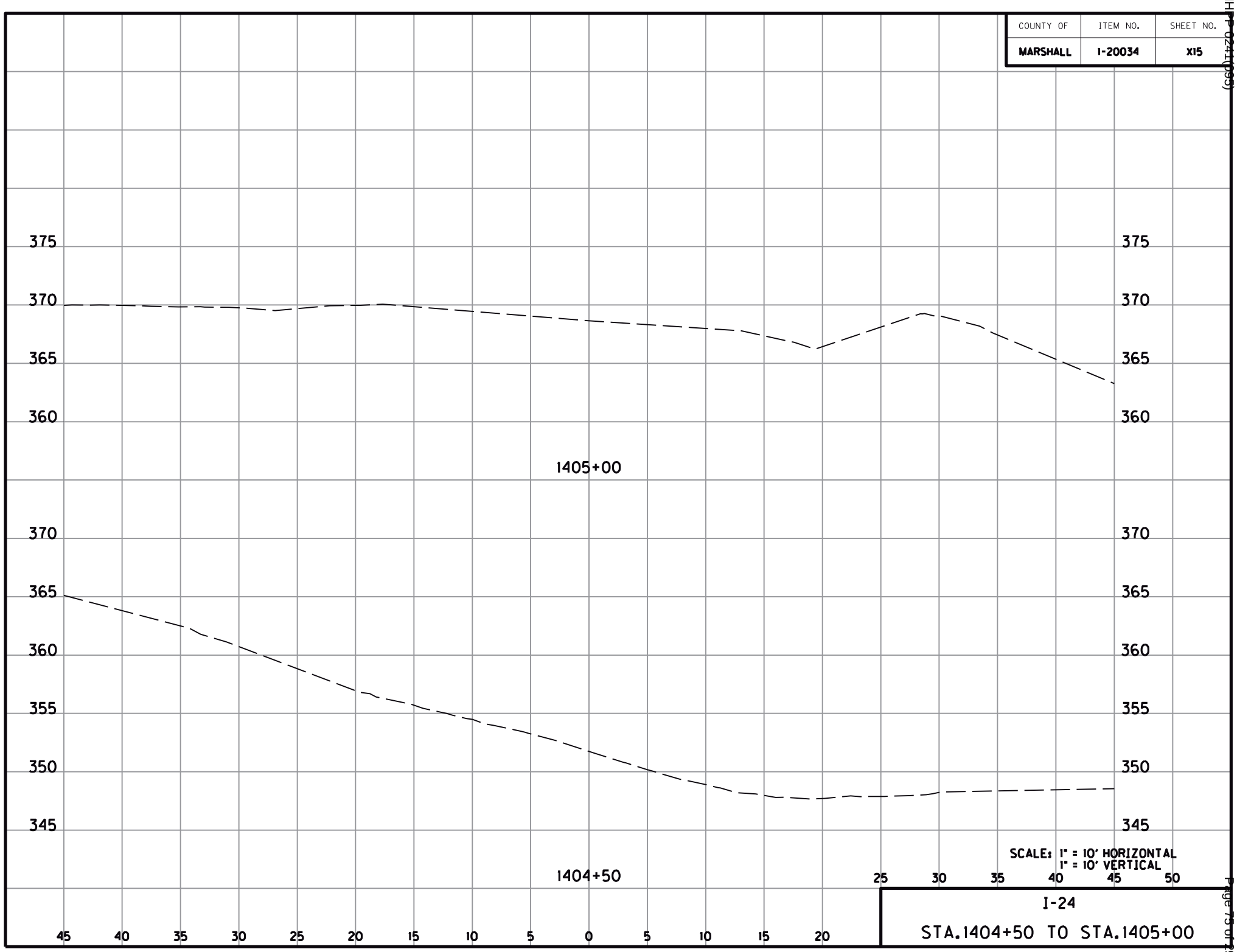
COUNTY OF	ITEM NO.	SHEET NO.
MARSHALL	1-20034	X14



I-24

STA.1403+00 TO STA.1404+00

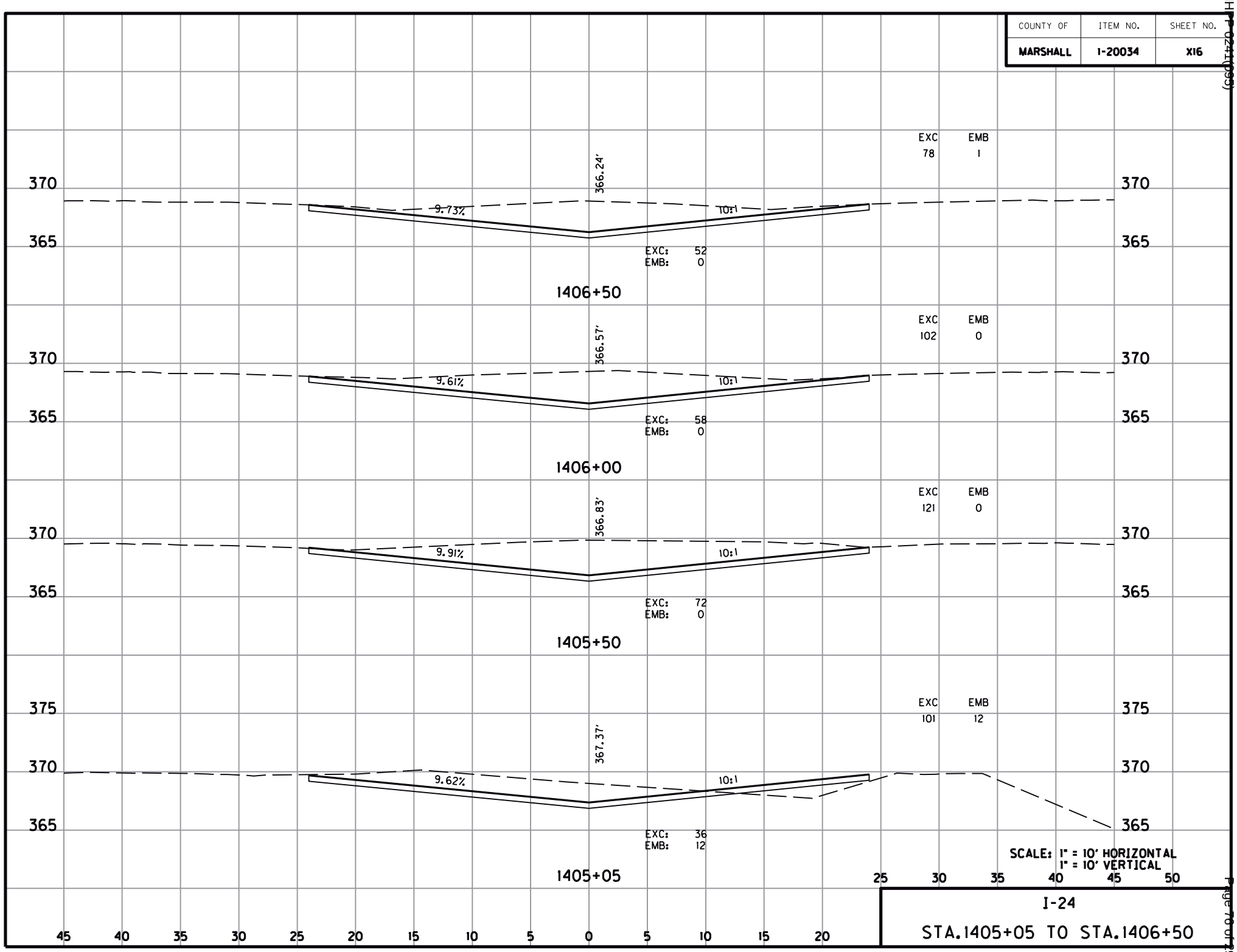
COUNTY OF	ITEM NO.	SHEET NO.
MARSHALL	I-20034	X15



I-24

STA.1404+50 TO STA.1405+00

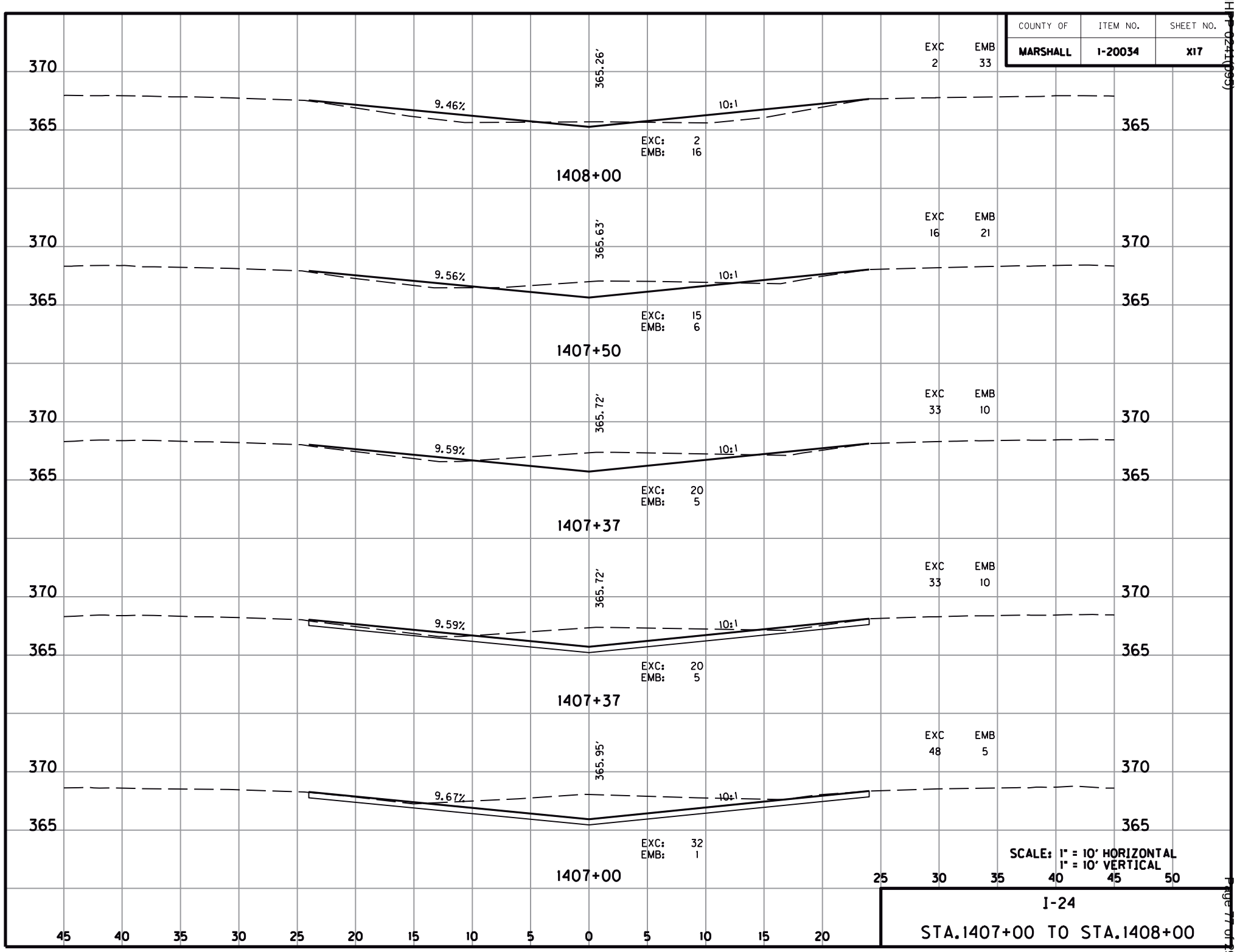
COUNTY OF	ITEM NO.	SHEET NO.
MARSHALL	I-20034	X16



I-24

STA.1405+05 TO STA.1406+50

COUNTY OF	ITEM NO.	SHEET NO.
MARSHALL	I-20034	X17

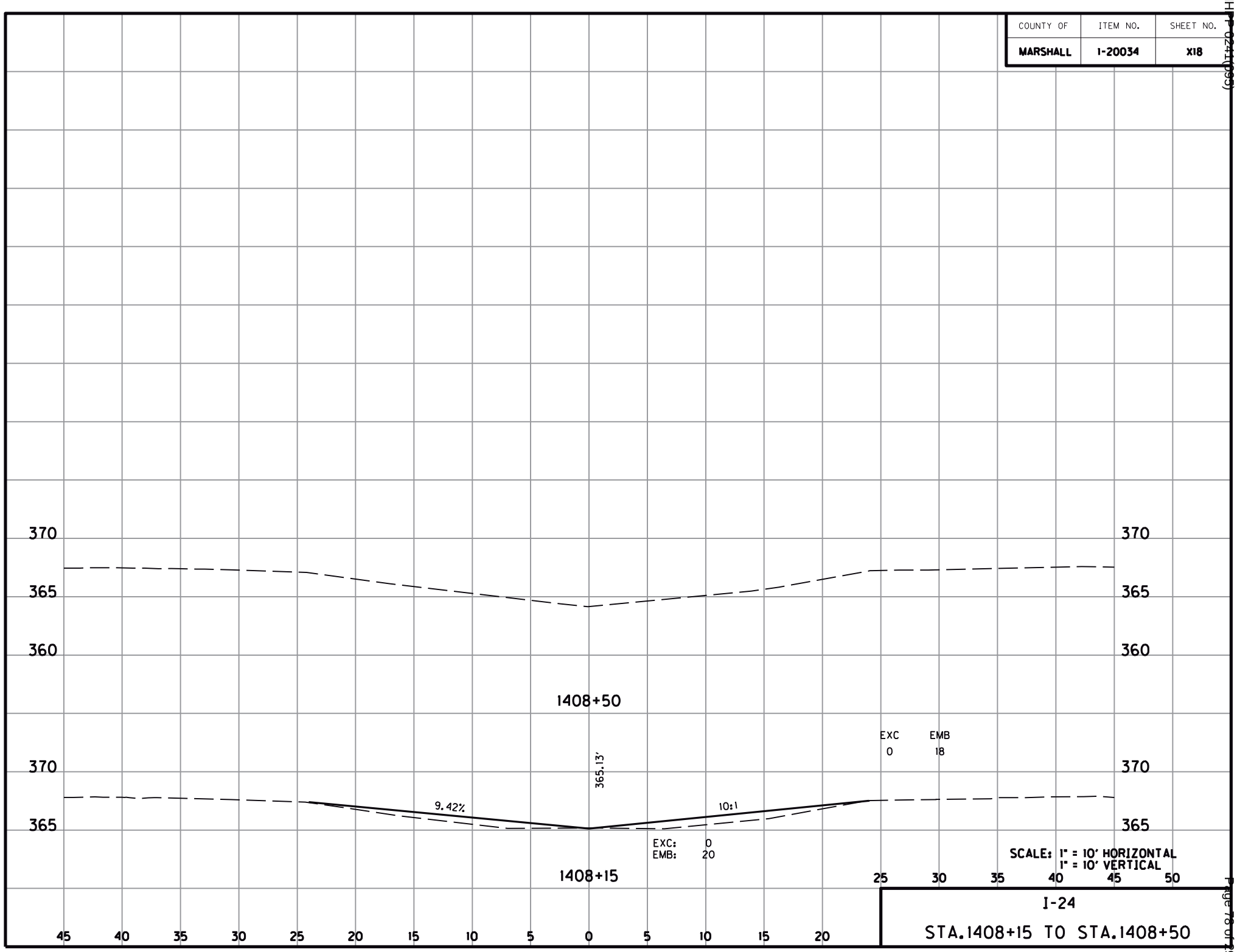


SCALE: 1" = 10' HORIZONTAL
1" = 10' VERTICAL

I-24

STA.1407+00 TO STA.1408+00

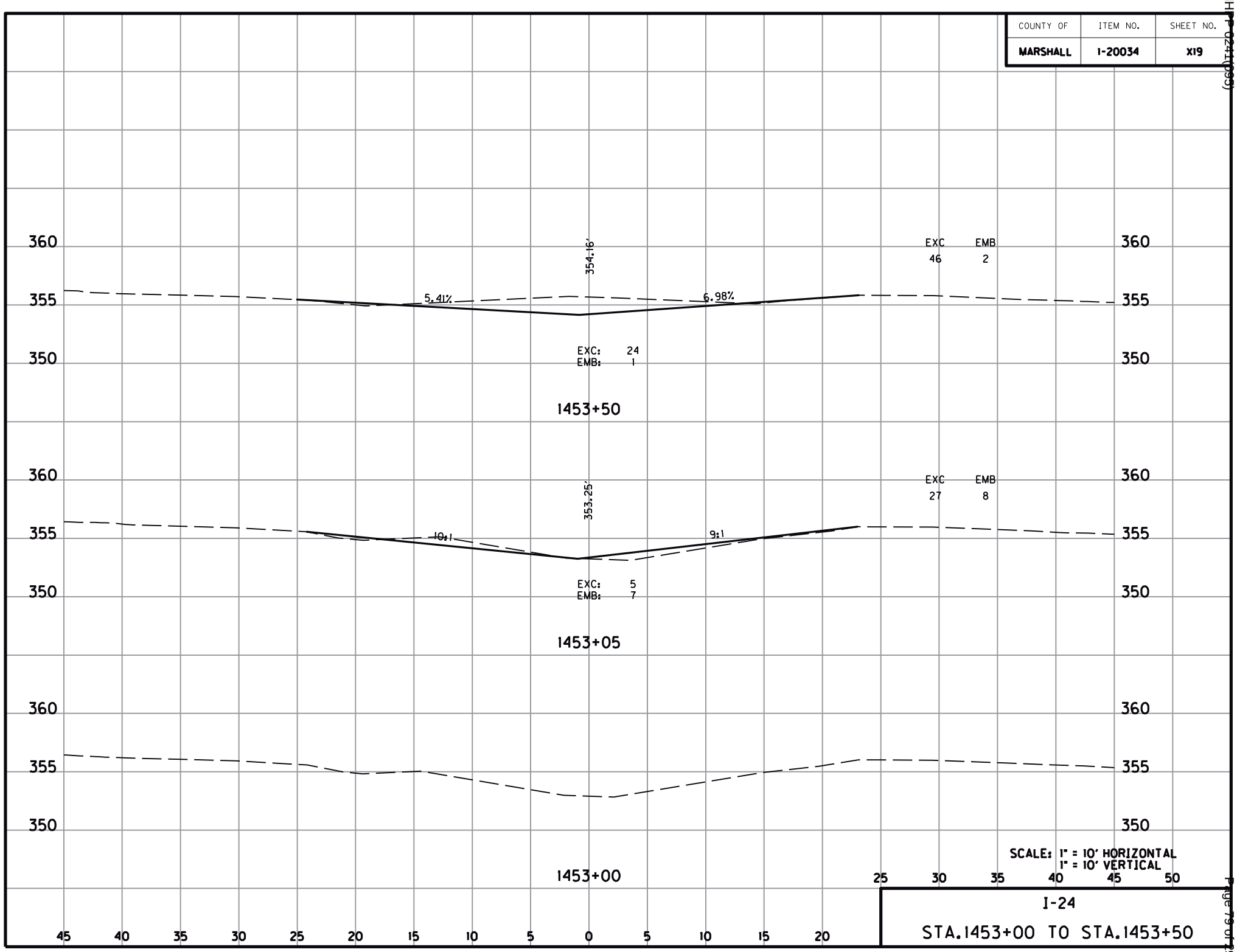
COUNTY OF	ITEM NO.	SHEET NO.
MARSHALL	I-20034	X18



I-24

STA.1408+15 TO STA.1408+50

COUNTY OF	ITEM NO.	SHEET NO.
MARSHALL	I-20034	X19

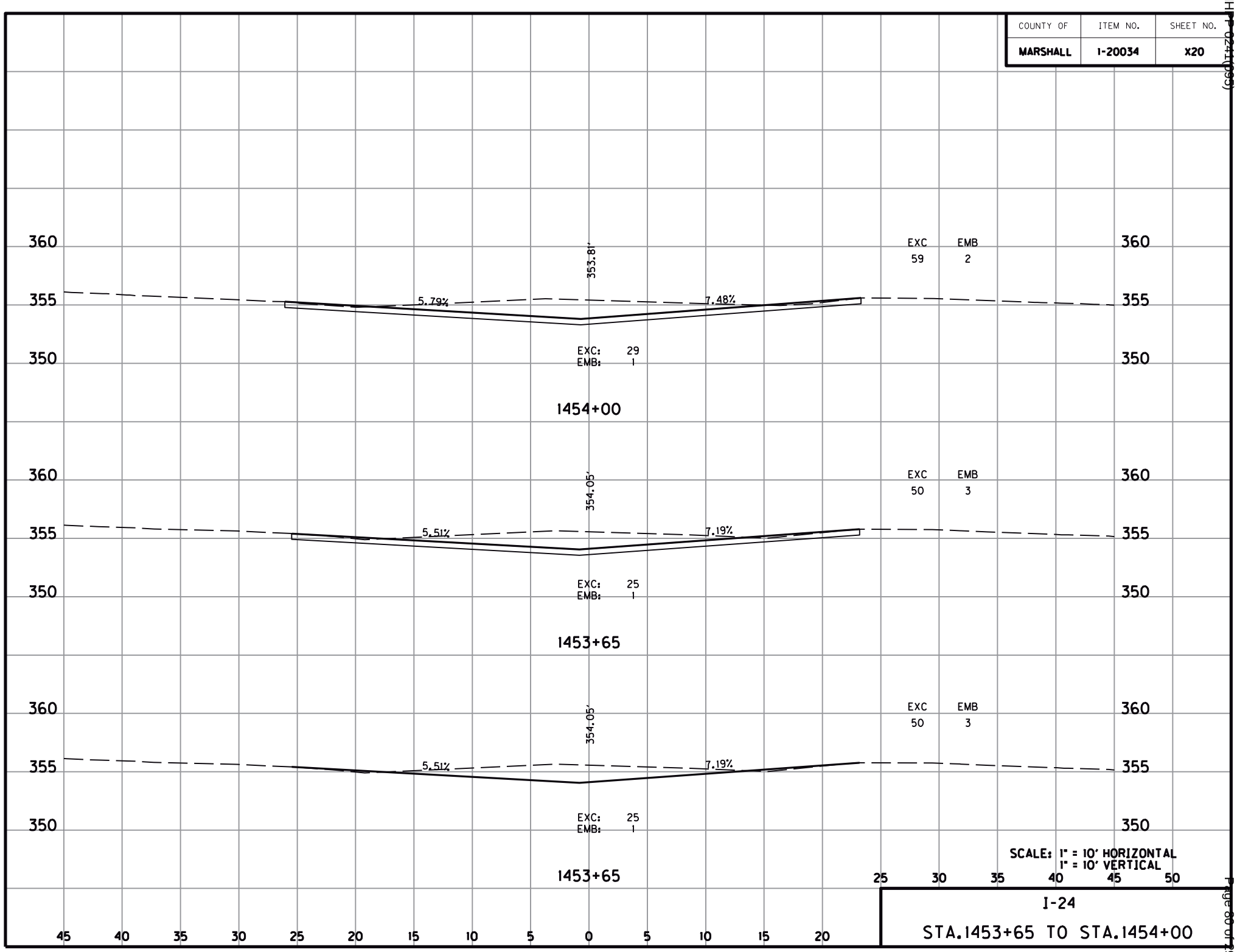


SCALE: 1" = 10' HORIZONTAL
1" = 10' VERTICAL

I-24

STA.1453+00 TO STA.1453+50

COUNTY OF	ITEM NO.	SHEET NO.
MARSHALL	I-20034	X20

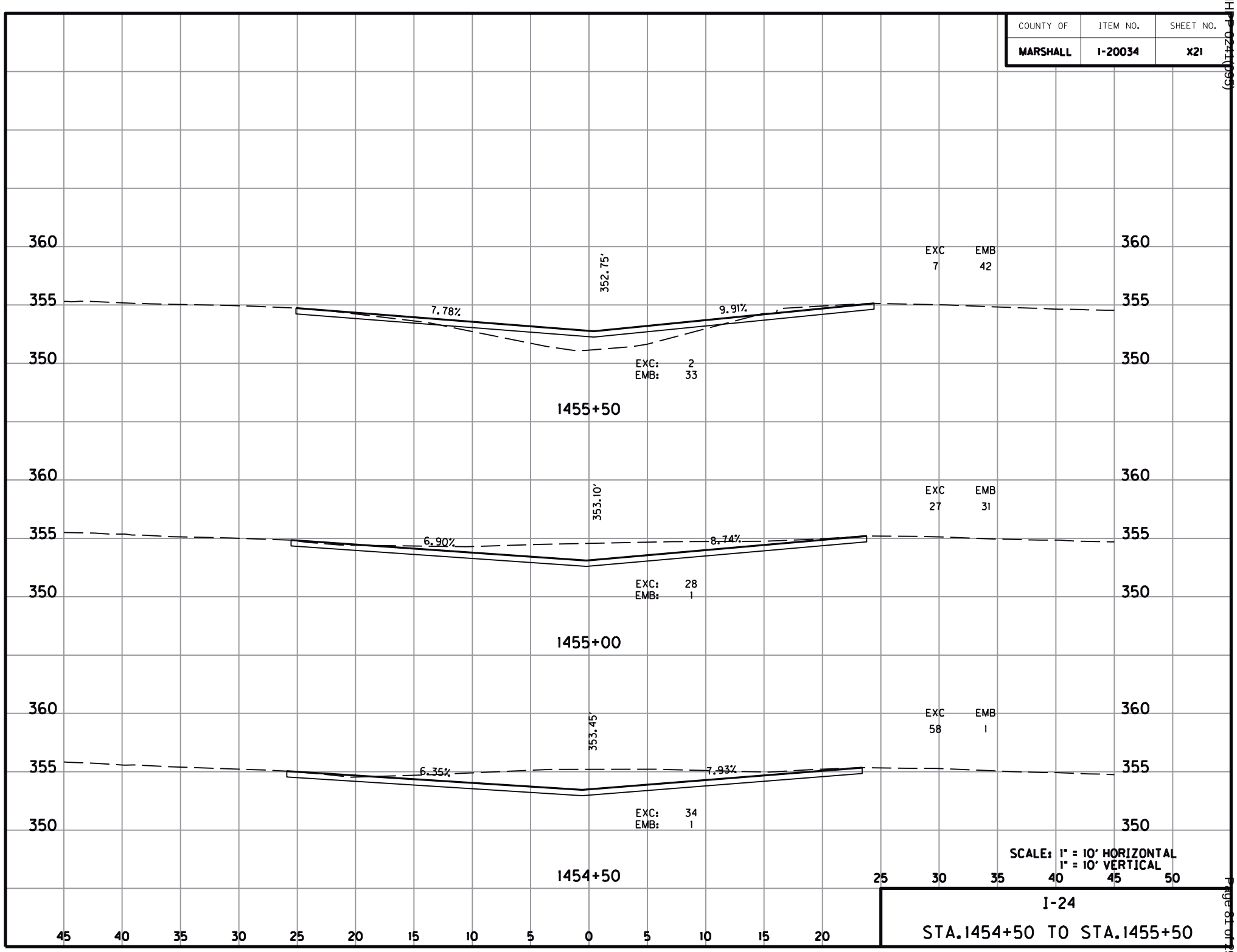


SCALE: 1" = 10' HORIZONTAL
1" = 10' VERTICAL

I-24

STA.1453+65 TO STA.1454+00

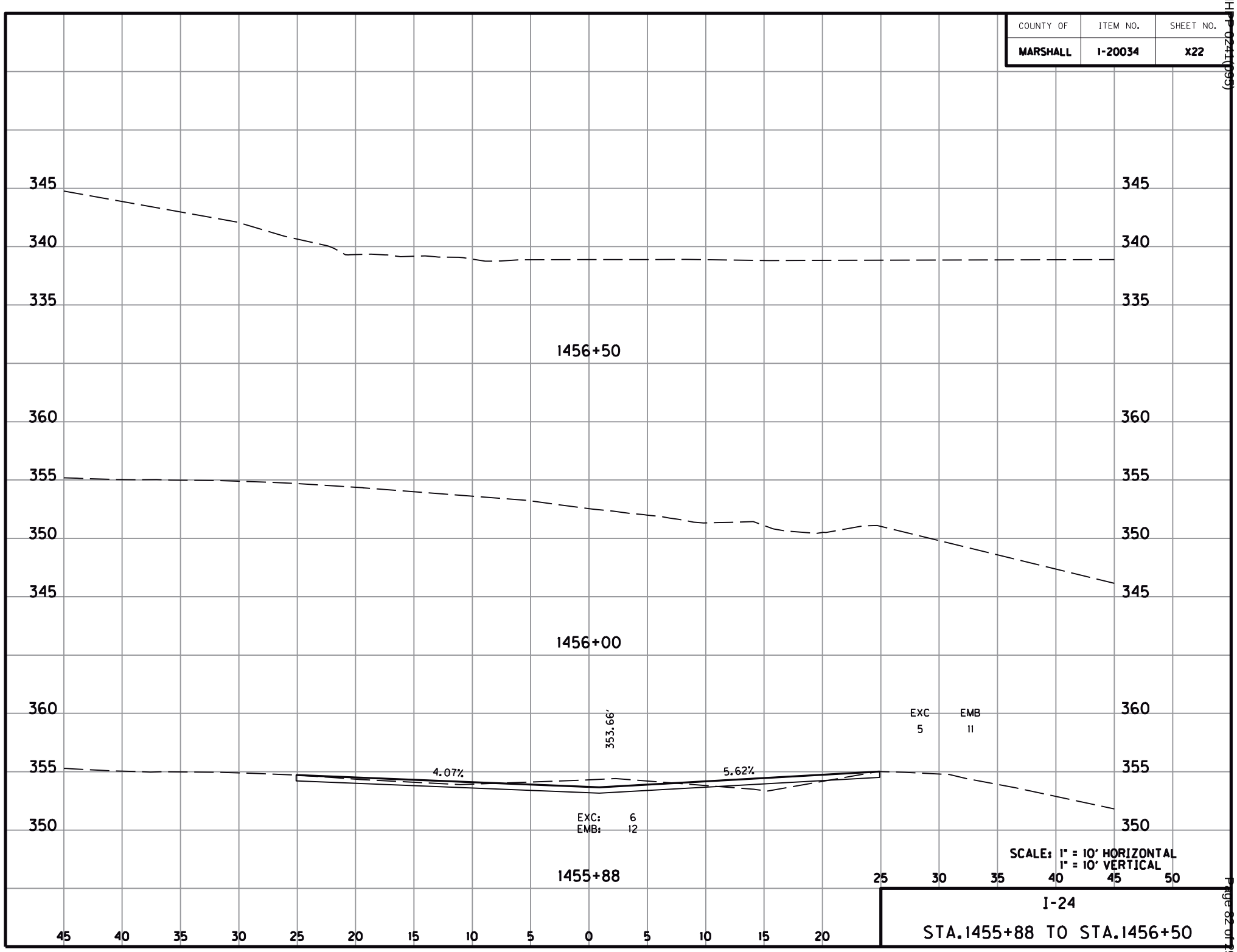
COUNTY OF	ITEM NO.	SHEET NO.
MARSHALL	I-20034	X21



I-24

STA.1454+50 TO STA.1455+50

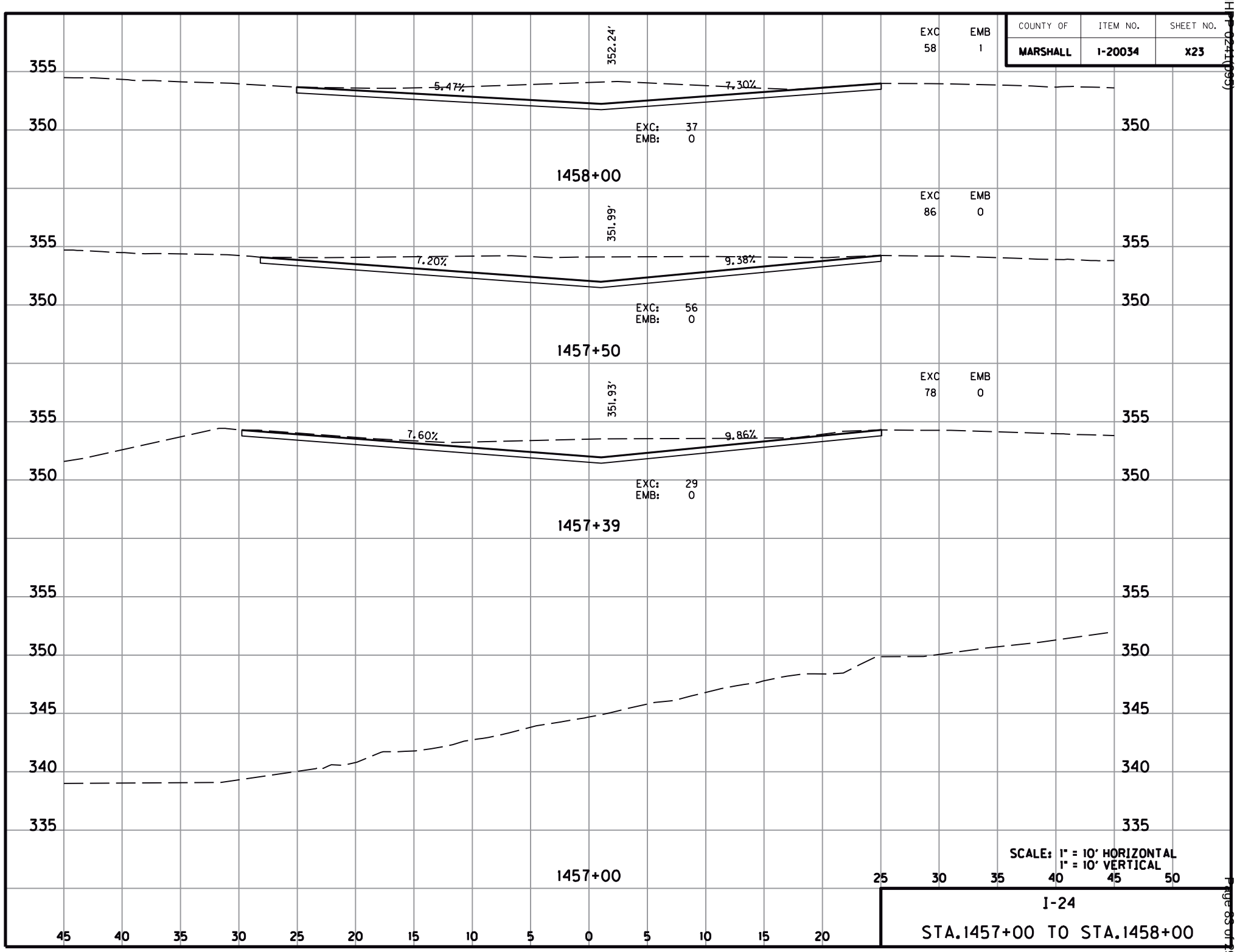
COUNTY OF	ITEM NO.	SHEET NO.
MARSHALL	I-20034	X22



I-24

STA.1455+88 TO STA.1456+50

COUNTY OF	ITEM NO.	SHEET NO.
MARSHALL	I-20034	X23

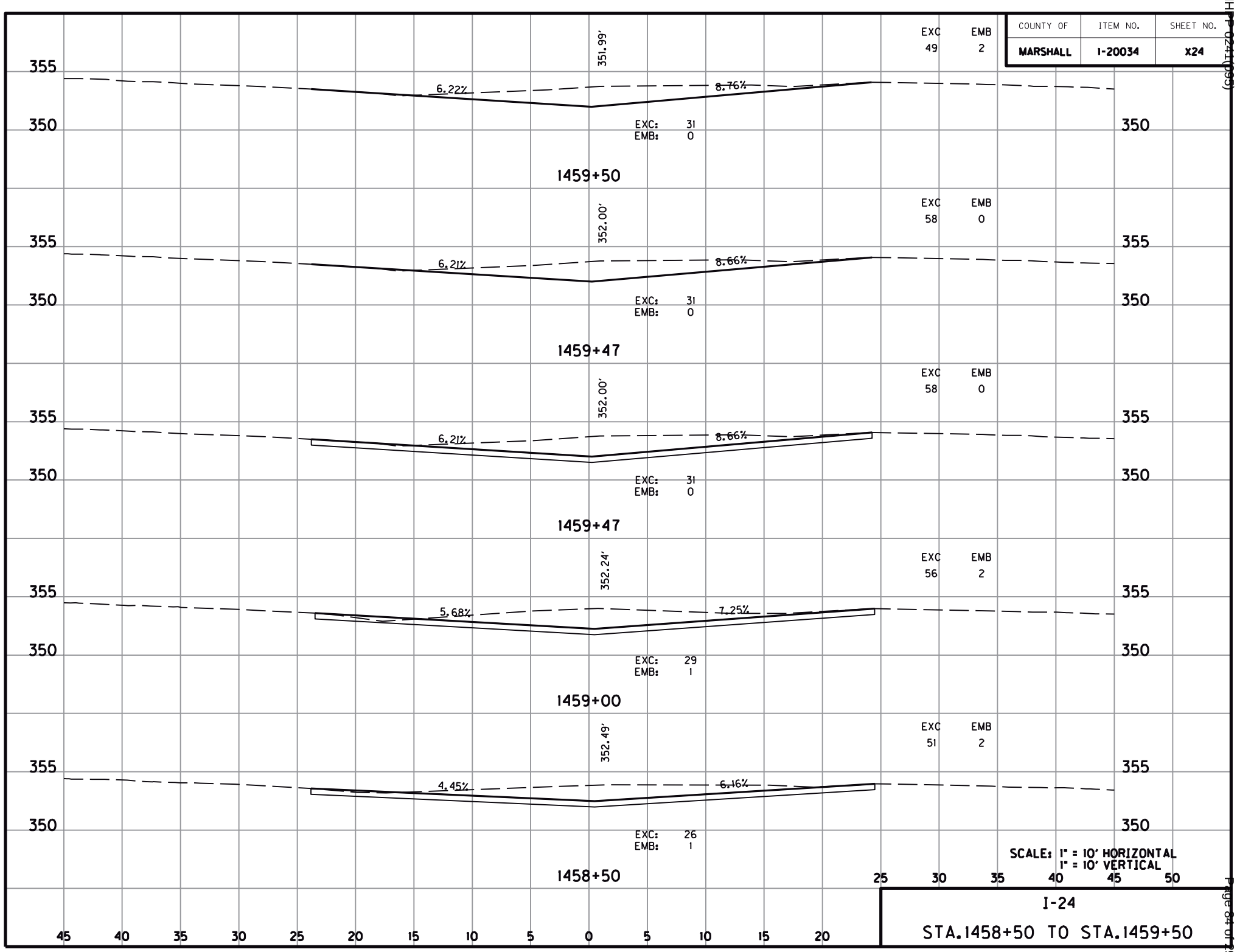


SCALE: 1" = 10' HORIZONTAL
1" = 10' VERTICAL

I-24

STA.1457+00 TO STA.1458+00

COUNTY OF	ITEM NO.	SHEET NO.
MARSHALL	I-20034	X24

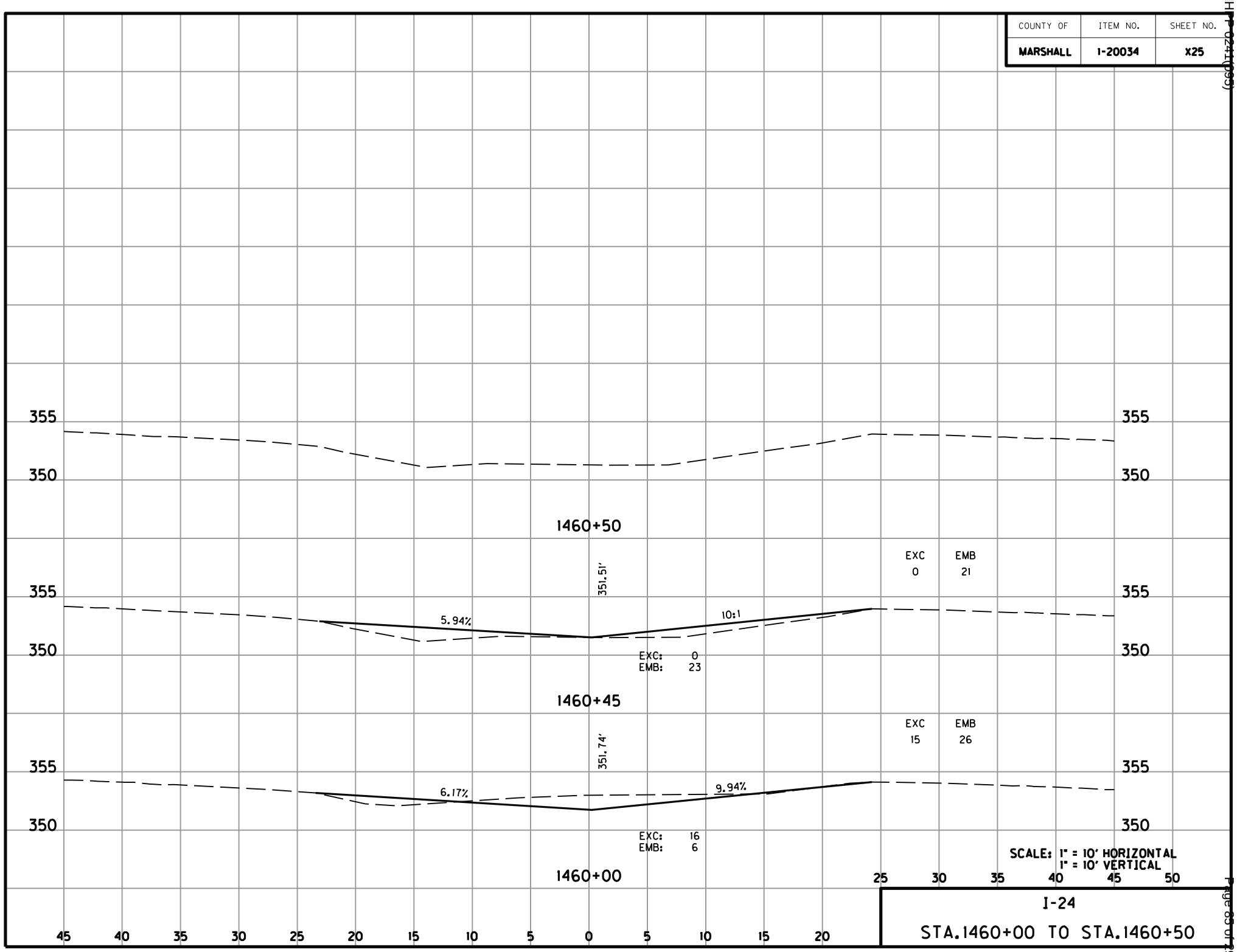


SCALE: 1" = 10' HORIZONTAL
1" = 10' VERTICAL

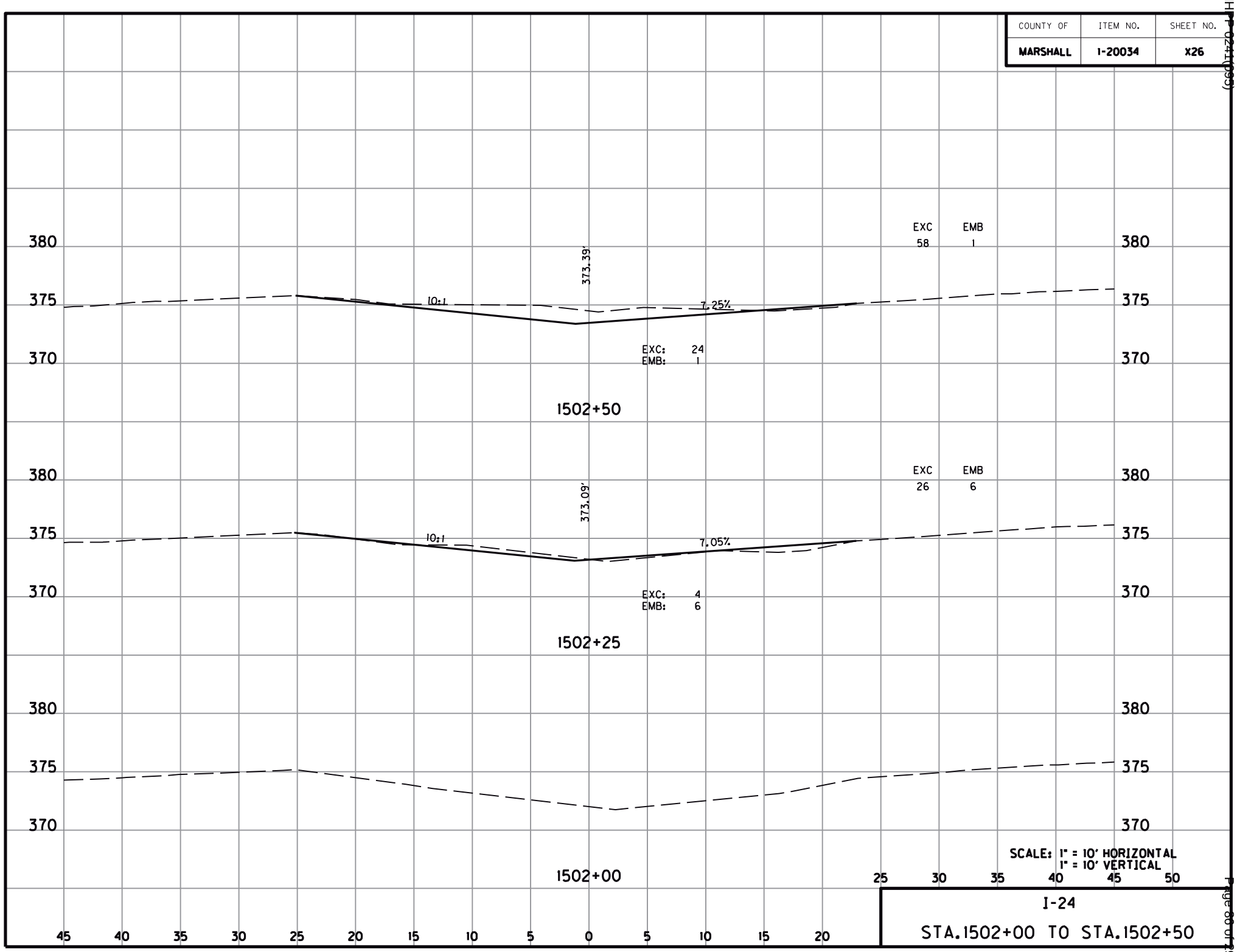
I-24

STA.1458+50 TO STA.1459+50

COUNTY OF	ITEM NO.	SHEET NO.
MARSHALL	I-20034	X25



COUNTY OF	ITEM NO.	SHEET NO.
MARSHALL	I-20034	X26

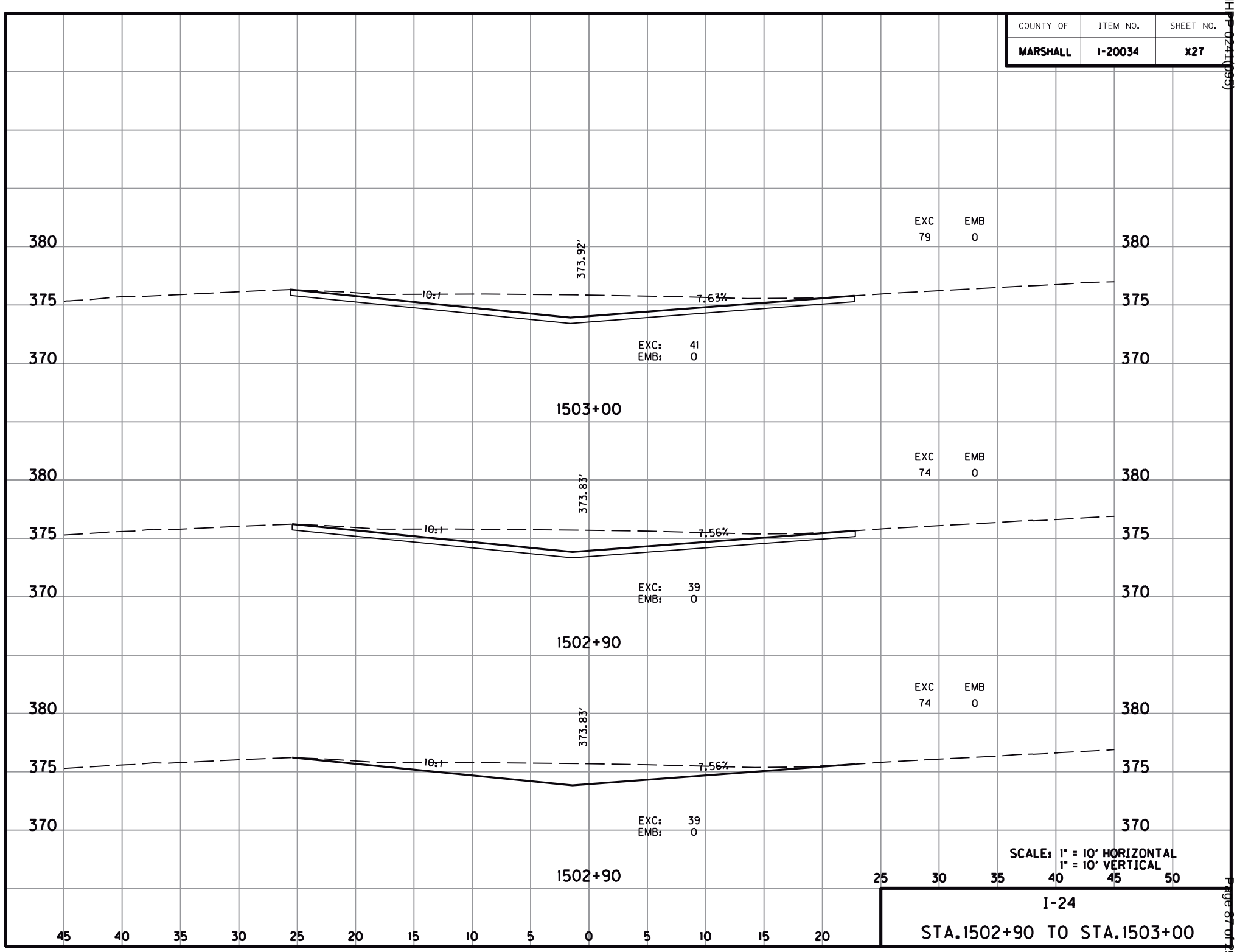


SCALE: 1" = 10' HORIZONTAL
1" = 10' VERTICAL

I-24

STA.1502+00 TO STA.1502+50

COUNTY OF	ITEM NO.	SHEET NO.
MARSHALL	I-20034	X27

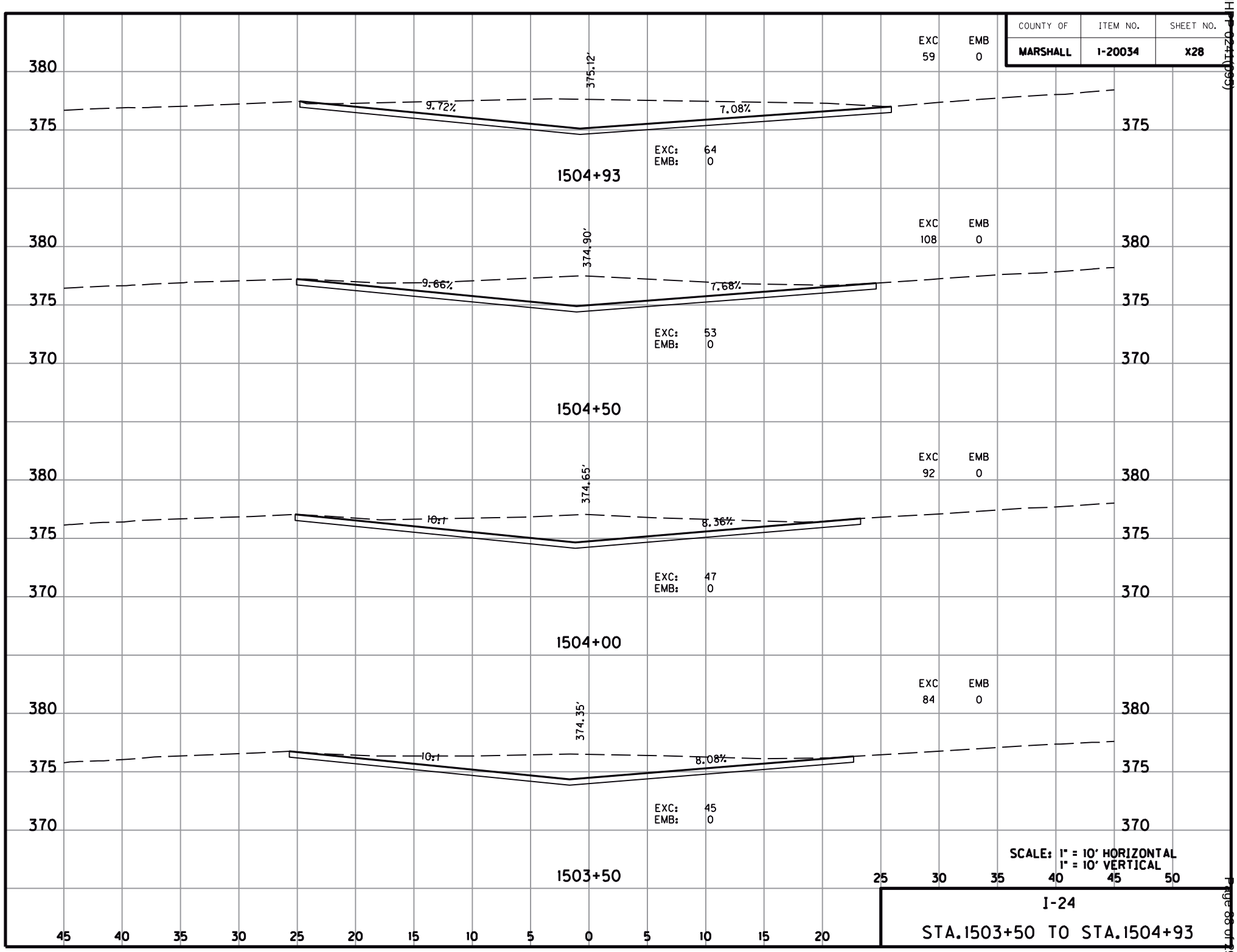


SCALE: 1" = 10' HORIZONTAL
1" = 10' VERTICAL

I-24

STA.1502+90 TO STA.1503+00

COUNTY OF	ITEM NO.	SHEET NO.
MARSHALL	I-20034	X28

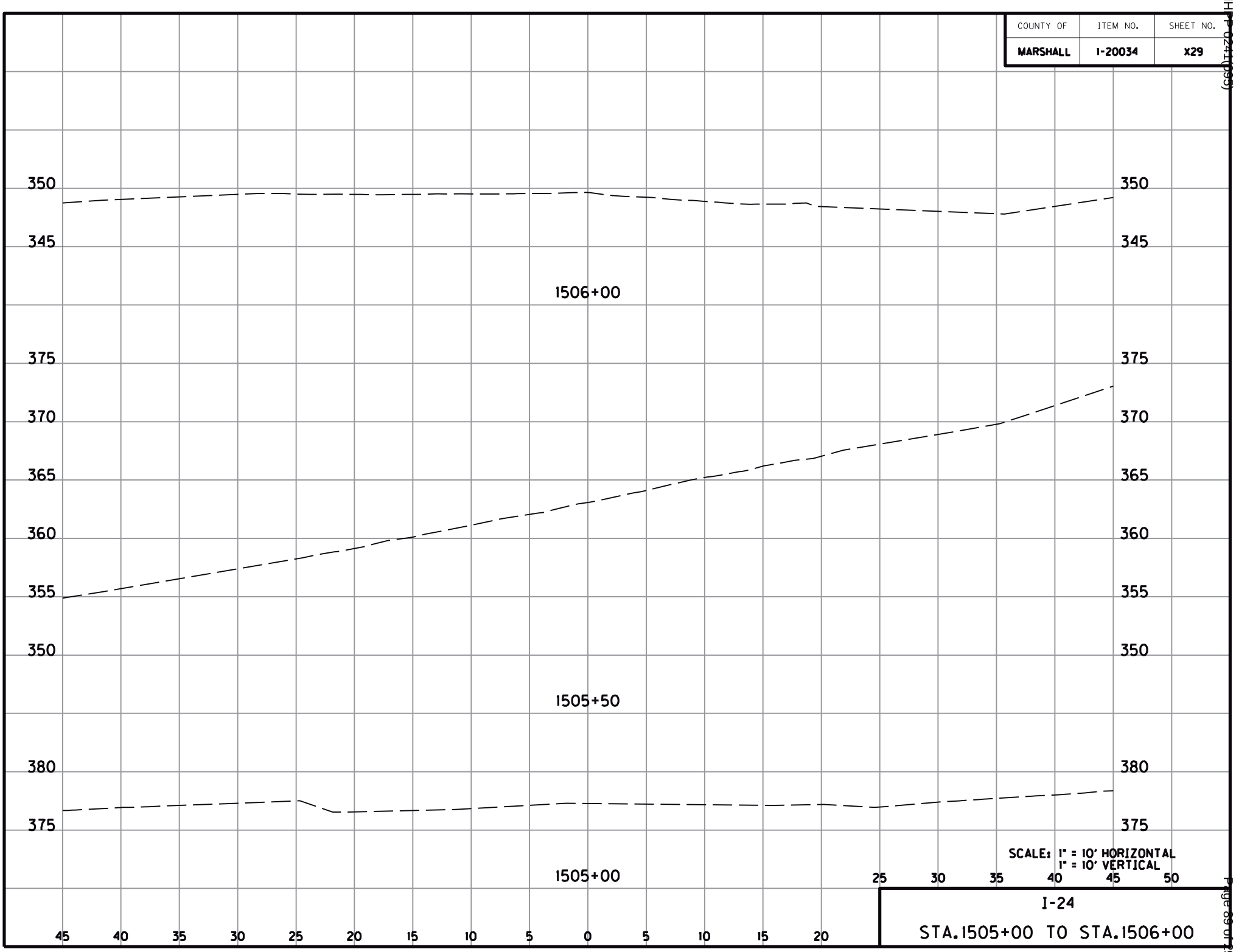


SCALE: 1" = 10' HORIZONTAL
1" = 10' VERTICAL

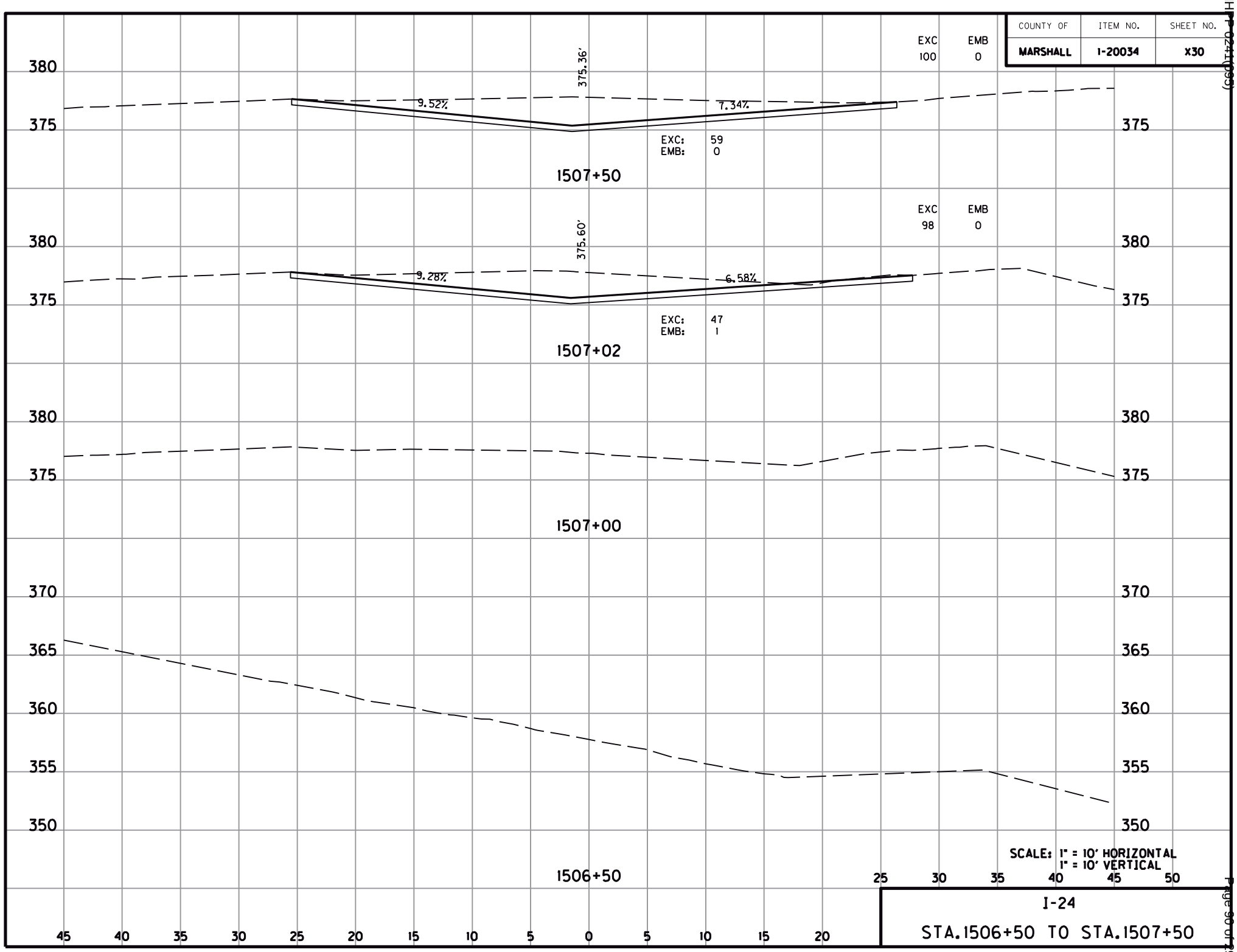
I-24

STA.1503+50 TO STA.1504+93

COUNTY OF	ITEM NO.	SHEET NO.
MARSHALL	I-20034	X29



COUNTY OF	ITEM NO.	SHEET NO.
MARSHALL	I-20034	X30

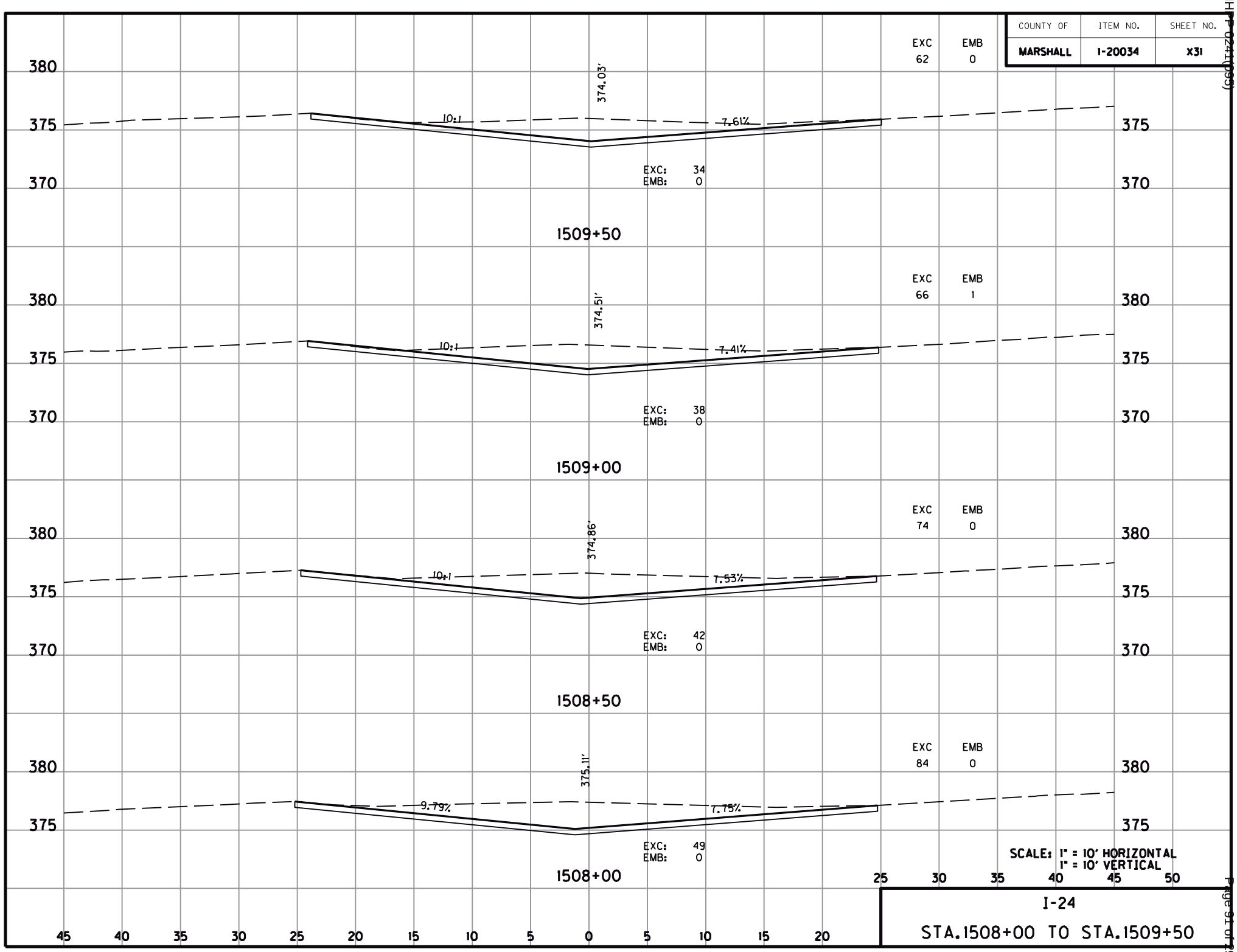


SCALE: 1" = 10' HORIZONTAL
1" = 10' VERTICAL

I-24

STA.1506+50 TO STA.1507+50

COUNTY OF	ITEM NO.	SHEET NO.
MARSHALL	I-20034	X31

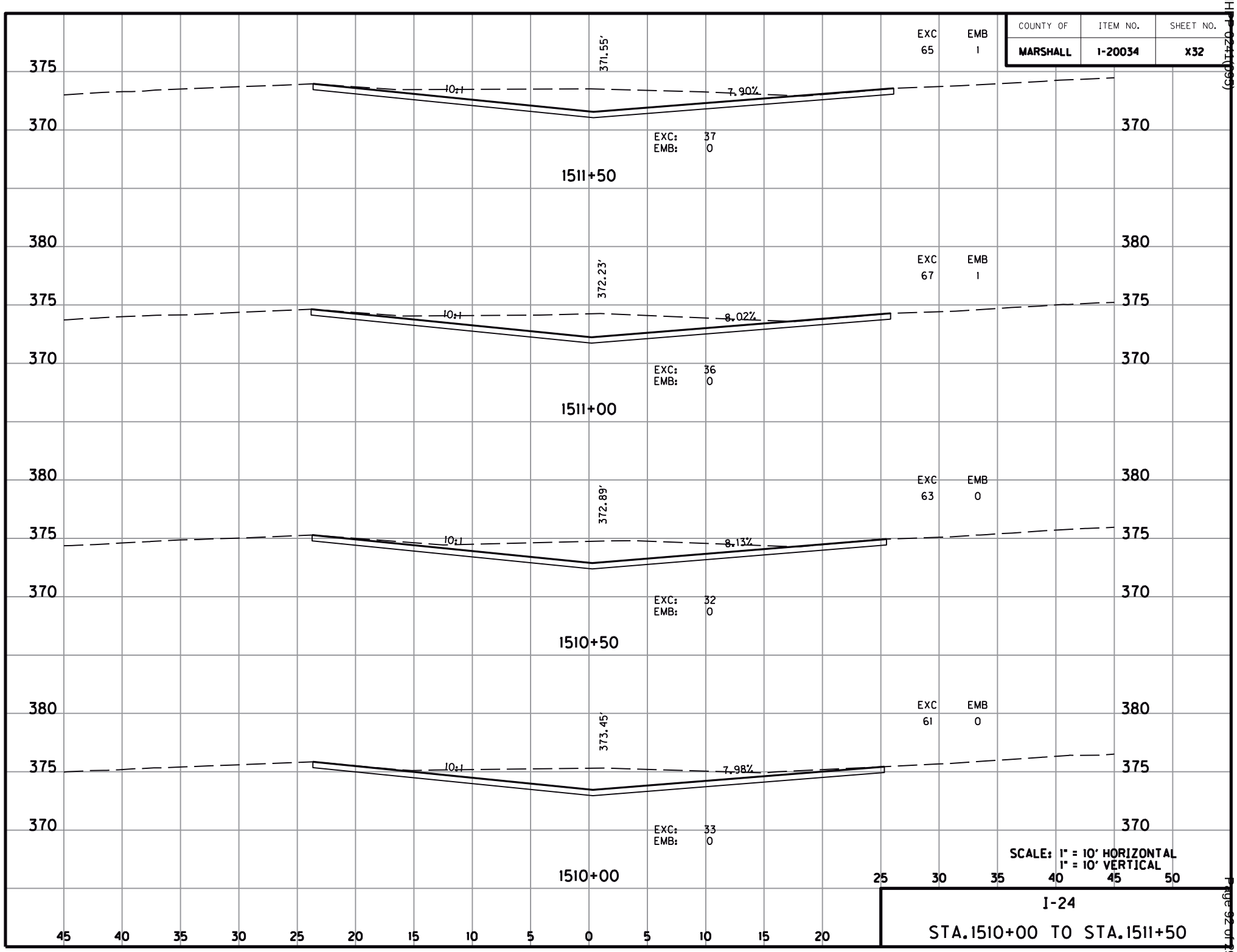


SCALE: 1" = 10' HORIZONTAL
1" = 10' VERTICAL

I-24

STA.1508+00 TO STA.1509+50

COUNTY OF	ITEM NO.	SHEET NO.
MARSHALL	I-20034	X32

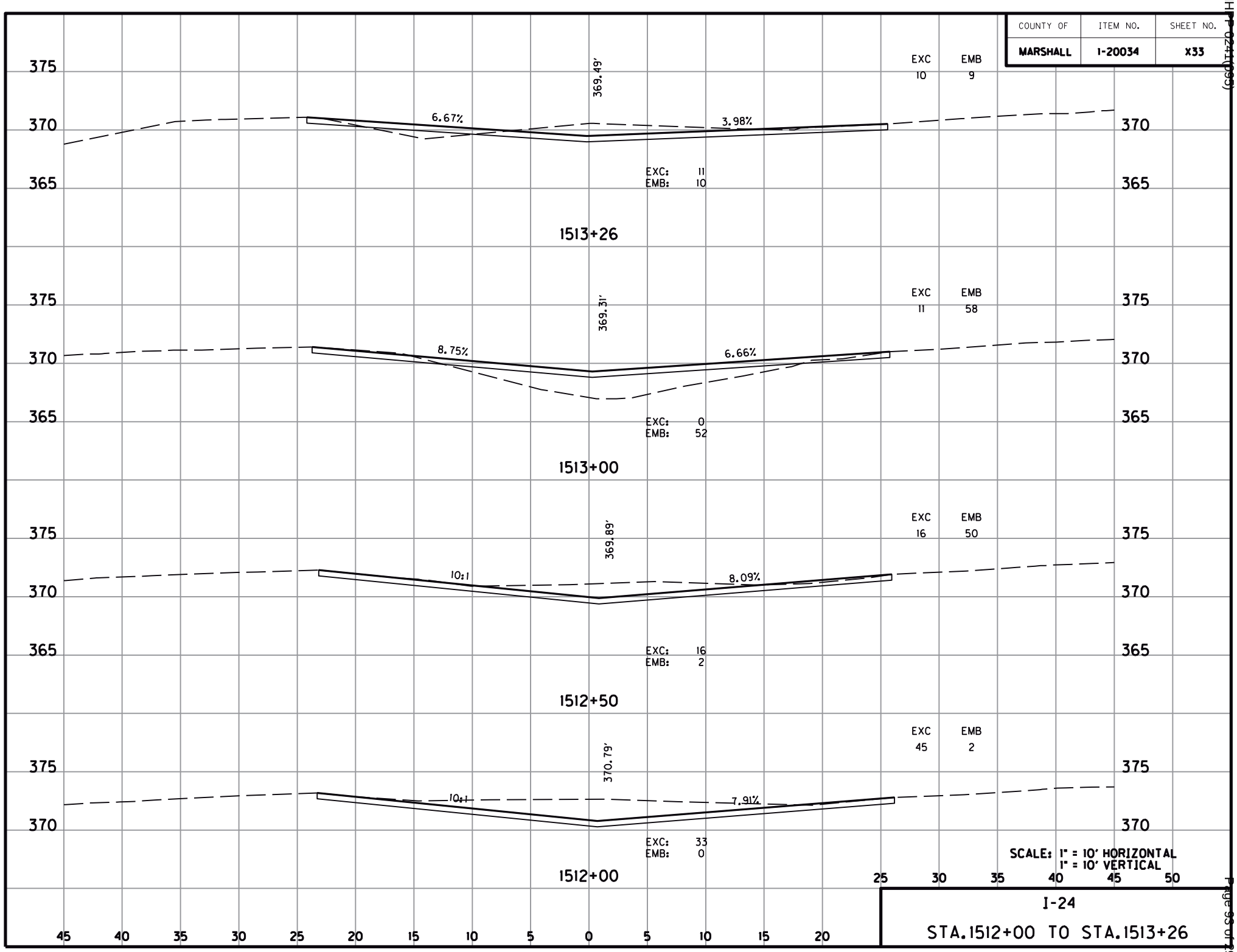


SCALE: 1" = 10' HORIZONTAL
1" = 10' VERTICAL

I-24

STA. 1510+00 TO STA. 1511+50

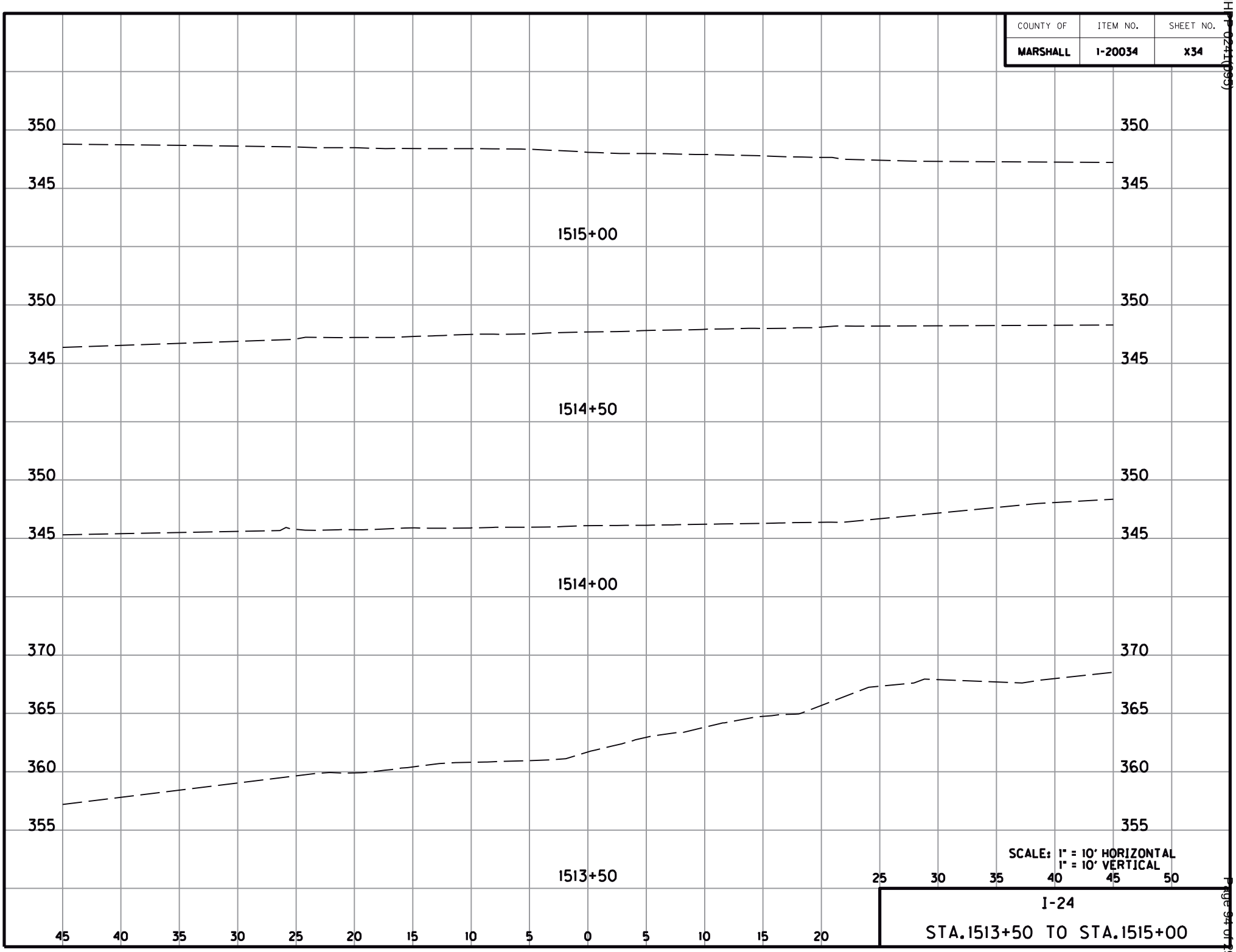
COUNTY OF	ITEM NO.	SHEET NO.
MARSHALL	I-20034	X33



I-24

STA.1512+00 TO STA.1513+26

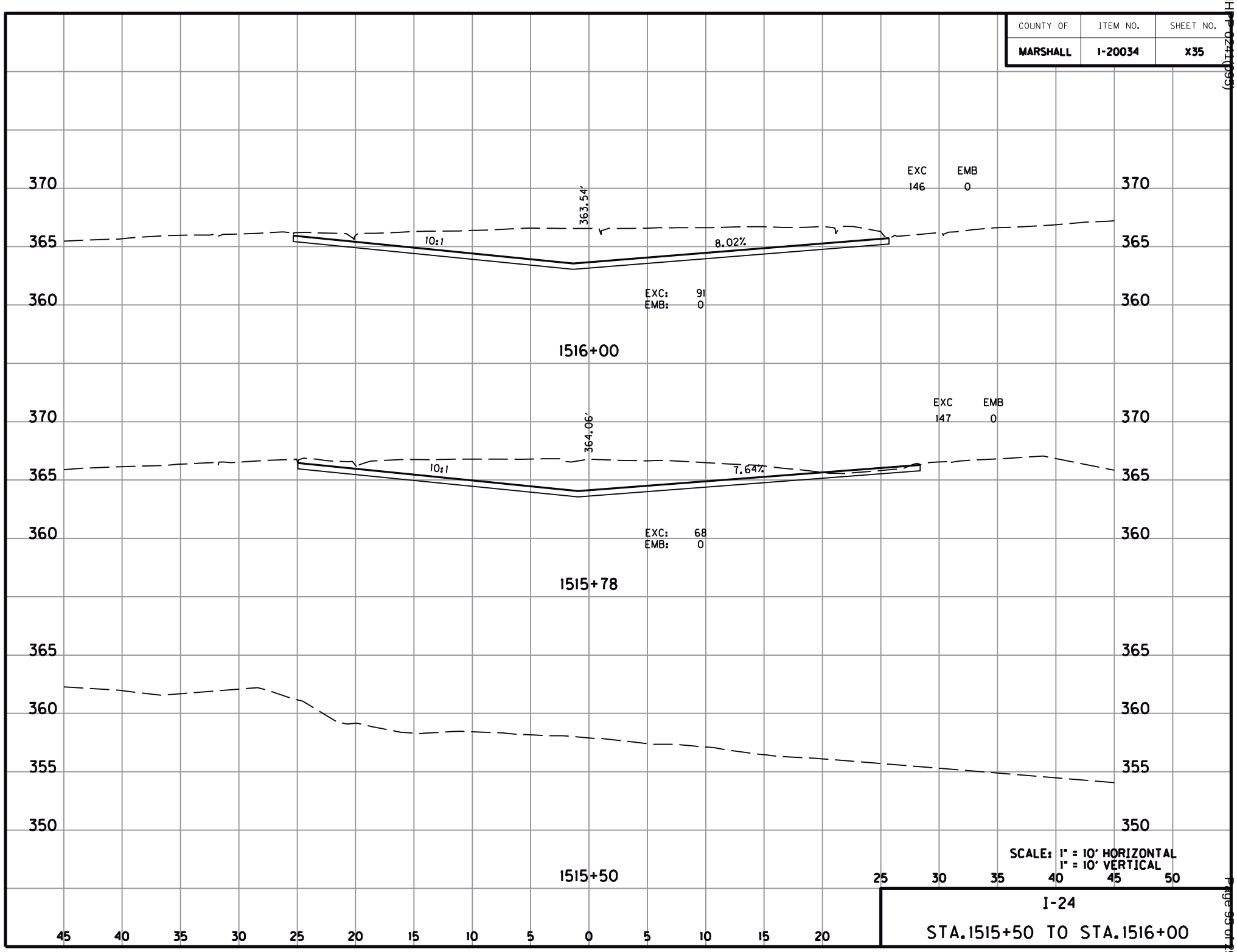
COUNTY OF	ITEM NO.	SHEET NO.
MARSHALL	I-20034	X34



I-24

STA. 1513+50 TO STA. 1515+00

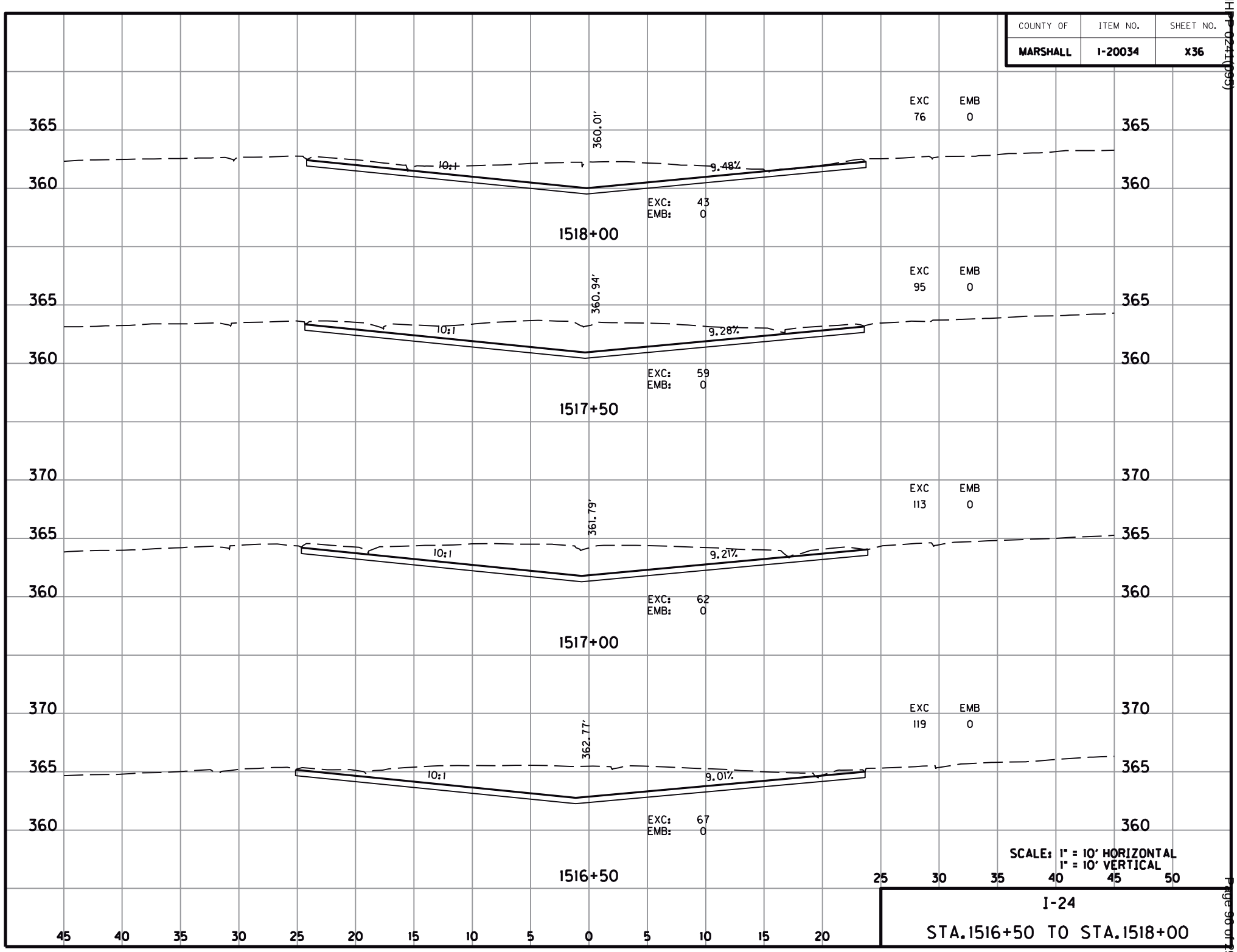
COUNTY OF	ITEM NO.	SHEET NO.
MARSHALL	I-20034	X35



I-24

STA. 1515+50 TO STA. 1516+00

COUNTY OF	ITEM NO.	SHEET NO.
MARSHALL	I-20034	X36

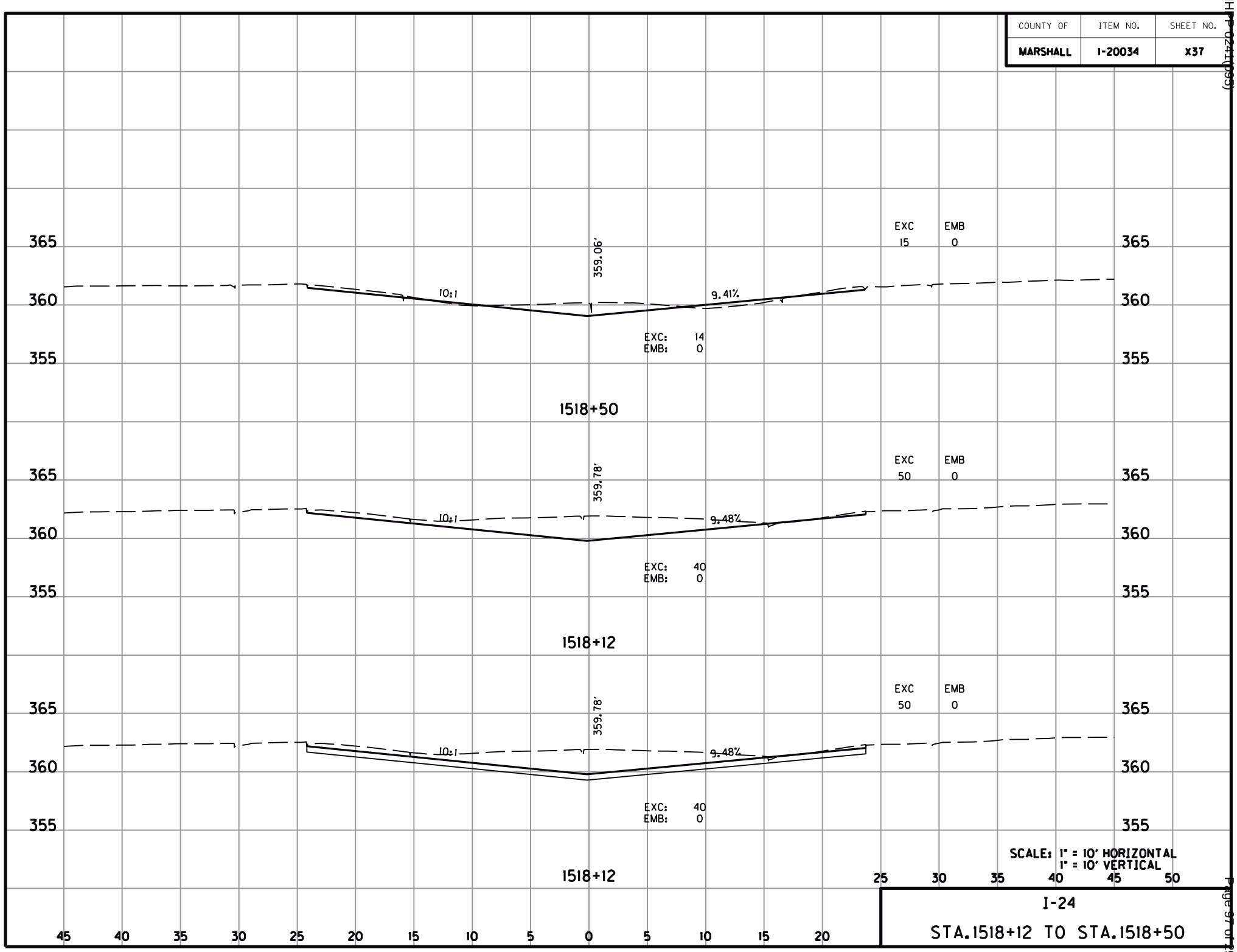


SCALE: 1" = 10' HORIZONTAL
1" = 10' VERTICAL

I-24

STA.1516+50 TO STA.1518+00

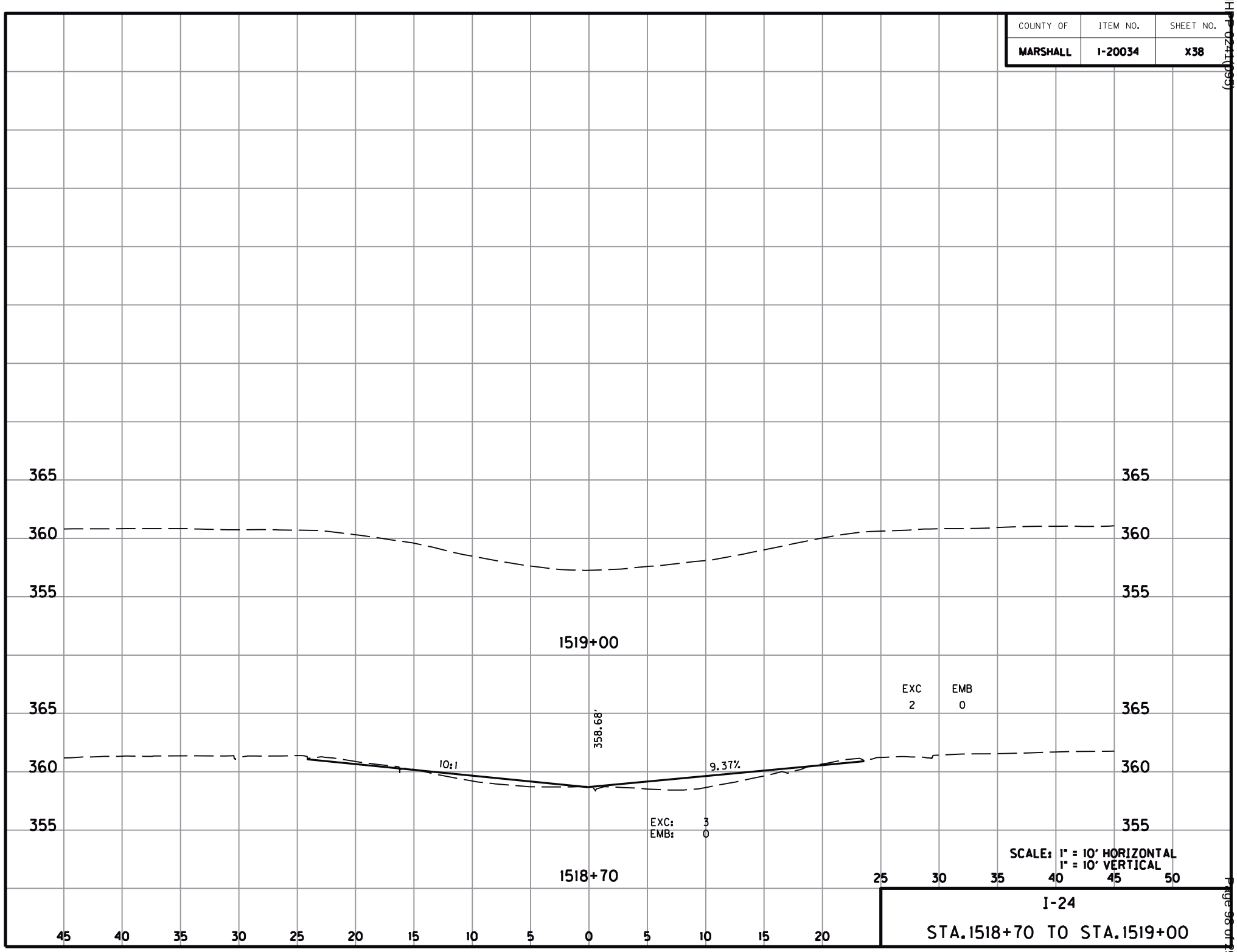
COUNTY OF	ITEM NO.	SHEET NO.
MARSHALL	I-20034	X37



I-24

STA.1518+12 TO STA.1518+50

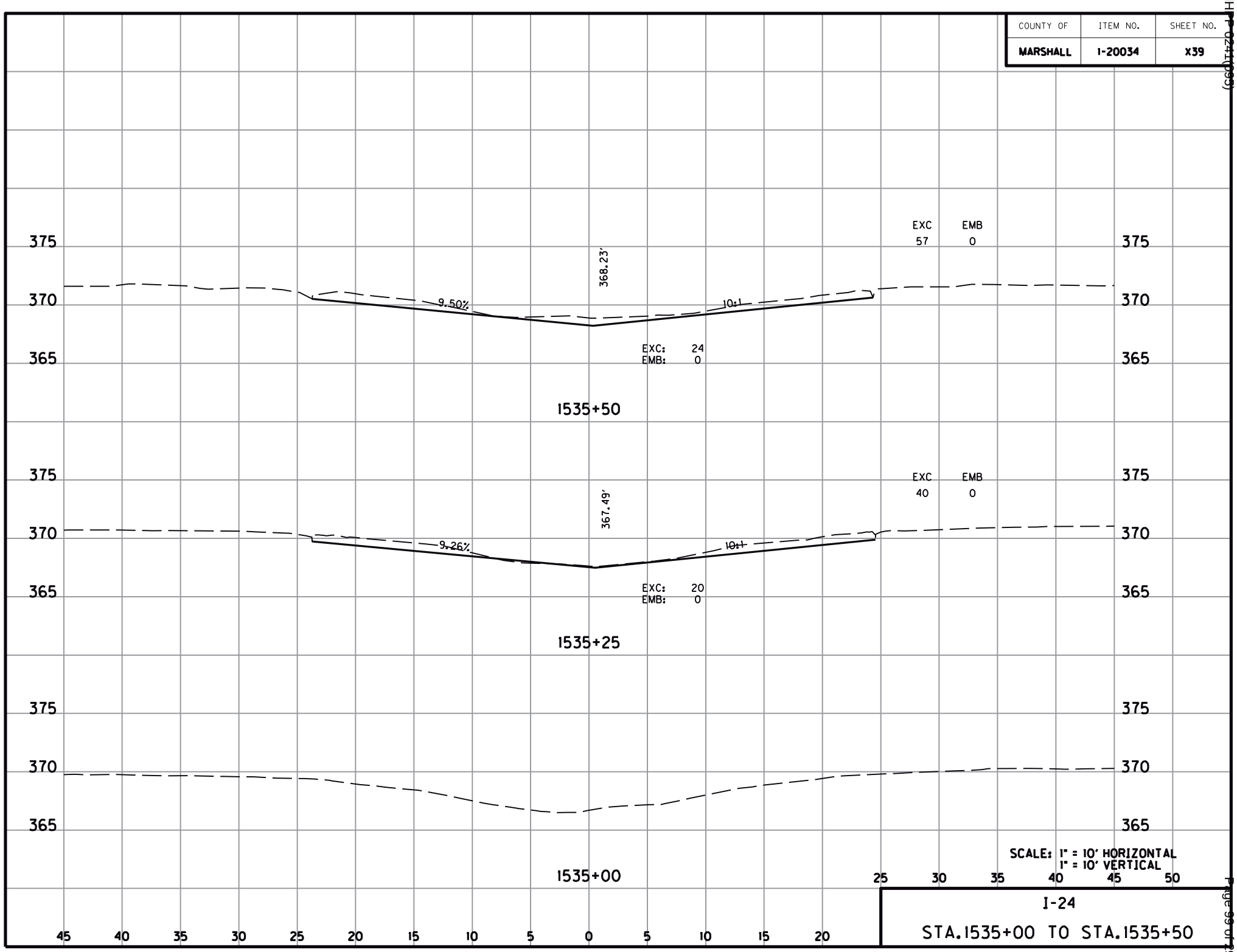
COUNTY OF	ITEM NO.	SHEET NO.
MARSHALL	I-20034	X38



I-24

STA.1518+70 TO STA.1519+00

COUNTY OF	ITEM NO.	SHEET NO.
MARSHALL	I-20034	X39

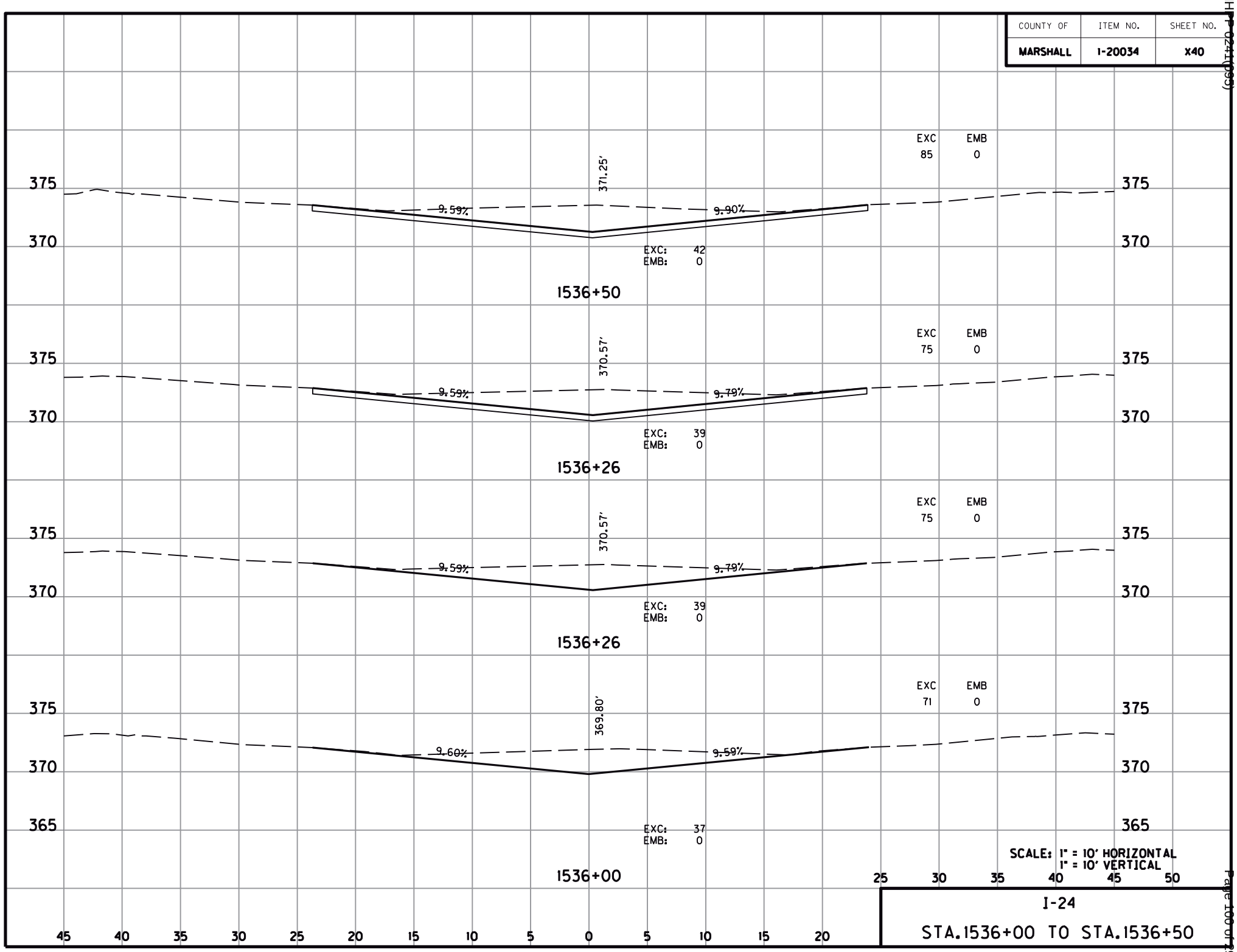


SCALE: 1" = 10' HORIZONTAL
1" = 10' VERTICAL

I-24

STA.1535+00 TO STA.1535+50

COUNTY OF	ITEM NO.	SHEET NO.
MARSHALL	I-20034	X40

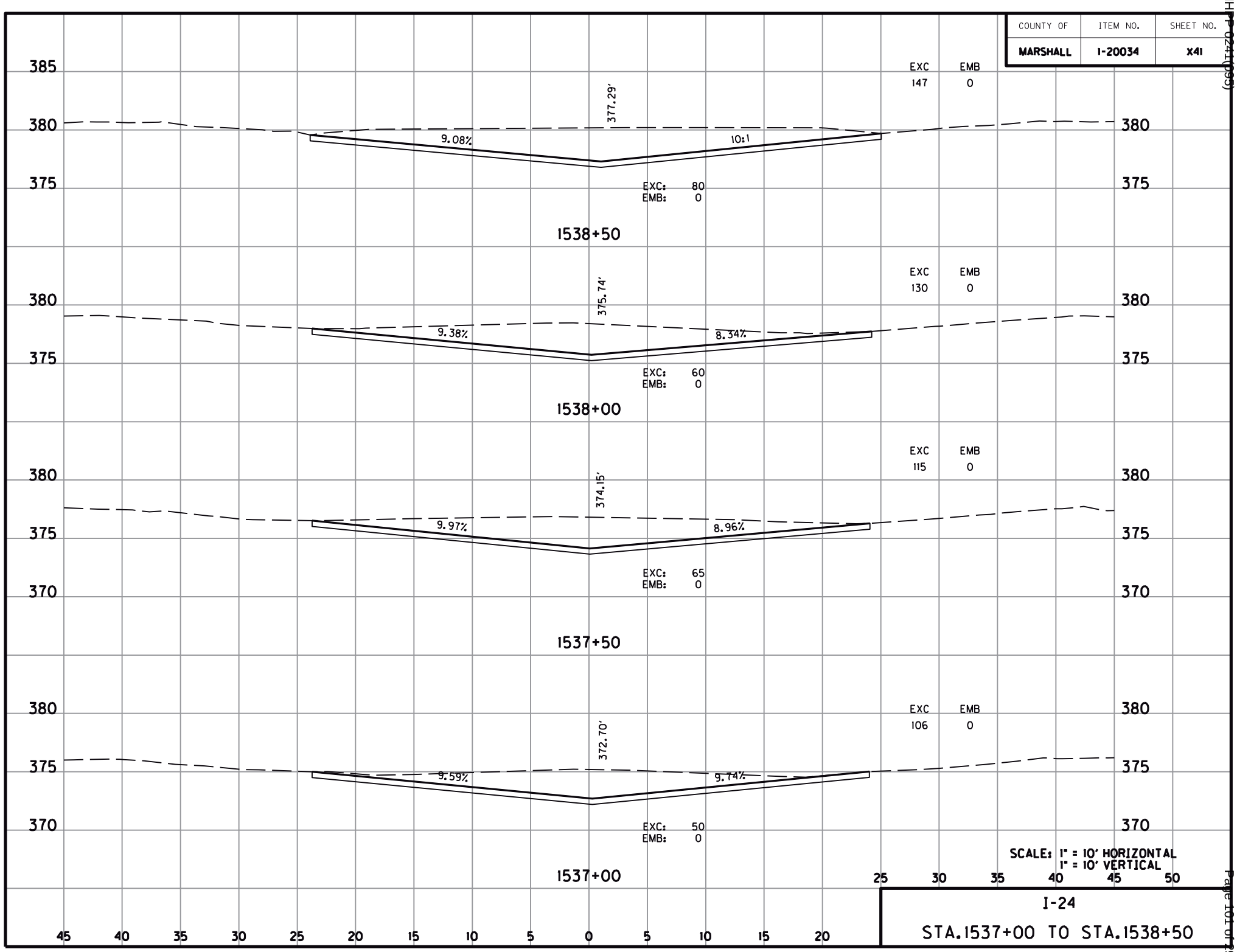


SCALE: 1" = 10' HORIZONTAL
1" = 10' VERTICAL

I-24

STA.1536+00 TO STA.1536+50

COUNTY OF	ITEM NO.	SHEET NO.
MARSHALL	I-20034	X41

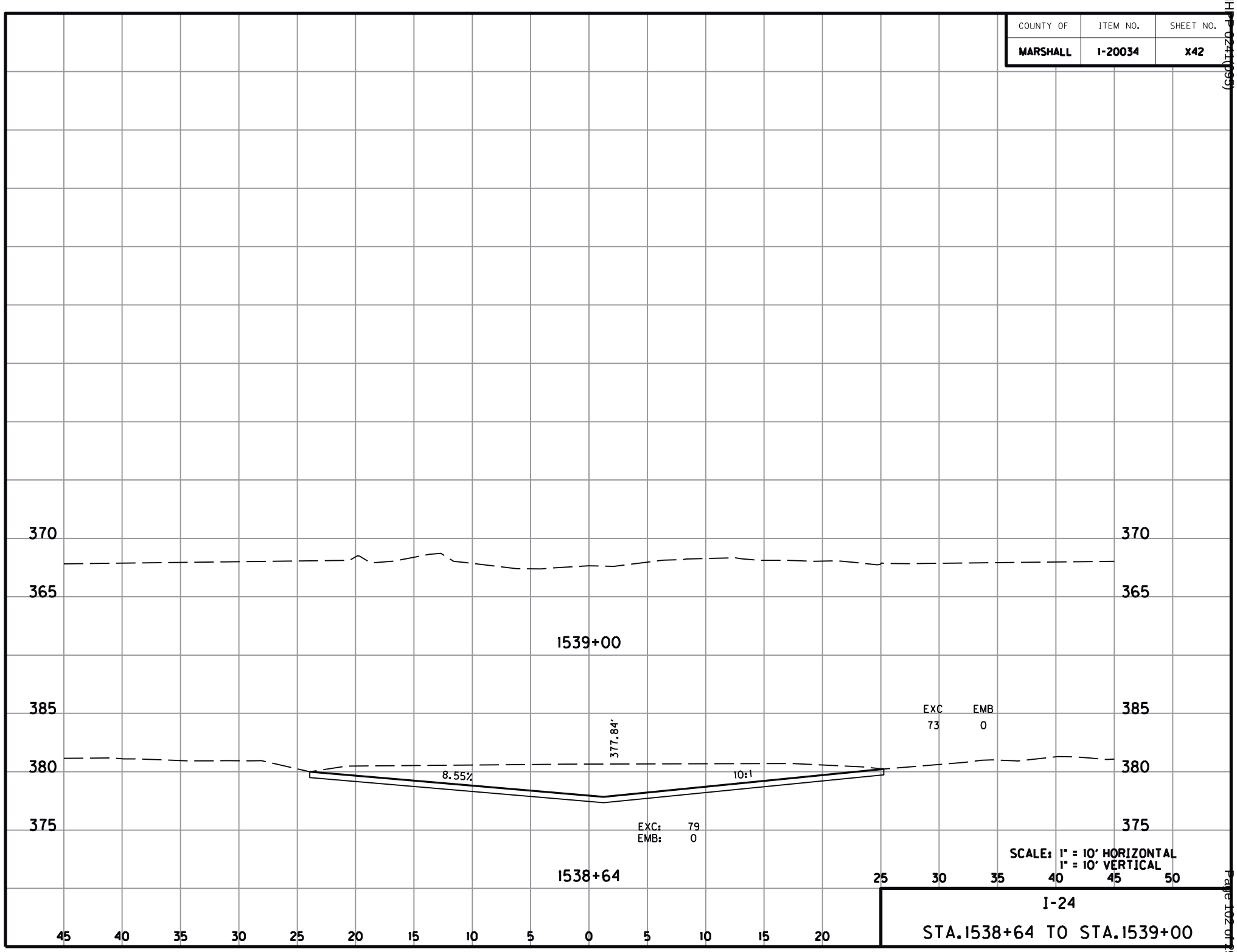


SCALE: 1" = 10' HORIZONTAL
1" = 10' VERTICAL

I-24

STA.1537+00 TO STA.1538+50

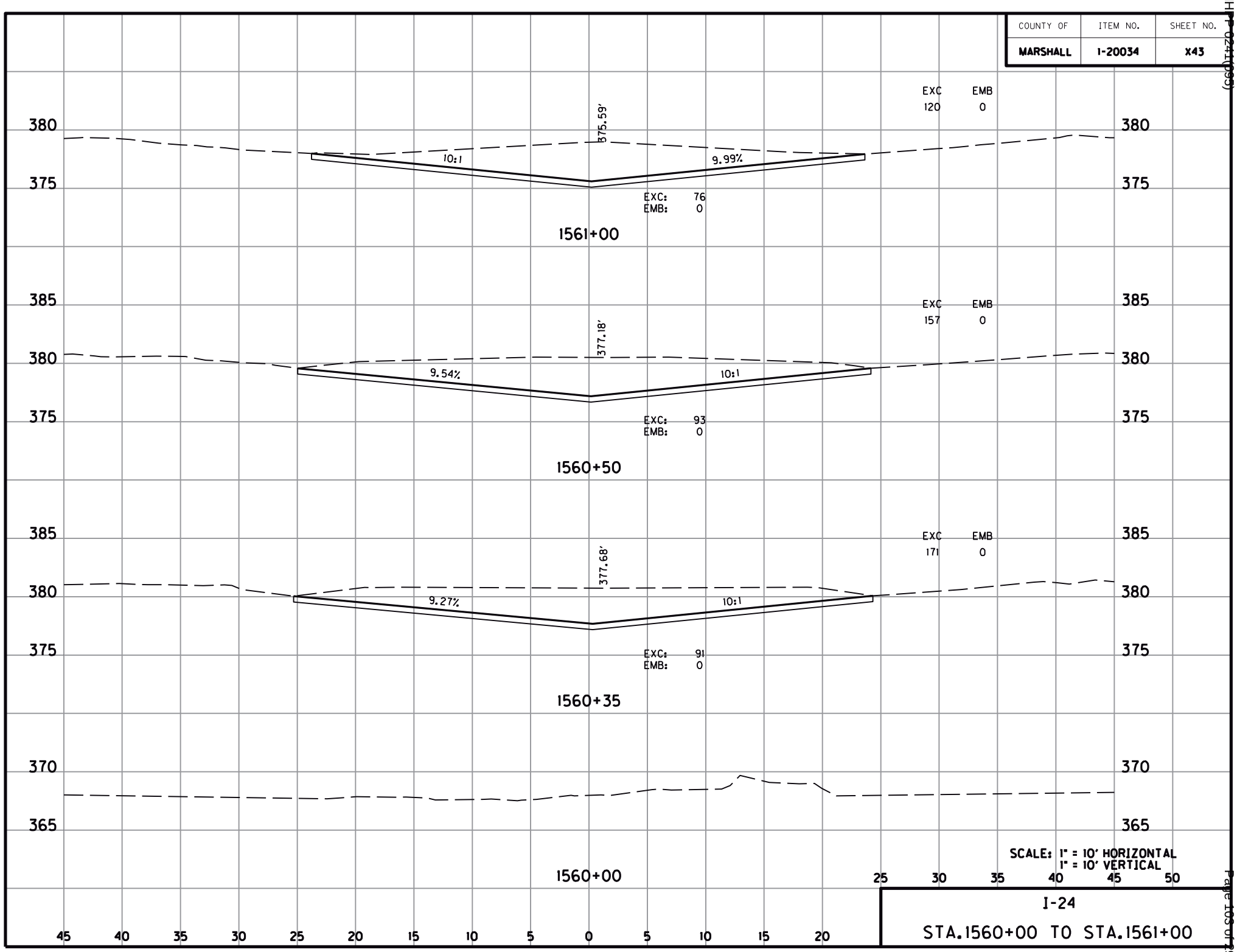
COUNTY OF	ITEM NO.	SHEET NO.
MARSHALL	I-20034	X42



I-24

STA.1538+64 TO STA.1539+00

COUNTY OF	ITEM NO.	SHEET NO.
MARSHALL	I-20034	X43

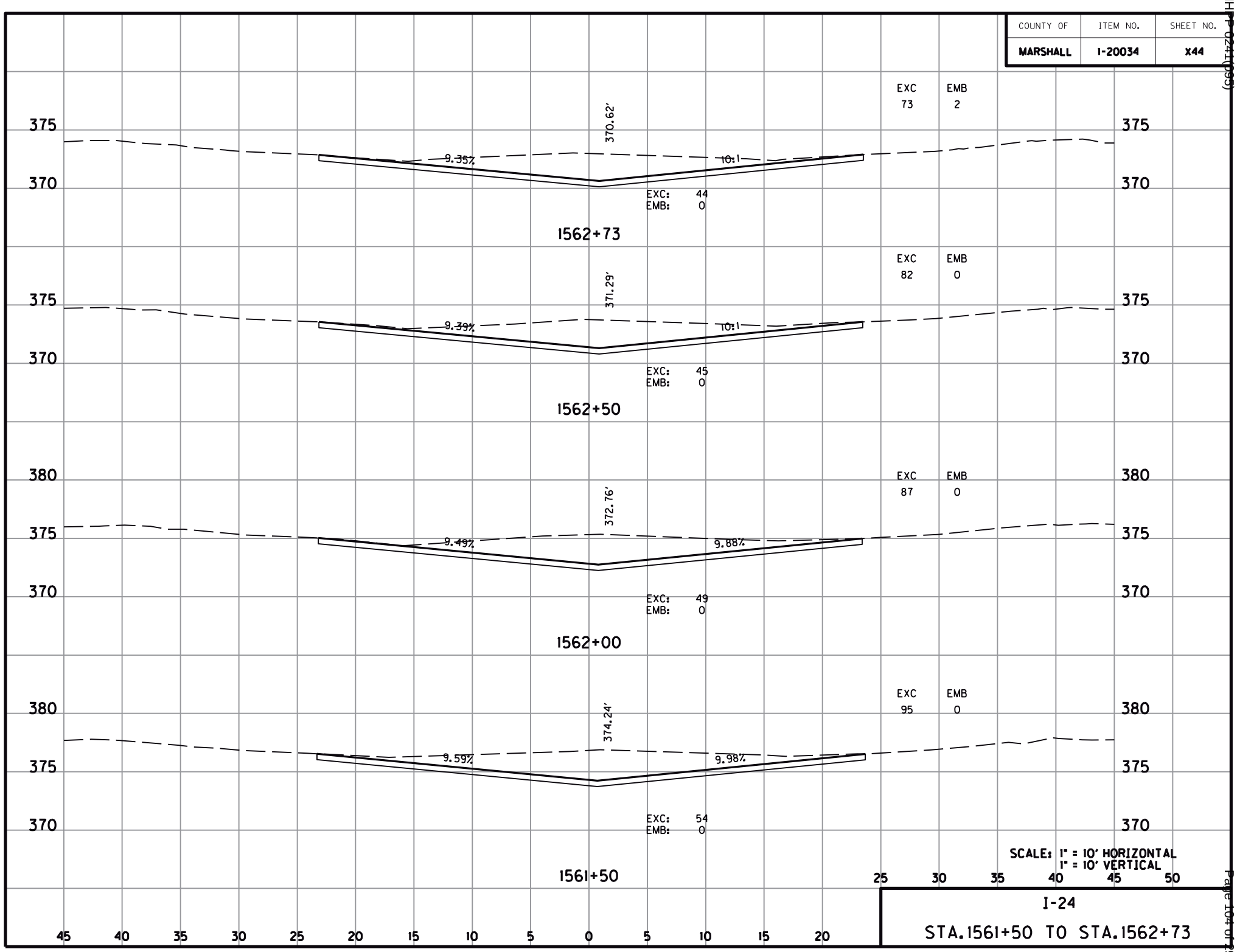


SCALE: 1" = 10' HORIZONTAL
1" = 10' VERTICAL

I-24

STA.1560+00 TO STA.1561+00

COUNTY OF	ITEM NO.	SHEET NO.
MARSHALL	I-20034	X44

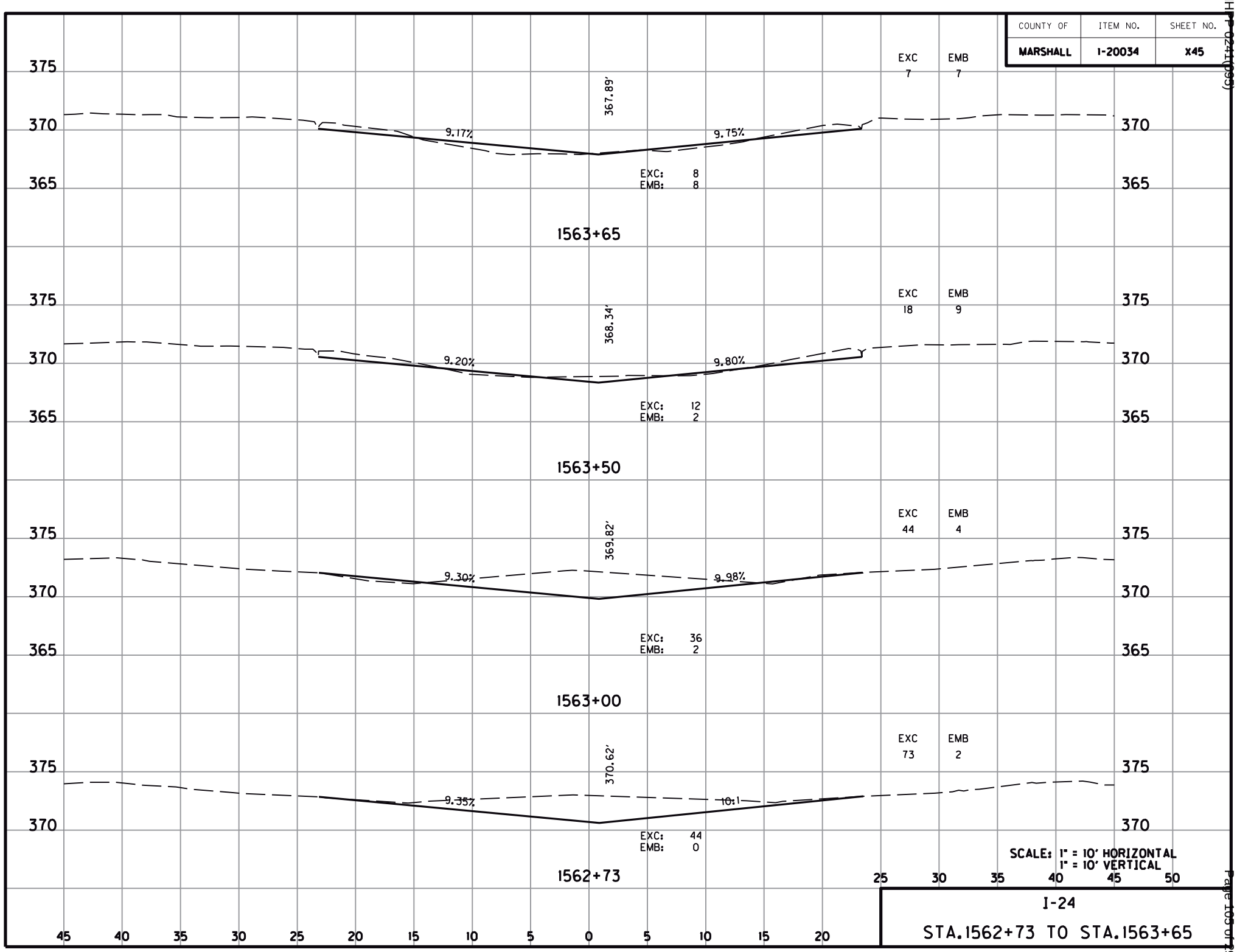


SCALE: 1" = 10' HORIZONTAL
1" = 10' VERTICAL

I-24

STA.1561+50 TO STA.1562+73

COUNTY OF	ITEM NO.	SHEET NO.
MARSHALL	I-20034	X45

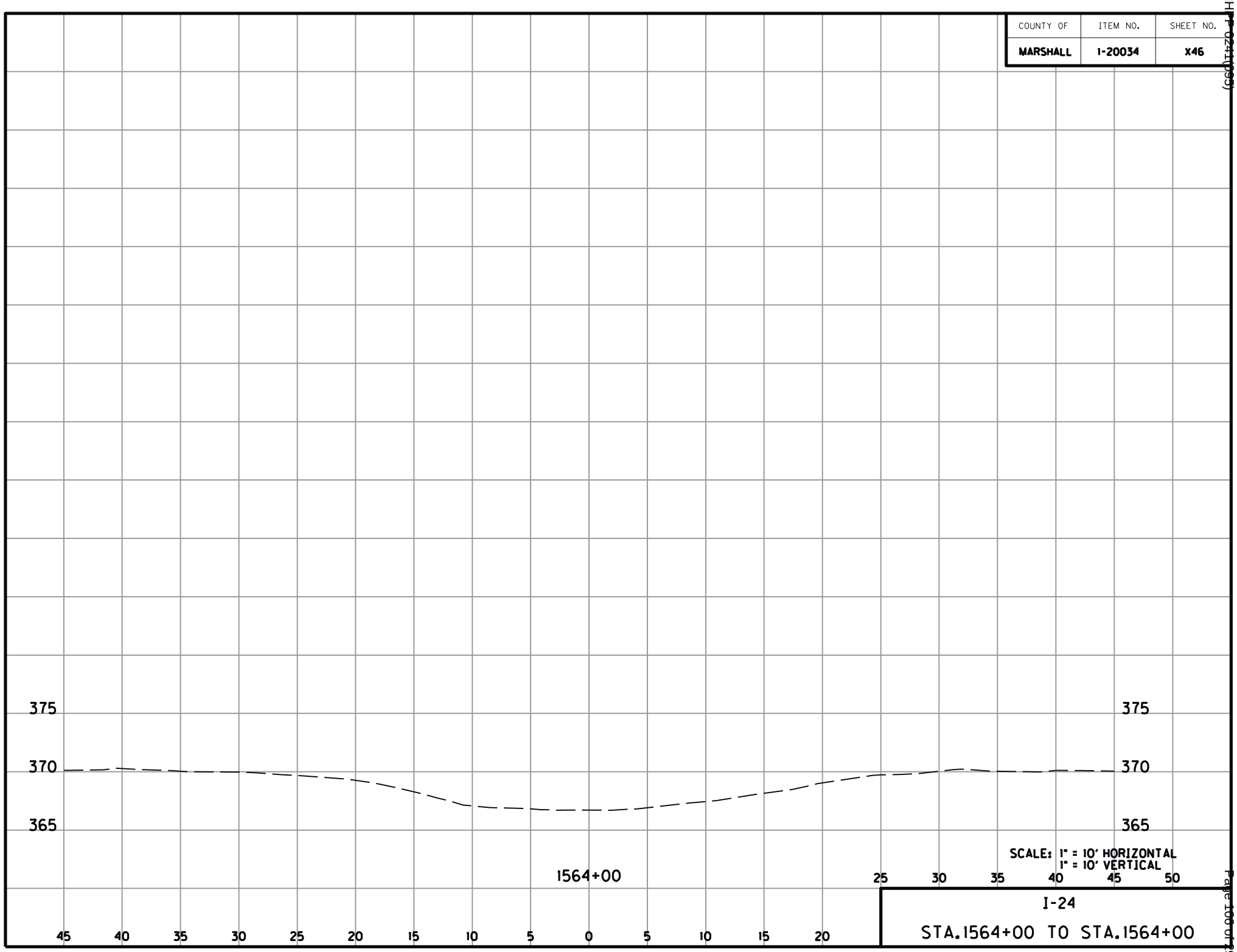


SCALE: 1" = 10' HORIZONTAL
1" = 10' VERTICAL

I-24

STA.1562+73 TO STA.1563+65

COUNTY OF	ITEM NO.	SHEET NO.
MARSHALL	I-20034	X46



I-24

STA.1564+00 TO STA.1564+00

GENERAL NOTES

SPECIFICATIONS

ALL REFERENCES TO THE STANDARD SPECIFICATIONS ARE TO THE 2019 EDITION OF THE KENTUCKY DEPARTMENT OF HIGHWAYS STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION WITH SUPPLEMENTAL SPECIFICATIONS.

ALL REFERENCES TO THE AASHTO SPECIFICATIONS ARE TO THE LRFD BRIDGE DESIGN SPECIFICATIONS, 9TH EDITION.

SPECIAL NOTES

SPECIAL NOTE FOR CONCRETE SEALING

MATERIALS DESIGN SPECIFICATIONS

FOR CLASS "AA" REINFORCED CONCRETE:	F'C = 4000 psi
FOR STEEL REINFORCEMENT:	FY = 60000 psi

REINFORCEMENT

DIMENSIONS SHOWN FROM THE FACE OF CONCRETE TO BARS ARE TO CENTER OF BAR UNLESS OTHERWISE SHOWN. CLEAR DISTANCE TO THE FACE OF CONCRETE IS 2" UNLESS NOTED OTHERWISE. SPACING OF BARS IS FROM CENTER TO CENTER OF BARS.

DRILLING AND ANCHORING INTO EXISTING CONCRETE

FOR ANCHORING NEW REINFORCING STEEL INTO EXISTING CONCRETE, SEE SECTIONS 511 AND 602.03.04 OF STANDARD SPECIFICATIONS. EMBEDMENT DEPTH OF REINFORCEMENT TO BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. IF REINFORCEMENT CAN NOT BE LOCATED PRIOR TO DRILLING AND IS HIT, STOP DRILLING IMMEDIATELY, SHIFT DRILL TEMPLATE LOCATION AND RE-DRILL. THE COST OF THIS WORK, INCLUDING LABOR, TOOLS, AND MATERIALS IS TO BE INCIDENTAL TO THE UNIT BID PRICE FOR BRIDGE BARRIER RETROFIT.

BONDING NEW CONCRETE TO EXISTING CONCRETE

IMMEDIATELY PRIOR TO PLACING NEW CLASS "AA" CONCRETE, THE SURFACE AREAS OF EXISTING CONCRETE ARE TO BE COATED WITH A TWO-COMPONENT EPOXY RESIN SYSTEM IN ACCORDANCE WITH SECTIONS 511 AND 826 OF THE STANDARD SPECIFICATIONS. THE COST OF THIS WORK, INCLUDING LABOR, TOOLS, AND MATERIALS IS TO BE INCIDENTAL TO THE UNIT BID PRICE FOR BRIDGE BARRIER RETROFIT.

CONCRETE SEALING

CONTRARY TO THE SPECIFICATIONS, DO NOT APPLY MASONRY COATING. INSTEAD APPLY CONCRETE SEALER IN ACCORDANCE WITH THE SPECIAL NOTE FOR CONCRETE SEALING.

TRAFFIC CONTROL

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ERECTING AND MAINTAINING PROPER BARRICADES AND ADVANCE WARNING SIGNALS FOR ROAD CONSTRUCTION AND ROAD CLOSURE. SEE MAINTENANCE OF TRAFFIC SHEETS IN ROADWAY PLANS.

UTILITIES

BEFORE BEGINNING WORK, LOCATE ALL EXISTING UTILITIES. CONSIDER LOCATION OF ANY UTILITIES SHOWN ON THE EXISTING OR CONTRACT DRAWINGS TO BE APPROXIMATE AND FOR INFORMATIONAL PURPOSES ONLY. THE DEPARTMENT DOES NOT WARRANT THE LOCATIONS AND ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OR COMPLETENESS. THE CONTRACTOR MUST MAKE HIS OWN DETERMINATION. EXCEPT AS SHOWN ON THE PLANS, WORK AROUND AND DO NOT DISTURB EXISTING UTILITES.

SOLAR EQUIPMENT: FOR THE SOLAR EQUIPMENT ON THE I-24 OVER TENNESEE RIVER BRIDGES, THE CONTRACTOR SHALL CONTACT THE MANUFACTURER OF THE EQUIPMENT TO OBTAIN HARDWARE NEEDED TO RECONNECT ANY OF THE EQUIPMENT THAT IS AFFECTED BY CONSTRUCTION, AS WELL AS TO PROVIDE TECHNICAL SUPPORT FOR THE DETACHMENT AND RE-ATTACHMENT OF THE EQUIPMENT.

PLANS OF EXISTING STRUCTURES

AS AN AID TO THE CONTRACTOR, PLANS OF THE EXISTING BRIDGES ARE AVAILABLE (SEE DRAWING NUMBERS 18311 AND 18012). THE COMPLETENESS AND ACCURACY OF THE DRAWINGS IS NOT GUARANTEED.

VERIFYING FIELD CONDITIONS

THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS BEFORE ORDERING MATERIAL. NEW MATERIAL THAT IS UNSUITABLE BECAUSE OF VARIATIONS IN THE EXISTING STRUCTURE SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

DAMAGE TO THE STRUCTURES

THE CONTRACTOR IS RESPONSIBLE FOR ANY AND ALL DAMAGE TO THE EXISTING STRUCTURES DUE TO THE CONTRACTOR'S ACTIONS.

CONCRETE REMOVAL

SAWCUT 1" DEEP PRIOR TO REMOVING EXISTING CONCRETE TO FACILITATE A CLEAN LINE.

GUARDRAIL CONNECTION

ATTACH THRIE-BEAM GUARDRAIL TRANSITION, TL-3 TO BARRIER RETROFIT AT BRIDGE END IN GENERAL CONFORMITY TO STD DWG BHS-014 WITH ALL MODIFICATIONS APPROVED BY THE ENGINEER.

BARRIER RETROFIT

THE UNIT PRICE BID FOR BRIDGE BARRIER RETROFIT SHALL INCLUDE THE COST OF CONCRETE, REINFORCING STEEL, DRILLING AND GROUTING BARS INTO EXISTING CONCRETE, AND OTHER WORK ITEMS AS NECESSARY TO CONSTRUCT THE RAILING AS DEPICTED IN THESE PLANS.

INDEX OF SHEETS

SPECIAL NOTES

CONCRETE SEALING

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
TEAM KENTUCKY

REVISION	DATE

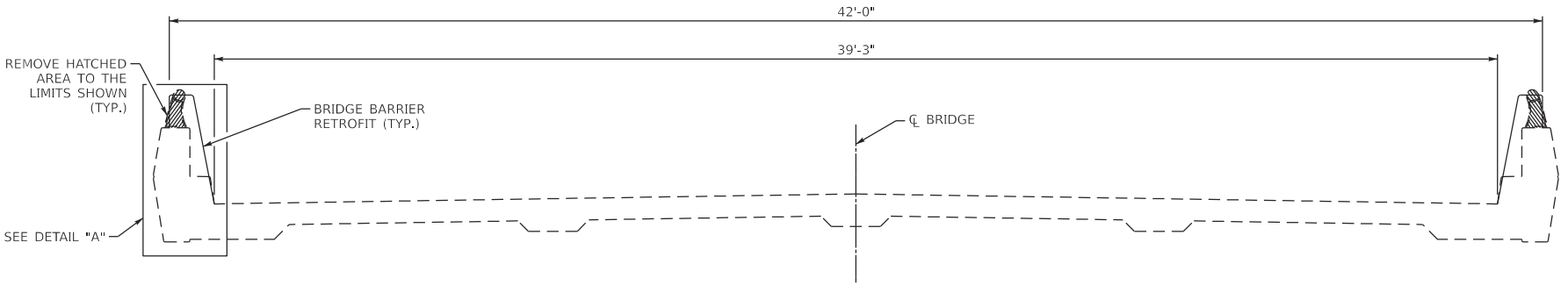
PREPARED BY
HMB PROFESSIONAL ENGINEERS, LLC

DATE: 05/2025	CHECKED BY
DESIGNED BY: B. KILE	L. BOLLER
DETAILED BY: B. KILE	B. REID

GENERAL NOTES
CROSSING: US-62 / TENNESEE RIVER

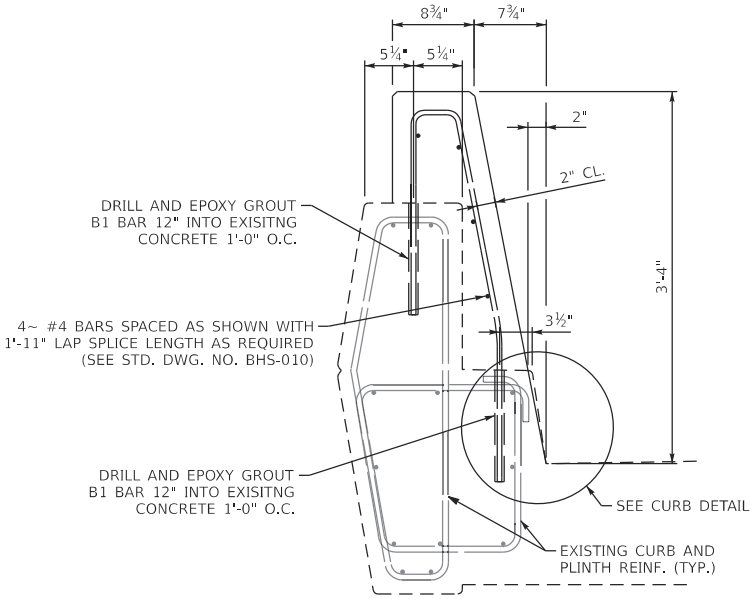
ROUTE: I-24
ITEM NO.: 1-20034
SHEET NO.: S1
COUNTY OF: MARSHALL
DRAWING NUMBER:

OpenRoads Designer v10.12.03.2 USER: BKILE DATE PLOTTED: $$$ FILE: $$$



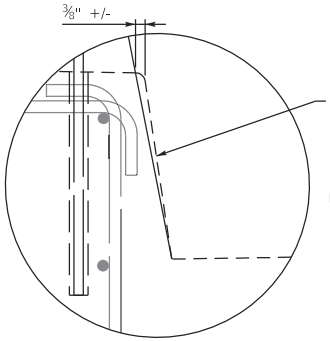
TYPICAL CROSS SECTION

(LOOKING AHEAD STATION)



DETAIL "A"

(TYPICAL EACH BARRIER)



GRIND FRONT FACE OF EXISTING CURB TO MATCH FRONT FACE OF 40" SINGLE SLOPE RAILING SYSTEM (SEE STD. DWG. NO. BHS-010)

NOTE: GRINDING FACE OF CURB IS INCIDENTAL TO THE UNIT BID PRICE FOR BRIDGE BARRIER RETROFIT.

CURB DETAIL

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
TEAM KENTUCKY

REVISION	DATE

PREPARED BY: HMB PROFESSIONAL ENGINEERS, LLC

DATE: 07/2025		CHECKED BY	
DESIGNED BY: B. KILE		L. BOLLER	
DETAILED BY: B. KILE		B. REID	

BARRIER RETROFIT LAYOUT & DETAILS

CROSSING: US-62

ROUTE: I-24

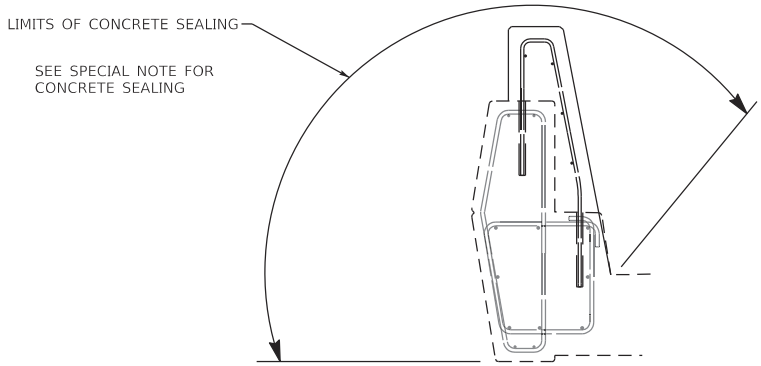
ITEM NO.: 1-20034

SHEET NO.: S2

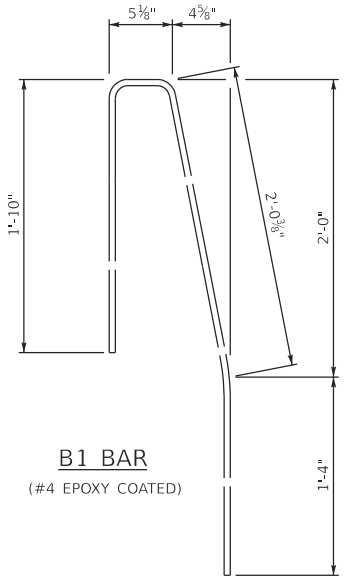
COUNTY OF: MARSHALL

DRAWING NUMBER:

OpenRoads Designer v10.12.03.2 USER: BKILE DATE PLOTTED: $$$ FILE: $$$



LIMITS OF CONCRETE SEALING



B1 BAR
(#4 EPOXY COATED)

ESTIMATE OF QUANTITIES

BID ITEM CODE	23032EN	23378EC
BID ITEM	BRIDGE BARRIER RETROFIT	CONCRETE SEALING
UNIT	LF	SQ FT
TOTALS	1012.0	9007

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
TEAM KENTUCKY

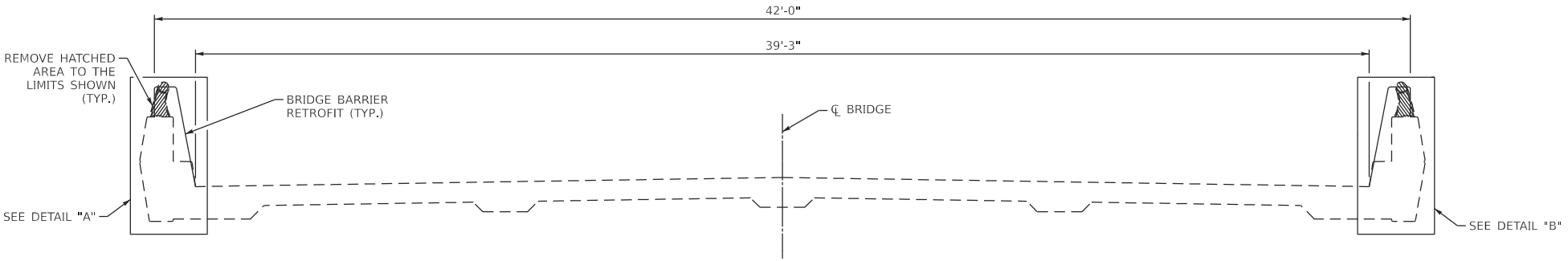
REVISION	DATE

PREPARED BY: HMB PROFESSIONAL ENGINEERS, LLC

DATE: 07/2025
DESIGNED BY: B. KILE
DETAILED BY: B. KILE
CHECKED BY: L. BOLLER, B. REID

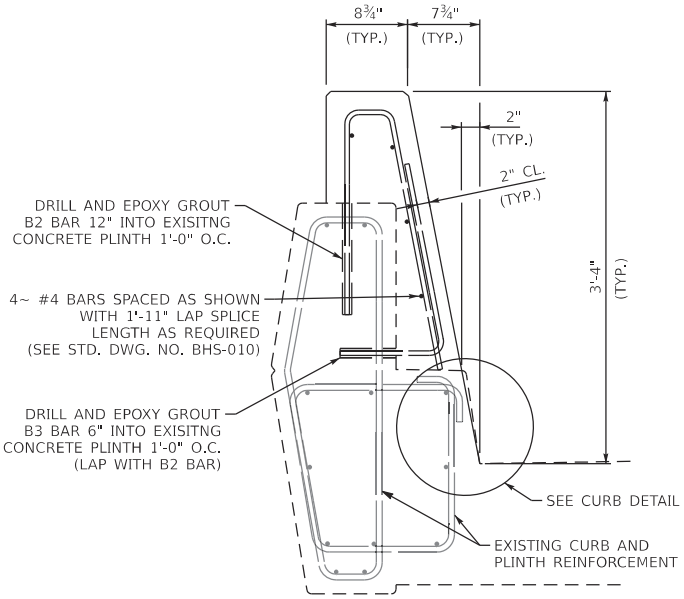
BARRIER RETROFIT DETAILS & QUANTITIES
CROSSING: US-62
ROUTE: I-24
ITEM NO.: 1-20034
SHEET NO.: S3
COUNTY OF: MARSHALL
DRAWING NUMBER:

OpenRoads Designer v10.12.03.2 USER: BKILE DATE PLOTTED: $$$ FILE: $$$

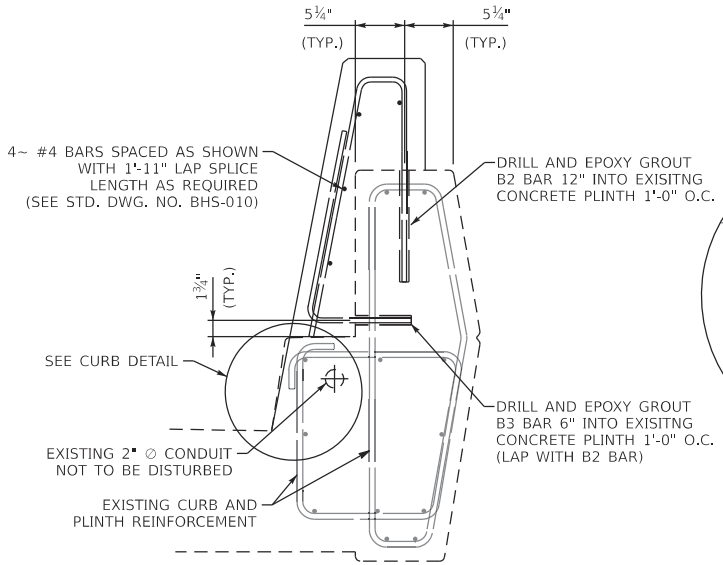


TYPICAL CROSS SECTION

(LOOKING AHEAD STATION)



DETAIL "A"



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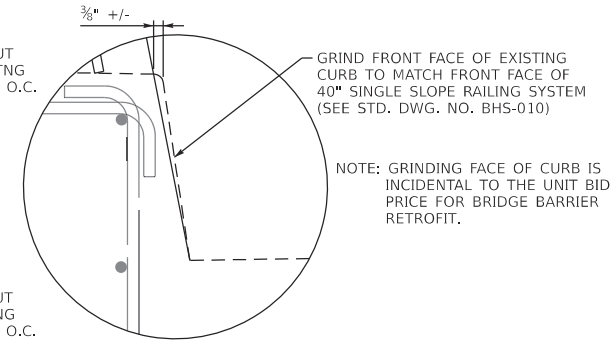
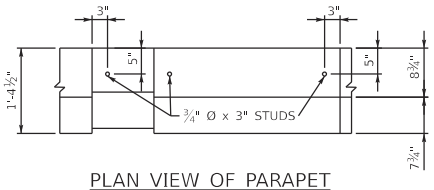


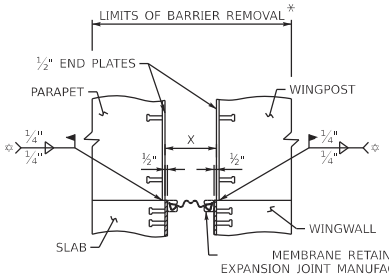
CURB DETAIL

COMMONWEALTH OF KENTUCKY DEPARTMENT OF HIGHWAYS	REVISION	DATE	PREPARED BY HMB PROFESSIONAL ENGINEERS, LLC	DATE: 07/2025 DESIGNED BY: B. KILE DETAILED BY: B. KILE	CHECKED BY L. BOLLER B. REID	BARRIER RETROFIT LAYOUT & DETAILS CROSSING: TENNESSEE RIVER	ROUTE I-24	ITEM NO. 1-20034 SHEET NO. S4	COUNTY OF MARSHALL DRAWING NUMBER

OpenRoads Designer v10.12.03.2 USER: BKILE DATE PLOTTED: $$$ FILE: $$$



PLAN VIEW OF PARAPET



SECTION G - G

☼ NOTE: WELD WIDTH OF CONTACT POINT

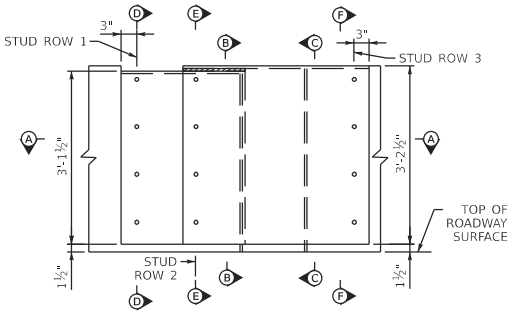
(BRIDGE END JOINTS SHOWN, SLIDER PLATE DETAILS AT MODULAR JOINTS SIMILAR)

* REMOVE EXISTING STEEL SLIDER PLATE ASSEMBLY, TAKING EXTREME CARE NOT TO DISTURB EXPANSION JOINT. CONTRACTOR SHOULD VERIFY JOINT PLACEMENT AND GEOMETRY IN THE FIELD TO VERIFIY THAT THESE RETROFIT DETAILS WILL NOT DAMAGE OR INTERFERE WITH THE JOINT.

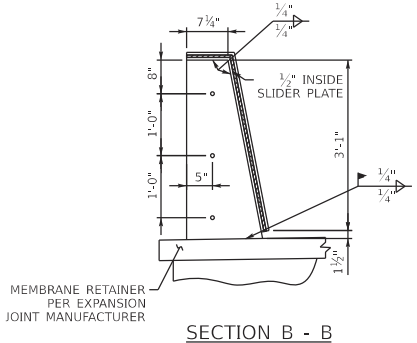
REMOVE 1'-6" OF EXISTING CURB AND PLINTH DOWN TO THE GUTTERLINE ON EACH SIDE OF EXPANSION JOINT, TO FACILITATE PLACEMENT OF NEW STEEL SLIDER PLATES INTO FRESH CONCRETE. TAKE EXTREME CARE TO PRESERVE THE EXISTING REINFORCEMENT. THE REINFORCEMENT SHALL BE CLEANED AND STRAIGHTENED AS NECESSARY, PRIOR TO PLACEMENT OF STEEL SLIDER PLATE ASSEMBLY.

NOTES:

1. ALL METAL PLATE MATERIAL SHALL BE ASTM A709 GRADE 36.
2. ALL WELDING, INCLUDING STUDS, SHALL BE COMPLETED PRIOR TO METAL PLATES BEING PAINTED OR GALVANIZED. ALL STEEL THAT IS PART OF THE JOINT ASSEMBLY SHALL BE PAINTED WITH 4 MILS OF INORGANIC ZINC OR GALVANIZED IN ACCORDANCE WITH ASTM A123 UNLESS SHOWN OTHERWISE ON PLANS.
3. ALL CONCRETE POURS SHALL BE WELL CONSOLIDATED AROUND THE SLIDER PLATE ASSEMBLIES.
4. COST OF STRUCTURAL STEEL, FORMING, LABOR, AND ALL MISCELLANEOUS MATERIALS NECESSARY TO COMPLETE THE INSTALLATION OF SLIDER PLATE ASSEMBLIES IS INCIDENTAL TO THE UNIT BID PRICE FOR BRIDGE BARRIER RETROFIT.

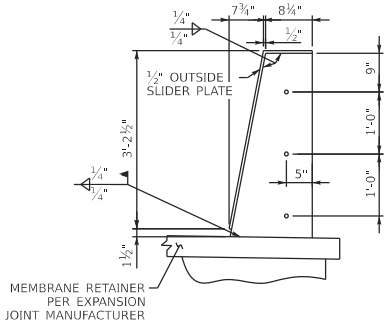


ELEVATION VIEW OF PARAPET



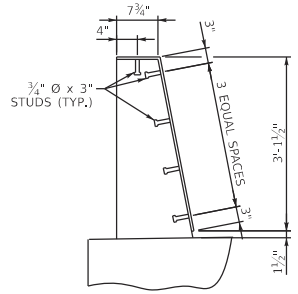
SECTION B - B

(SHOWING STUD SPACING IN END PLATE)



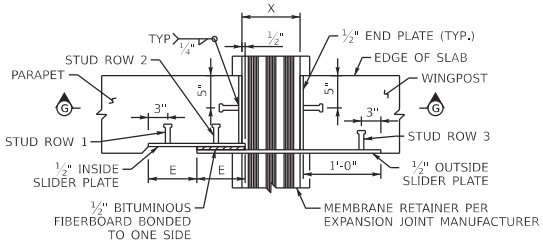
SECTION C - C

(SHOWING STUD SPACING IN END PLATE)



SECTION D - D

(SHOWING STUD SPACING
IN ½" INSIDE SLIDER PLATE)



SECTION A - A

(BRIDGE END JOINTS SHOWN, SLIDER PLATE DETAILS AT MODULAR JOINTS SIMILAR)

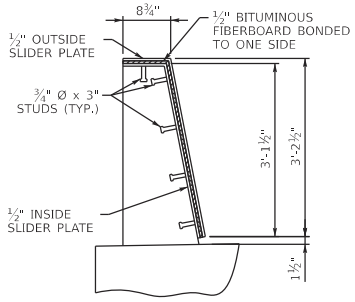
E DENOTES: ONE HALF OF THE TOTAL EXPANSION JOINT MOVEMENT PLUS (+) THREE (3) INCHES, AT MID TEMPERATURE.

IF E IS LESS THAN 6½" OMIT STUD ROW 2

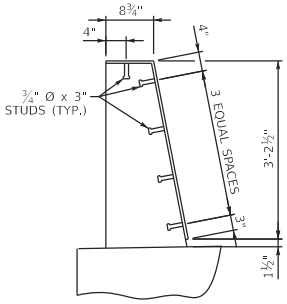
X DENOTES: EXPANSION JOINT + 1"

TABLE OF E, X DIMENSIONS		
LOCATION	E	X
BEG. & END BRIDGE	6"	5¾"
ARCH SPAN	✡	✡

✡ CONTRACTOR TO CONSULT KYTC DISTRICT 1 FOR SHOP DRAWINGS TO VERIFY "E" AND "X" DIMENSIONS ON MODULAR JOINTS AT ARCH SPAN



SECTION E - E

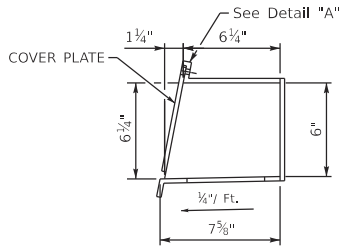


SECTION F - F

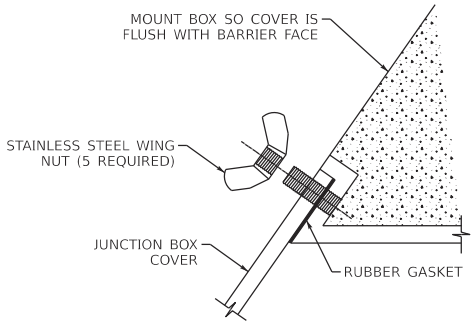
(SHOWING STUD SPACING IN
½" OUTSIDE SLIDER PLATE)

COMMONWEALTH OF KENTUCKY DEPARTMENT OF HIGHWAYS	REVISION	DATE	PREPARED BY HMB PROFESSIONAL ENGINEERS, LLC	DATE: 07/2025 DESIGNED BY: B. KILE DETAILED BY: B. KILE	CHECKED BY L. BOLLER B. REID	STEEL SLIDER PLATE ASSEMBLY CROSSING: TENNESSEE RIVER	ROUTE I-24	ITEM NO. 1-20034 SHEET NO. S5	COUNTY OF MARSHALL DRAWING NUMBER

OpenRoads Designer v10.12.03.2 USER: BKILE DATE PLOTTED: $$$ FILE: $$$



SIDE ELEVATION



DETAIL "A"

GENERAL NOTES

CONSTRUCT JUNCTION BOXES FROM ¼" A36 STEEL PLATE AND THE JUNCTION BOX COVER FROM ⅛" A36 PLATE. HOT DIP GALVANIZE BOX AND COVER AFTER FABRICATION AND IN ACCORDANCE WITH ASTM A123 AND THE STANDARD SPECIFICATIONS. COVER PLATE SHALL INCLUDE (5) STAINLESS STEEL SCREW TAPS WITH WING NUTS AND A RUBBER GASKET FOR ALL SIDES WHERE SCREWS ARE INSTALLED.

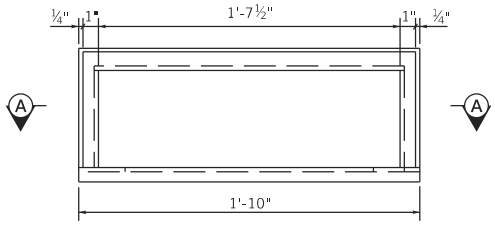
FITTINGS SHALL BE UL LISTED AND CSA-CERTIFIED CONCRETE TIGHT ON THE OUTSIDE OF THE JUNCTION BOX CONDUIT CONNECTION. USE A SEALING LOCK NUT AND A RIGID PVC CONDUIT BUSHING ON THE INSIDE FOR ALL CONDUIT PENETRATIONS.

LIBERALLY COAT THE THREADS OF THE COVER FASTENERS WITH ANTI-SEIZE COMPOUND DURING CONSTRUCTION AND BEFORE FINAL CLOSURE.

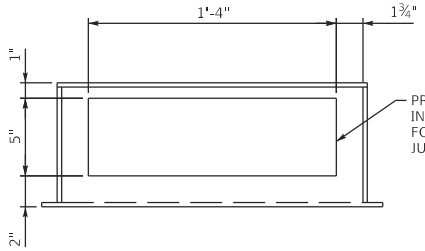
PROTECT COVER OF JUNCTION BOX FROM DAMAGE/DISFIGUREMENT FROM CONCRETE SEALING APPLICATION AND OTHER SOURCES BY TAPING OR WRAPPING DURING CONSTRUCTION. REMOVE PROTECTION PRIOR TO FINAL ELECTRICAL INSPECTION AND REPAIR ANY DAMAGE OR DISFIGUREMENT TO THE SATISFACTION OF THE ENGINEER AND AT NO COST TO THE DEPARTMENT.

WHEN PROPERLY INSTALLED, BOX COVER WILL BE FLUSH WITH BARRIER FACE AND BOX BOTTOM WILL SLOPE TO DRAIN APPROXIMATE ¼" / FT. IN ALL CASES.

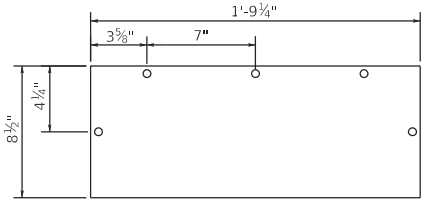
THE COST TO FURNISH AND INSTALL THE JUNCTION BOX IN ACCORDANCE WITH THESE PLANS IS INCIDENTAL TO THE UNIT BID PRICE FOR BRIDGE BARRIER RETROFIT.



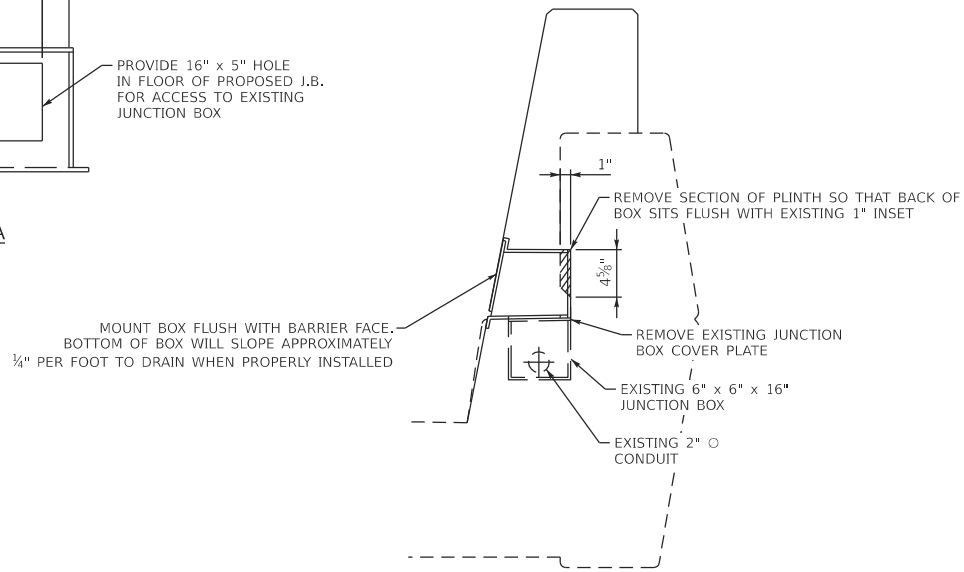
FRONT ELEVATION



SECTION A - A



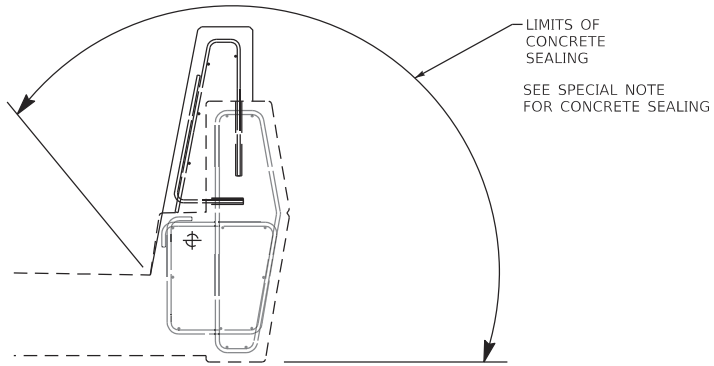
COVER PLATE



INSTALLATION DETAIL

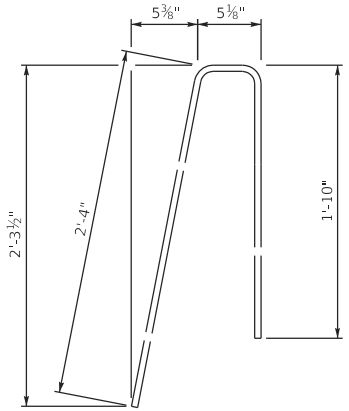
COMMONWEALTH OF KENTUCKY DEPARTMENT OF HIGHWAYS	REVISION	DATE	PREPARED BY HMB PROFESSIONAL ENGINEERS, LLC	DATE: 07/2025 DESIGNED BY: B. KILE DETAILED BY: B. KILE	CHECKED BY L. BOLLER B. REID	STEEL SLIDER PLATE ASSEMBLY CROSSING: TENNESSEE RIVER	ROUTE I-24	ITEM NO. 1-20034 SHEET NO. S6	COUNTY OF MARSHALL DRAWING NUMBER

OpenRoads Designer v10.12.03.2 USER: BKILE DATE PLOTTED: $$$ FILE: $$$

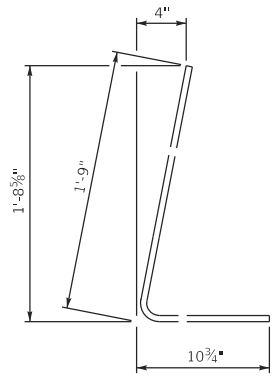


LIMITS OF CONCRETE SEALING

ESTIMATE OF QUANTITIES		
BID ITEM CODE	23032EN	23378EC
BID ITEM	BRIDGE BARRIER RETROFIT	CONCRETE SEALING
UNIT	LF	SQ FT
TOTALS	8648.0	76967



B2 BAR
(#4 EPOXY COATED)



B3 BAR
(#4 EPOXY COATED)

COMMONWEALTH OF KENTUCKY DEPARTMENT OF HIGHWAYS TEAM KENTUCKY	REVISION / DATE	HMB PROFESSIONAL ENGINEERS, LLC	PREPARED BY	DATE: 07/2025 DESIGNED BY: B. KILE DETAILED BY: B. KILE	CHECKED BY L. BOLLER B. REID	BARRIER RETROFIT DETAILS & QUANTITIES CROSSING: TENNESSEE RIVER	ROUTE: I-24	ITEM NO.: 1-20034 SHEET NO.: S7	COUNTY OF: MARSHALL DRAWING NUMBER

OpenRoads Designer v10.12.03.2 USER: BKILE DATE PLOTTED: $$$ FILE: $$$

MARSHALL CO. I-24 ~m.p. 27.58
~LAT/LONG 37.01355, W 88.31233
STATION 049

SITE LOCATION IS APPROXIMATE AND WILL BE DETERMINED IN THE FIELD AND APPROVED BY DIVISION OF PLANNING PERSONNEL PRIOR TO ANY CONSTRUCTION.

ALL LOOPS SHALL BE 6'X6' SQUARE AND SHALL BE INSTALLED 16' FROM LEADING EDGE TO LEADING EDGE AS SHOWN. PIEZOELECTRIC SENSORS (PIEZOS) SHALL BE INSTALLED 5' FROM THE EDGE OF LOOPS WITH THE EDGE OF EACH PIEZO FLUSH WITH THE EDGE OF THE CORRESPONDING DRIVING LANE. LOOPS AND PIEZOS SHALL BE INSTALLED SPLICE-FREE TO THE CABINET AND A MINIMUM OF 2' OF WIRE FOR EACH SENSOR SHALL BE COILED INSIDE EACH JUNCTION BOX AND CABINET. ALL LOOPS AND PIEZOS SHALL BE LABELED IN ALL JUNCTION BOXES AND CABINETS. DIVISION OF PLANNING PERSONNEL WILL CONNECT THE LOOPS AND PIEZOS INSIDE THE CABINETS.

INSTALL ONE (1) 1¼" CONDUIT FROM EACH SAW SLOT TO NEAREST JUNCTION BOX.

INSTALL TWO (2) TYPE A JUNCTION BOXES (JB A1, JB A2).

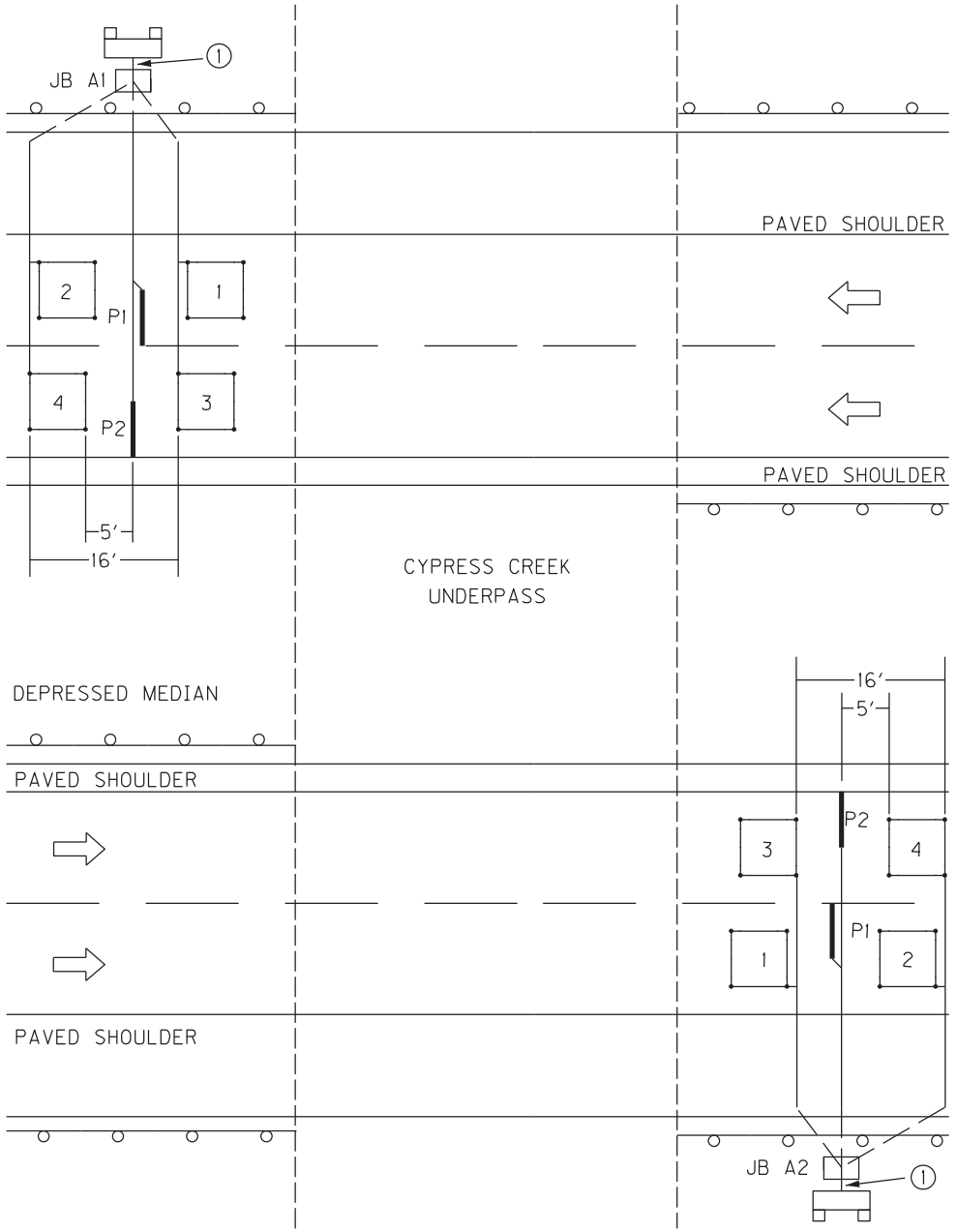
INSTALL TWO (2) 20"x20"x8" CABINETS MOUNTED TO TWO (2) WOOD POSTS EACH.

CABINETS SHOULD BE INSTALLED NEAR THE OLD CABINETS CLOSE TO THE END OF THE GUARDRAIL ON EACH SIDE.

REMOVE ALL OLD EXISTING EQUIPMENT AND DISPOSE OF OFF THE PROJECT.

CODED NOTE:

① INSTALL ONE (1) 2" CONDUIT.



SCALE 1"=5'

PERMANENT TRAFFIC DATA ACQUISITION STATIONS
ESTIMATE OF QUANTITIES

Bid Item Code	Description	Unit	Quantity
4793	CONDUIT 1 ¼ INCH	LIN FT	80
4795	CONDUIT 2 INCH	LIN FT	20
4811	ELECTRICAL JUNCTION BOX TYPE B	EACH	
4820	TRENCHING AND BACKFILLING	LIN FT	90
4821	OPEN CUT ROADWAY	LIN FT	
4829	PIEZOELECTRIC SENSOR	EACH	4
4830	LOOP WIRE	LIN FT	1600
4833	WIRE – NO. 8	LIN FT	
4834	WIRE – NO. 6	LIN FT	
4850	CABLE NO. 14/1 PAIR	LIN FT	
4871	POLE – 35’ WOODEN	EACH	
4895	LOOP SAW SLOT AND FILL	LIN FT	360
4899	ELECTRICAL SERVICE	EACH	
4960	REMOVE AND REPLACE SIDEWALK	SQYD	
20213EC	INSTALL PAD MOUNT ENCLOSURE	EACH	
20359NN	GALVANIZED STEEL CABINET	EACH	2
20360ES818	WOOD POST	EACH	4
20391NS835	ELECTRICAL JUNCTION BOX TYPE A	EACH	2
20392NS835	ELECTRICAL JUNCTION BOX TYPE C	EACH	
20468EC	ELECTRICAL JUNCTION BOX 10x8x4	EACH	
21543EN	BORE AND JACK CONDUIT – 2 INCH	LIN FT	
23206EC	INSTALL CONTROLLER CABINET	EACH	
24963ED	LOOP TEST	EACH	

MATERIAL, INSTALLATION, AND BID ITEM NOTES FOR PERMANENT TRAFFIC DATA ACQUISITION STATIONS

1. DESCRIPTION

Except as specified in these notes, all work shall consist of furnishing and installing all materials necessary for permanent data acquisition station equipment installation(s) and shall be performed in accordance with the current editions of:

- The Contract
- Division of Planning Standard Detail Sheets
- Kentucky Transportation Cabinet, Department of Highways, *Standard Specifications for Road and Bridge Construction*
- Kentucky Transportation Cabinet, Department of Highways, Standard Drawings
- National Fire Protection Association *(NFPA) 70: National Electrical Code*
- Institute of Electrical and Electronic Engineers (IEEE), *National Electrical Safety Code*
- Federal Highway Administration, *Manual on Uniform Traffic Control Devices*
- American Association of State Highway and Transportation Officials (AASHTO), *Roadside Design Guide*.
- Standards of the utility company serving the installation, if applicable

The permanent traffic data acquisition station layout(s) indicate the extent and general arrangement of the proposed installation and are for general guidance. Any omission or commission shown or implied shall not be cause for deviation from the intent of the plans and specifications. Information shown on the plans and in this proposal and the types and quantities of work listed are not to be taken as an accurate or complete evaluation of the material and conditions to be encountered during construction. The bidder must draw his own conclusion as to the conditions encountered. The Department of Highways (Department) does not give any guarantee as to the accuracy of the data and no claim will be considered for additional compensation if the conditions encountered are not in accordance with the information shown. If any modifications of the plans or specifications are considered necessary by the Contractor, details of such modifications and the reasons, therefore, shall be submitted in writing to the Engineer for written approval prior to beginning such modified work.

The Contractor shall contact all utility companies and the district utility agent prior to beginning construction to insure proper clearance and shielding from existing and proposed utilities. The Contractor shall use all possible care in excavating on this project so as not to disturb any existing utilities whether shown on the plans or not shown on the plans. Any utilities disturbed or damaged by the Contractor during construction shall be replaced or repaired to original condition by the Contractor at no cost to the department. If necessary, to avoid existing utilities, the Contractor shall hand dig areas where poles or conduit cross utilities.

The Contractor shall be responsible for all damage to public and/or private property resulting from his work.

The Contractor shall inspect the project site prior to submitting a bid and shall be thoroughly familiarized with existing conditions. Submission of a bid will be considered an affirmation of this inspection having been completed. The Department will not honor any claims resulting from site conditions.

2. MATERIALS

All proposed materials shall be approved prior to being utilized. The Contractor shall submit for material approval an electronic file of descriptive literature, drawings and any requested design data for the proposed materials. After approval, no substitutions of any approved materials may be made without the written approval of the Engineer.

Materials requiring sampling shall be made available a sufficient time in advance of their use to allow for necessary testing.

2.1. Anchoring

2.1.1. Anchor and Anchor Rod

Anchor, except rock anchor, shall be expanding type, with a minimum area of 135 square inches.

Anchor rod shall be galvanized steel, double-eye, have a minimum diameter of 5/8 inches, and a minimum length of 84 inches. Minimum holding capacity shall be 15,400 lbs.

Rock anchor shall be galvanized steel, triple-eye, expanding type, with a minimum diameter of ¾ inch, a minimum 53 inches long, and a minimum tensile strength of 23,000 lb.

2.1.2. Guy Wire and Guy Guard

Guy wire shall be Class A, Zinc-coated, 3/8 inch diameter, high strength grade steel (minimum 10,800 lb.) and galvanized per ASTM A475. Guy guard shall be 8’ long, fully-rounded, yellow, and able to be securely attached to the guy wire.

2.1.3. Strandvise for Guy Wire

Strandvise for guy wire shall be 3/8 inch and rated to hold a minimum of 90% of the rated breaking strength (RBS) of the strand used.

2.2. Asphalt

Asphalt shall be a minimum CL2 Asph Surf 0.38B PG64-22 and conform to the *Standard Specifications for Road and Bridge Construction.*

2.3. Backer Rod

Backer rod shall be ½ inch diameter, closed cell polyethylene foam and shall meet or exceed the following physical properties:

- Density (average): 2.0 lbs/cu.ft. (minimum): ASTM D 1622 test method
- Tensile Strength: 50 PSI (minimum): ASTM D 1623 test method
- Compression Recovery: 90% (minimum): ASTM D 5249 test method
- Water Absorption: 0.03 gm/cc (maximum): ASTM C 1016 test method

2.4. Cabinets

2.4.1. Galvanized Steel Cabinet

Galvanized Steel Cabinet shall be constructed of 16 or 14 gauge galvanized steel and shall meet or exceed the industry standards set forth by UL 50 and NEMA 3R. The finish shall be an ANSI 61 gray polyester powder finish inside and out over the galvanized steel. Cabinet shall have minimum inside dimensions of 20 inches high by 20 inches wide by 8 inches deep.

The cabinet shall be equipped with the following:

- Drip shield top
- Seam-free sides, front, and back, to provide protection in outdoor installations against rain, sleet, and snow
- Hinged cover with 16 gauge galvanized steel continuous stainless steel pin.
- Cover fastened with captive plated steel screws, knob or latch
- Hasp and staple for padlocking
- No gaskets or knockouts
- Back panel for terminal block installation
- Post mounting hardware
- Terminal Blocks

2.4.2. Anchor Bolt for Pad Mounted Cabinet

Anchor bolt for pad mounted cabinet shall be galvanized steel with minimum dimensions of 3/8 inch by 6 inches.

2.5. Concrete

Concrete shall be Class A and conform to the *Standard Specifications for Road and Bridge Construction.*

2.6. Conduit and Conduit Fittings

Conduit and conduit fittings shall be rigid steel unless otherwise specified.

Conduit shall be zinc galvanized inside and out and conform to the NEC, UL Standard 6, and ANSI C-80.1.

Rigid Steel Conduit Fittings shall be galvanized inside and out and conform to the NEC, UL Standard 514B, and ANSI C-80.4. Intermediate Metal Conduit (IMC) will not be approved as an acceptable alternative to rigid steel conduit.

2.7. Conduit sealant

Conduit sealant shall be weather-, mold-, and mildew-resistant and chemically resistant to gasoline, oil, dilute acids and bases. Conduit sealant shall be closed cell type and shall meet or exceed the following properties:

- Cure Time — 20 minutes max.
- Density — 64.4 kg/m3; 6 lbs/ft3
- Compressive Strength (ASTM 1691) — 13.8 MPa; 330 or 300 psi

- Tensile Strength (ASTM 1623) 15.9 MPa; 270 or 250 psi
- Flexural Strength (ASTM D790) 14.5 MPa; 460 or 450 psi
- Service Temperature -20 to 200 F

2.8. Electrical Service Meter Base

Electrical service meter base shall meet or exceed all requirements of the National Electrical Code and the local utility providing the electrical service.

2.9. Electrical Service Disconnect

Electrical service disconnect shall meet or exceed all requirements of the National Electrical Code and the local utility providing the electrical service.

2.10. Flashing Arrow

Flashing Arrow shall conform to the *Standard Specifications for Road and Bridge Construction.*

2.11. Ground Fault Circuit Interrupter (GFCI) Receptacle

Ground Fault Circuit Interrupter Receptacle shall be 2-pole, 3-wire, 20 Amp, 125 Volt, 60 Hz, NEMA 5-20R configuration and meet or exceed the following standards and certifications:

- NEMA WD-1 and WD-6
- UL 498 and 943
- NOM 057
- ANSI C-73

This item shall include a UL listed, 4 inch x4 inch x $2^{1}/_{8}$ inch box with ¾ inch side and end knockouts and a 1½ inches deep, single-receptacle cover to house the GFCI receptacle. Box and cover shall be hot rolled, galvanized steel with a minimum thickness of 0.62 inches.

2.12. Grounding

2.12.1. Ground Rod

Ground Rod shall be composite shaft consisting of a pure copper exterior (5 mil minimum) that has been inseparably molten welded to a steel core. Ground Rod shall have a minimum diameter of 5/8 inch, a minimum length of 8 feet and shall be manufactured for the sole purpose of providing electrical grounding.

2.12.2. Ground Rod Clamp

Ground rod shall be equipped with a one piece cast copper or bronze body with a non-ferrous hexagonal head set screw and designed to accommodate a 10 AWG solid through 2 AWG stranded grounding conductor.

2.13. Grout

2.13.1. Grout for Inductive Loop Installation

Grout for inductive loop installation shall be non-shrink, shall meet the requirements of the *Standard Specifications for Road and Bridge Construction*,

and shall be included on the KYTC Division of Materials, *List of Approved Materials*.

2.13.2. Grout for Piezoelectric Sensor Installation

Grout for piezoelectric sensor installation shall be per the piezoelectric sensor manufacturer's recommendation. Grout shall be suitable for installation in both asphalt and Portland cement pavements. Grout shall have a short curing time (tack free in ten minutes; open to traffic in forty minutes; and fully cured within sixty minutes) to prevent unnecessary lane closure time and should be of sufficient consistency to prevent running when applied on road surfaces with a drainage cross slope. Particulate matter within the grout shall not separate or settle and the grout shall not shrink during the curing process.

2.14. Hardware

Except where specified otherwise, all hardware such as nuts, bolts, washers, threaded ends of fastening devices, etc. with a diameter less than 5/8 inch shall be passivated stainless steel, alloy type 316 or type 304. Stainless steel hardware shall meet ASTM F593 and F594 for corrosion resistance. All other nuts and bolts shall meet ASTM A307 and shall be galvanized.

2.14.1. Conduit Strap

Conduit strap shall be double-hole, stainless steel, and sized to support specified conduit. Conduit strap shall attach to wood pole or post with two 2 ¼ inch wood screws.

2.14.2. Mounting Strap for Pole Mount Cabinet

Mounting strap for pole mount cabinet shall be ¾ inch x 0.03 inch stainless steel; equipped with clips or buckles to securely hold strap.

2.14.3. Metal Framing Channel and Fittings

Metal framing channel shall be 1 5/8 inches wide galvanized steel that conforms to ASTM A1011 and ASTM A653. One side of the channel shall have a continuous slot with in-turned edges to accommodate toothed fittings.

Fittings shall be punch pressed from steel plates and conform to ASTM A575 and the physical requirements of ASTM A1011.

2.15. Junction Box

2.15.1. Junction Box Type A, B, or C

Junction Box Type A, B, or C shall meet or exceed ANSI/SCTE 77-2007, Tier 15. Box shall have an open bottom. A removable, non-slip cover marked "PLANNING" shall be equipped with a lifting slot and attached with a minimum of two 3/8 inch stainless steel hex bolts and washers. Type A Box shall have nominal inside dimensions of 13 inches wide by 24 inches long by 18 inches deep. Type B Box shall have nominal inside dimensions of 11 inches wide by 18 inches long by 12

inches deep. Type C Box shall have nominal inside dimensions of 24 inches wide by 36 inches long by 30 inches deep.

2.15.2. Aggregate for Junction Box Type A, B, or C

Aggregate for junction box type A, B, or C shall be gradation size no. 57 and conform to the *Standard Specifications for Road and Bridge Construction*.

2.15.3. Junction Box 10x8x4

Junction Box Type 10x8x4 shall be constructed of a UV-stabilized, nonmetallic material or non-rusting metal and be weatherproof in accordance with NEMA 4X. Box shall be equipped with an overhanging door with a continuous durable weatherproof gasket between the body and door. Door shall be hinged with screws, hinge(s) and pin(s) and shall be equipped with a padlockable latch on the side opposite the hinge(s). Junction Box 10x8x4 shall have minimum inside dimensions of 10 inches high by 8 inches wide by 4 inches deep.

2.16. Maintain and Control Traffic

Materials for the bid item Maintain and Control Traffic shall conform to the *Standard Specifications for Road and Bridge Construction,* and the KYTC Department of Highways *Standard Drawings*.

2.17. Piezoelectric Sensor

Piezoelectric sensor (piezo) shall provide a consistent level voltage output signal when a vehicle axle passes over it, shall have a shielded transmission cable attached, and shall meet the following requirements:

- Dimensions: such that sensor will fit in a ¾ inch wide by 1 inch deep saw cut. Total length shall be 6 feet unless specified otherwise.
- Output uniformity: ± 7% (maximum)
- Typical output level range: 250mV (minimum) from a wheel load of 400 lbs.
- Working temperature range: -40° to 160° F.
- Sensor life: 30 million Equivalent Single Axle Loadings (minimum)

Shielded transmission cable shall be coaxial and shall meet the following requirements:

- RG 58C/U with a high density polyethylene outer jacket rated for direct burial
- Length shall be a minimum of 100 feet. Installations may exceed 100 feet so the piezo shall be supplied with a lead-in of appropriate length so that the cable can be installed splice-free from the piezo to the cabinet.
- Soldered, water resistant connection to the sensor.

One installation bracket for every 6 inches of sensor length shall also be supplied. Piezo shall be a RoadTrax BL Class I or approved equal.

2.18. Saw Slot Sealant

Saw Slot Sealant shall be non-shrink, non-stringing, moisture cure, polyurethane

encapsulant suitable for use in both asphalt and concrete pavements. It shall provide a void-free encapsulation for detector loop cables and adequate compressive yield strength and flexibility to withstand heavy vehicular traffic and normal pavement movement.

The cured encapsulant shall meet or exceed the following:

- Hardness (Indentation): 35-65 Shore A, ASTM D2240
- Tensile Strength: 150 psi minimum, ASTM D412
- Elongation: 125% minimum 2 inch/minute pull, ASTM D412
- Tack-free Drying Time: 24 hours maximum, ASTM C679
- Complete Drying Time: 30 hours maximum, KM 64-447
- Chemical Interactions (seven day cure at room temperature, 24-hour immersion, KM 64-446):
  - Motor Oil: No effect
  - Deicing Chemicals: No effect
  - Gasoline: Slight swell
  - Hydraulic Brake Fluid: No effect
  - Calcium Chloride (5%): No effect

2.19. Seeding and Protection

Material for Seeding and Protection shall be Seed Mixture Type I and conform to the *Standard Specifications for Road and Bridge Construction*.

2.20. Signs

Materials for signs shall conform to the *Standard Specifications for Road and Bridge Construction.*

2.21. Splicing Materials

2.21.1. Electrical Tape

Electrical tape shall be a premium grade, UL-listed, all-weather, vinyl-insulating tape with a minimum thickness of 7 mil. Tape shall be flame retardant and resistant to abrasion, moisture, alkalis, acids, corrosion, and weather (including ultraviolet exposure).

2.21.2. Splice Kit

Splice kit shall be inline resin-type and rated for a minimum of 600V. Resin shall be electrical insulating-type and shall provide complete moisture and insulation resistance.

2.22. Steel Reinforcing Bar

Steel reinforcing bar shall be #5 and shall conform to the *Standard Specifications for Road and Bridge Construction.*

2.23. Terminal Block

Terminal block shall be rated for a minimum of 300 V and have a minimum of six

terminal pairs with 9/16-inch nominal spacing (center to center) for connecting loop and piezoelectric sensor wires to cable assemblies. Terminal block shall have screw type terminal strips to accommodate wire with spade-tongue ends.

2.24. Warning Tape

Warning tape shall be acid and alkali resistant formulated for direct burial. Tape shall be a minimum of 3 inches wide by 4.0 mils (nominal) thick, and shall be permanently imprinted with a minimum 1 inch black legend on a red background warning of an electric line. Tape shall meet or exceed the following industry specifications:

- American Gas Association (AGA) 72-D-56
- American Petroleum Institute (API) RP 1109
- American Public Works Association (APWA) Uniform Color Code
- Department of Transportation (DOT) Office of Pipeline Safety USAS B31.8
- Federal Gas Safety Regulations S 192-321 (e)
- General Services Administration (GSA) Public Buildings Service Guide: PBS 4-1501, Amendment 2
- National Transportation Safety Board (NTSB) PSS 73-1
- Occupational Safety and Health Administration (OSHA) 1926.956 (c) (1)

2.25. Wire and Cable

All cable and wire shall be plainly marked in accordance with the National Electrical Code (NEC).

2.25.1. Loop Wire

Loop wire shall be 14 AWG, stranded, copper, single conductor, and shall conform to the International Municipal Signal Association (IMSA) Specification No. 51-7.

2.25.2. Cable No. 14/1 Pair

Cable No. 14/1 pair loop lead-in cable shall be 14 AWG, stranded, copper paired, electrically shielded conductors, and shall conform to IMSA 19-2.

2.25.3. Grounding conductor

Grounding conductor and bonding jumper shall be solid or stranded, 4 AWG bare copper.

2.25.4. Service Entrance Conductor

Service entrance conductor shall be stranded, copper, Type USE-2, sized as required to comply with the NEC.

2.25.5. Terminal for electrical wire or cable

Terminal for electrical wires or cables shall be insulated, solderless, spade tongue terminals of correct wire and stud size. Terminal for electrical wires or cables shall be incidental to the wire or cable (including piezoelectric sensor transmission cable) to be connected to terminal strips.

2.26. Wood Post

Wood post shall be Southern Pine pretreated to conform to the American Wood Preservers' Association (AWPA) C-14 or UC4B and shall have minimum dimensions of 4 inches by 4 inches by 8 feet long (for Galvanized Steel Cabinet) or 4 feet long (for Junction Box 10x8x4), sawed on all four sides with both ends square.

2.27. Wooden Pole

Wooden pole shall be a Class IV wood pole of the length specified and shall conform to the *Standard Specifications for Road and Bridge Construction* except the pole shall be treated in accordance with AWPA P9 Type A.

3. CONSTRUCTION METHODS

The plans indicate the extent and general arrangement of the installation and are for guidance. When the Contractor deems any modifications to the plans or specifications necessary, details of such changes and the reasons shall be submitted in writing to the engineer for written approval prior to beginning the modified work.

After the project has been let and awarded, the Division of Construction shall notify the Division of Planning of the scheduled date for a Pre-Construction meeting so that prior arrangements can be made to attend. This will allow the Division of Planning an opportunity to address any concerns and answer any questions that the Contractor may have before beginning the work.

The Division of Planning Equipment Management Team (502-564-7183) shall be notified a minimum of seven days before any work pertaining to these specifications begins to allow their personnel the option to be present during installation.

Unless otherwise specified, installed materials shall be new.

Construction involving the installation of loops or piezoelectric sensors shall not be performed when the temperature of the pavement is less than 38ºF.

A final inspection will be performed by a member of the Central Office Division of Planning equipment staff after the installation is complete to verify that the installation is in compliance with the plans and specifications.

Any required corrective work shall be performed per the *Standard Specifications for Road and Bridge Construction.*

3.1. Anchoring

Furnish: Anchor, anchor rod, guy wire, strand vise, guy guard.

Anchor shall be installed in relatively dry and solid soil. Rock anchor shall be installed in solid rock. Excavate the hole at a 45° to 60° angle in line with the guy (hole size shall be slightly larger than the expanded anchor – see manufacturer's recommendation). Attach rod to anchor, install assembly into hole, and expand anchor. Backfill and tamp entire disturbed area. The effectiveness of the anchor is dependent upon the thoroughness of backfill tamping. Attach guy to strand vise on pole and anchor rod and tighten to required tension. Install guy guard on guy.

3.2. Bore and Jack Pipe – 2"

Furnish: Steel Encasement Pipe, 2"

Bore and jack pipe – 2" shall conform to the Section 706 of the *Standard Specifications for Road and Bridge Construction*.

3.3. Cleanup and Restoration

Furnish: Seed Mix Type 1 (as required); fertilizer (as required); agricultural limestone (as required); mulch or hydromulch (as required); tackifier (as required).

The Contractor shall be responsible for repairing any damage to public and/or private property resulting from his work. Upon completion of the work, restore all disturbed highway features in like kind design and materials. This shall include filling any ruts and leveling ground appropriately. Contractor shall dispose of all waste and debris off the project. Sow all disturbed earthen areas with Seed Mix Type 1 per Section 212 of the *Standard Specifications for Road and Bridge Construction*. All materials and labor necessary for cleanup and restoration shall be considered incidental to other bid items.

3.4. Conduit

Furnish: Conduit; conduit fittings; bushings (grounding where required); LB condulets (as required); weatherheads (as required); conduit straps; hardware; conduit sealant.

Conduit that may be subject to regular pressure from traffic shall be laid to a minimum depth of 24 inches below grade. Conduit that will not be subject to regular pressure from traffic shall be laid to a minimum depth of 18 inches below grade.

Conduit ends shall be reamed to remove burrs and sharp edges. Cuts shall be square and true so that the ends will butt together for the full circumference of the conduit. Tighten couplings until the ends of the conduit are brought together. Do not leave exposed threads. Damaged portions of the galvanized surfaces and untreated threads resulting from field cuts shall be painted with an Engineer-approved, rust inhibitive paint. Conduit bends shall have a radius of no less than 12 times the nominal diameter of the conduit, unless otherwise shown on the plans.

Contractor shall install a bushing (grounding bushing where required) on both ends of all conduits. Cap spare conduits on both ends with caps or conduit sealant.

Conduit openings in junction boxes and cabinets shall be waterproofed with a flexible, removable conduit sealant, working it around the wires, and extending it a minimum 1 inch into the end of the conduit.

After the conduit has been installed and prior to backfilling, the conduit installation shall be inspected and approved by the Engineer.

3.5. Electrical Service

Furnish: Meter base, service disconnect, wire, GFCI AC duplex receptacle with box and cover; conduit, conduit fittings, bushings (grounding where required); LB condulets (as required); weatherhead; conduit straps; hardware; conduit sealant; ground rod with clamp; grounding conductor.

Prior to any construction, the Contractor shall initiate a work order with the local power

company for the installation of electrical service to the site. A representative from the Division of Planning and the local power company shall be consulted prior to choosing an exact location for the pole. The Contractor shall clear the right-of-way for the electrical service drop.

Contractor shall obtain electrical inspections, memberships, meter base, service disconnect and any other requirements by the utility serving the installation and pay all fees as required.

Install meter-base and disconnect panel with a 30-ampere, fused, circuit breaker inside. Install a manufactured weatherproof hub connector to connect the conduit to the top of the meter base and service disconnect.

Install a rigid ¾ inch conduit with three 8 AWG service conductors from the cabinet, through the service disconnect to the meter base and a 1¼" conduit with three 8 AWG service conductors from the meter base to a weatherhead two feet from the top of the electrical service pole. Install conduit straps 30 inches on center and provide a drip loop where the wire enters the weatherhead. Splice electric drop with service entrance conductors at the top of the pole.

The limit of conduit incidental to "Install Electrical Service" for a pad mounted cabinet is 24 inches beyond face of service pole.

Install a 120-volt, 20-amp GFCI AC duplex receptacle with box and cover in the automatic data recorder (ADR) cabinet.

Install a ground rod with clamp. Install a grounding conductor wire from the meter base, through the disconnect panel, to the ground rod clamp. Install grounding conductor in 1-¾" conduit from service disconnect to ground rod.

After completing the installation and before the electrical service is connected, obtain a certificate of compliance from the Kentucky Department of Housing, Buildings and Construction, Electrical Inspection Division.

3.6. Flashing Arrow

Furnish: Arrow Panel

Construction of Flashing Arrow shall conform to the *Standard Specifications for Road and Bridge Construction.*

3.7. Galvanized Steel Cabinet

Furnish: Cabinet; wood posts; concrete; conduit fittings; metal framing channel; pipe clamp; terminal block(s); spade tongue wire terminals; wire labels; hardware.

Where right-of-way allows, locate the cabinet such that it is outside the clear zone in accordance with the *Roadside Design Guide*. Install Cabinet such that the door of the

cabinet faces the roadway.

Excavate as required and install wood posts to a depth of 36 inches and place concrete around posts as shown on the standard detail sheets. Install metal framing channel with pipe clamp between posts.

Install Cabinet on wood posts 38 inches above the finished grade as shown on the standard detail sheets. Install a unistrut between posts when two posts are specified.

Install the required number of terminal blocks on the cabinet back plate. Install a spade tongue terminal on each loop and piezo sensor wire entering the cabinet and connect wires to terminal block(s). Wiring shall be neat and orderly. Label all wires and cables inside cabinet.

Install conduit from ground to cabinet and attach to pipe clamp. Install locknuts to attach conduit to cabinet and install a conduit bushing as shown on the standard detail sheets.

3.8. Grounding

Furnish: Ground rod with clamp; grounding conductor.

At sites with electrical or solar service, all conduits, poles, and cabinets shall be bonded to ground rods and the electrical system ground to form a complete grounded system.

Install such that top of ground rod is a minimum of 3 inches below finished grade.

Grounding systems shall have a maximum 25 ohms resistance to ground. If the resistance to ground is greater than 25 ohms, two or more ground rods connected in parallel shall be installed. Adjacent ground rods shall be separated by a minimum of 6 feet.

3.9. Install Pad Mount Enclosure

Furnish: Concrete; anchor bolts with washers and nuts; conduit; conduit fittings; conduit grounding bushings; ground rod with clamp; grounding conductor; conduit sealant; wooden stakes (where required); wire labels; hardware.

The Contractor shall be responsible for securing the enclosure from the Central Office Division of Planning Warehouse in Frankfort and transporting it to the installation site.

Where right-of-way allows, locate the enclosure such that it is outside the clear zone in accordance with the *Roadside Design Guide*.

Excavate as required, and place concrete to construct the enclosure foundation as specified on the standard detail sheets. Install enclosure on the concrete base such that the door(s) of the enclosure opens away from traffic (hinges away from traffic). Install anchor bolts, washers, and nuts to secure the enclosure to the foundation.

Install ground rod with clamp and install one ¾ inch rigid conduit from enclosure base to

ground rod. Install a grounding conductor from ground rod to enclosure base and bond to each conduit bushing in the base.

Install one ¾ inch rigid steel conduit for electrical service from the base of the enclosure to 24 inches beyond the concrete base. Make all field wiring connections to the electrical service, as applicable.

If electrical service is not provided as a bid item in the contract, plug conduit on both ends with a cap, conduit sealant, or electrical tape. Mark the location of the buried conduit end with a wooden stake labeled "3/4 in. conduit."

Install specified rigid steel conduit(s) into the base of the enclosure for sensor wire entry. Install one spare 2-inch conduit from the enclosure base to 2 feet beyond the concrete base. Plug spare conduit on both ends with a cap, conduit sealant or electrical tape.

The limit of all conduits incidental to "Install Pad Mount Enclosure" is 24 inches beyond the edge of the concrete base.

Wiring in enclosure shall be neat and orderly. Label all wires and cables inside enclosure. KYTC personnel will furnish and install terminal blocks and connect sensors to terminal blocks.

3.10. Install Controller Cabinet

Furnish: Mounting brackets; mounting straps; conduit; LB condulets; conduit fittings; conduit grounding bushings; ground rod with clamp; grounding conductor; cable staples; conduit sealant; wooden stakes (where required); wire labels; hardware.

The Contractor shall be responsible for securing the cabinet from the Central Office Division of Planning Warehouse in Frankfort and transporting it to the installation site. Any existing holes in the cabinet not to be reused shall be covered or plugged to meet NEC requirements.

Install mounting brackets and secure cabinet to pole with mounting straps.

Install a ground rod with clamp. Install grounding conductor in 1-¾" conduit form cabinet to ground rod.

Install one ¾ inch rigid steel conduit with two lb. condulets from cabinet to electrical service disconnect box. Make all field wiring connections to the electrical service, as applicable.

If electrical service is not provided as a bid item in the contract, plug conduit on both ends with cap, plumbers putty, conduit sealant, or electrical tape. Mark the location of the buried conduit end with a wooden stake labeled "3/4 in. conduit".

Install specified rigid steel conduit(s) and type LB condulet(s) into the bottom of the

cabinet for sensor wire entry. The limit of conduits incidental to "Install Controller Cabinet" is 24 inches beyond the face of the pole.

Wiring in cabinet shall be neat and orderly. Label all wires and cables inside cabinet. KYTC personnel will furnish and install terminal blocks and connect sensors to terminal blocks.

3.11. Junction Box Type 10x8x4

Furnish: Junction box; wood post; conduit fittings; wire labels; hardware.

Where right-of-way allows, locate the junction box such that it is outside the clear zone in accordance with the Roadside Design Guide.

Excavate as required and install wood post(s) to a depth of 18 inches. Install junction box on wood post such that the bottom of the box is 18 inches above the finished grade as shown on the standard detail sheets. Box shall be installed with four (4) 2½ inch wood screws and washers.

Install locknuts to attach conduit to junction box and install a conduit bushing as shown on the standard detail sheets.

Wiring inside box shall be neat and orderly. Label all wires and cables inside box.

3.12. Junction Box Type A, B, or C

Furnish: Junction box, No. 57 aggregate; grounding conductor

Excavate as required and place approximately 12 inches of No. 57 aggregate beneath the proposed junction box to allow for drainage. Install specified junction box type A, B, or C near the edge of pavement, flush with finished grade per the detail sheets. Where required, orient the box so that the dimensions comply with the National Electrical Code. Stub conduits with grounding bushings into junction box at its base to accommodate wires and connect grounding conductor to all grounding bushings. Backfill to existing grade, and restore disturbed area to the satisfaction of the Engineer.

Wiring inside box shall be neat and orderly. Label all wires and cables inside box.

3.13. Loops - Proposed

Furnish: Wire; saw slot sealant; backer rod; grout; conduit sealant.

The plans and notes specify the approximate location for loop installations. Prior to sawing slots or drilling cores, the Contractor shall meet with a representative of the Division of Planning to verify the precise layout locations on site. Avoid expansion joints and pavement sections where potholes, cracks, or other roadway flaws exist.

Upon completion of this meeting, the Contractor shall measure out and mark the proposed loop locations with spray paint or chalk such that the saw slots will be parallel

and perpendicular to the direction of traffic. Marked lines shall be straight and exact to the locations determined and sized as shown on the plans. Unless indicated otherwise, loops shall be 6 feet by 6 feet square and loops in the same lane shall be spaced 16 feet from leading edge to leading edge.

On resurfacing, rehabilitation, and new construction projects that include new asphalt pavement, the Contractor shall install loops prior to laying the final surface course. On projects with milling and texturing, the Contractor may install the loops prior to or after the milling operation; however, if installed prior to milling, the Contractor shall be responsible for ensuring that the loops are installed at a depth such that the milling operation will not disturb the newly installed loops. The Contractor shall correct damage caused by the milling operations to newly installed loops prior to placement of the final surface course at no additional cost to the Cabinet.

For projects that include the installation of new asphalt and piezoelectric sensors, the Contractor shall mark or otherwise reference all loops installed prior to the final surface course such that the loops can be accurately located when the piezoelectric sensors are installed after placement of the final surface course.

For projects that do not have asphalt surfacing, the Contractor shall install the loops in the surface of the pavement.

The Prime Contractor shall coordinate the installation of loops with the electrical sub-Contractor and the Engineer to ensure correct operation of the completed installation.

The following is a typical step by step procedure for the installation of a loop.

- Carefully mark the slot to be cut, perpendicular to the flow of traffic and centered in the lane.
- Make each saw-cut 3/8-inch wide and at a depth such that the top of the backer rod is a minimum of 2 inches below the surface of rigid (PCC/Concrete) pavement or 4 inches below the surface of asphalt pavement.
- Drill a 1½ inch core hole at each corner and use a chisel to smooth corners to prevent sharp bends in the wire.
- Clean ALL foreign and loose matter out of the slots and drilled cores and within 1 foot on all sides of the slots using a high-pressure washer.
- Completely dry the slots and drilled cores and within 1 foot on all sides of the slots using oil-free forced air, torpedo heaters, electric heaters, or natural evaporation, depending on weather conditions. Be very careful not to burn the asphalt if heat is used.
- Measure 9-12 inches from the edge of the paved surface (shoulder break or face of curb) and drill a 1½ inch hole on a 45º angle to the conduit adjacent to the roadway.
- Closely inspect all cuts, cores, and slots for jagged edges or protrusions prior to the placement of the wire. All jagged edges and protrusions shall be ground or re-cut and cleaned again.

- Place the loop wire splice-free from the termination point (cabinet or junction box) to the loop, continue around the loop for four turns, and return to the termination point.
- Push the wire into the saw slot with a blunt object such as a wooden stick. Make sure that the loop wire is pushed fully to the bottom of the saw slot.
- Install conduit sealant to a minimum of 1" deep into the cored 1½ inch hole.
- Apply loop sealant from the bottom up and fully encapsulate the loop wires in the saw slot. The wire should not be able to move when the sealant has set.
- Cover the encapsulated loop wire with a continuous layer of backer rod along the entire loop and home run saw slots such that no voids are present between the loop sealant and backer rod.
- Finish filling the saw cut with non-shrinkable grout per manufacturer's instructions. Alleviate all air pockets and refill low spaces. There shall be no concave portion to the grout in the saw slot. Any excess grout shall be cleaned from the roadway to alleviate tracking.
- Clean up the site and dispose of all waste off the project.
- Ensure that the grout has completely cured prior to subjecting the loop to traffic. Curing time varies with temperature and humidity.

Exceptions to installing loop wire splice-free to the junction box or cabinet may be considered on a case-by-case basis and must be pre-approved by the Engineer. If splices are allowed, they shall be located in a junction box and shall conform to the construction note for Splicing.

If loop lead-in cable (Cable No. 14/1 Pair) is specified, cable shall be installed splice free to the cabinet ensuring that extra cable is left in each junction box or cabinet. All wires and cables shall be labeled in each junction box and cabinet.

Loop inductance readings shall be between 100 and 300 microhenries. The difference of the loop inductance between two loops in the same lane shall be ±20 microhenries. Inductance loop conductors shall test free of shorts and grounds. Upon completion of the project, all loops must pass an insulation resistance test of a minimum of 100 million ohms to ground when tested with a 500 Volt direct current potential in a reasonably dry atmosphere between conductors and ground.

3.14. Loop Test

When noted on a data collection station layout sheet that there are existing inductive loops within the limits of the project, notify the Engineer in writing, a minimum of 14 calendar days prior to beginning milling operations. After milling and prior to placing asphalt inlay, conduct an operating test on the existing inductance loops at the control cabinet in the presence of the Engineer to determine if the inductance loop conductors have an insulating resistance of a minimum of 100 megohms when tested with a 500-volt direct current potential in a reasonably dry atmosphere between conductors and ground. The Department may also conduct its own tests with its own equipment.

If the tests indicate the loop resistances are above the specified limit and the Engineer determines the system is operable, proceed with the asphalt inlay. If the test indicates the loop resistance is not within the specified limits or if the Engineer determines the system is otherwise not operable, prior to placing the asphalt inlay install and test new loop detectors according to the station layout, notes, and Detail Drawings.

The Engineer will contact and maintain liaison with the District Planning Engineer and the Division of Planning in order to coordinate any necessary work.

3.15. Maintain and Control Traffic

Furnish (all as required): Drums, traffic cones, barricades used for channelization purposes, delineators, and object markers.

Maintain and Control Traffic shall conform to the plans, the Standard Specifications for Road and Bridge Construction, and the KYTC Department of Highways Standard Drawings.

3.16. Open Cut Roadway

Furnish: Concrete, reinforcing bars.

Excavate trench by sawing and chipping away roadway to dimensions as indicated on the detail sheets. After placing conduit, install concrete and steel reinforcing bars per the *Standard Specifications for Road and Bridge Construction*. Restore any disturbed sidewalk to its original condition.

3.17. Piezoelectric Sensor

Furnish: Piezoelectric sensor and cable; sensor support brackets; saw slot sealant; backer rod; grout; conduit sealant.

The plans and notes specify the approximate location for piezoelectric sensor (piezo) installations. Prior to sawing slots or drilling cores, the Contractor shall meet with a representative of the Division of Planning to verify the final layout on site. Avoid expansion joints and pavement sections where potholes, cracks, or other roadway flaws exist. Roadway ruts at the proposed piezo location shall not be in excess of ½ inch under a 4-foot straight edge.

Install the piezo perpendicular to traffic in the final surface course of the pavement. Locate the sensor in the lane as shown on the site layout drawing. Eleven-foot length sensors shall be centered in the lane.

The following is a typical step by step procedure for the installation of a piezo. Refer specifically to the manufacturer's instructions provided with the sensor prior to installation.

- Carefully mark the slot to be cut, perpendicular to the flow of traffic and properly positioned in the lane.

- It is strongly recommended that a ¾ inch wide diamond blade be used for cutting the slot, or that blades be ganged together to provide a single ¾ inch wide cut. The slot shall be wet cut to minimize damage to the pavement.
- Cut a slot ¾ inch wide (±1/16 inch) by 1 inch minimum deep. The slot should be a minimum of 2 inches longer than the sensor (including the lead attachment). Drop the saw blade an extra ½ inch down on both ends of the sensor. The lead out of the passive cable should be centered on the slot.
- Cut the slot for the passive cable ¼ inch wide and at a depth so that the top of the backer rod is a minimum of 2 inches below the road surface.
- Clean ALL foreign and loose matter out of the slot and within 1 foot on all sides of the slot using a high-pressure washer.
- Completely dry the slot and within 1 foot on all sides of the slot using oil-free forced air, torpedo heaters, electric heaters, or natural evaporation, depending on weather conditions. Be very careful not to burn the asphalt if heat is used.
- Measure 9-12 inches from the edge of the paved surface (shoulder break or face of curb) and drill a 1½ inch hole on a 45º angle to the conduit adjacent to the roadway.
- Place strips of 2-4-inch-wide tape strips on the pavement along the lengths of both sides of the sensor slot, 1/8 inch away from the slot.
- Wear clean, protective latex (or equivalent) gloves at all times when handling sensors. Visually inspect sensor to ensure it is straight. Check lead attachment and passive cable for cuts, gaps, cracks and/or bare wire. Verify that the correct sensor type and length is being installed by checking the data sheet. Verify there is sufficient cable to reach the cabinet. Piezo lead-in cable shall not be spliced.
- Test the sensor for capacitance, dissipation factor and resistance, according to the directions enclosed with the sensor. Capacitance and dissipation should be within ±20% of the piezo data sheet. Resistance (using the 20M setting) should be infinite. Record the sensor serial number and the test results and label “pre-installation.” This information should be stored in the counter cabinet and/or returned to Department Planning personnel.
- Lay the sensor next to the slot and ensure that it is straight and flat.
- Clean the sensor with steel wool or an emery pad and wipe with alcohol and a clean, lint-free cloth.
- Place the installation bracket clips every 6 inches along the length of the sensor.
- Bend the tip of the sensor downward at a 30° angle. Bend the lead attachment end down at a 15° angle and then 15° back up until level (forming a lazy Z).
- Place the sensor in the slot, with the brass element 3/8 inch below the road surface along the entire length. The tip of the sensor should be a minimum of 2 inches from the end of the slot and should not touch the bottom of the slot. The top of the plastic installation bracket clips should be 1/8 inch below the surface of the road. The lead attachment should not touch the bottom or sides of the slot. Ensure the sensor ends are pushed down per the manufacturer’s instructions.
- Visually inspect the length of the sensor to ensure it is at uniform depth along its length and it is level (not twisted, canted or bent).

- On the passive cable end, block the end of the slot approximately 3-5 inches beyond the end of the lead attachment area creating an adequate "dam" so that the sensor grout does not flow out.
- Use one bucket of sensor grout per piezo installation. Overfill the slot with sensor grout and allow to cure for a minimum of 10 minutes before continuing with the installation. Ensure that sensor grout fills around and beneath the sensor completely and that there is not a trough on top.
- Remove the tape along the sides of the saw slot when the adhesive starts to cure.
- Carefully remove the dam from the end of the sensor.
- Route the lead-in cable through the saw slot
- Install conduit sealant to a minimum of 1" deep into the cored 1½ inch hole.
- Cover the lead-in cable with encapsulant, backer rod, and grout.
- If necessary, after the grout has hardened, grind with an angle grinder until the profile is a 1/16-inch mound. There shall be no concave portion to the mound.
- Clean up the site and dispose of all waste off the project.
- Ensure that the sensor grout has completely cured prior to subjecting the sensor to traffic. Curing time will vary with temperature and humidity.

Upon installation, test the sensor for capacitance, dissipation factor and resistance, according to the directions enclosed with the sensor. Capacitance and dissipation should be within ±20% of the piezo data sheet. Resistance (using the 20M setting) should be infinite. Perform a functional test of the piezo with an oscilloscope to ensure that the sensor is generating a proper response to the passage of vehicles.

Record the sensor serial number and the test results and label "post-installation." This information should be stored in the counter cabinet and/or returned to Department Planning personnel.

3.18. Pole – Wooden

Furnish: Pole; anchoring equipment (as required); hardware (as required).

Excavate and install wood pole to a minimum depth of one-sixth the total pole height. Place backfill material in hole and compact until flush with existing grade. Install guy wire, guy guard, anchor, anchor rod, and strand vise, if necessary. Anchor shall be a minimum of one-third the pole height from the face of the pole. Provide temporary erosion control, seeding, protection and restoration of disturbed areas to the satisfaction of the Engineer.

3.19. Removal of Existing Equipment

The Contractor shall remove existing materials (including but not limited to: poles, anchors, cabinets, junction boxes, conduit and wire) not to be reused. Contractor shall dispose of all removed materials off the project. All materials and labor necessary for the removal of existing equipment shall be considered incidental to other bid items.

3.20. Signs

Furnish: Signs; sign standards; hardware.

Construction of **s**igns shall conform to the *Standard Specifications for Road and Bridge Construction.*

3.21. Splicing

Furnish: Splice kit; solder.

These notes describe the splicing process (if permitted) and are not intended to grant permission to splice. Permission to splice shall be determined by the Division of Planning and the locations shall be shown on the layout sheet. If splicing is needed but not shown on the layout sheet, the Contractor shall receive prior written approval from the Division of Planning.

All splices shall conform to the provisions of the NEC.

Splices for loop and loop lead-in wire shall be twisted and soldered. Abrade the outer jacket of both wires to promote good adhesion and prevent capillary leak paths. Seal the splice with an electrical sealing resin. Spliced loop conductors shall test free of shorts and unauthorized grounds and shall have an insulating resistance of at least 100 megohms when tested with a 500-volt direct current potential in a reasonably dry atmosphere between conductors and ground.

For piezos, the same type coax cable, supplied by the manufacturer, shall be used to splice to the sensor's lead-in cable. Cables shall be soldered. Abrade the outer jacket of both cables to promote good adhesion and prevent capillary leak paths. Seal the splice with an electrical sealing resin. Spliced piezo cables shall be tested and have a minimum resistance of 20 megohms, a maximum dissipation factor of 0.03, a capacitance within the manufacturer's recommended range based upon the length of additional cable. A functional test of the piezo shall be performed to ensure that the sensor is generating a proper response to the passage of vehicles.

3.22. Trenching and Backfilling

Furnish: Warning tape; seed mix type I; cereal rye or German foxtail-millet; mulch; concrete (as required); asphalt (as required).

Excavate trench and provide required cover as shown on the standard detail sheets. After placing conduit, backfill material shall be placed and compacted in lifts of 9 inches or less. Install warning tape as shown on the detail sheet. Provide temporary erosion control, seeding, protection and restoration of disturbed areas to the satisfaction of the Engineer.

3.23. Wiring

Furnish: Wire; wire labels; spade tongue wire terminals (as required).

Installation of all wiring shall conform to the NEC. Permanent identification numbers

shall be affixed to all wires in all junction boxes and cabinets (see Layout(s) for loop and piezo numbers).

Additional lengths of each loop and piezo sensor wire shall be neatly coiled in all cabinets and junction boxes as follows:

Enclosure Type	Additional length of each wire
Galvanized Steel Cabinet	2' – 3'
Pad Mount Cabinet (332)	6' - 8'
Pole Mount Cabinet (336)	3' - 4'
Junction Box Type 10x8x4	2' – 3'
Junction Box Type A, B, or C	2' – 3'

3.24. Wood Post

Furnish: Wood post; concrete (as required); seed mix type I; cereal rye or German foxtail-millet; mulch.

Excavate hole to specified depth and place concrete, if required. Install post, backfill to existing grade, and tamp backfill. Provide temporary erosion control, seeding, protection and restoration of disturbed areas to the satisfaction of the Engineer.

3.25. Remove and Replace Sidewalk

Furnish: Lumber, stakes, nails or screws, and concrete.

Remove existing sidewalk to install rigid conduit from edge of roadway to nearest junction box or cabinet. Form, pour and finish concrete in place of old existing sidewalk making sure to replace the expansion joints in their respective locations. Concrete shall conform to the *Kentucky Standard Specifications for Road and Bridge Construction* for sidewalks.

4. BID ITEM NOTES AND METHOD OF MEASUREMENT FOR PAYMENT

Only the bid items listed will be measured for payment. All other items required to complete the vehicle detection installation shall be incidental to other items of work. Payment at the contract unit price shall be full compensation for all materials, labor, equipment and incidentals to furnish and install these items.

4.1. Bore and Jack Pipe – 2”

Bore and jack pipe – 2” shall be furnished, installed, and measured for payment per the *Standard Specifications for Road and Bridge Construction*.

4.2. Conduit

Conduit shall include furnishing and installing specified conduit in accordance with the specifications. This item shall include conduit fittings, bodies, boxes, weatherheads, expansion joints, couplings, caps, conduit sealant, electrical tape, clamps, bonding straps and any other necessary hardware. Conduit will be measured in linear feet.

4.3. Electrical Service

Electrical Service shall include furnishing and installing all necessary materials and payment of all fees toward the complete installation of an electrical service which has passed all required inspections. Incidental to this item shall be furnishing and installing:

- Meter-base per utility company’s specifications
- Service disconnect panel per utility company’s specifications
- Meter base and service disconnect entrance hubs, waterproof
- Service entrance conductors
- Rigid steel conduit
- Rigid steel conduit fittings
- Conduit straps
- Weatherhead
- Duplex GFCI receptacle, 120-volt, 20-amp
- Ground rod with clamp
- Grounding conductor

Also incidental to this item shall be any necessary clearing of right of way for the electrical service drop.

Electrical service will be measured in individual units each.

4.4. Flashing Arrow

Flashing Arrow shall be furnished, installed, and measured for payment per the *Standard Specifications for Road and Bridge Construction.*

4.5. Galvanized Steel Cabinet

Galvanized Steel Cabinet shall include furnishing and installing galvanized steel cabinet on post as specified. Incidental to this item shall be furnishing and installing grounding hardware, and any necessary post/pole mounting hardware. Also incidental to this item shall be furnishing and installing the required number of terminal blocks and connection of all

sensors to the terminal blocks. Galvanized Steel Cabinet will be measured in individual units each.

4.6. Install Pad Mount Enclosure

Install Pad Mount Enclosure shall include installing a Department-furnished enclosure as specified on the detail sheets.

This item shall include obtaining the enclosure from KYTC and transporting it to the installation site and furnishing and installing the following:

- Concrete foundation (including any excavation necessary)
- Anchor bolts, lock washers, and nuts
- Conduit
- Conduit fittings (including grounding bushings)
- Weatherhead
- Terminal Strip(s)
- Ground rod with clamp
- Grounding conductor

Install Pad Mount Enclosure will be measured in individual units each.

4.7. Install Controller Cabinet

Install Controller Cabinet shall include installing a Department-furnished cabinet as specified on the detail sheets.

This item shall include obtaining the cabinet from KYTC and transporting it to the installation site and furnishing and installing the following:

- Conduit
- Conduit Fittings
- Terminal Strip(s)
- Ground rod with clamp
- Grounding conductor

Install Controller Cabinet will be measured in individual units each.

4.8. Junction Box Type 10" x 8" x 4"

Junction Box Type 10”x8”x4” shall include furnishing and installing specified junction box in accordance with the specifications. This item shall include connectors, splice sleeves, conduit fittings, mounting materials and any other items required to complete the installation. Incidental to this item shall be furnishing and installing specified post (wood, channel, metal, etc.) as required for the installation. Junction Box Type 10”x8”x4” will be measured in individual units each.

4.9. Junction Box Type A, B, or C

Junction Box Type A, B, or C shall include furnishing and installing specified junction box in accordance with the specifications. This item shall include excavation, furnishing and installing #57 aggregate, backfilling around the box, and restoration of disturbed areas to the satisfaction of the Engineer. Incidental to this item shall be furnishing and installing a

grounding conductor bonding all conduit grounding bushings in the box. Junction Box Type A, B, or C will be measured in individual units each.

4.10. Loop Saw Slot and Fill

Loop Saw Slot and Fill shall include sawing and cleaning saw slots and furnishing and installing conduit sealant, loop sealant, backer rod, grout, or other specified material. Loop Saw Slot and Fill will be measured in linear feet of sawed slot.

4.11. Maintain and Control Traffic

Maintain and Control Traffic shall be measured for payment per the *Standard Specifications for Road and Bridge Construction.*

4.12. Open Cut Roadway

Open Cut Roadway shall include excavating trench (sawing and chipping roadway) to dimensions as indicated on the detail sheets and furnishing and placing concrete, steel reinforcing bars, and asphalt. This item also includes restoring any disturbed sidewalk to its original condition. Open Cut Roadway will be measured in linear feet.

4.13. Piezoelectric Sensor

Piezoelectric sensor (piezo) shall include sawing and cleaning saw slots and furnishing and installing piezo in accordance with the specifications. This item shall include furnishing and installing lead-in wire, conduit sealant, encapsulation material, backer rod, grout, testing, and accessories. Piezo will be measured in individual units each.

4.14. Pole – 35’ Wooden

Pole – 35’ Wooden shall include excavation, furnishing and installing specified wood pole, backfilling and restoring disturbed areas to the satisfaction of the Engineer. Incidental to this item shall be furnishing and installing guy wire, anchor and anchor rod, strand vise, and guy guard, if specified.

Pole – 35’ Wooden will be measured in individual units each.

4.15. Signs

Signs shall be furnished, installed, and measured for payment per the *Standard Specifications for Road and Bridge Construction.*

4.16. Trenching and Backfilling

Trenching and Backfilling shall include excavation, warning tape, backfilling, temporary erosion control, seeding, protection and restoration of disturbed areas to original condition. This item shall include concrete, asphalt or approved replacement material for sidewalks, curbs, roadways, etc. (if required). Trenching and backfilling will be measured in linear feet.

4.17. Wire or Cable

Wire or cable shall include furnishing and installing specified wire or cable within saw slot, conduit, junction box, cabinet, or overhead as indicated on the detail sheets. Incidental to this item shall be the labeling of all wires and cables in each junction box, cabinet and splice

box, and furnishing and installing other hardware required for installing cable. Wire or Cable will be measured in linear feet.

4.18. Wood Post

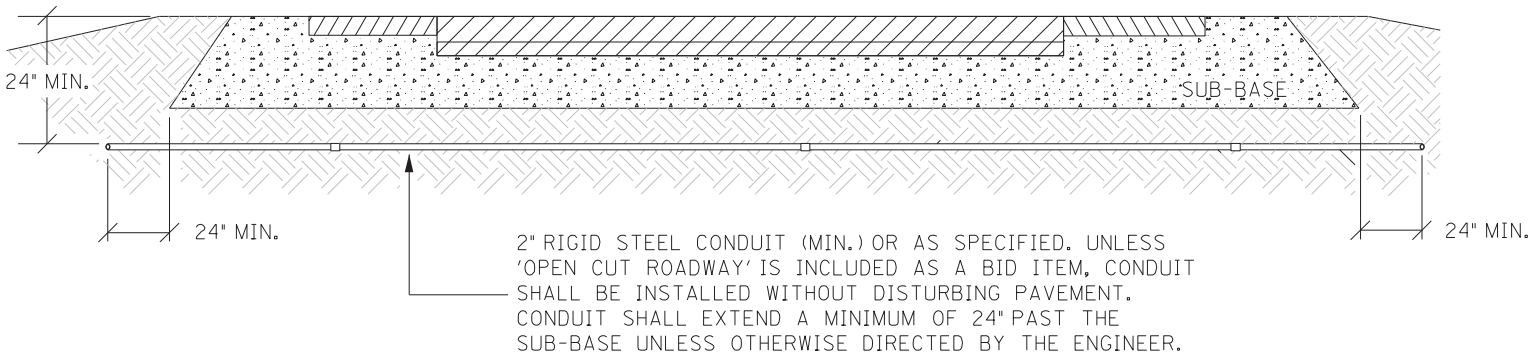
Wood Post shall include furnishing and installing wood post as specified. This item shall include excavation, furnishing and placing concrete (if required), backfilling around the post, and restoration of disturbed areas to the satisfaction of the engineer. Wood Post will be measured in individual units each.

4.19. Remove and Replace Sidewalk

Remove and Replace Sidewalk shall include removing existing sidewalk to install conduit and/or junction box (if required) and replacing old existing sidewalk with new sidewalk after installation of required items. This item includes removing old sidewalk and disposing of off the project and forming, pouring and finishing the new sidewalk after installation of required items.

4.20. Loop Test

Loop Test includes conducting an operating test on the existing inductance loops at the control cabinet in the presence of the Engineer to determine if the inductance loop conductors have an insulating resistance of a minimum of 100 megohms when tested with a 500-volt direct current potential in a reasonably dry atmosphere between conductors and ground.

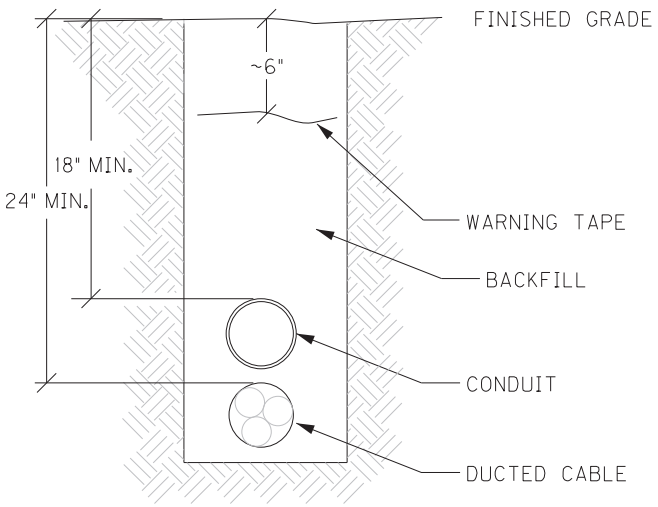


CONDUIT UNDER PAVEMENT

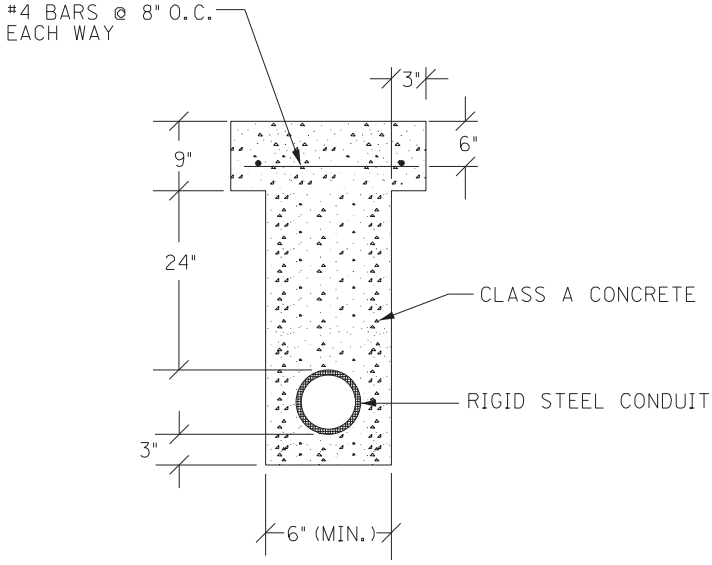
TOTAL TRENCH WIDTH SHALL BE 3" (NOM.) WIDER THAN THE SUM OF THE OUTSIDE DIAMETER(S) OF THE CONDUIT(S) INSTALLED. CONDUIT(S) SHALL BE CENTERED IN TRENCH.

CONTRACTOR SHALL PLACE BACKFILL IN LIFTS (9" MAX.) COMPACT BACKFILL, AND RESTORE DISTURBED AREA TO THE SATISFACTION OF THE ENGINEER

CONTRACTOR SHALL INSTALL UNDERGROUND UTILITY WARNING TAPE ABOVE CONDUIT AS SHOWN.



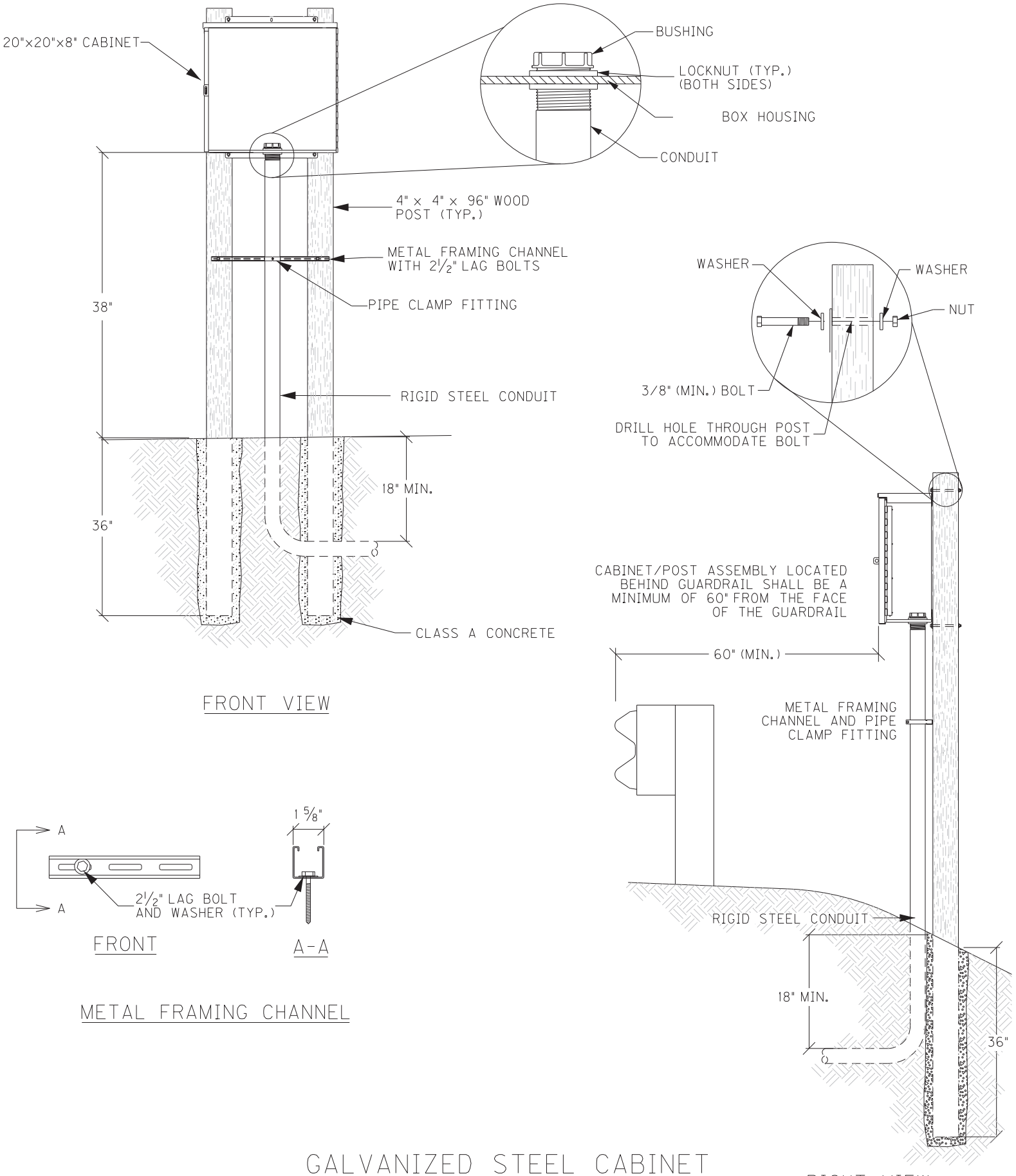
CONDUIT TRENCH



OPEN CUT PAVEMENT DETAIL

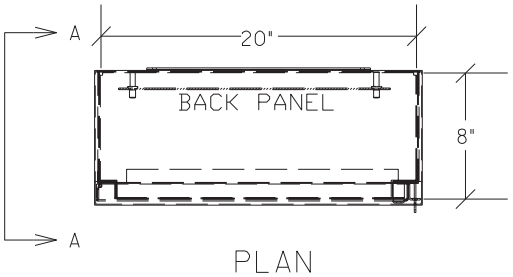
CONDUIT INSTALLATION

NOT TO SCALE

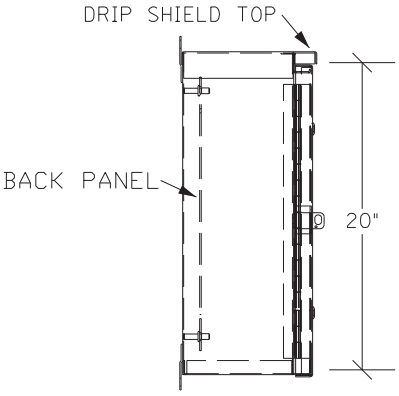


GALVANIZED STEEL CABINET
DOUBLE POST ASSEMBLY

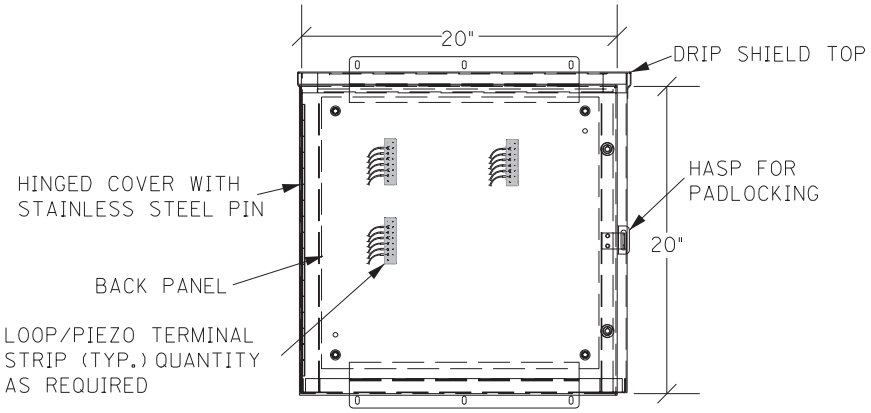
NOT TO SCALE



PLAN

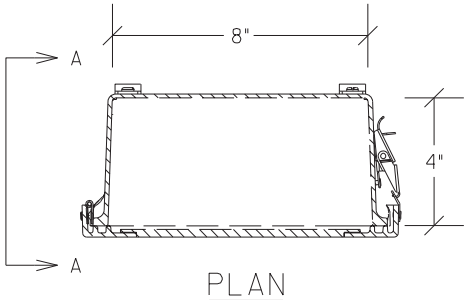


SECTION A-A

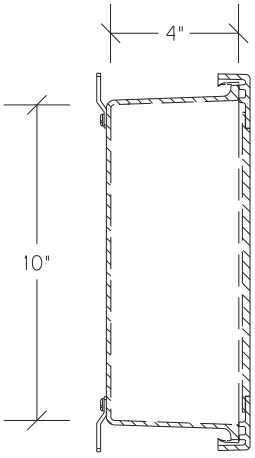


ELEVATION

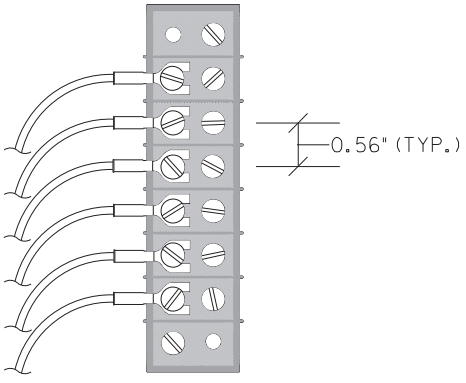
GALVANIZED STEEL CABINET



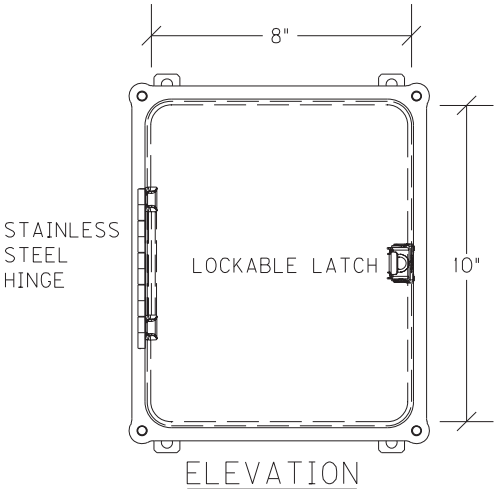
PLAN



SECTION A-A



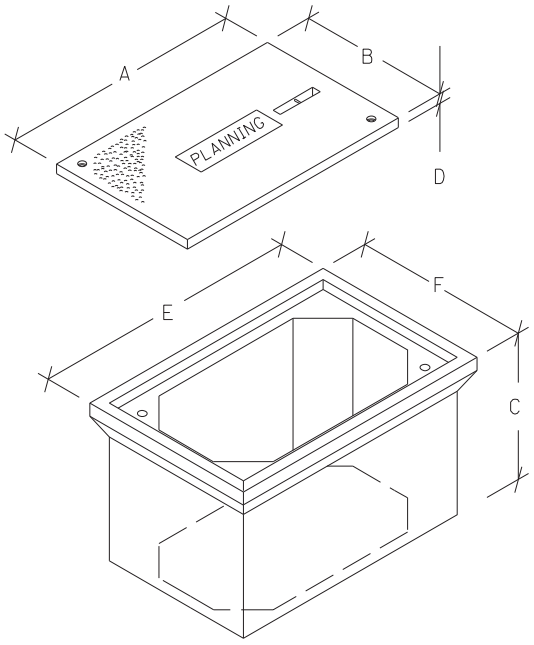
TERMINAL STRIP (TYP.)



ELEVATION

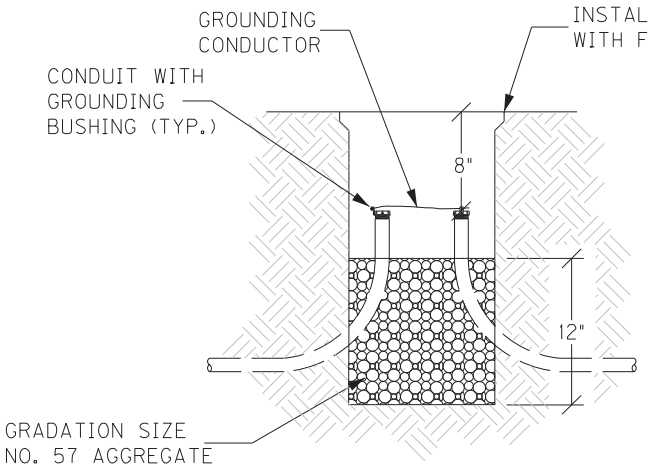
JUNCTION BOX 10"x8"X4"

NOT TO SCALE



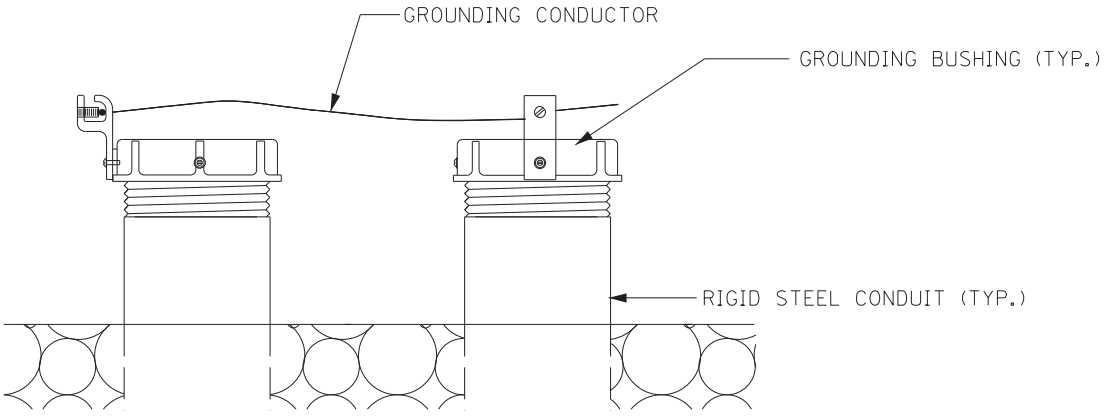
JUNCTION BOX DIMENSIONS (NOMINAL)						
	A	B	C	D*	E	F
TYPE A	23"	14"	18"	2"	25"	16"
TYPE B	18"	11"	12"	1¾"	20"	13"
TYPE C	36"	24"	30"	3"	38"	26"

* MINIMUM
STACKABLE BOXES ARE PERMITTED



ELEVATION

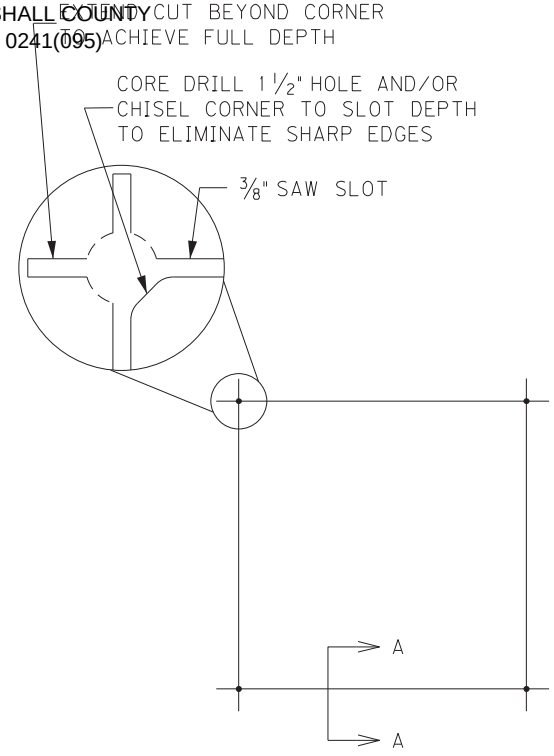
WHERE REQUIRED, JUNCTION BOX SHALL BE ORIENTED SUCH THAT THE DIMENSIONS COMPLY WITH THE NATIONAL ELECTRICAL CODE.



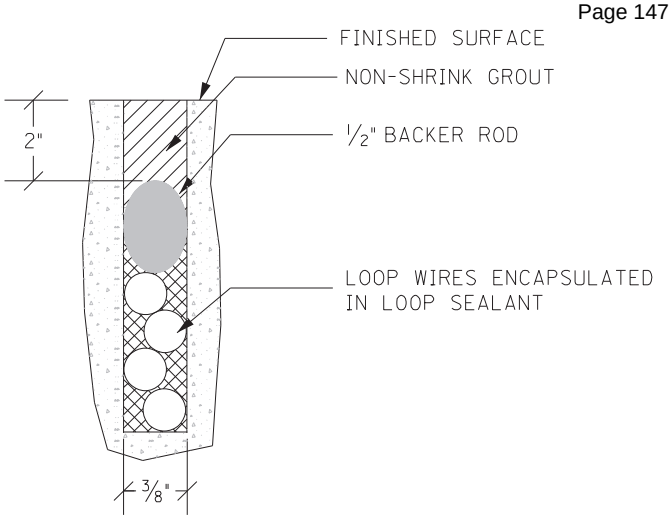
GROUNDING DETAIL

JUNCTION BOX - TYPE A, TYPE B, TYPE C

NOT TO SCALE



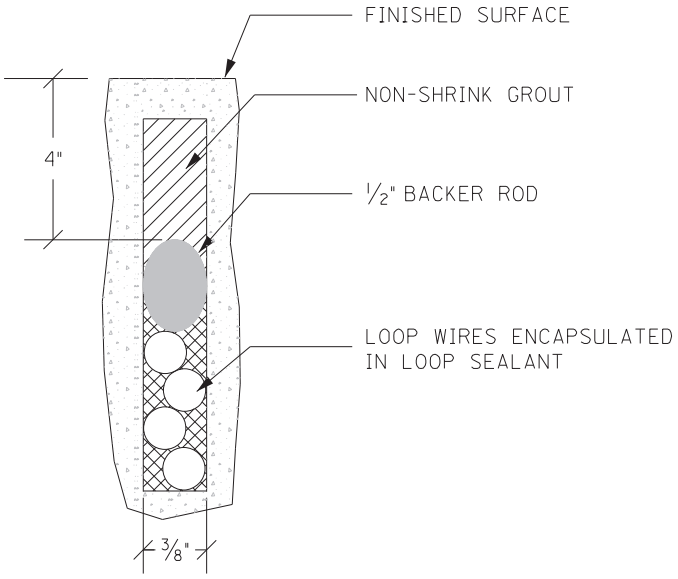
SAW CUT PLAN



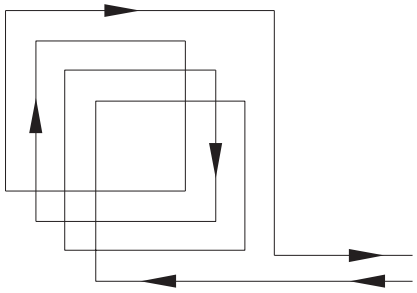
SECTION A-A (CONCRETE)

UNLESS SPECIFIED OTHERWISE, ALL LOOPS SHALL BE 6' x 6' SQUARE, CENTERED IN EACH LANE, WITH FOUR TURNS OF 14 AWG LOOP WIRE.

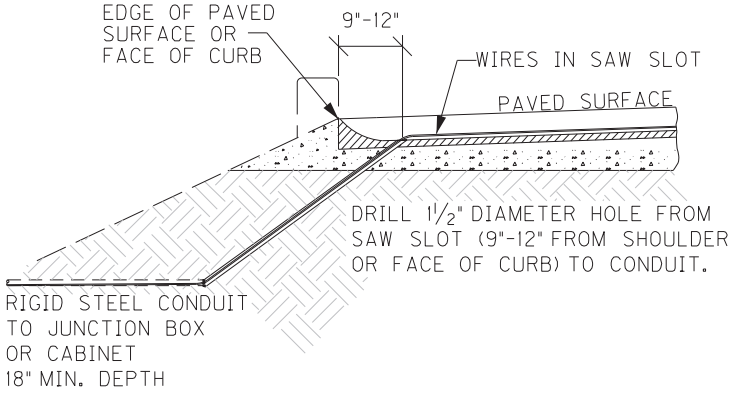
ADJACENT SAW SLOTS SHALL BE A MINIMUM OF 12" APART.



SECTION A-A (ASPHALT)



WIRING PLAN

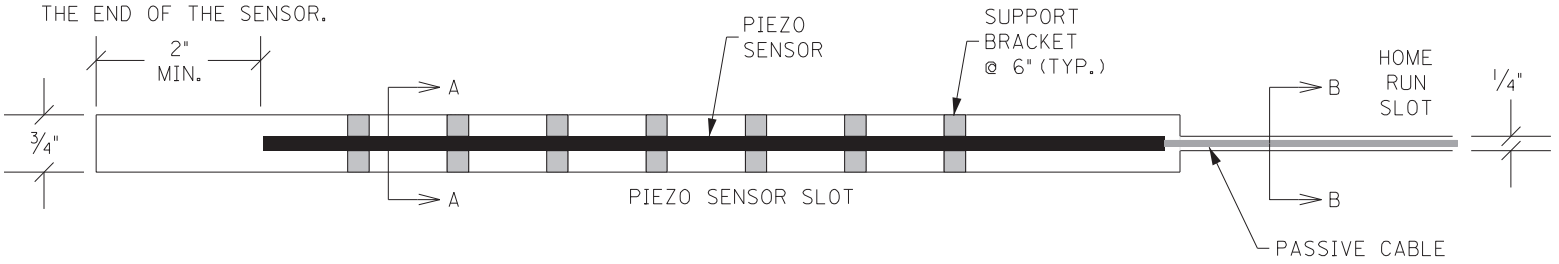


SAW SLOT EDGE OF PAVEMENT TRANSITION

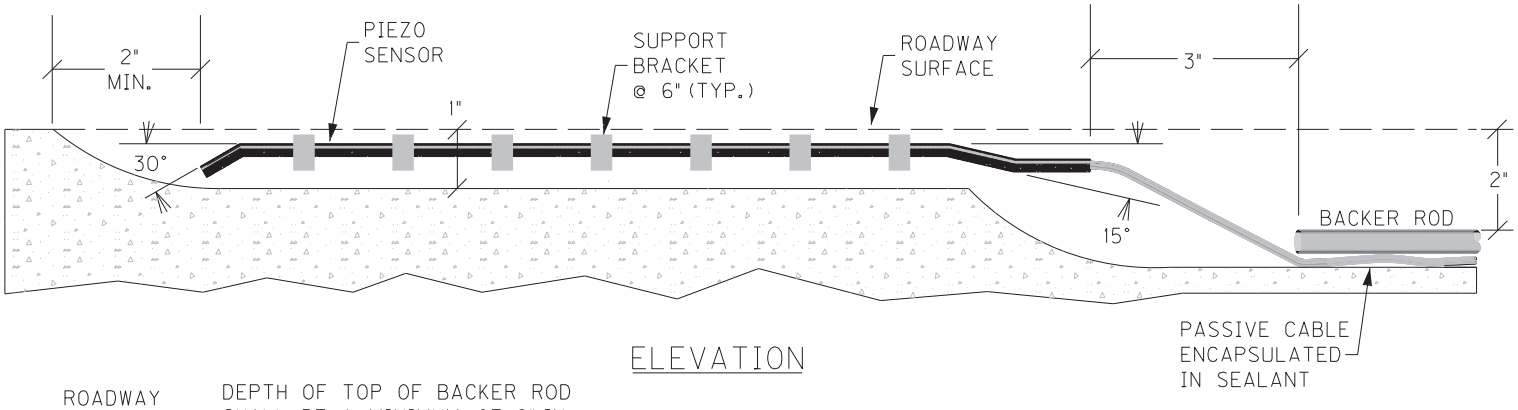
INDUCTIVE LOOP DETECTOR

NOT TO SCALE

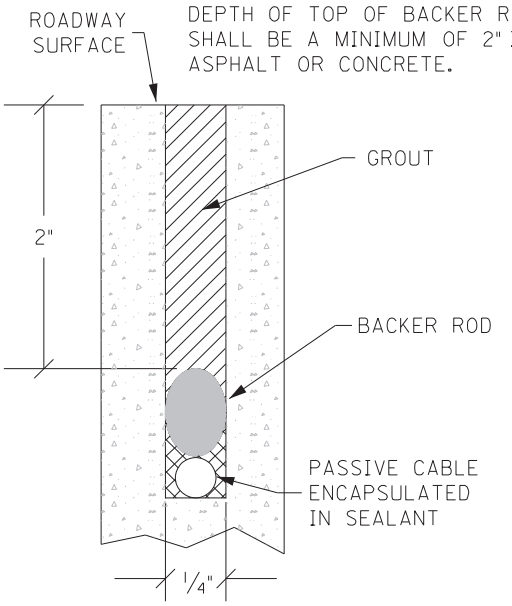
EXTEND SAW SLOT A
2" MIN. OF 2" BEYOND
THE END OF THE SENSOR.



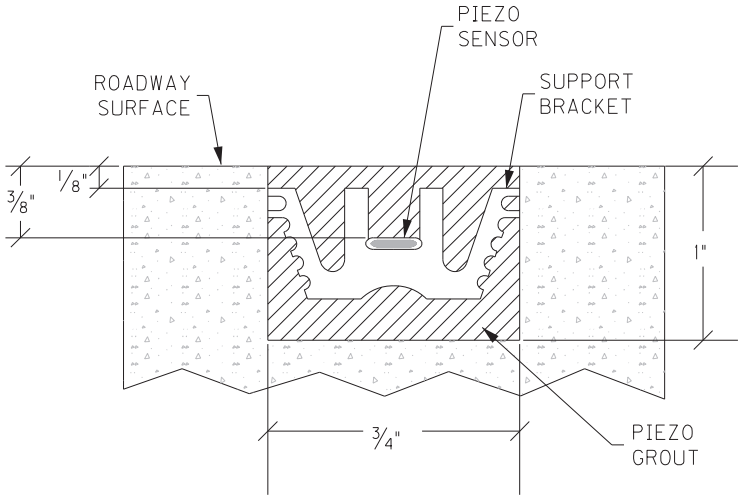
PLAN



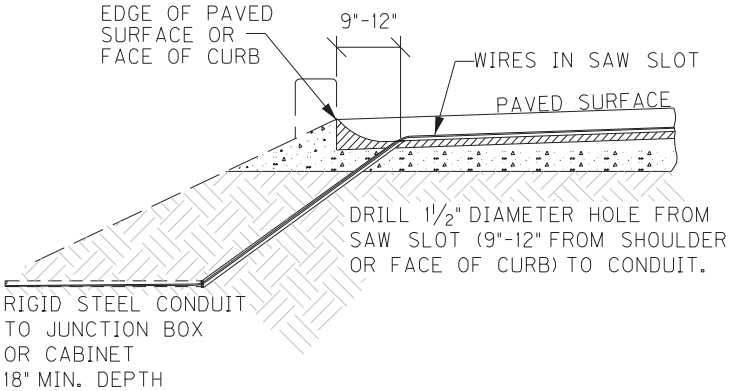
ELEVATION



SECTION B-B



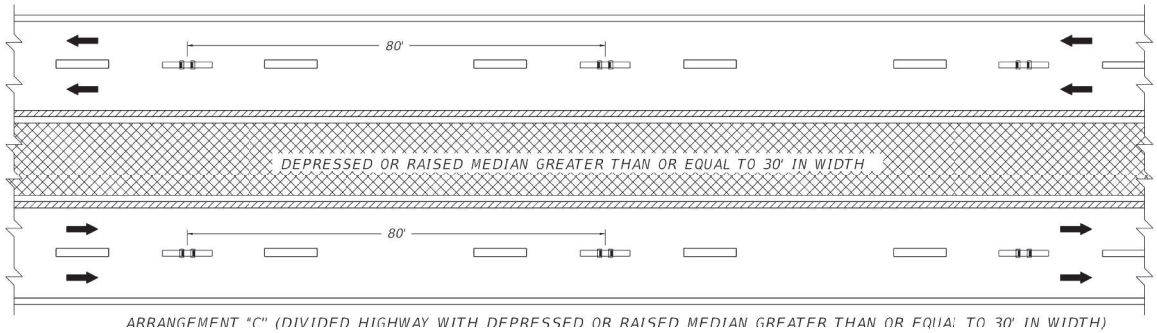
SECTION A-A



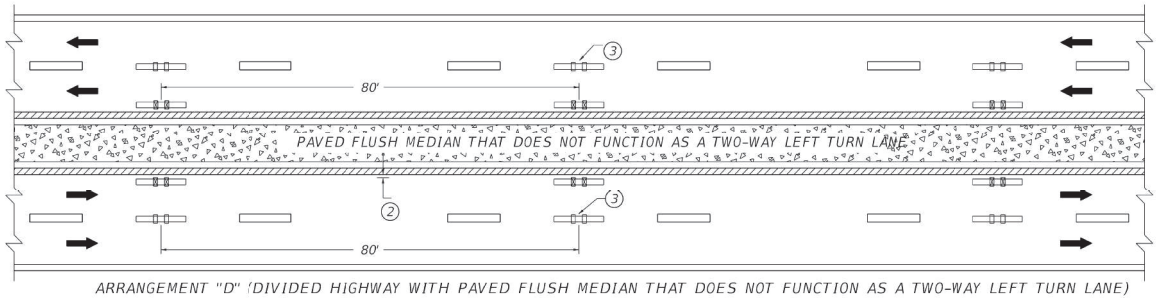
SAW SLOT EDGE OF PAVEMENT TRANSITION

PIEZOELECTRIC SENSOR INSTALLATION

NOT TO SCALE



ARRANGEMENT "C" (DIVIDED HIGHWAY WITH DEPRESSED OR RAISED MEDIAN GREATER THAN OR EQUAL TO 30' IN WIDTH)



ARRANGEMENT "D" (DIVIDED HIGHWAY WITH PAVED FLUSH MEDIAN THAT DOES NOT FUNCTION AS A TWO-WAY LEFT TURN LANE)

~ NOTES ~

1. MARKERS INSTALLED ALONG LANE LINES SHOULD BE PLACED BETWEEN AND IN LINE WITH THE SKIPS.
2. MARKERS INSTALLED ALONG EDGE LINES SHOULD BE PLACED SO THAT THE NEAR EDGE OF THE GROOVE IS NO MORE THAN 1" FROM THE NEAR EDGE OF THE LINE.
3. IF WIDTH OF PAVED FLUSH MEDIAN IS GREATER THAN OR EQUAL TO 30', BI-DIRECTIONAL (WHITE-RED) MARKERS SHALL BE USED ALONG THE LANE LINES IN LIEU OF MONO-DIRECTIONAL (WHITE) MARKERS.
4. MARKERS SHALL NOT BE INSTALLED ON TOP OF THE PAVEMENT JOINT. OFFSET MARKERS A MINIMUM OF 2" FROM THE PAVEMENT JOINT. ENSURE THAT THE FINISHED LINE OF MARKERS IS STRAIGHT WITH MINIMAL LATERAL DEVIATION. MARKERS MAY BE ELIMINATED OR PLACEMENT ADJUSTED AT THE DISCRETION OF THE ENGINEER.
5. MARKERS SHALL BE INSTALLED AT 40' SPACING ALONG SOLID WHITE AUXILIARY LANES. MARKER COLOR SHALL MATCH THE MARKERS INSTALLED ALONG THE WHITE LANE LINES.

BID ITEMS	UNIT TO BID
06610 - INLAID PAVEMENT MARKER - MW	EACH
06612 - INLAID PAVEMENT MARKER - BY	EACH
06613 - INLAID PAVEMENT MARKER - B W/R	EACH

LEGEND

- BI-DIRECTIONAL PAVEMENT MARKER (YELLOW)
- BI-DIRECTIONAL PAVEMENT MARKER (WHITE-RED)
- MONO-DIRECTIONAL PAVEMENT MARKER (WHITE)
- MARKINGS (YELLOW)
- MARKINGS (WHITE)
- FLUSH MEDIAN
- DEPRESSED OR RAISED MEDIAN

DRAWING NOT TO SCALE

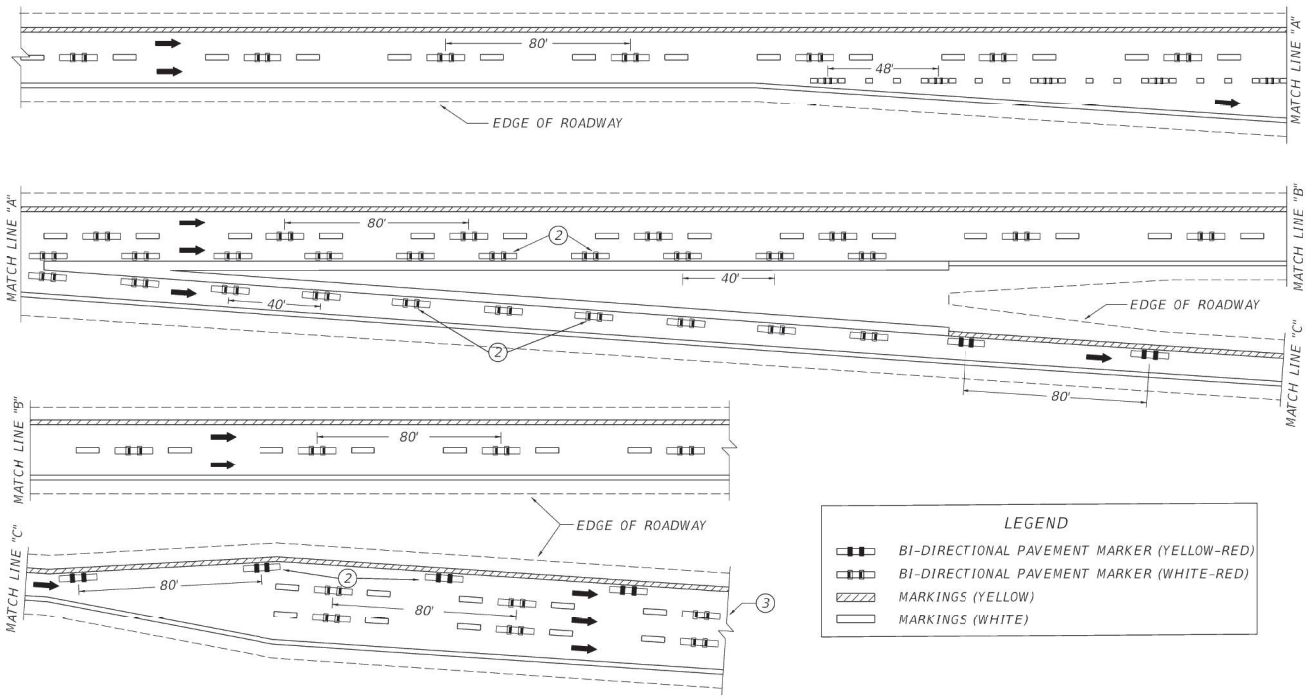
SUBMITTED _____ DIVISION DIRECTOR 06-09-21 DATE

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

DRAWING TITLE: SEPIA 007 - INLAID PAVEMENT MARKER ARRANGEMENTS MULTI-LANE ROADWAYS

ITEM NO. 1-20034 COUNTY OF MARSHALL
SHEET NO. -

OpenRoads Designer v10.16.0.80 USER: cwillmerdinger DATE PLOTTED: 8/7/2015 9:53:17 AM FILE NAME: C:\PWWORK\KYTC_CWILLMERDINGER\D1859957\SEPIA007.DGN



~ NOTES ~

1. MARKERS INSTALLED ALONG LANE LINES SHALL BE PLACED BETWEEN AND IN LINE WITH THE SKIPS.
2. MARKERS INSTALLED ALONG EDGE LINES SHALL BE PLACED SO THAT THE NEAR EDGE OF THE GROOVE IS NO MORE THAN 1" FROM THE NEAR EDGE OF THE LINE.
3. MARKERS SHALL BE CONTINUED ALONG THE ENTIRE LENGTH OF THE RAMP UNTIL THE INTERSECTION WITH THE CROSS-STREET.
4. MARKERS SHALL NOT BE INSTALLED ON TOP OF THE PAVEMENT JOINT. OFFSET MARKERS A MINIMUM OF 2" FROM THE PAVEMENT JOINT. ENSURE THAT THE FINISHED LINE OF MARKERS IS STRAIGHT WITH MINIMAL LATERAL DEVIATION. MARKERS MAY BE ELIMINATED OR PLACEMENT ADJUSTED AT THE DISCRETION OF THE ENGINEER.

BID ITEMS	UNIT TO BID
06613 - INLAID PAVEMENT MARKER - B-W/R	EACH
06614 - INLAID PAVEMENT MARKER - B-Y/R	EACH

DRAWING NOT TO SCALE

USE WITH CUR. STD. DWG.
TPM-201

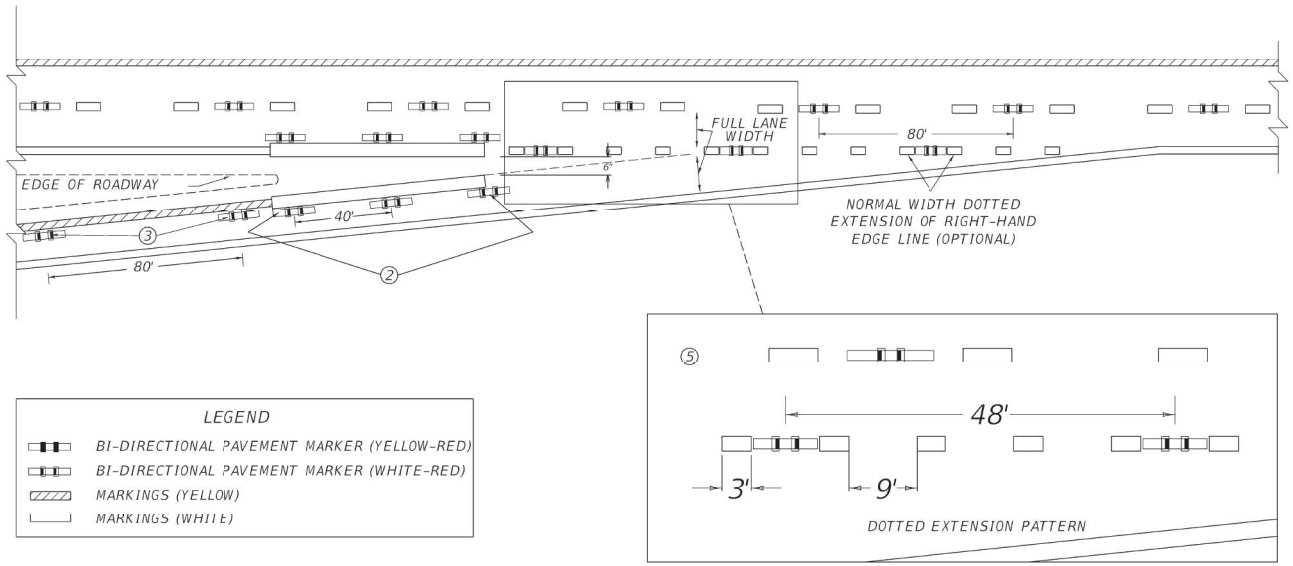
SUBMITTED _____ DIVISION DIRECTOR 06-09-21 DATE

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

DRAWING TITLE: SEPIA 011 - INLAID PAVEMENT MARKER ARRANGEMENT EXIT GORE AND OFF RAMP

ITEM NO. 1-20034 COUNTY OF MARSHALL
SHEET NO. -

OpenRoads Designer v10.16.0.80 USER: cwillmerdinger DATE PLOTTED: 8/7/2015 9:53:17 AM FILE NAME: C:\PWWORK\KYTC_CWILLMERDINGER\D1859962\SEPIA 011.DGN



~ NOTES ~

1. MARKERS INSTALLED ALONG LANE LINES SHALL BE PLACED BETWEEN AND IN LINE WITH THE SKIPS.
2. MARKERS INSTALLED ALONG EDGE LINES SHALL BE PLACED SO THAT THE NEAR EDGE OF THE GROOVE IS NO MORE THAN 1" FROM THE NEAR EDGE OF THE LINE.
3. BI-DIRECTIONAL (YELLOW-RED) MARKERS ARE TO BE PLACED ALONG THE ENTIRE LENGTH OF THE YELLOW EDGE LINE FROM THE INTERSECTION OF THE CROSS-STREET TO THE BEGINNING OF THE GORE AREA.
4. ON TWO-LANE, TWO-WAY HIGHWAYS, MARKERS INSTALLED ALONG GORE MARKINGS SHALL BE MONO-DIRECTIONAL (WHITE).
5. IF DOTTED EXTENSIONS ARE USED IN THE TAPERED ACCELERATION LANE, MARKERS SHALL BE INSTALLED AS DEPICTED.
6. MARKERS SHALL NOT BE INSTALLED ON TOP OF THE PAVEMENT JOINT. OFFSET MARKERS A MINIMUM OF 2" FROM THE PAVEMENT JOINT. ENSURE THAT THE FINISHED LINE OF MARKERS IS STRAIGHT WITH MINIMAL LATERAL DEVIATION. MARKERS MAY BE ELIMINATED OR PLACEMENT ADJUSTED AT THE DISCRETION OF THE ENGINEER.

BID ITEMS	UNIT TO BID
06613 - INLAID PAVEMENT MARKER - B-W/R	EACH
06614 - INLAID PAVEMENT MARKER - B-Y/R	EACH

DRAWING NOT TO SCALE

USE WITH CUR. STD. DWG. TPM-200

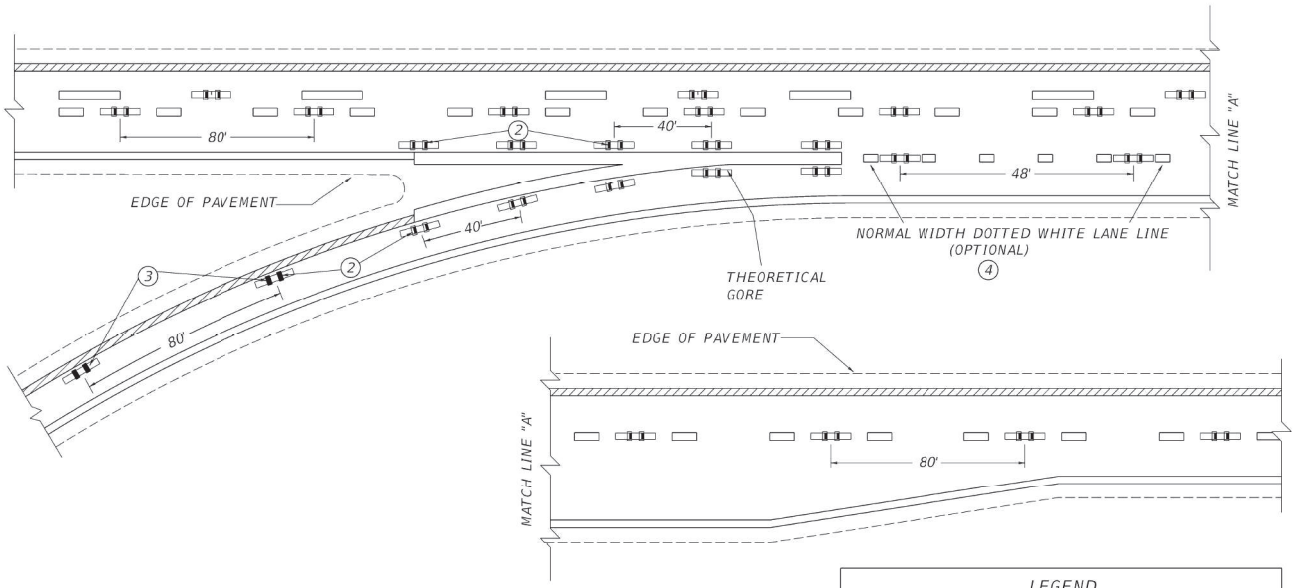
SUBMITTED _____ DIVISION DIRECTOR 06-09-21 DATE

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

DRAWING TITLE: SEPIA 013 - INLAID PAVEMENT MARKER ARRANGEMENT ON-RAMP WITH TAPERED ACCELERATION LANE

ITEM NO. 1-20034 COUNTY OF MARSHALL
SHEET NO. RXXX

OpenRoads Designer v10.16.0.80 USER: cwillmerdinger DATE PLOTTED: 8/7/2015 9:53:17 AM FILE NAME: C:\PWWORK\KYTC_CWILLMERDINGER\D1859964\SEPIA013.DGN



LEGEND

- BI-DIRECTIONAL PAVEMENT MARKER (YELLOW-RED)
- BI-DIRECTIONAL PAVEMENT MARKER (WHITE-RED)
- MARKINGS (YELLOW)
- MARKINGS (WHITE)

~ NOTES ~

1. MARKERS INSTALLED ALONG LANE LINES SHALL BE PLACED BETWEEN AND IN LINE WITH THE SKIPS.
2. MARKERS INSTALLED ALONG EDGE LINES SHALL BE PLACED SO THAT THE NEAR EDGE OF THE GROOVE IS NO MORE THAN 1" FROM THE NEAR EDGE OF THE LINE.
3. BI-DIRECTIONAL (YELLOW-RED) MARKERS ARE TO BE PLACED ALONG THE ENTIRE LENGTH OF THE YELLOW EDGE LINE FROM THE INTERSECTION OF THE CROSS-STREET TO THE BEGINNING OF THE GORE AREA.
4. IF DOTTED EXTENSIONS ARE USED IN THE TAPERED ACCELERATION LANE, MARKERS SHALL BE INSTALLED AS DEPICTED.
5. MARKERS SHALL NOT BE INSTALLED ON TOP OF THE PAVEMENT JOINT. OFFSET MARKERS A MINIMUM OF 2" FROM THE PAVEMENT JOINT. ENSURE THAT THE FINISHED LINE OF MARKERS IS STRAIGHT WITH MINIMAL LATERAL DEVIATION. MARKERS MAY BE ELIMINATED OR PLACEMENT ADJUSTED AT THE DISCRETION OF THE ENGINEER.
6. THE NORMAL WIDTH DOTTED WHITE LANE LINE SHALL EXTEND FOR AT LEAST HALF THE LENGTH OF THE FULL-WIDTH ACCELERATION LANE PLUS TAPER MEASURED FROM THE THEORETICAL GORE.

BID ITEMS AND UNIT TO BID

INLAID PAVEMENT MARKER (B-W/R, B-Y/R, BY, MW, MY)	EACH

DRAWING NOT TO SCALE
USE WITH CUR. STD. DWG.
TPM-200

SUBMITTED _____ DIVISION DIRECTOR 06-09-21 DATE

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

DRAWING TITLE: SEPIA 014 - INLAID PAVEMENT MARKER ARRANGEMENT ON-RAMP WITH PARALLEL ACCELERATION LANE

ITEM NO. 1-20034 COUNTY OF MARSHALL
SHEET NO. -

OpenRoads Designer v10.16.0.80 USER: cwillmerdinger DATE PLOTTED: 8/7/2015 9:53:17 AM FILE NAME: C:\PWWORK\KYTC_CWILLMERDINGER\D1859965\SEPIA014.DGN

CULVERT PIPE

PIPE MATERIAL	pH RANGE ③					
	(ACID) L (< 5)		M (5 - 9) ④		(BASE) H (> 9)	
	COATING	PAVING	COATING	PAVING	COATING	PAVING
ALUMINUM-COATED TYPE 2 STEEL	-	-	HB	I	-	-
ALUMINUM ALLOY	B	I	HB	I	B	I
REINFORCED CONCRETE	-	EP	-	-	-	EP
PLASTIC	-	-	-	-	-	-

STORM SEWER AND ENTRANCE PIPE

PIPE MATERIAL	pH RANGE					
	(ACID) L (< 5)		M (5 - 9)		(BASE) H (> 9)	
	COATING	PAVING	COATING	PAVING	COATING	PAVING
ALUMINUM-COATED TYPE 2 STEEL	B	-	AZ	-	B	-
ALUMINUM ALLOY	AL	-	AL	-	AL	-
STEEL GALVANIZED	P	-	P	-	P	-
REINFORCED CONCRETE	-	-	-	-	-	-
PLASTIC	-	-	-	-	-	-

HB - HALF ASPHALT COATED
B - FULLY ASPHALT COATED
P - POLYMERIC COATED (PRECOATED GALVANIZED)
EP - EXTRA PROTECTION
I - PAVED INVERT
AL - ALUMINUM ALLOY
AZ - ALUMINUM-COATED TYPE 2 STEEL

LEGEND

~ NOTES ~

1. EXCEPTIONS FOR STORM SEWERS:
   a. ANNULAR CORRUGATED PIPE > 24" DIA. SHALL BE FULLY LINED.
   b. HELICAL CORRUGATED PIPE > 24" DIA. SHALL BE FULLY LINED.
   c. HELICAL CORRUGATED PIPE < 24" DIA. SHALL NOT REQUIRE COATING, PAVING, OR LINING.
   d. SPIRAL RIB PIPE SHALL NOT REQUIRE COATING, PAVED INVERT, OR LINING.
2. EXCEPTIONS FOR ENTRANCE PIPE:
   a. COATINGS REQUIRED FOR LOW pH LEVELS.
   b. ENTRANCE PIPE GREATER THAN 30" DIA. SHALL BE CULVERT PIPE.

③ L = LOW pH RANGE (ACID)
M = MEDIUM pH RANGE
H = HIGH pH RANGE (BASE)

④ EXPECTATIONS FOR CULVERT PIPE:
   a. ALUMINUM COATED TYPE 2 STEEL IS ONLY PERMITTED IN pH RANGES OF 5 TO 9.

REVISION DATE: 05.13.2025
REVISION NUMBER: 02

SUBMITTED Rob Logan DIVISION DIRECTOR 05-13-2025 DATE
APPROVED STATE HIGHWAY ENGINEER DATE

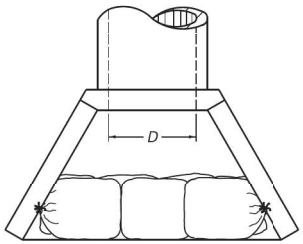
TYPICAL DRAINAGE INSTALLATIONS

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

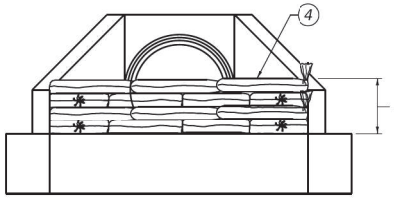
COATINGS, LINING, AND PAVING

FOR NON-STRUCTURAL PLATE PIPE

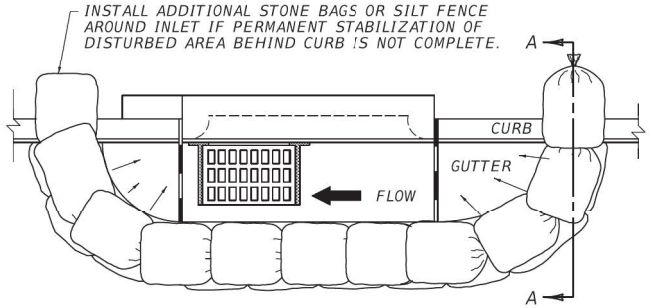
SEPIA NUMBER
SEPIA021



PLAN VIEW



FRONT ELEVATION



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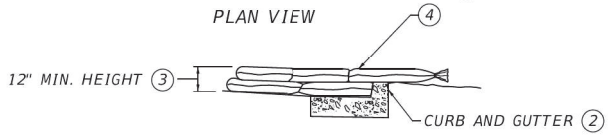
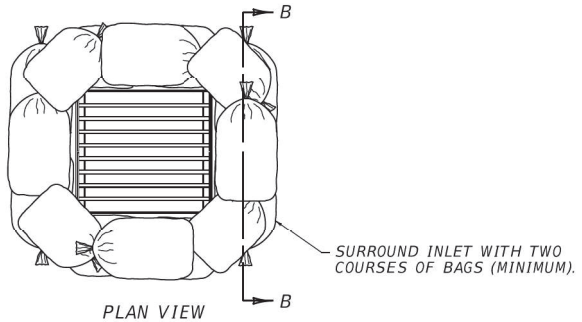


SECTION A~A



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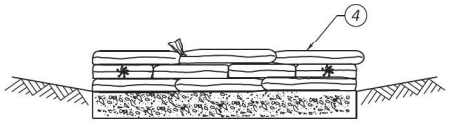


SECTION B~B

~ NOTES ~

BID ITEMS AND UNIT TO BID:

SILT TRAP TYPE C	EACH
CLEAN SILT TRAP TYPE C	EACH

1. SILT TRAP TYPE C SHALL INCLUDE GEOTEXTILE FABRIC BAGS, NO. 57 STONE, LABOR AND ALL INCIDENTALS NECESSARY FOR ONE COMPLETE INSTALLATION.
2. INLET PROTECTION IS SUITABLE FOR USE IN BOTH PAVED AND UNPAVED AREAS.
3. THE HEIGHT REQUIREMENT IS WAIVED IN CASES WHERE IT WILL CREATE AN UNACCEPTABLE PONDING SITUTATION ON THE PAVEMENT OR ON AN ADJACENT PROPERTY.
4. INTERWEAVE BAG ENDS TO FILL GAPS BETWEEN BAGS.
5. CONSTRUCT 18" X 30" BAGS OF NON-WOVEN CLASS 1 OR 2 GEOTEXTILE FABRIC CONFORMING TO SECTION 843 OF THE STANDARD SPECIFICATIONS. DOUBLE STITCH BAG SEAMS WITH 1 LB. POLYESTER THREAD. ATTACH ONE (1) TIE STRING TO EACH BAG. BAG OPENING SHALL BE ON 18" SIDE.
6. FILL BAGS WITH NO. 57 STONE BETWEEN ½ TO ⅔ FULL (50 LB TO 60 LB).
7. SILT TRAP TYPE C SHALL NOT BE USED IN BLUE LINE STREAMS.

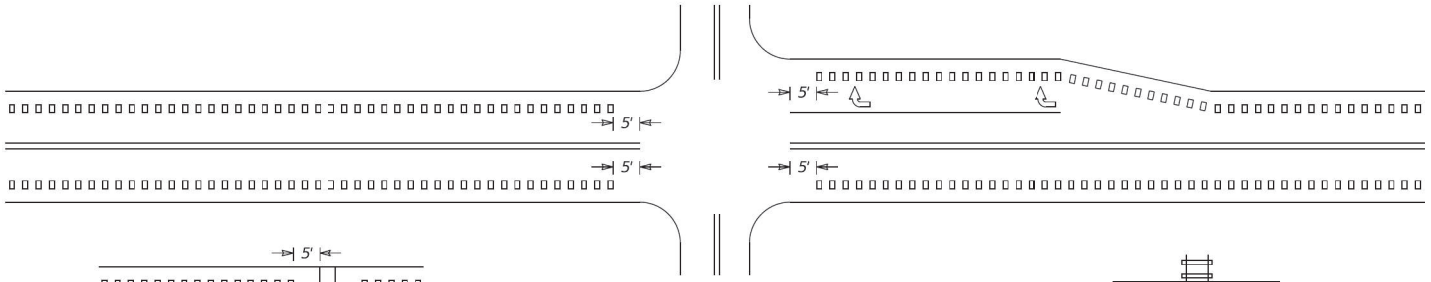
SUBMITTED W. T. Sharpe 05-08-2023
DIVISION DIRECTOR DATE

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
TEAM KENTUCKY

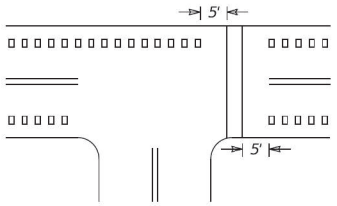
DRAWING TITLE: SEPIA 025 - SILT TRAP TYPE C

ITEM NO. 1-20034 | COUNTY OF MARSHALL | SHEET NO.

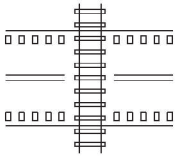
OpenRoads Designer v10.16.2.267 USER: cwillmerdinger FILE NAME: C:\PWWORK\KYTC_CWILLMERDINGER\D2168268\RDX230.DGN



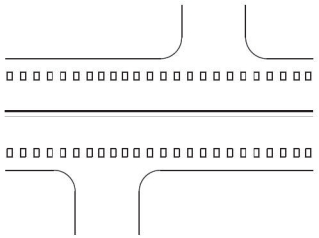
INTERSECTIONS WITH OR WITHOUT (1)
RIGHT TURN LANES



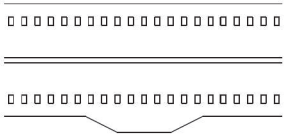
MARKED CROSSWALK (2)



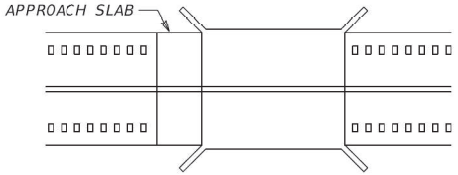
HIGHWAY-RAIL GRADE CROSSINGS (3)



DRIVEWAYS/MINOR
COMMERCIAL ENTRANCES (5)



MAILBOX TURNOUTS (6)



BRIDGE DECK/APPROACH SLAB (4)

~ NOTES ~

(1) EDGELINE RUMBLE STRIPS SHALL BE OMITTED THROUGH MAJOR INTERSECTIONS WITH, OR WITHOUT, RIGHT-TURN LANES. OMIT EDGELINE RUMBLE STRIPS APPROXIMATELY 5' IN ADVANCE OF THE AREA WHERE EDGELINE PAVEMENT MARKINGS HAVE BEEN OMITTED (NORMALLY WHERE THE SIDE STREET RADIUS INTERSECTS THE MAINLINE).

(2) EDGELINE RUMBLE STRIPS SHALL NOT BE INSTALLED THROUGH MARKED CROSSWALKS. OMIT EDGELINE RUMBLE STRIPS APPROXIMATELY 5 FT IN ADVANCE OF MARKED CROSSWALKS.

(3) EDGELINE RUMBLE STRIPS SHALL NOT BE INSTALLED ACROSS HIGHWAY-RAIL GRADE CROSSINGS.

(4) EDGELINE RUMBLE STRIPS SHALL NOT BE INSTALLED ON BRIDGE DECKS OR APPROACH SLABS.

(5) EDGELINE RUMBLE STRIPS SHALL BE INSTALLED THROUGH DRIVEWAYS & MINOR COMMERCIAL ENTRANCES.

(6) EDGELINE RUMBLE STRIPS SHALL BE INSTALLED THROUGH MAILBOX TURNOUTS.

7. EDGELINE RUMBLE STRIPS SHOULD BE OMITTED WHERE THE POSTED SPEED LIMIT IS 45 MPH OR LESS.

DRAWING NOT TO SCALE

USE WITH CUR. STD. DWGS.
TPR-120, TPR-125, AND
TPR-130

BID ITEMS AND UNIT TO BID
EDGELINE RUMBLE STRIPS LF

SUBMITTED _____ 08-21-2023
DIVISION DIRECTOR DATE

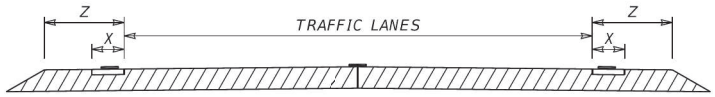
COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
TEAM KENTUCKY

DRAWING TITLE: SEPIA 028 - EDGELINE RUMBLE STRIP PLACEMENT DETAILS

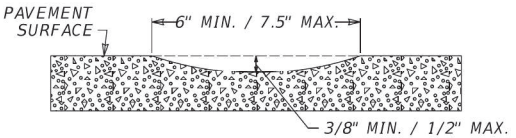
ITEM NO. 1-20034 | COUNTY OF MARSHALL | SHEET NO.

OpenRoads Designer v10.12.02.4 USER: cwillmerdinger FILE NAME: C:\PWWORK\KYTC_CWILLMERDINGER\D2267497\TPR115.DGN

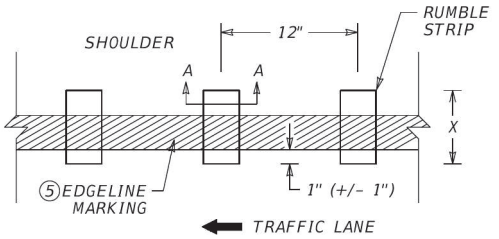
SHOULDER WIDTH (Z) ②	RUMBLE TYPE ①	RUMBLE LENGTH (X) ③
>=1' up to <3'	ELRS	8"
>=3' up to <6.5'	ELRS ⑥	8"
>=6.5' up to <8'	ELRS ⑥	12"
>=8'	ELRS ⑥	16"



PAVEMENT CROSS-SECTION
(FOR EDGELINE RUMBLE STRIPS)



SECTION A-A



~ NOTES ~

① FOR MULTI-LANE ROADWAYS, THE RUMBLE TYPE TO BE INSTALLED IS EDGELINE RUMBLE STRIPS (ELRS).

② FOR EDGELINE RUMBLE STRIPS, THE SHOULDER WIDTH (Z) IS FROM THE LANE SIDE EDGE OF THE EDGELINE RUMBLE STRIP TO THE OUTSIDE EDGE OF SHOULDER PAVEMENT.

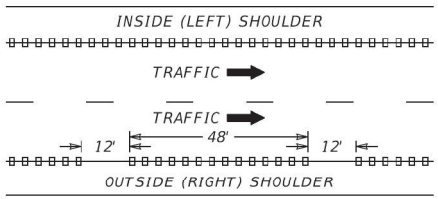
③ THE RUMBLE LENGTH (X) MAY BE MODIFIED AS DIRECTED BY THE ENGINEER.

4. THE DIMENSIONS SHOWN ON THIS DRAWING ARE APPROXIMATE. MAINTAIN RUMBLE STRIP DIMENSIONS AND SPACING AS MUCH AS POSSIBLE.

⑤ PLACE THE EDGELINE MARKING SO THAT THE LANE SIDE EDGE OF THE MARKING GENERALLY FOLLOWS THE LANE SIDE EDGE OF THE RUMBLE STRIP. THE TARGET IS FOR THE LANE SIDE EDGE OF THE MARKING TO BE 1" BEYOND THE LANE SIDE EDGE OF THE RUMBLE STRIP WITH AN ACCEPTABLE VARIANCE OF +/- 1".

⑥ EDGELINE RUMBLE STRIPS ALONG OUTSIDE (RIGHT) SHOULDERS THAT ARE 3' OR WIDER SHALL INCLUDE BICYCLE GAPS AS DETAILED. BICYCLE GAPS ARE NOT REQUIRED ON INSIDE (LEFT) SHOULDERS.
NOTE: BICYCLE GAPS SHALL NOT BE USED ON INTERSTATES AND PARKWAYS.

7. RUMBLE STRIPS SHOULD BE OMITTED WHERE THE POSTED SPEED LIMIT IS 45 MPH OR LESS, OR WHEN THE SHOULDER WIDTH (Z) IS LESS THAN 1 FT.



BICYCLE GAPS ⑥

DRAWING NOT TO SCALE

USE WITH CUR. STD. DWG.
TPR-115

SUBMITTED _____ DIVISION DIRECTOR 08-21-2023 DATE

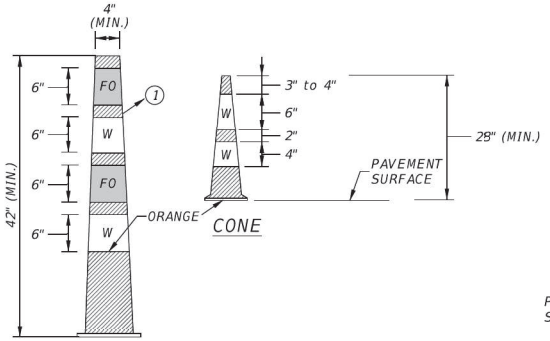
BID ITEMS AND UNIT TO BID
SHOULDER RUMBLE STRIPS LF
EDGELINE RUMBLE STRIPS LF

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
TEAM KENTUCKY

DRAWING TITLE: SEPIA 030 - EDGELINE RUMBLE STRIP DETAILS MULTI-LANE ROADWAYS AND RAMPS

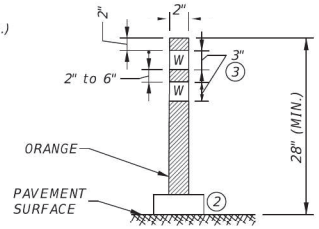
ITEM NO. 1-20034 | COUNTY OF MARSHALL | SHEET NO.

OpenRoads Designer v10.12.02.4 USER: cwillmerdinger FILE NAME: C:\PWWORK\KYTC_CWILLMERDINGER\D2267500\TPR130.DGN



GRABBER CONE

CONE



TUBULAR MARKER

~NOTES~

1. THE MAXIMUM DISTANCE BETWEEN THE EDGES OF ADJACENT RETROREFLECTIVE SHEETING STRIPS SHALL BE 3 INCHES.
2. KEEP BALLAST TO A MINIMUM BASE AREA NEEDED THAT WILL NOT IMPEDE THE TRAVEL LANE.
3. FOR TUBULAR MARKERS 42" OR TALLER, USE 6" ALTERNATING ORANGE AND WHITE STRIPES WITH THE TOP STRIPE BEING ORANGE.
4. RETROREFLECTIVE SHEETING FOR CHANNELIZING DEVICES UTILIZED IN HIGHWAY WORK ZONES SHALL BE TYPE IV OR HIGHER.
5. CHANNELIZING DEVICES SHALL SATISFY MASH CRASH EVALUATION CRITERIA.
6. THE NAME AND PHONE NUMBER OF THE CONTRACTOR OR SUPPLIER MAY BE DISPLAYED ON THE NON-REFLECTIVE SURFACE OF CHANNELIZING DEVICES. THE LETTERS AND NUMBERS OF THE NAME AND PHONE NUMBER SHALL BE NON-REFLECTIVE AND NOT OVER 2 INCHES IN HEIGHT.
7. WHERE BARRICADES EXTEND ENTIRELY ACROSS A ROADWAY, THE STRIPES SHOULD SLOPE DOWNWARD IN THE DIRECTION TOWARD WHICH ROAD USERS MUST TURN. WHERE BOTH RIGHT AND LEFT TURNS ARE PROVIDED, THE BARRICADE STRIPES SHOULD SLOPE DOWNWARD IN BOTH DIRECTIONS FROM THE CENTER OF THE BARRICADE OR BARRICADES. WHERE NO TURNS ARE INTENDED, THE STRIPES SHOULD BE POSITIONED TO SLOPE DOWNWARD TOWARD THE CENTER OF THE BARRICADE OR BARRICADES.

BID ITEMS AND UNIT TO BID

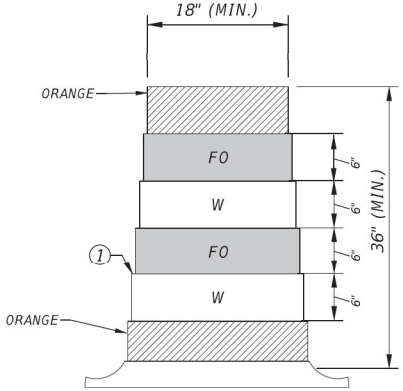
ITEM # 02014	BARRICADE - TYPE III	EACH
ITEM # 03225	TUBULAR MARKERS	EACH

ALL OTHER CHANNELIZING DEVICES DEPICTED ARE TYPICALLY CONSIDERED INCIDENTAL TO THE MAINTAIN AND CONTROL TRAFFIC ITEM.

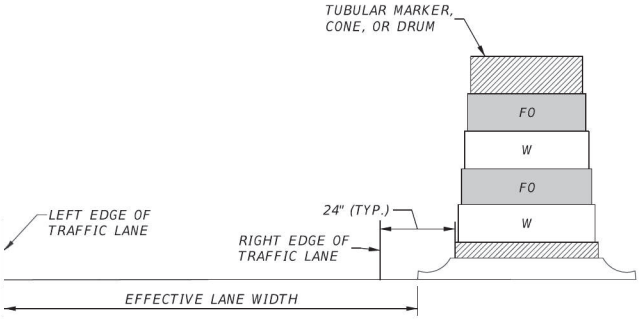
~LEGEND~

W = WHITE RETROREFLECTIVE SHEETING

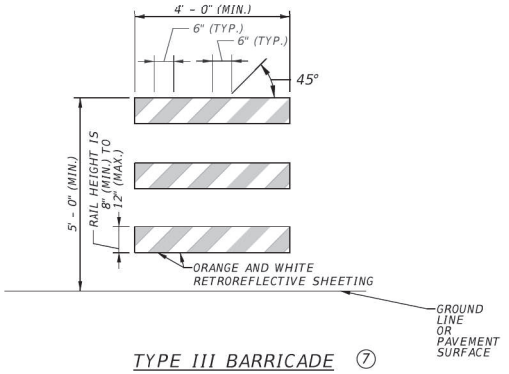
FO = FLUORESCENT ORANGE RETROREFLECTIVE SHEETING



DRUM



TYPICAL PLACEMENT OF CHANNELIZING DEVICES



TYPE III BARRICADE ⑦

SUBMITTED _____ DIVISION DIRECTOR 01/17/24 DATE

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
TEAM KENTUCKY

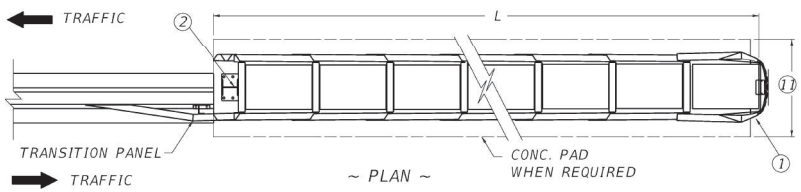
DRAWING TITLE: SEPIA 033 - CHANNELIZING DEVICES (INCLUDING BARRICADES)

ITEM NO. 1-20034 | COUNTY OF MARSHALL | SHEET NO.

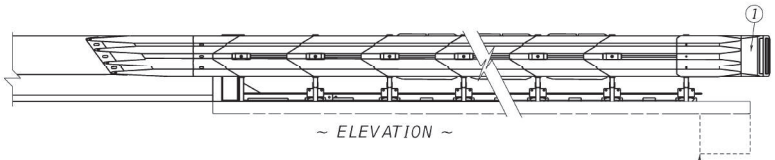
OpenRoads Designer v10.12.02.4 USER: cwillmerdinger FILE NAME: C:\PWWORK\KYTC_CWILLMERDINGER\D2286929\SEPIA033.DGN

CLASS	SPEED (MPH)	ATTENUATOR			
		MODEL	PRODUCT NAME	MANUFACTURER	LENGTH
B	45 & LESS	TL2	SCI 70 GM IMPACT ATTENUATOR SMART CUSHION	HILL AND SMITH OF COLUMBUS, OHIO	13'-6"
			3-BAY QUADGUARD M10	VALTIR OF DALLAS, TEXAS	13'-0"
B	OVER 45	TL3	SCI 100 GM SMART CUSHION	HILL AND SMITH OF COLUMBUS, OHIO	21'-6"
			6-BAY QUADGUARD M10	VALTIR OF DALLAS, TEXAS	22'-0"
*C	OVER 45	TL3	SCI 100 GM SMART CUSHION	HILL AND SMITH OF COLUMBUS, OHIO	21'-6"
			QUADGUARD ELITE M10	VALTIR OF DALLAS, TEXAS	27'-2"

*A TYPE VI-CLASS C CAN BE USED AT THE CONTRACTOR'S DISCRETION.



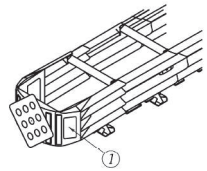
~ PLAN ~



~ ELEVATION ~

ADDITIONAL CONCRETE PAD CONSTRUCTION MAY BE PER MANUFACTURER SPECIFICATIONS

~ CONCRETE PAD SECTION ~
(PER MANUFACTURER SPECIFICATIONS)
REFER TO NOTES 11 13



~ PICTORIAL VIEW ~

~ NOTES ~

1. NOSE ASSEMBLY (OBJECT MARKER TYPE 1 AS NECESSARY).
2. CONSTRUCTION ZONE BACKUP FOR BT.
3. CRASH CUSHION TYPE VI , CLASS B, ☆ , △.
   ☆ EITHER TEST LEVEL 2 (TL2) OR TEST LEVEL 3 (TL3), AS REQUIRED.
   △ SEE "CONNECTION DETAILS OF CRASH CUSHION TYPE VI TO DOUBLE FACE GUARDRAIL", RBC-110.
4. CRASH CUSHION TYPE VI-BT IS DEPICTED ATTACHED TO A CONCRETE BARRIER (TEMPORARY).
5. WHEN CRASH CUSHION TYPE VI-BT IS ATTACHED TO STEEL "W" BEAM GUARDRAIL (DOUBLE FACE), ALL APPLICABLE DETAILS SHOWN ON RBC-110 , "CONNECTION DETAIL OF CRASH CUSHION TYPE VI TO DOUBLE FACE GUARDRAIL" SHALL BE REQUIRED.
6. WHEN CRASH CUSHION TYPE VI-BT IS ATTACHED TO STEEL "W" BEAM GUARDRAIL (DOUBLE FACE), THE TRANSITION PANEL SHALL BE ELIMINATED.
7. IN A TWO-WAY TRAFFIC SITUATION FOR A 6" TOP WIDTH WALL, THE UNIT SHALL BE OFFSET FROM THE CENTERLINE OF THE WALL, AS SHOWN IN THE PLAN VIEW. FOR A 12" TOP WIDTH WALL, THE UNIT SHALL BE CENTERED ON THE END OF THE BARRIER.
8. FOR ONE-WAY APPROACH TRAFFIC THE UNIT SHALL BE CENTERED ON THE END OF THE BARRIER.
9. THE COMPLETE INSTALLATION SHALL MEET ALL APPLICABLE REQUIREMENTS OF HILL AND SMITH OR VALTIR.
10. ANCHORAGE DEVICES TO SECURE THE CRASH CUSHION TO THE EXISTING SURFACE SHALL BE SHOWN ON APPROVED SHOP DRAWINGS.
11. THE CONRETE PAD, PAD EXCAVATION AND STEEL REINFORCEMENT, INSTALLED IN PLACE SHALL BE INCLUDED IN THE UINT PRICE BID FOR CRASH CUSHION TYPE VI. DIMENSION AND REINFORCEMENT SPECIFICATIONS FOR CONCRETE PADS ARE TO BE PROVIDED BY THE MANUFACTURER. THE PAD WILL NOT BE REQUIRED WHEN UNIT IS CONSTRUCTED ON RIGID PAVEMENT.
12. THE PAD WILL NOT BE REQUIRED WHEN THE UNIT IS CONSTRUCTED ON EXISTING PAVEMENT OR BRIDGES AND THE COST OF ANCHORING SHALL BE INCLUDED IN THE UNIT PRICE OF THE CRASH CUSHION.
13. CRASH CUSHIONS ARE TO BE INSTALLED PER MANUFACTURER SPECIFICATIONS, INCLUDING THE CONCRETE PAD. THE MANUFACTURER SHALL FURNISH TWO (2) SETS OF SHOP DRAWINGS TO THE CONTRACTOR WITH EACH INSTALLATION.

USE WITH CUR. STD. DWG.
RBC-110

SUBMITTED W. T. Seyon 05-03-2024
DIVISION DIRECTOR DATE

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
TEAM KENTUCKY

DRAWING TITLE: SEPIA 037 - CRASH CUSHION TYPE VI BT AND CT (TL2 AND TL3)

ITEM NO. 1-20034 | COUNTY OF MARSHALL | SHEET NO.

OpenRoads Designer v10.12.02.4 USER: corinne.schurman FILE NAME: C:\PWWORK\CORRINE.SCHURMAN\D2341926\SEPIA037.DGN

~ NOTES ~

(100) DIMENSIONS ARE MEASURED TO THE CENTER OF THE GUARDRAIL POSTS.

ON THE PLAN SHEETS, THE DESIGNER MUST INCLUDE THE STATION AND OFFSET MEASUREMENTS FOR THE CENTER OF THE GUARDRAIL POSTS OF THE BULLNOSE. REFER TO SHEET 3 FOR DETAILS.

REFER TO DETAIL A FOR MORE INFORMATION.

(101) U-BOLT CABLE CLIPS (3 PER CABLE) SPACED OUT ON NOSE, TO HOLD CABLE TO BACKSIDE OF THE RAIL.

(102) NOSE CABLE WITH SWAGGED END BUTTONS.

(103) NOSE CABLE ANCHOR PLATE (BACKSIDE OF SPLICE).

(104) THE SLACK IN THE NOSE CABLES SHALL BE EVENLY DISTRIBUTED BETWEEN THE CABLE CLIP FASTENERS AND POST NO. 1 ON EITHER SIDE OF THE NOSE.

(105) MINIMUM WORKING WIDTH 4'-2". GRADING INSIDE THE THRIE BEAM TERMINAL BEYOND POST 13 MAY BE ADJUSTED FOR DRAINAGE, PROVIDED THERE IS A MINIMUM OF 2 FEET OF FILL BEHIND THE POSTS TO ENSURE ADEQUATE SUPPORT FOR THE SYSTEM.

(106) MINIMUM WIDTH OF SYSTEM IS 14' - 9¼" MEASURED FROM FACE OF GUARDRAIL TO FACE OF GUARDRAIL.

(107) FIXED OBJECT OR OTHER OBSTACLE.

108 PARTS E1 THROUGH E4 ARE THRIE BEAM RAILS. SEE SHEET 8 FOR DETAILS.

- [E1] UNBENT STANDARD THRIE BEAM RAIL (POST 8 AND BEYOND)
- [E2] SLOTTED THRIE BEAM RAIL (POST 1B TO POST 1A)
- [E3] SLOTTED THRIE BEAM RAIL (POST 5 TO POST 8)
- [E4] SLOTTED THRIE BEAM RAIL (POST 1 TO POST 5)

(109) BEYOND POST 12 - CAN CONSTRUCT W-BEAM GUARDRAIL OR THRIE BEAM GUARDRAIL. FOR W-BEAM INSTALLATIONS, TRANSITION THE RAIL FROM POST 12 TO 13 BY USING A THRIE BEAM CONNECTOR (INCIDENTAL TO THE BULLNOSE TERMINAL BID ITEM) FOLLOWED BY A STANDARD POST AND BLOCK, SPACED AT 3' - 1½". CONTINUE BARRIER SYSTEM WITH STANDARD 6' - 3" POST SPACING, AND TRANSITION THE BULLNOSE RAIL HEIGHT TO 31" OVER A 12' -6" BEAM LENGTH. FOR ADDITIONAL DETAILS SEE RBR-001, RBR-005 AND THE DETAIL ON SHEET 2.

FOR THRIE BEAM INSTALLATIONS BEYOND POST 12, TRANSITION THE BULLNOSE RAIL HEIGHT TO 33" OVER A 12' - 6" BEAM LENGTH.

110 SEE SHEET 5 FOR DETAILS ON THE INSTALLATION OF DELINEATOR REFLECTORS.

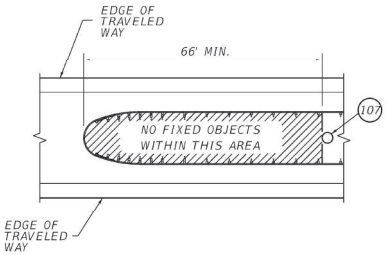
111 SEE SHEET 4 FOR MEDIAN GRADING.

112 THRIE BEAM RAILS MAY NEED TO BE FIELD BENT TO FIT THE LOCATION.

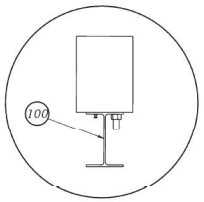
113 IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2". MINIMUM DIAMETER OF THE ROCK REMOVAL IS 12" DIAMETER.

114 SEE SHEET 3 FOR INSTALLATION LAYOUT DETAILS OF THE BULLNOSE TERMINAL.

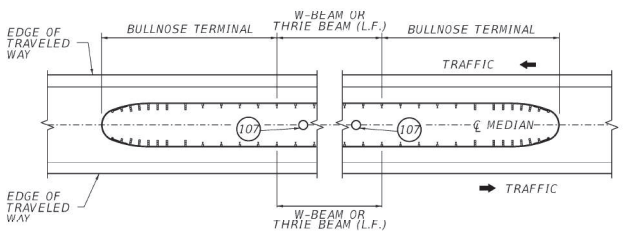
LAPPING DETAIL



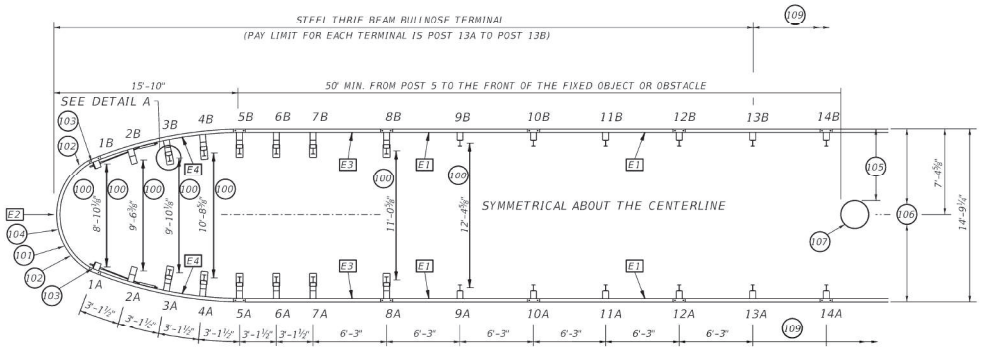
OBSTACLE FREE AREA INSIDE BULLNOSE



DETAIL A



MEDIAN FIXED OBJECT SHIELDING PAY LIMITS



PLAN VIEW
TYPICAL BULLNOSE LAYOUT

REVISION DATE: 12.10.2024
REVISION NUMBER: 0

03-03-2025
SUBMITTED — DIVISION DIRECTOR — DATE
APPROVED — STATE HIGHWAY ENGINEER — DATE

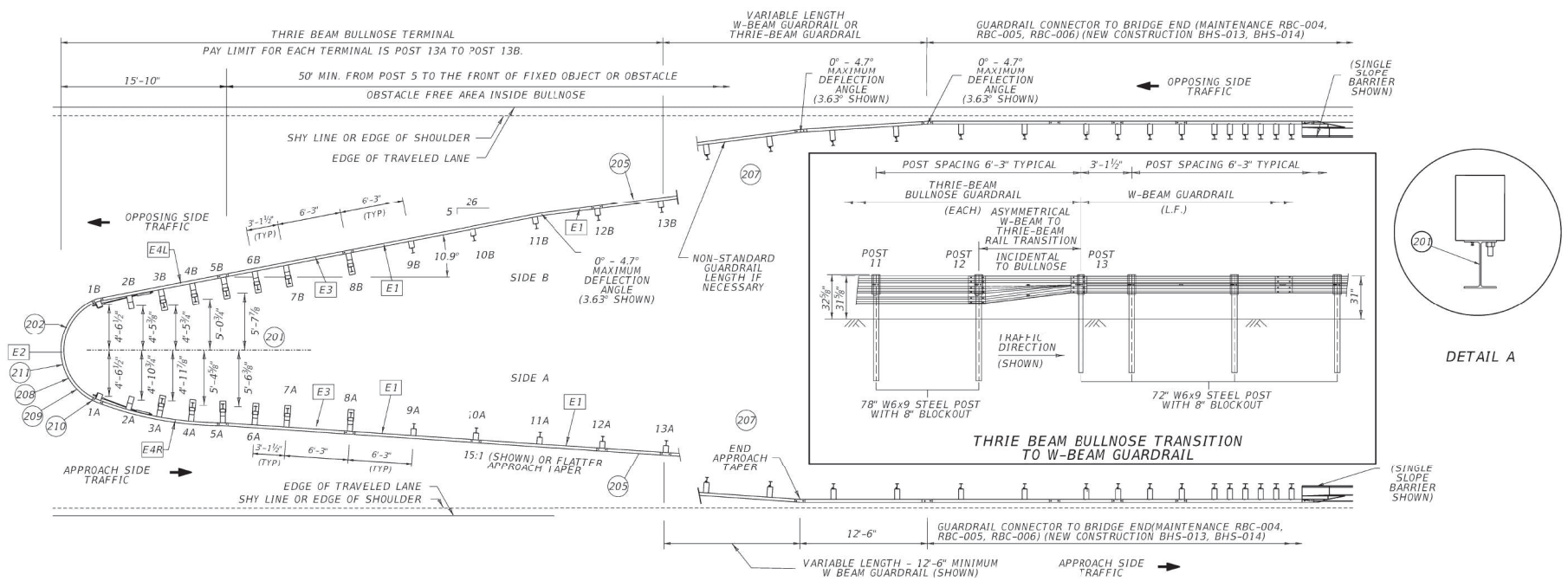
BARRIERS

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
TEAM KENTUCKY

STEEL THRIE BEAM BULLNOSE TERMINAL

SHEET 001: SYMMETRICAL BULLNOSE

SEPIA NUMBER
SEPIA 095



TYPICAL LAYOUT FOR ASYMMETRICAL BULLNOSE FOR SYSTEM WIDTHS GREATER THAN 24'

~ NOTES ~

(201) DIMENSIONS ARE MEASURED FROM THE GUARDRAIL CENTER OF POSTS TO THE SYMMETRY LINE OF SLOTTED THRIE BEAM RAIL E2.

ON THE PLAN SHEETS, THE DESIGNER MUST INCLUDE THE STATION AND OFFSET MEASUREMENTS FOR THE CENTER OF THE GUARDRAIL POSTS OF THE BULLNOSE. REFER TO SHEET 3 FOR DETAILS.

REFER TO DETAIL A FOR MORE INFORMATION.

(202) BEND THE RAIL IN THE FIELD AS NEEDED TO MAKE CONNECTIONS. THE MAXIMUM DEFLECTION ANGLE IS 4.7° (3.63° SHOWN).

203 SAW, DRILL, OR PUNCH THE RAIL AS REQUIRED. DO NOT TORCH-CUT. REPAIR GALVANIZED COATINGS IN ACCORDANCE WITH ASTM A780 (THIS IS INCIDENTAL). SPACING BETWEEN INDIVIDUAL POSTS FROM POST 1 TO POST 7 IS 3'-1½"

204 PARTS E1 THROUGH E4 ARE THRIE BEAM RAILS. SEE SHEET 8 FOR DETAILS.

- [E1] UNBENT STANDARD THRIE BEAM RAIL (POST 8 AND BEYOND)
- [E2] SLOTTED THRIE BEAM RAIL (POST 1B TO POST 1A)
- [E3] SLOTTED THRIE BEAM RAIL (POST 5 TO POST 8)
- [E4] SLOTTED THRIE BEAM RAIL (POST 1 TO POST 5) WITH A RADIAL OPTION ON THE APPROACH SIDE AND A TANGENT OPTION ON THE OPPOSING SIDE.

(205) BEYOND POST 12 - CAN CONSTRUCT W-BEAM GUARDRAIL OR THRIE BEAM GUARDRAIL. FOR W-BEAM INSTALLATIONS, TRANSITION THE RAIL FROM POST 12 TO 13 BY USING A THRIE BEAM CONNECTOR (INCIDENTAL TO THE BULLNOSE TERMINAL BID ITEM) FOLLOWED BY A STANDARD POST AND BLOCK, SPACED AT 3' - 1½". CONTINUE BARRIER SYSTEM WITH STANDARD 6' - 3" POST SPACING, AND TRANSITION THE BULLNOSE RAIL HEIGHT TO 31" OVER A 12' - 6" BEAM. FOR ADDITIONAL DETAILS SEE RBR-001, RBR-005 AND THE DETAIL ABOVE.

FOR THRIE BEAM INSTALLATIONS BEYOND POST 12, TRANSITION THE BULLNOSE RAIL HEIGHT TO 33" OVER A 12' - 6" BEAM LENGTH.

206 SEE SHEET 4 FOR MEDIAN GRADING.

(207) MINIMUM WORKING WIDTH 4'-2". GRADING INSIDE THE THRIE BEAM TERMINAL BEYOND POST 13 MAY BE ADJUSTED FOR DRAINAGE, PROVIDED THERE IS A MINIMUM OF 2 FEET OF FILL BEHIND THE POSTS TO ENSURE ADEQUATE SUPPORT FOR THE SYSTEM.

(208) U-BOLT CABLE CLIPS (3 PER CABLE) SPACED OUT ON NOSE, TO HOLD CABLE TO BACKSIDE OF THE RAIL.

(209) NOSE CABLE WITH SWAGGED END BUTTONS.

(210) NOSE CABLE ANCHOR PLATE (BACKSIDE OF SPLICE).

(211) THE SLACK IN THE NOSE CABLES SHALL BE EVENLY DISTRIBUTED BETWEEN THE CABLE CLIP FASTENERS AND POST NO. 1 ON EITHER SIDE OF THE NOSE.

212 FOR MEDIANS WIDER THAN 24', TAPER THE OPPOSING SIDE BEFORE TAPERING THE APPROACH SIDE, AS SHOWN.

213 EXTEND THE RAIL BEYOND POST 12 AT A TAPER RATE OF 15:1 OR FLATTER, AS NEEDED. THE REQUIRED EXTENSION LENGTH WILL DEPEND ON THE MEDIAN WIDTH OR THE WORKING WIDTH REQUIREMENTS.

214 IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 ½". MINIMUM DIAMETER OF THE ROCK REMOVAL IS 12" DIAMETER.

215 SEE SHEET 5 FOR DETAILS ON THE INSTALLATION OF DELINEATOR REFLECTORS.

216 SEE SHEET 3 FOR INSTALLATION LAYOUT DETAILS OF THE BULLNOSE TERMINAL.

REVISION DATE: 12.10.2024
REVISION NUMBER: 0

03-03-2025
SUBMITTED — DATE
STATE HIGHWAY ENGINEER
DIVISION DIRECTOR
APPROVED — DATE

BARRIERS

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
TEAM KENTUCKY

STEEL THRIE BEAM BULLNOSE TERMINAL

SHEET 002: ASYMMETRICAL BULLNOSE

SEPIA NUMBER
SEPIA 095

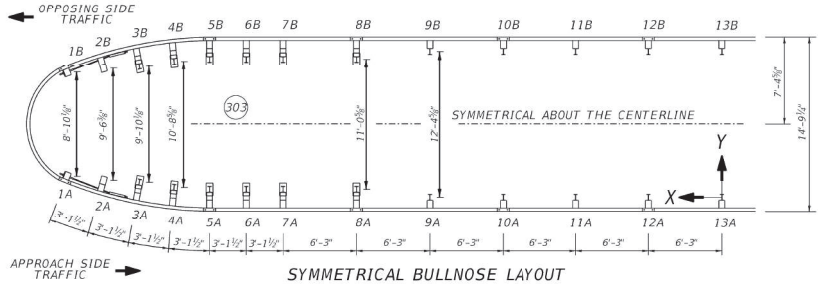
BULLNOSE TERMINAL INSTALLATION LAYOUT

SYMMETRICAL BULLNOSE POST COORDINATES

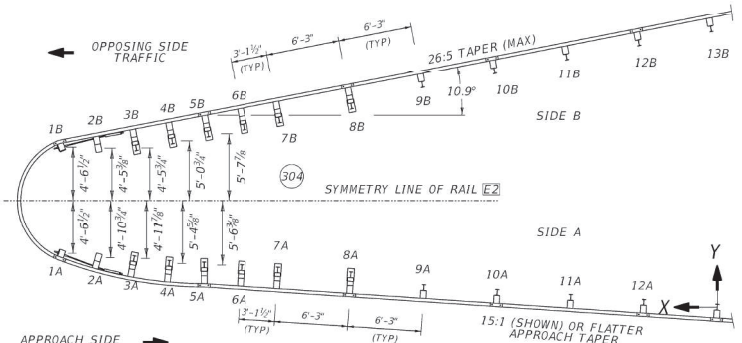
POST NUMBER	X (301)	Y (301)	ANGLE OF POST (FLANGE FACE) (303)
13A	0	0	0
12A	6'-3"	0	0
11A	12'-6"	0	0
10A	18'-9"	0	0
9A	25'-0"	0	0
8A	31'-3"	0"-8"	0
7A	37'-6"	0"-8"	0
6A	40'-7 ½"	0"-8"	0
(300) 5A	43'-9"	0"-8"	0
4A	46'-9 ¼"	0'-10"	5
3A	49'-8 ⅝"	1'-3 ¼"	10
2A	52'-9 ¼"	1'-5 ⅛"	16
1A	55'-10 ½"	1'-9 ¼"	21
1B	55'-10 ½"	10'-7 ⅜"	21
2B	52'-9 ¼"	10'-11 ⅝"	16
3B	49'-8 ⅝"	11'-1 ⅜"	10
4B	46'-9 ¼"	11'-6 ⅝"	5
(300) 5B	43'-9"	11'-8 ⅝"	0
6B	40'-7 ½"	11'-8 ⅝"	0
7B	37'-6"	11'-8 ⅝"	0
8B	31'-3"	11'-8 ⅝"	0
9B	25'-0"	12'-4 ⅝"	0
10B	18'-9"	12'-4 ⅝"	0
11B	12'-6"	12'-4 ⅝"	0
12B	6'-3"	12'-4 ⅝"	0
13B	0	12'-4 ⅝"	0

ASYMMETRICAL BULLNOSE POST COORDINATES

POST NUMBER	X (301)	Y (301)	ANGLE OF POST (FLANGE FACE) (304)
13A	0	0	3.8
12A	6'-2 ⅞"	0'-5"	3.8
11A	12'-5 ¾"	0'-10"	3.8
10A	18'-8 ½"	1'-3"	3.8
9A	24'-11 ⅜"	1'-8"	3.8
8A	31'-1 ⅝"	2'-9"	3.8
7A	37'-4 ½"	3'-1 ⅞"	3.8
6A	40'-5 ⅞"	3'-4 ⅜"	3.8
(300) 5A	43'-8 ½"	3'-7"	0
4A	46'-8 ¼"	3'-8 ⅝"	5
3A	49'-8 ¼"	4'-1 ½"	10
2A	52'-8 ¾"	4'-2 ⅝"	16
1A	55'-10 ⅛"	4'-6 ⅞"	21
1B	55'-10 ⅛"	13'-7 ¾"	21
2B	52'-8 ⅝"	13'-6 ⅝"	10.9
3B	49'-6"	13'-7"	10.9
4B	46'-5 ⅛"	14'-2"	10.9
(300) 5B	43'-4 ⅜"	14'-9 ⅛"	10.9
6B	40'-3 ½"	15'-4 ¼"	10.9
7B	37'-2 ¾"	15'-11 ⅜"	10.9
8B	31'-1"	17'-1 ½"	10.9
9B	25'-0 ⅜"	18'-11 ½"	10.9
10B	18'-11 ¼"	20'-1 ¾"	10.9
11B	12'-9 ⅝"	21'-3 ⅞"	10.9
12B	6'-7 ¾"	22'-6"	10.9
13B	0'-6"	23'-8 ¼"	10.9



SYMMETRICAL BULLNOSE LAYOUT



ASYMMETRICAL BULLNOSE LAYOUT

~ NOTES ~

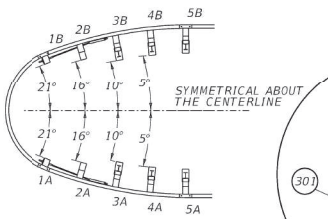
(300) MINIMUM DISTANCE REQUIREMENT: THE LENGTH FROM POST 5 TO THE FRONT OF THE FIXED OBJECT OR OBSTACLE MUST BE A MINIMUM OF 50'.

(301) DIMENSIONS ARE MEASURED TO THE CENTER OF GUARDRAIL POSTS. REFER TO DETAIL A FOR MORE INFORMATION. USE THE STATION AND OFFSET FOR POST 13A, AND REFER TO THE COORDINATES PROVIDED IN THE TABLE TO LAYOUT THE CENTER OF THE BULLNOSE GUARDRAIL POSTS.

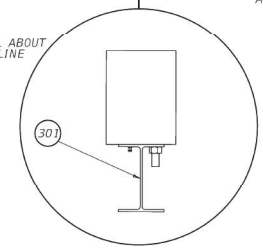
302 ON THE PLAN SHEETS, THE DESIGNER MUST INCLUDE THE STATION AND OFFSET MEASUREMENTS FOR THE CENTER OF THE GUARDRAIL POSTS 1 THROUGH 13 FOR THE BULLNOSE.

(303) FOR THE SYMMETRIC BULLNOSE, LAYOUT AND ANGLE DIMENSIONS FOR POST 1-5 ARE MEASURED FROM THE CENTER OF THE POSTS ON SIDE A TO THE CENTER OF POSTS ON SIDE B.

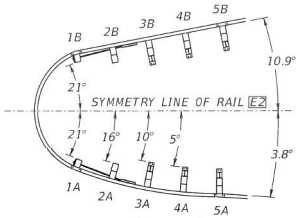
(304) FOR THE ASYMMETRIC BULLNOSE, LAYOUT AND ANGLE DIMENSIONS FOR POST 1-5 ARE MEASURED FROM THE CENTER OF THE POSTS TO THE SYMMETRY LINE OF SLOTTED THRIE BEAM RAIL E2.



POST ANGLE



DETAIL A



POST ANGLE

REVISION DATE: 2.24.2025
REVISION NUMBER: 1

SUBMITTED 03-03-2025 DATE — DIVISION DIRECTOR — DATE

APPROVED — STATE HIGHWAY ENGINEER — DATE

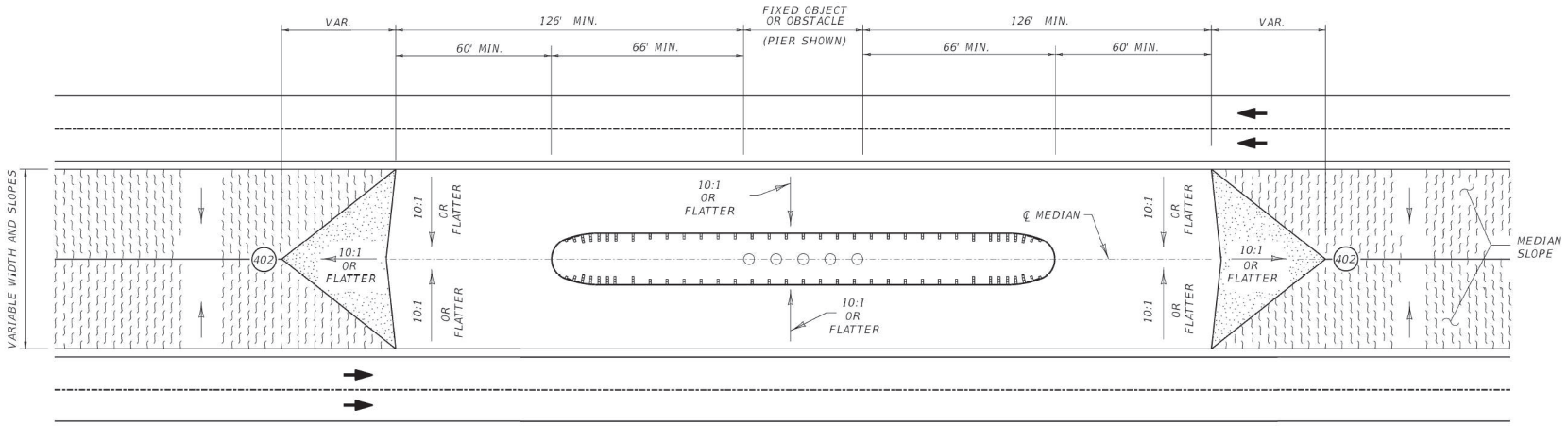
BARRIERS

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
TEAM KENTUCKY

STEEL THRIE BEAM BULLNOSE TERMINAL

SHEET 003: BULLNOSE TERMINAL INSTALLATION LAYOUT

SEPIA NUMBER
SEPIA 095



GRADING AT BULLNOSE

~ NOTES ~

(400) MINIMUM WORKING WIDTH 4'-2".

GRADING FROM POST 1 TO POST 13 AND THE 60' LEADING OR TRAILING THE THRIE BEAM TERMINAL SHALL BE 10:1 OR FLATTER.

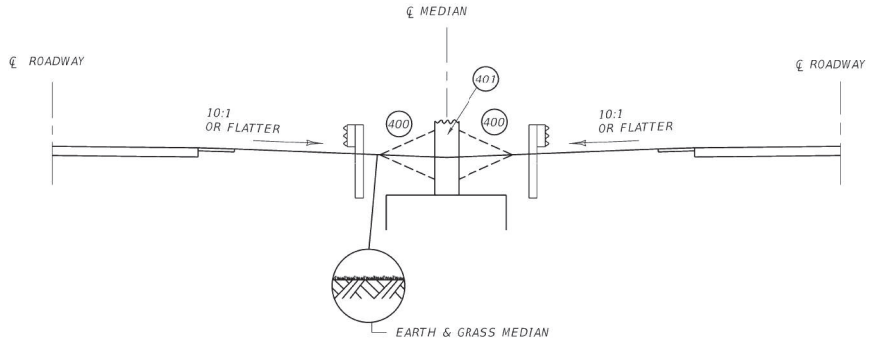
GRADING BEYOND POST 13 MAY BE ADJUSTED FOR DRAINAGE, PROVIDED THERE IS A MINIMUM OF 2 FEET OF FILL BEHIND THE POSTS TO ENSURE ADEQUATE SUPPORT FOR THE SYSTEM.

(401) FIXED OBJECT OR OTHER OBSTACLE.

(402) EVALUATE MEDIAN DRAINAGE AND ENSURE POSITIVE FLOW. INCLUDE A DROP BOX INLET AND PIPING AS NEEDED, AND ENSURE THAT ALL NECESSARY BID ITEMS ARE INCLUDED.

403 WHILE MEDIAN GRADING DETAIL DEPICTS SYMMETRICAL THRIE BEAM BULLNOSE TERMINAL, ALL GRADING REQUIREMENTS APPLY TO ASYMMETRICAL SITUATIONS ALSO.

404 GRADING QUANTITIES MUST BE CALCULATED AND SHOWN AS BID ITEMS.



CROSS SECTION AT BULLNOSE

REVISION DATE: 2.24.2025
REVISION NUMBER: 1

SUBMITTED 03-03-2025 DATE
DIVISION DIRECTOR

APPROVED DATE
STATE HIGHWAY ENGINEER

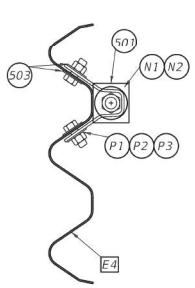
BARRIERS

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
TEAM KENTUCKY

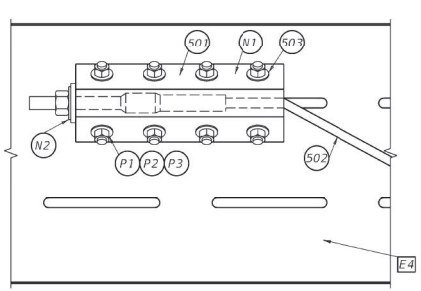
STEEL THRIE BEAM BULLNOSE TERMINAL

SHEET 004: GRADING AT BULLNOSE

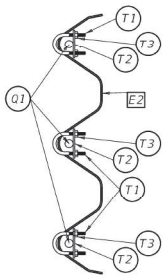
SEPIA NUMBER
SEPIA 095



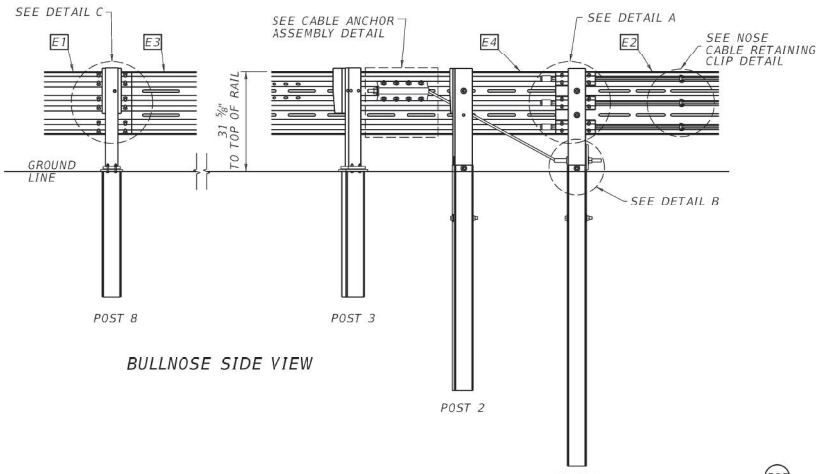
PROFILE VIEW
CABLE ANCHOR ASSEMBLY CONNECTION



CABLE ANCHOR ASSEMBLY



NOSE CABLE RETAINING CLIP



BULLNOSE SIDE VIEW

~ NOTES ~

500 SEE SHEET 10 FOR PART DESCRIPTIONS.

501 SEE ANCHOR BRACKET ASSEMBLY DETAIL ON SHEET 9.

502 SEE ANCHOR CABLE ASSEMBLY DETAIL ON SHEET 9.

503 ONE WASHER BETWEEN BOLT HEAD AND RAIL AND BETWEEN NUT AND ANCHOR BRACKET ASSEMBLY.

504 ONE WASHER BETWEEN BOLT HEAD AND FOUNDATION TUBE AND BETWEEN NUT AND FOUNDATION TUBE.

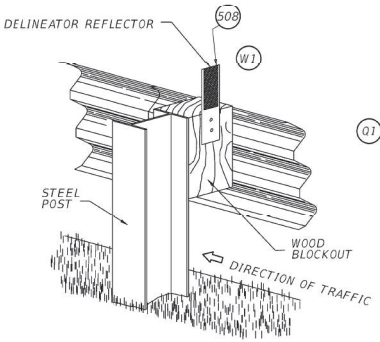
505 BEND TWO NAILS OVER THE BEARING PLATE TO PREVENT ROTATION.

506 NO MATERIAL IS TO BE PLACED AGAINST THE VERTICAL FACES OF BEARING PLATE.

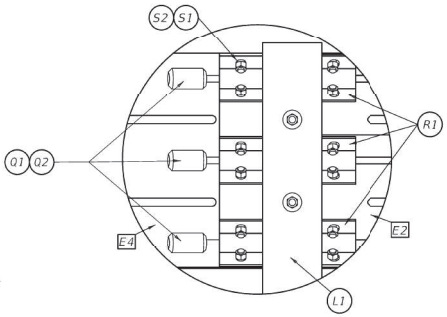
507 PREVENT OR REMOVE MATERIALS THAT BLOCK ACCESS TO BOLTS FOR POST ASSEMBLIES.

508 THE COLOR OF DELINEATORS MUST MATCH THE COLOR OF THE EDGELINE THEY SUPPLEMENT.

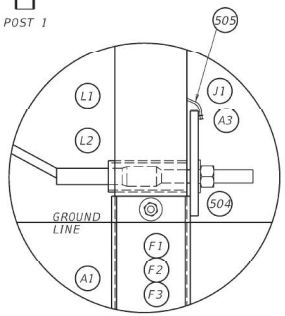
509 DELINEATOR SPACING SHOULD BE 100' WITH A MINIMUM OF 3 REFLECTORS. THE FIRST DELINEATOR SHOULD BE PLACED ON POST 3, ON THE ADJACENT TRAFFIC SIDE OF THE BULLNOSE.



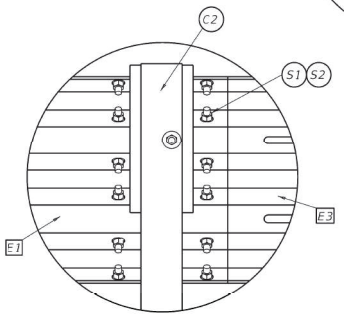
ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION



DETAIL A



DETAIL B



DETAIL C
THRIE BEAM SPLICE

REVISION DATE: 12.10.2024
REVISION NUMBER: 0

SUBMITTED 03-03-2025 DATE
STATE HIGHWAY ENGINEER DIVISION DIRECTOR
APPROVED DATE

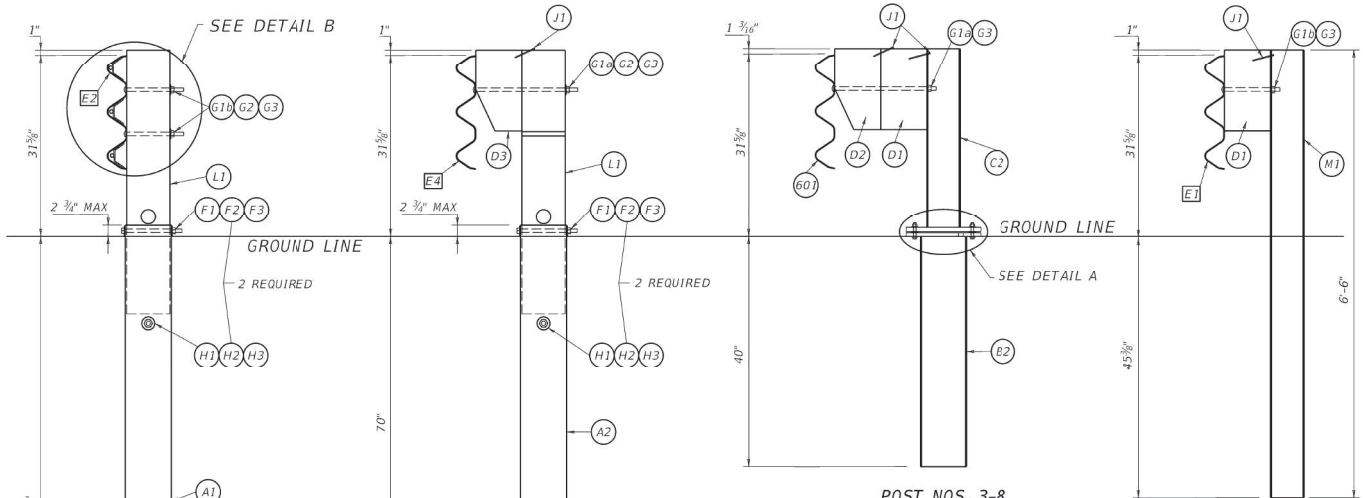
BARRIERS

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
TEAM KENTUCKY

STEEL THRIE BEAM BULLNOSE TERMINAL

SHEET 005: NOSE AND ANCHOR DETAILS

SEPIA NUMBER
SEPIA 095

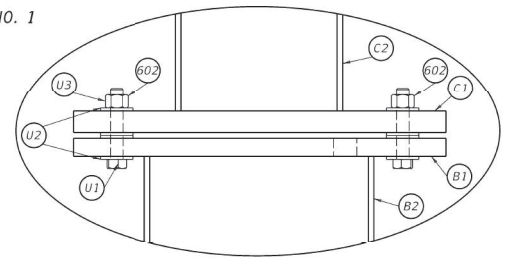


POST NO. 1

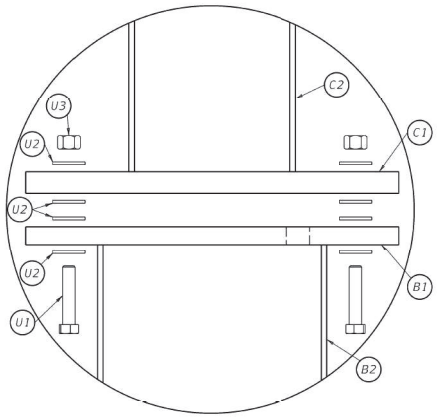
POST NO. 2

POST NOS. 3-8

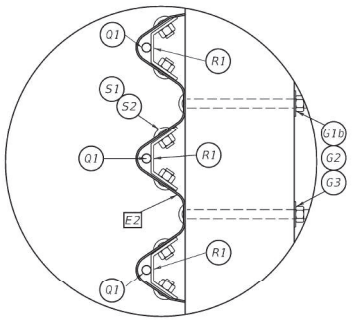
POST NOS. 9-13



DETAIL A



EXPLODED VIEW
DETAIL A



DETAIL B

~ NOTES ~

600 SEE SHEET 10 FOR PART DESCRIPTIONS.

601 RAIL CAN BE E3 OR E4 DEPENDING ON POST LOCATION.

602 TORQUE BOLT BETWEEN 60-75 FT-LB.

REVISION DATE: 12.10.2024
REVISION NUMBER: 0

SUBMITTED 03-03-2025 DATE
DIVISION DIRECTOR

APPROVED DATE
STATE HIGHWAY ENGINEER

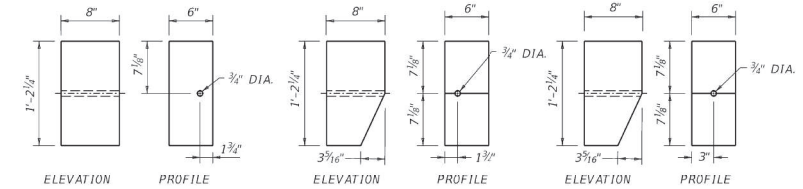
BARRIERS

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
TEAM KENTUCKY

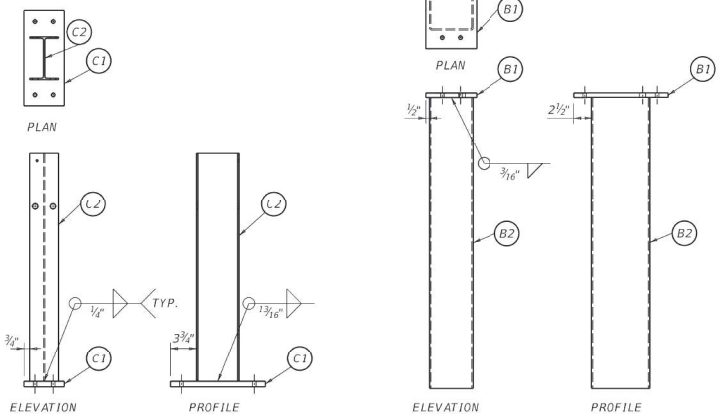
STEEL THRIE BEAM BULLNOSE TERMINAL

SHEET 006: POST DETAILS

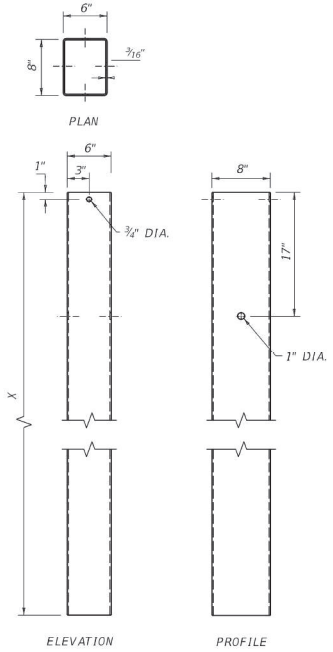
SEPIA NUMBER
SEPIA 095



BLOCKOUT (D1) BLOCKOUT (D2) BLOCKOUT (D3)

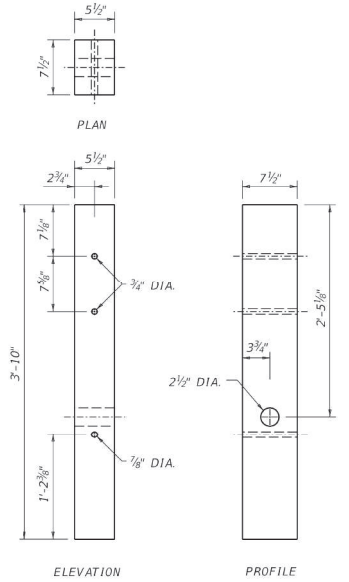


UPPER POST ASSEMBLY LOWER POST ASSEMBLY

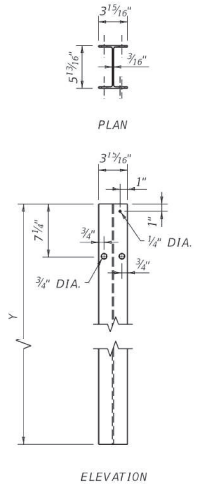


FOUNDATION TUBE (A1, A2, & B2)

PART	LENGTH "X"
A1	8' - 0"
A2	6' - 0"
B2	3' - 4"

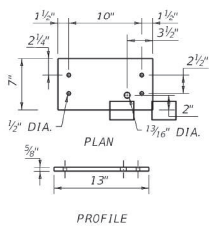


BCT POST (L1)

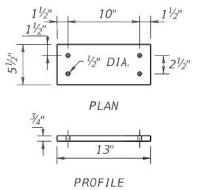


POST (M1 & C2)

PART	LENGTH "Y"
M1	6' - 6"
C2	2' - 7¼"



LOWER SHEAR PLATE (B1)



UPPER SHEAR PLATE (C1)

~ NOTES ~

700 SEE SHEET 10 FOR PART DESCRIPTIONS.

REVISION DATE: 12.10.2024
REVISION NUMBER: 0

SUBMITTED 03-03-2025 DATE
DIVISION DIRECTOR
APPROVED DATE
STATE HIGHWAY ENGINEER

BARRIERS

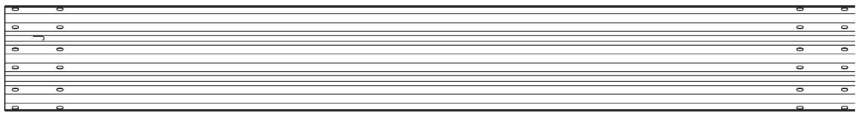
COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
TEAM KENTUCKY

STEEL THRIE BEAM BULLNOSE TERMINAL

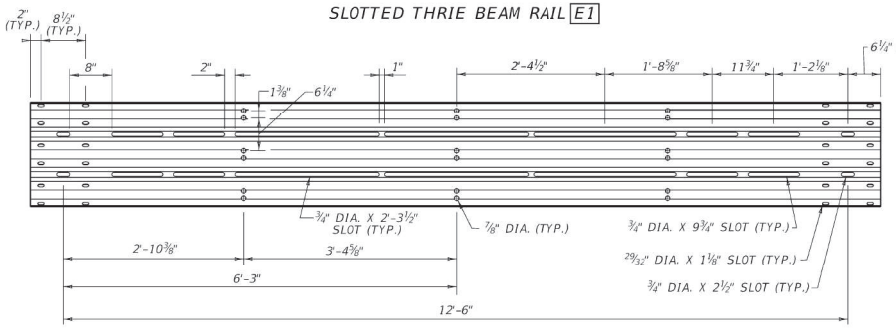
SHEET 007: POST, BLOCK, AND HARDWARE DETAILS

SEPIA NUMBER
SEPIA 095

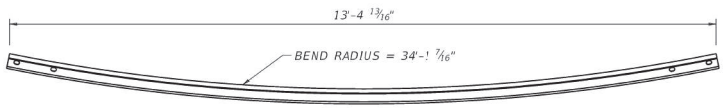
OpenRoads Designer v23.00.01.11 USER: matthew.sipes FILE NAME: C:\KYTC_STANDARDS\ORGANIZATION-CIVIL\KYTC_STANDARDS_OC_KYTC\DGNLIB\SHEET SEEDS\KYTC STANDARDS BORDER SEED.DGNLIB



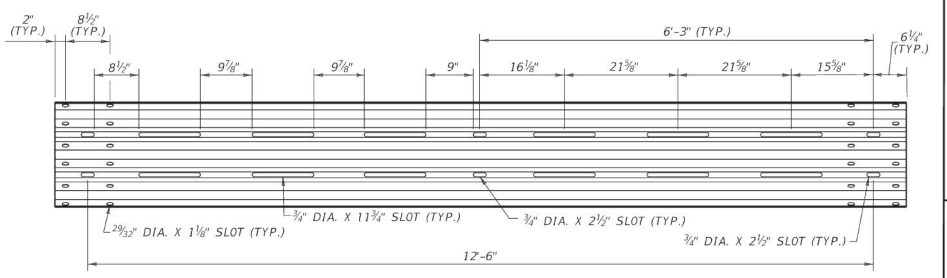
SLOTTED THRIE BEAM RAIL E1



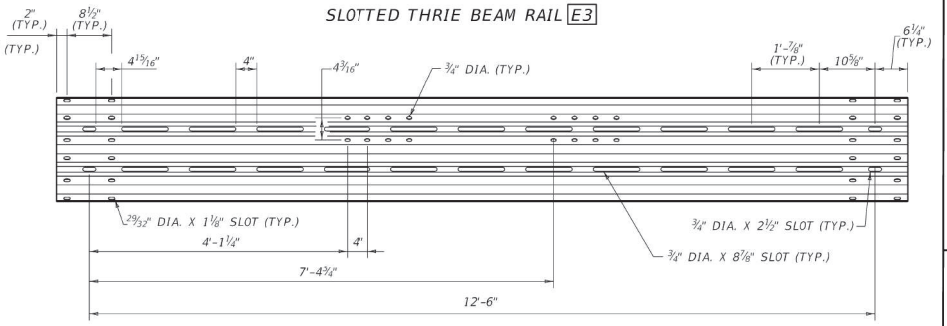
ELEVATION VIEW NON-RADIUSED
SLOTTED THRIE BEAM RAIL E2



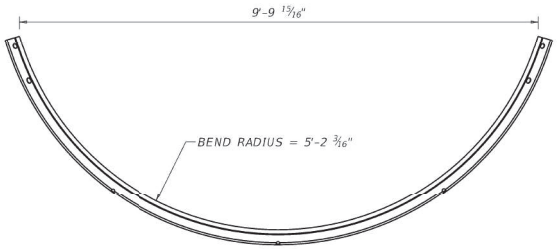
PLAN VIEW
SLOTTED THRIE BEAM RAIL E4



SLOTTED THRIE BEAM RAIL E3



ELEVATION VIEW NON-RADIUSED
SLOTTED THRIE BEAM RAIL E4



PLAN VIEW
SLOTTED THRIE BEAM RAIL E2

~ NOTES ~

801 FOR THRIE BEAM RAIL, USE AASHTO M180, SPEC 814, AND GUARDRAIL MANUFACTURER FROM KYTC'S LIST.

802 MARK THE RADIUS OF CURVATURE ON EACH OF THE CURVED ELEMENTS.

803 IN AN ASYMMETRICAL BULLNOSE, THE OPPOSING-SIDE E4 THRIE-BEAM IS STRAIGHT, NOT CURVED. THIS TANGENT BEAM HAS A LENGTH OF 13' - 6 ½".

REVISION DATE: 12.10.2024
REVISION NUMBER: 0

03-03-2025
DATE

SUBMITTED — DIVISION DIRECTOR — DATE
APPROVED — STATE HIGHWAY ENGINEER — DATE

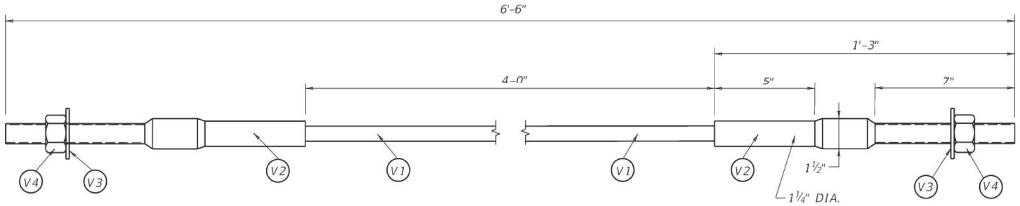
BARRIERS

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
TEAM KENTUCKY

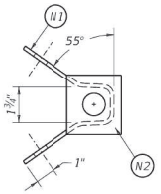
STEEL THRIE BEAM BULLNOSE TERMINAL

SHEET 008: SLOTTED THRIE BEAM RAIL

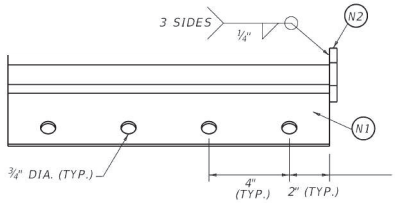
SEPIA NUMBER
SEPIA 095



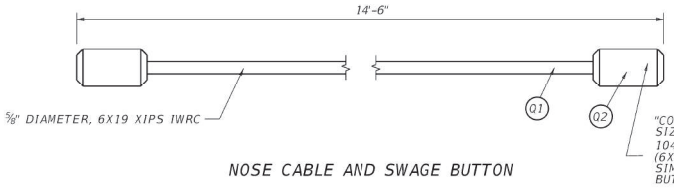
ANCHOR CABLE ASSEMBLY



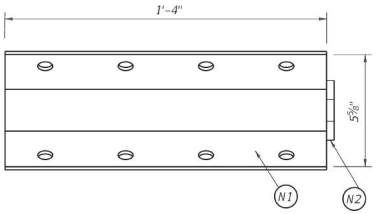
PROFILE VIEW



PLAN VIEW

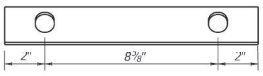


NOSE CABLE AND SWAGE BUTTON

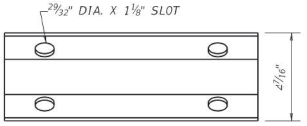


ELEVATION VIEW

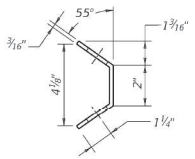
ANCHOR BRACKET ASSEMBLY (N1)



PLAN VIEW

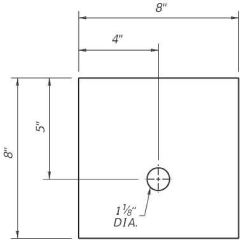


ELEVATION VIEW

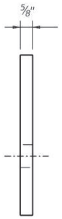


PROFILE VIEW

NOSE CABLE ANCHOR (R1)

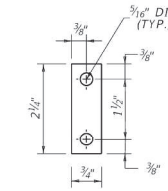


ELEVATION VIEW

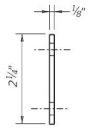


PROFILE VIEW

BCT BEARING PLATE (A3)

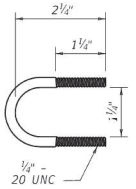


ELEVATION VIEW



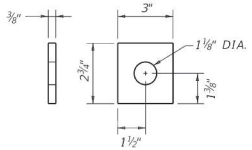
PROFILE VIEW

U - BOLT
PLATE WASHER (T2)

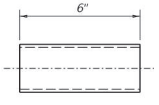


U - BOLT
(T1)

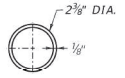
U - BOLT
NUT (T3)



ANCHOR BRACKET
END PLATE (N2)



ELEVATION VIEW



PROFILE VIEW

BCT POST SLEEVE (L2)

~ NOTES ~

900 SEE SHEET 10 FOR PART DESCRIPTIONS.

REVISION DATE: 12.10.2024
REVISION NUMBER: 0

03-03-2025
DATE

SUBMITTED — DIVISION DIRECTOR — DATE

APPROVED — STATE HIGHWAY ENGINEER — DATE

BARRIERS

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
TEAM KENTUCKY

STEEL THRIE BEAM BULLNOSE TERMINAL

SHEET 009: ASSEMBLY DETAILS

SEPIA NUMBER
SEPIA 095

THRIE BEAM BULLNOSE TERMINAL MATERIALS LIST

PART NUMBER	QUANTITY	DESCRIPTION	MATERIAL SPECIFICATION
A1	2	LONG FOUNDATION TUBE	AASHTO M111/ASTM A123 ASTM A500 GRADE B OR ASTM A-501
A2	2	FOUNDATION TUBE	AASHTO M111/ASTM A123 ASTM A500 GRADE B OR ASTM A-501
A3	2	BEARING PLATE AT POST	AASHTO M111/ASTM A123 ASTM A36 MIN STRENGTH 36 (SI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI,OR ASTM A992 MAX. STRENGTH 50 KSI
B1	12	LOWER SHEAR PLATE	AASHTO M111/ASTM A123 ASTM A36 MIN STRENGTH 36 (SI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI,OR ASTM A992 MAX. STRENGTH 50 KSI
B2	12	FOUNDATION TUBE	AASHTO M111/ASTM A123 ASTM A500 GRADE B OR ASTM A-501
C1	12	UPPER SHEAR PLATE	AASHTO M111/ASTM A123 ASTM A36 MIN STRENGTH 36 (SI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI,OR ASTM A992 MAX. STRENGTH 50 KSI
C2	12	STEEL POST	AASHTO M111/ASTM A123 ASTM A6 W6X9 OR W6X8.5 ASTM A36 MIN STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX.STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI
D1	20	BLOCK FOR STEEL POST - WOOD	KYTC SPEC. 814
D2	12	TAPERED BLOCK FOR STEEL POST - WOOD	KYTC SPEC. 814
D3	2	TAPERED BLOCK FOR BCT POST - WOOD	KYTC SPEC. 814
E1	4	THRIE BEAM RAIL	AASHTO M180, SPEC 814, AND A GUARDRAIL MANUFACTURER FROM KYTC'S LIST OF APPROVED MATERIALS.
E2	1	THRIE BEAM RAIL - SHOP BENT AND PUNCHED	AASHTO M180, SPEC 814, AND A GUARDRAIL MANUFACTURER FROM KYTC'S LIST OF APPROVED MATERIALS. CURVE GUARDRAIL IN SHOP. MARK THE RADIUS OF CURVATURE ON EACH OF THE CURVED ELEMENTS.
E3	2	THRIE BEAM RAIL - PUNCHED	AASHTO M180, SPEC 814, AND A GUARDRAIL MANUFACTURER FROM KYTC'S LIST OF APPROVED MATERIALS.
E4	2	THRIE BEAM RAIL - SHOP BENT AND PUNCHED	AASHTO M180, SPEC 814, AND A GUARDRAIL MANUFACTURER FROM KYTC'S LIST OF APPROVED MATERIALS. CURVE GUARDRAIL IN SHOP. MARK THE RADIUS OF CURVATURE ON EACH OF THE CURVED ELEMENTS. NOTE: IN AN ASYMMETRICAL BULLNOSE, THE OPPOSING TRAFFIC SIDE E4 THRIE-BEAM IS STRAIGHT, NOT CURVED. THIS TANGENT BEAM HAS A LENGTH OF 13' 6 ½".
F1	4	5/8" DIA. HEX HEAD GROUND STRUT AND YOKE BOLT 11 UNC, 10" LONG BOLT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1/ ASTM B695 CLASS 50 TYPE 1 UNC HEAVY HEX HEAD ASTM A307 GRADE B OR SAE J429 GRADE 2 OR ASTM F1554 GRADE 36
F2	8	5/8" DIA. GROUND STRUT AND YOKE BOLT - WASHER 1 ¾" OUTSIDE DIAMETER, $1\frac{1}{16}$" INSIDE DIAMETER WASHER. ⅛" THICK	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1/ ASTM B695 CLASS 50 TYPE 1 F436 TYPE 1 (HARDEN WASHER ONLY)
F3	4	GROUND STRUT AND YOKE BOLT - NUT $\frac{9}{16}$" THICK	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1/ ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291/ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5
G1a	14	5/8 " DIA. POST BOLT - 18" LONG	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1/ ASTM B695 CLASS 50 TYPE 1 F436 TYPE 1 (HARDEN WASHER TYPICALLY USED WITH STEEL POSTS) OR ASTM F844 (UNHARDENED WASHER TYPICALLY USED WITH WOOD)
G1b	12	5/8 " DIA. POST BOLT - 10" LONG	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1/ ASTM B695 CLASS 50 TYPE 1 F436 TYPE 1 (HARDEN WASHER TYPICALLY USED WITH STEEL POSTS) OR ASTM F844 (UNHARDENED WASHER TYPICALLY USED WITH WOOD)
G2	6	POST BOLT - WASHER 1 ¾" OUTSIDE DIAMETER, $1\frac{1}{16}$" INSIDE DIAMETER WASHER. ⅛" THICK	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1/ ASTM B695 CLASS 50 TYPE 1 F436 TYPE 1 (HARDEN WASHER TYPICALLY USED WITH STEEL POSTS) OR ASTM F844 (UNHARDENED WASHER TYPICALLY USED WITH WOOD)
G3	26	POST BOLT - NUT ⅝", $\frac{9}{16}$" THICK	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1/ ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291/ASTM A 563 AASHTO M180 RECESSED HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5
H1	4	7/8" DIA. SOIL TUBE BOLT 9 UNC, 8" LONG	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1/ ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIEDIN AASHTO 291/ASTM A 563 HEAVY HEX HEAD 7/8" ASTM A563DH OR SAE J995 GRADE 5
H2	8	SOIL TUBE BOLT - WASHER 2 ½" OUTSIDE DIAMETER, $1\frac{5}{16}$" INSIDE DIAMETER WASHER. $\frac{3}{16}$" THICK	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1/ ASTM B695 CLASS 50 TYPE 1 7/8" ASTM F844 TYPE 1 (HARDEN WASHER ONLY)
H3	4	SOIL TUBE BOLT - NUT ¾" THICK	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1/ ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291/ASTM A 563 HEAVY HEX HEAD 7/8" ASTM A563DH OR SAE J995 GRADE 5
J1	38	16D DOUBLE HEAD NAIL	ASTM A153 HOT DIPPED CLASS D DOUBLE HEAD ASTM F1667 TYPE 1 STYLE 12 (16 DOUBLE HEADED)
L1	4	BCT TIMBER POST	KYTC SPEC. 814, S4S FINISH ON 4 SIDE
L2	2	BCT POST SLEEVE	AASHTO M111/ASTM A123 2 3/8" OD ASTM 53 GRADE B
M1	8	W6X8.5 OR W6X9 STEEL POST	AASHTO M111/ASTM A123 ASTM A6 W6X9 OR W6X8.5 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI
N1	2	ANCHOR BRACKET	AASHTO M111/ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI
N2	2	ANCHOR BRACKET - BEARING PLATE	AASHTO M111/ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI

PART NUMBER	QUANTITY	DESCRIPTION	MATERIAL SPECIFICATION
P1	16	5/8" DIA. ANCHOR BRACKET BOLT 1 ½" LONG, ⅝" DIAMETER - 14 UNC	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1/ ASTM B695 CLASS 50 TYPE 1 UNC HEAVY HEX HEAD 5/8" ASTM A307 GRADE B OR SAE J429 GRADE 2 OR ASTM F1554 GRADE 36
P2	32	ANCHOR BRACKET BOLT - WASHER ⅛" THICK, 1 ¾" OUTSIDE DIAMETER, $1\frac{1}{16}$" INSIDE DIAMETER	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1/ ASTM B695 CLASS 50 TYPE 1 F436 TYPE 1 (HARDEN WASHER ONLY)
P3	16	ANCHOR BRACKET BOLT - NUT, $\frac{9}{16}$" THICK	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1/ ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291/ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5
Q1	3	5/8" DIA. NOSE CABLE 6X9 XIPS IWRC	6X19 AASTHO M30 / ASTM A741 XIPS INDEPENDENT WIRE CORE (IWRC) PR 6X25 XIPS, IWRC NOMINAL BREAKING STRENGTH OF 41.2 KIPS.
Q2	6	NOSE CABLE-SWAGE BUTTON	COLC TUFF BUTTON, S-409 SIZE NO. 12 SB STOCK NUMBER 1040395 FOR ⅝ IN. DIAMETER OR ANY OTHER SIMILAR SIZED WAGED-GRIP-BUTTON FERRULES. ASTM A576 GRADE 1035 SWAGE FITTING ARE TO BE FIELD SWAGED PER MANUFACTURERS RECOMMENDATION. NOMINAL BREAKING STRENGTH OF 41.2 KIPS.
R1	6	NOSE CABLE ANCHOR BRACKET	AASHTO M111/ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI
S1	120	5/8" DIA. SPLICE BOLT - BOLT 11 UNC, 1 ¼" LONG	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC AASHTO M180 HEAD ASTM A307 GRADE B OR SAE J429 GRADE 2 OR ASTM F1554 GRADE 36
S2	120	SPLICE - BOLT NUT $\frac{9}{16}$" THICK	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291/ASTM A 563 AASHTO M180 RECESSED HEAVY HEX HEAD 5/8" ASTM A563DH OR SAE J995 GRADE 5
T1	9	1/4" DIA. NOSE CABLE - U BOLT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC HEAVY HEX HEAD ASTM A307 GRADE B OR SAE J429 GRADE 2 OR ASTM F1554 GRADE 36
T2	9	U-BOLT - PLATE WASHER	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 F436 TYPE 1 (HARDEN WASHER ONLY)
T3	18	U-BOLT NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1/ ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5
U1	48	7/16" DIA. SLIP POST ASSEMBLY - BREAKAWAY BOLT 2 ½", $\frac{7}{16}$" DIAMETER - 14 UNC	ASTM A153 OR B695 CLASS 55 OR F2329 UNC FULLY THREADED HEX HEAD TAP BOLT ASTM A449 OR SAE J429 GRADE 5
U2	192	7/16" DIA. SLIP POST ASSEBLY - BREAKAWAY BOLT - WASHER 1 ¾" OUTSIDE DIAMETER, ½" INSIDE DIAMETER	ASTM F436 TYPE I (HARDEN TYPICALLY USED WITH STEEL) GALV. AASHTO M111/ASTM A 123 OR GALV. HOT DIP. TO POST BOLT CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM AASHTO M298 CLASS 50, TYPE1 / ASTM B695 CLASS 55, F2329
U3	48	SLIP POST ASSEBLY - BREAKAWAY BOLT - NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / STM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291/ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5
V1	2	¾" DIA. BCT CABLE	AASHTO M30 / ASTM A741 6X19 INDEPENDENT WIRE CORE (IWRC) IMPROVED PLOW STEEL (IPS), 6X19 INDEPENDENT WIRE CORE (IWRC) IMPROVED PLOW STEEL (IPS) TYPE II OR IIC, CLASS C ZINC COATED MIN BREAKING STRENGTH OF 42.7 KIPS
V2	4	ANCHOR CABLE-SWAGE FITTING, 1 ¼" DIAMETER	UNC ASTM A576 GRADE 1035 SWAGE FITTING ARE TO BE FACTORY SWAGED. MIN. BREAKING STRENGTH OF 42.7 KIPS. ASME B30.26 "FORGED, CAST, OR DIE STAMPED WITH THE FOLLOWING IN TO CONNECTION: NAME OF MANUFACTURE OR TRADEMARK OF CONNECTION'S MANUFACTURER, SIZE OR RATED LOAD, GRADE FOR ALLOY EYEBOLTS."
V3	4	1" DIA. ANCHOR CABLE-WASHER	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 F436 TYPE 1 (HARDEN WASHER ONLY)
V4	4	1" DIA. ANCHOR CABLE-NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1/ ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5
W1	3	REFLECTOR	SEE SPEC 838, AND KYTC'S LIST OF APPROVED MATERIALS.

REVISION DATE: 12.10.2024
REVISION NUMBER: 0

03-03-2025
DATE

SUBMITTED
DIVISION DIRECTOR

APPROVED
STATE HIGHWAY ENGINEER

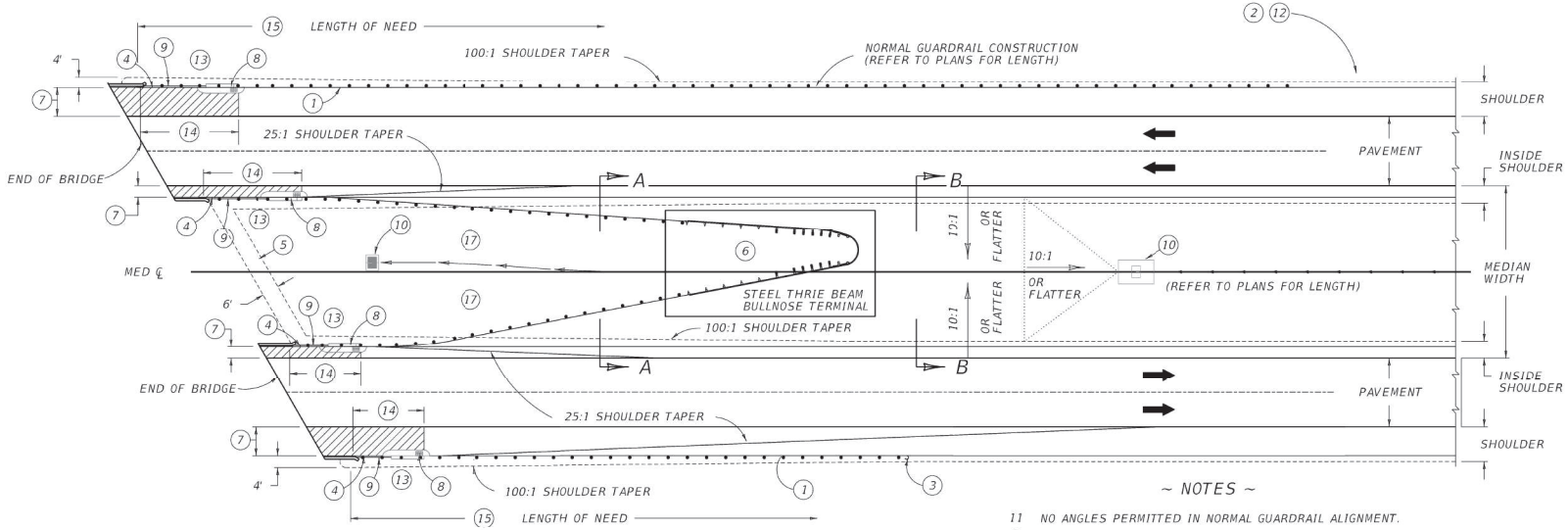
BARRIERS

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
TEAM KENTUCKY

STEEL THRIE BEAM BULLNOSE TERMINAL

SHEET 010: MATERIALS LIST

SEPIA NUMBER
SEPIA 095



ITEM		STD. DWG. NO
(1)	STEEL W BEAM GUARDRAIL - SINGLE FACE (NOTE 11)	RBR-SERIES
(2)	END TREATMENT TYPE 1, 3, OR 4A (NOTE 12)	
(3)	END TREATMENT TYPE 2A (TRAILING END TERMINAL)	
(4)	THRIE-BEAM GUARDRAIL TRANSITION	BHS-013, BHS-014
(5)	6' EARTH DIKE	RGX-001
(6)	STEEL THRIE BEAM BULLNOSE TERMINAL	SEPIA 095
	DRAINAGE ITEMS (IF NECESSARY)	
(7)	BRIDGE END DRAINAGE AREA (NOTE 13)	
(8)	CURB BOX INLET TYPE B (SHOWN) OR FLUME INLET	RDB OR RDD SERIES
(9)	STANDARD HEADER CURB OR STANDARD HEADER CURB AND GUTTER	RPM-100
(10)	DROP BOX INLET (NOTE 13)	RDB-SERIES

~ NOTES ~

11 NO ANGLES PERMITTED IN NORMAL GUARDRAIL ALIGNMENT.

(12) PROPERLY ENDING A GUARDRAIL INSTALLATION:

A. IN AREAS WITH ADEQUATE VEHICLE RECOVEY SPACE, USE GUARDRAIL END TREATMENT 1 OR 4A.

B. IN SOLID ROCK CUTS WITHOUT AN ADEQUATE VEHICLE RECOVER ZONE BEHIND THE GUARDRAIL, EXTEND THE GUARDRAIL TO A SUITABLE RECOVERY AREA AND USE END TREATMENT TYPE 1 OR 4A.

C. EARTH CUTS AND SOFT ROCK BACKSLOPES (2:1 OR STEEPER), USE GUARDRAIL END TREATMENT TYPE 3.

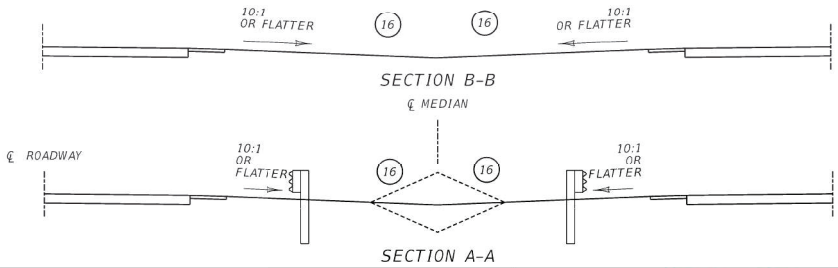
(13) FLATTEN SLOPES AND REMOVE INLET WHEN MEDIAN OR SHOULDER SLOPES AWAY FROM BRIDGE. REFER TO THE PLANS FOR DETAILS.

(14) VARIABLE LENGTH. SEE APPLICABLE "THRIE BEAM GUARDRAIL TRANSITION" DRAWINGS (BHS-013 AND BHS-014).

(15) PROPERLY SHIELD ROADSIDE OBSTACLES AND AREAS OF CONCERN BY CALCULATING THE LENGTH OF NEED (LON) TO DETERMINE THE NECESSARY BARRIER LENGTH.

(16) SEE SHEET 004 OF SEPIA 095 FOR GRADING DETAILS FOR THE BULLNOSE.

(17) GRADE TO DRAIN THE MEDIAN AREA BEHIND THE BARRIER WHILE ENSURING THAT A MINIMUM OF 2 FEET OF 10:1 MATERIAL IS PLACED BEHIND THE BARRIER POST.



REVISION DATE: 02.28.2025
REVISION NUMBER: 1

02-28-2025
DATE
SUBMITTED
DIVISION DIRECTOR
DATE
APPROVED
STATE HIGHWAY ENGINEER

BARRIERS

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
TEAM KENTUCKY

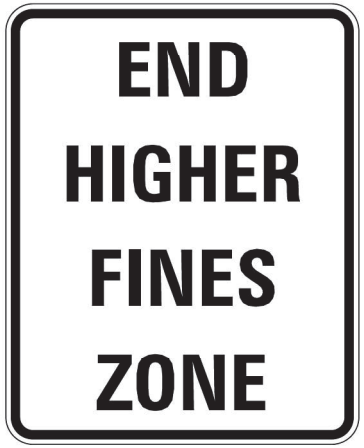
GUARDRAIL AND BRIDGE END DRAINAGE

FOR TWIN STRUCTURE

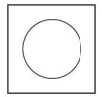
SEPIA NUMBER
S-RBB-002

OpenRoads Designer v23.00.01.11 USER: corinne.schurman FILE NAME: C:\PWWORK\CORRINE.SCHURMAN\D2436315\RBB002_READY TO POST.DGN

R2-10

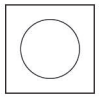


R2-11



8" (MIN.) FY

S4-4P



8" (MIN.) FY

APPLICATION

IN ACCORDANCE WITH KRS 189.2327, IN ORDER FOR HIGHER FINES TO BE ESTABLISHED IN A HIGHWAY WORK ZONE, SIGNS INFORMING DRIVERS OF THE WORK ZONE AND THAT FINES ARE HIGHER MUST BE DISPLAYED AND AT LEAST ONE (1) BONA FIDE WORKER MUST BE PRESENT.

THE ENGINEER MAY DETERMINE WHETHER TO ESTABLISH A HIGHER FINES ZONE WITHIN A HIGHWAY WORK ZONE BASED ON ENGINEERING JUDGMENT.

~ NOTES ~

1. THE BEGIN AND END HIGHER FINES ZONE SIGNS SHALL BE 36" X 48" FOR FREEWAYS AND EXPRESSWAYS AND 24" X 30" FOR OTHER ROADWAYS. "WHEN FLASHING" PLAQUES SHALL BE 36" X 18" FOR FREEWAYS EXPRESSWAYS AND 24" X 12" FOR OTHER ROADWAYS.
2. SIGNS SHALL HAVE A WHITE BACKGROUND WITH A BLACK LEGEND AND SHALL BE MOUNTED AT ELEVATIONS AND OFFSETS PRESCRIBED IN THE MUTCD.
3. USE ENGINEERING JUDGMENT WHEN DETERMINING THE LIMITS OF HIGHER FINES ZONES. FOR SHORT LENGTH PROJECTS WHERE WORK WILL OCCUR THROUGHOUT THE PROJECT LIMITS, LOCATE "BEGIN HIGHER FINES ZONE" SIGN ASSEMBLY BETWEEN THE LAST ADVANCE WARNING SIGN AND THE BEGINNING OF THE ACTIVITY AREA AND LOCATE THE "END HIGHER FINES ZONE" SIGN 250' IN ADVANCE OF THE "END ROAD WORK" SIGN. FOR LONG LENGTH PROJECTS WHERE WORK WILL NOT OCCUR THROUGHOUT THE PROJECT LIMITS, CONSIDER PLACING SIGNS ONLY IN AREAS WHERE ACTIVITY IS OCCURRING.
4. SIGNS SHALL BE DUAL-MOUNTED ON MULTI-LANE HIGHWAYS WHERE MEDIAN IS WIDE ENOUGH TO MAINTAIN LATERAL CLEARANCES AS PRESCRIBED IN THE MUTCD. WHERE CONSTRUCTION ONLY AFFECTS ONE DIRECTION OF A DIVIDED HIGHWAY WITH A BARRIER OR WIDE MEDIAN, SIGNS SHALL NOT BE ERECTED FOR OPPOSING DIRECTION.
5. ADDITIONAL SIGNS MAY BE REQUIRED FOR LONG HIGHWAY WORK ZONES OR WHERE RAMPS OR INTERSECTING STREETS JUNCTION WITHIN THE PROJECT LIMITS.
6. "BEGIN HIGHER FINES ZONE" SIGN ASSEMBLIES MAY INCLUDE A "WHEN FLASHING" PLAQUE AND FLASHING BEACONS. BEACONS SHALL BE YELLOW, AT LEAST 8" IN DIAMETER, AND MOUNTED HORIZONTALLY NEAR THE TOP OF THE SIGN ASSEMBLY. BEACONS SHALL FLASH ALTERNATELY AND CONFORM TO PART 4S OF THE MUTCD.
7. HIGHER FINES ZONES SIGNS SHALL BE COVERED IF A BONA FIDE WORKER WILL NOT BE PRESENT FOR A SIGNIFICANT PERIOD OF TIME. IN SUCH CASES, ASSEMBLIES WITH FLASHING BEACONS SHALL BE TURNED OFF.

BID ITEM	UNIT TO BID
TEMPORARY SIGNS	SQFT

REVISION DATE: 04.10.2025
REVISION NUMBER: 1

SUBMITTED — DIVISION DIRECTOR — 04-10-2025 DATE
APPROVED — STATE HIGHWAY ENGINEER — DATE

TEMPORARY

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

HIGHER FINES ZONE SIGNS

SEPIA NUMBER
S-TTD-120-03

OpenRoads Designer v23.00.01.11 USER: corrinne.schurman FILE NAME: C:\PWWORK\CORRINE.SCHURMAN\D2457913\TTD120.DGN

W3-5

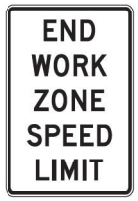
W3-5b
⑦

8" (MIN.) FY
G20-5aP
R2-1
S4-4P
8" (MIN.) FY

Option A

G20-5aP
R2-1

Option B



R2-12

SIGN	BACKGROUND COLOR	MIN. SIZE	
		CONVENTIONAL ROAD	EXPRESSWAY/ FREEWAY
W3-5	FLUORESCENT ORANGE	36" x 36"	48" x 48"
W3-5b	FLUORESCENT ORANGE	36" x 36"	48" x 48"
G20-5aP	FLUORESCENT ORANGE	24" x 18"	36" x 24"
R2-1	WHITE	24" x 30"	36" x 48"
R2-12	WHITE	24" x 36"	36" x 54"
S4-4P	WHITE	24" x 10"	36" x 18"

~ NOTES ~

1. REDUCED SPEED LIMITS SHOULD BE USED ONLY IN SPECIFIC PORTIONS OF THE WORK ZONE WHERE CONDITIONS OR RESTRICTIVE FEATURES ARE PRESENT. LOWERING THE REGULATORY SPEED LIMIT SHOULD BE AVOIDED AS MUCH AS PRACTICAL BECAUSE DRIVERS REDUCE THEIR SPEEDS ONLY IF THEY CLEARLY PERCEIVE A NEED TO DO SO.
2. SPEED LIMIT MAY BE REDUCED BY 15 MPH WITHOUT A TRAFFIC ENGINEERING INVESTIGATION ON HIGHWAYS WHERE THE NORMAL POSTED SPEED LIMIT IS 70 MPH. THE SPEED LIMIT MAY BE REDUCED BY 10 MPH WITHOUT A TRAFFIC ENGINEERING INVESTIGATION ON OTHER HIGHWAYS. LARGER SPEED REDUCTIONS REQUIRE A TRAFFIC ENGINEERING INVESTIGATION AND APPROVAL OF THE SECRETARY OF TRANSPORTATION.
3. A REDUCED SPEED LIMIT AHEAD (W3-5) SIGN SHALL BE INSTALLED IN ADVANCE OF A WORK ZONE WITH A TEMPORARY WORK ZONE SPEED LIMIT. SIGNS SHALL BE DUAL-MOUNTED ON MULTI-LANE HIGHWAYS WHERE MEDIAN IS WIDE ENOUGH TO MAINTAIN LATERAL CLEARANCES AS PRESCRIBED IN THE MUTCD. THE SPEED LIMIT DISPLAYED ON THE SIGN SHALL MATCH THE DESIRED SPEED LIMIT THROUGH THE WORK ZONE.
4. IF THE END OF THE REDUCED SPEED ZONE DOES NOT COINCIDE WITH THE "END ROAD WORK" SIGN, AN "END WORK ZONE SPEED LIMIT" (R2-12) SIGN SHOULD BE INSTALLED AT THE END OF THE REDUCED SPEED ZONE.
5. SPEED LIMIT ASSEMBLIES MAY INCLUDE A "WHEN FLASHING" PLAQUE AND FLASHING BEACONS. BEACONS SHALL BE YELLOW, AT LEAST EIGHT (8) INCHES IN DIAMETER, AND MOUNTED VERTICALLY. BEACONS SHALL FLASH ALTERNATELY AND CONFORM TO PART 4S OF THE MUTCD.
6. IF A SPEED LIMIT IS TO APPLY TO THE ENTIRE LENGTH OF THE WORK ZONE, THE REDUCED SPEED LIMIT AHEAD (W3-5) SIGN SHOULD BE INSTALLED BETWEEN THE FIRST AND SECOND ADVANCE WARNING SIGN, AND THE SPEED LIMIT (R2-1) SIGN OR FLASHER ASSEMBLY SHOULD BE INSTALLED BETWEEN THE SECOND AND THIRD ADVANCE WARNING SIGN. IF A SPEED LIMIT ONLY APPLIES TO A SHORT SECTION OF A LONGER WORK ZONE, THE W3-5 SIGN SHOULD BE MOUNTED APPROXIMATELY 500 FEET IN ADVANCE OF THE SPEED LIMIT SIGN ASSEMBLY AND NO CLOSER THAN 250 FEET TO ANY OTHER SIGNS.

⑦ A "VARIABLE SPEED ZONE AHEAD" (W3-5b) SIGN SHOULD ONLY BE USED INSTEAD OF A REDUCED SPEED LIMIT AHEAD (W3-5) SIGN IF THE ENGINEER HAS APPROVED THE USE OF VARIABLE WORK ZONE SPEED LIMITS, I.E. WHEN THE WORK ZONE SPEED LIMIT IS VARIED BY TIME OF DAY OR AS CONDITIONS CHANGE. VARIABLE WORK ZONE SPEED LIMITS WILL BE SIGNED WITH SPEED LIMIT ASSEMBLIES UTILIZING FLASHING BEACONS OR SPEED LIMIT SIGNS WITH A CHANGEABLE MESSAGE DISPLAY.

BID ITEM	UNIT TO BID
TEMPORARY SIGNS	SQFT

REVISION DATE: 04.10.2025
REVISION NUMBER: 1

04-10-2025
DATE
SUBMITTED
DIVISION DIRECTOR

DATE
STATE HIGHWAY ENGINEER
APPROVED

TEMPORARY

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

SPEED ZONE SIGNING

FOR WORK ZONES

SEPIA NUMBER
S-TTD-130

OpenRoads Designer v23.00.01.11 USER: corinne.schurman FILE NAME: C:\PWWORK\CORRINE.SCHURMAN\D2457914\TTD130.DGN

EXISTING CLEARANCE DETAIL

OVERHEAD SIGN OVER I–24
MP 26.5

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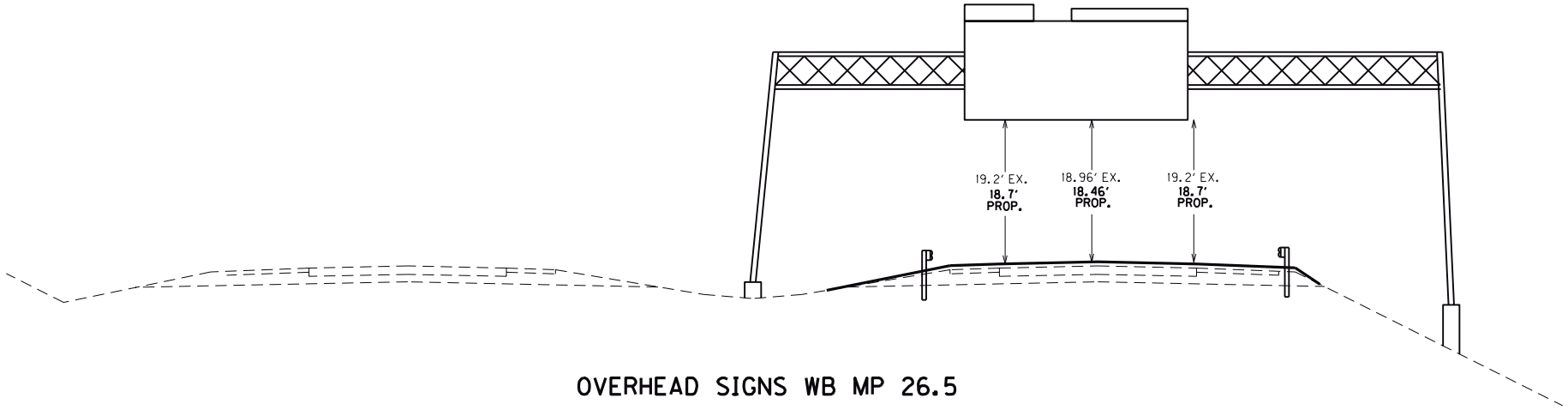
MARSHALL	I-20034	-



OVERHEAD SIGNS WB MP 26.5

CLEARANCE DETAIL
OVERHEAD TRUSS SIGNS

I-24
VERTICAL CLEARANCE

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M.O.T. TYPICAL SECTIONS
I–24

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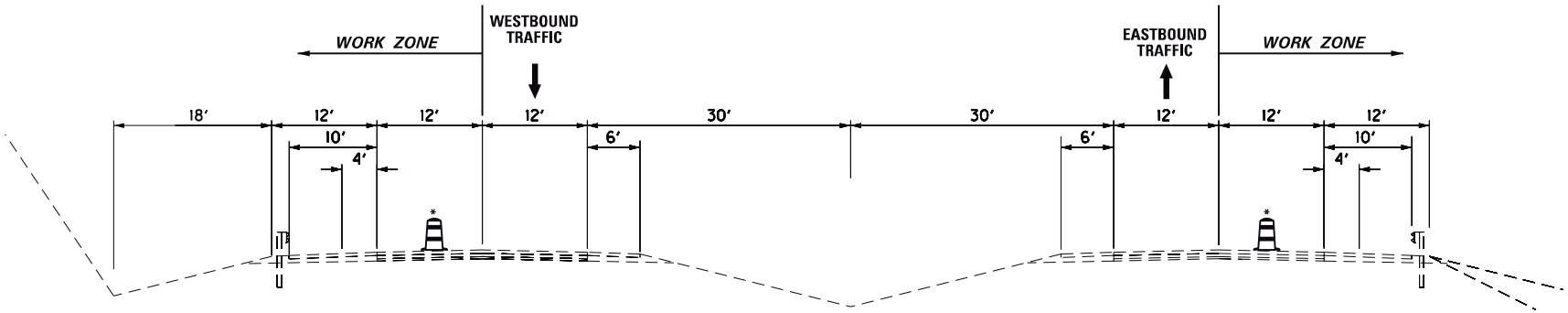
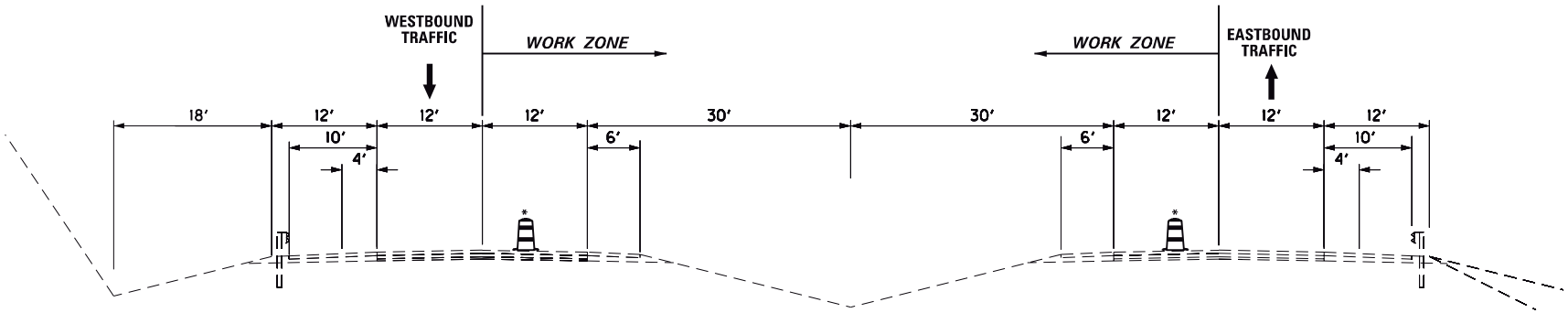


OUTSIDE LANE CLOSURE



INSIDE LANE CLOSURE

* *MOVE DRUM TEMPORARILY WHEN NECESSARY TO ALLOW CONSTRUCTION EQUIPMENT TO PASS. IMMEDIATELY MOVE DRUMS INTO CLOSED LANE AS SOON AS PRACTICAL TO RESTORE LANE WIDTHS.*

NOT TO SCALE

I-24
M.O.T. TYPICAL SECTIONS

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M.O.T. TYPICAL SECTIONS

RAMPS

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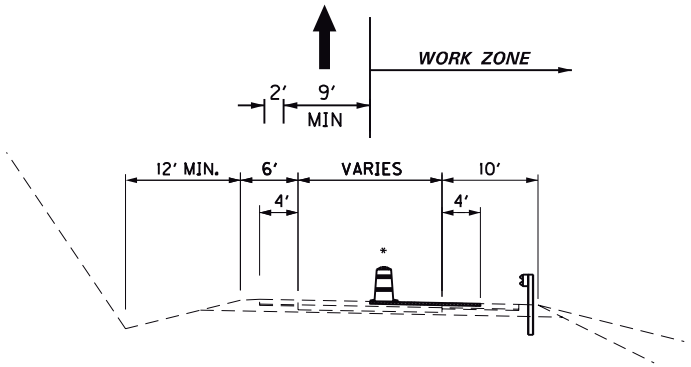
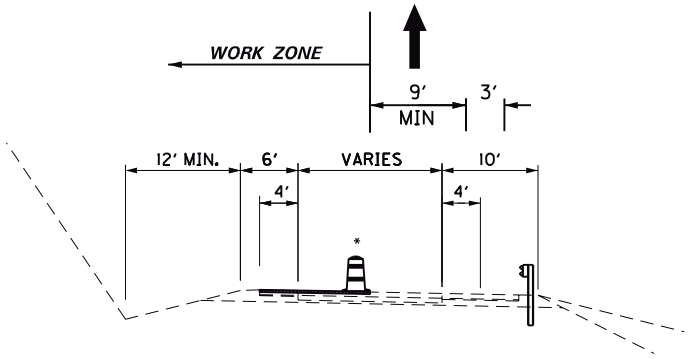


RAMP OUTSIDE CONSTUCTION



RAMP INSIDE CONSTUCTION

* *MOVE DRUM TEMPORARILY WHEN NECESSARY TO ALLOW PAVING EQUIPMENT TO PASS. IMMEDIATELY MOVE DRUMS ONTO NEW ASPHALT AS SOON AS PRACTICAL TO RESTORE LANE WIDTHS.*

LEGEND

MILL AND INLAY

NOT TO SCALE

I-24
M.O.T. TYPICAL SECTIONS

M.O.T. TYPICAL SECTIONS

I–24

US62 N.B. ON RAMP EXTENSION WIDENING

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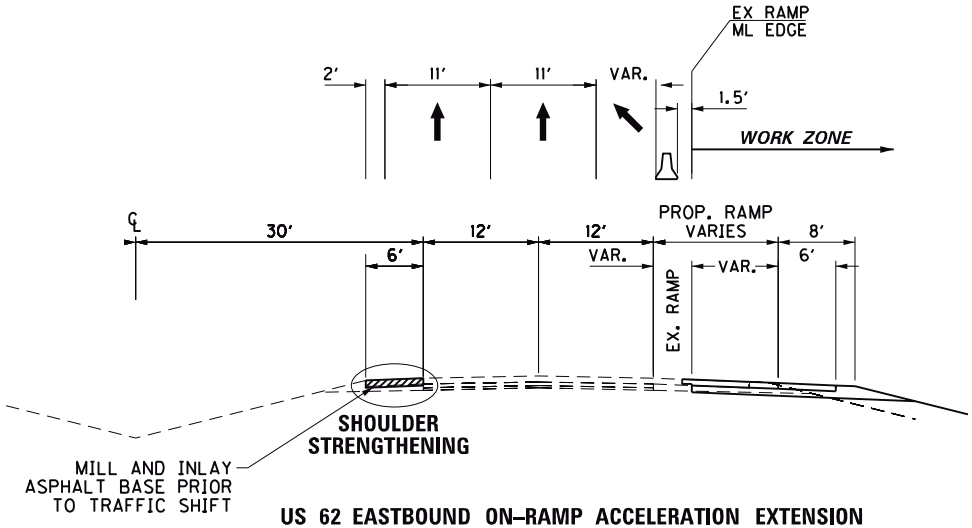
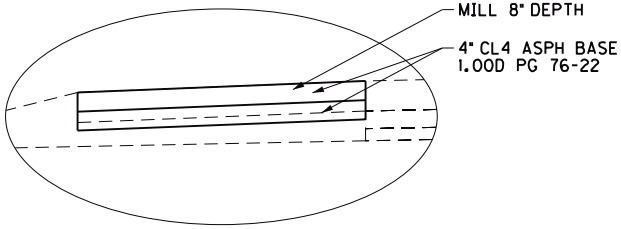
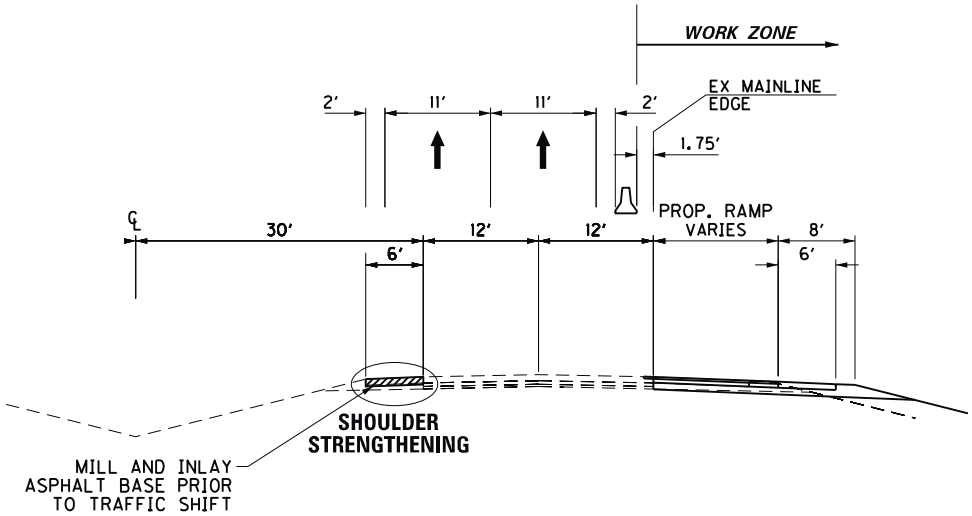
MARSHALL	I-20034	



US 62 EASTBOUND ON–RAMP ACCELERATION EXTENSION
(AT EXISTING RAMP LOCATION)



SHOULDER STRENGTHENING



US 62 EASTBOUND ON–RAMP ACCELERATION EXTENSION
(BEYOND EXISTING RAMP LOCATION)

NOT TO SCALE

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M.O.T. TYPICAL SECTIONS

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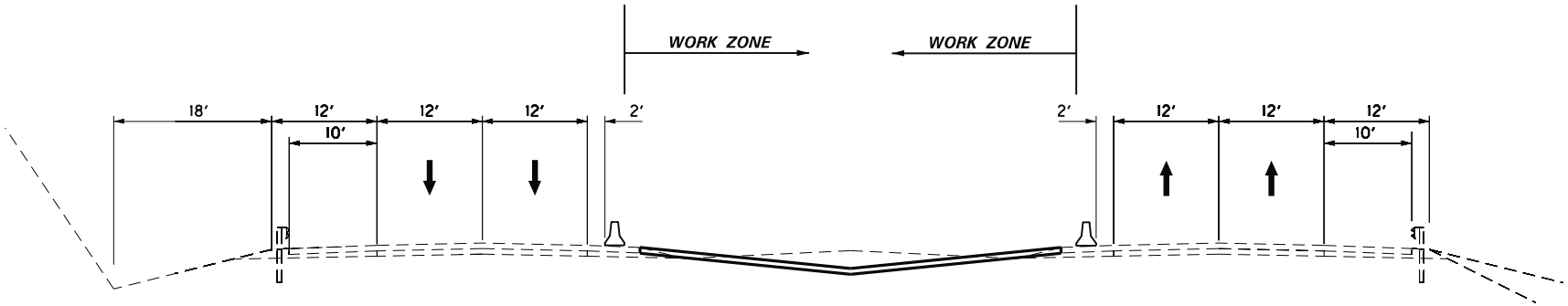
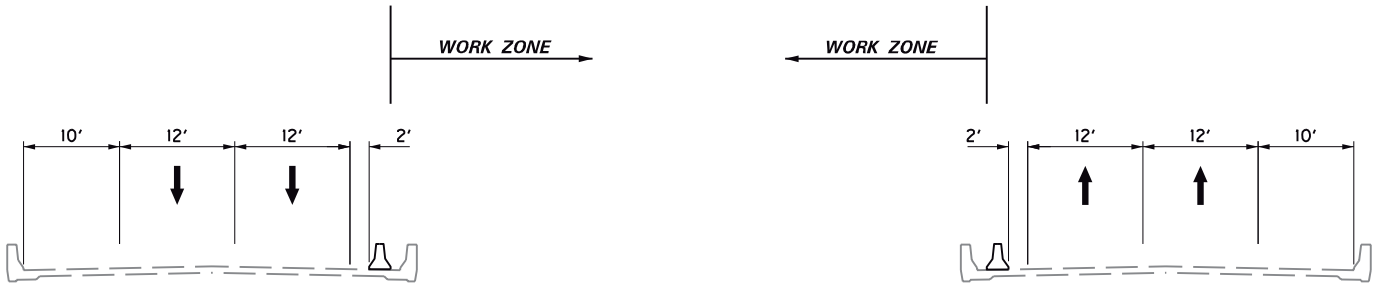
I–24
MEDIAN GRADING AND BULLNOSE TERMINALS
OVER CYPRESS CREEK CANAL
OVER P&L RAILWAY
OVER KY 282



MEDIAN GRADING FOR BULLNOSE TERMINALS
ROADWAY SECTION



MEDIAN GRADING FOR BULLNOSE TERMINALS
BRIDGE SECTION

NOTE: PLACE 100' OF BARRIER PRIOR TO THE BEGIN GRADING OPERATIONS AND 100' BEYOND THE END OF GRADING OPERATIONS. CRASH CUSHIONS REQUIRED ON LEADING END ONLY.

LEAVE ONE GAP IN WALL FOR ACCESS BETWEEN THE P&L RAILROAD BRIDGE (CONTRACTOR CHOOSE DIRECTION) AND PLACE CRASH CUSHION TO PROTECT BARRIER END AT GAP.

NOT TO SCALE

I-24
M.O.T. TYPICAL SECTIONS

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M.O.T. TYPICAL SECTIONS

I–24
BRIDGE BARRIER RETROFIT

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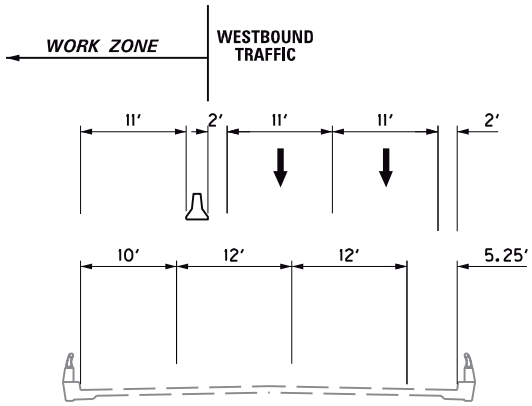
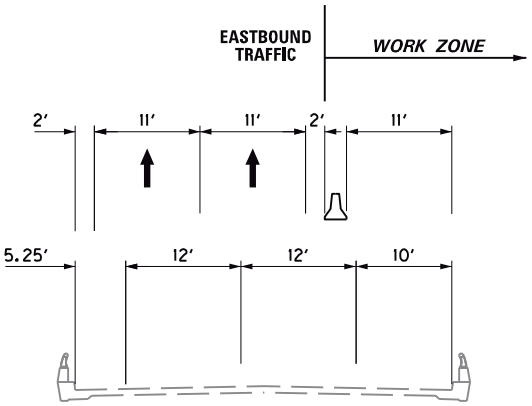
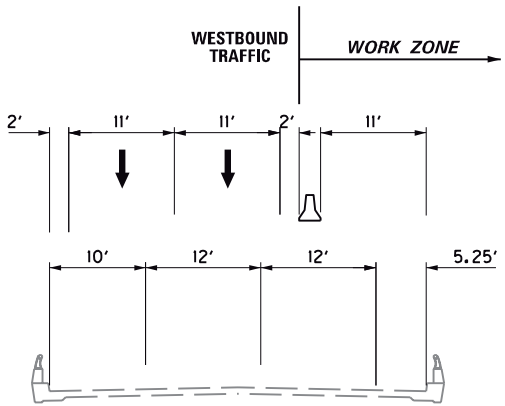


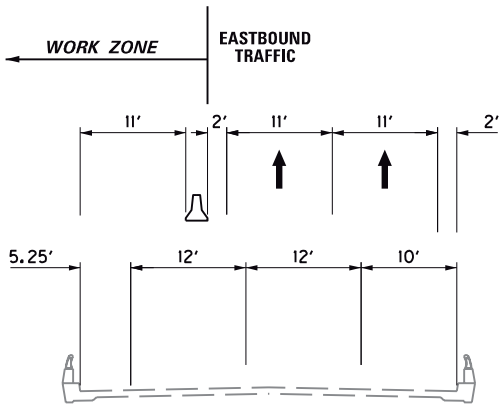
I–24 OVER US 62
I–24 OVER TN. RIVER
OUTSIDE CLOSURE



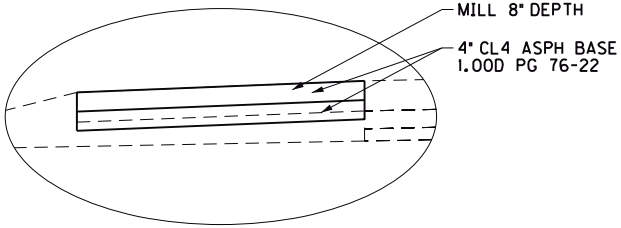
I–24 OVER US 62
I–24 OVER TN. RIVER
OUTSIDE CLOSURE



I–24 OVER US 62
I–24 OVER TN. RIVER
INSIDE CLOSURE



I–24 OVER US 62
I–24 OVER TN. RIVER
INSIDE CLOSURE



SHOULDER
STRENGTHENING

NOTE: COMPLETE STRENGTHING OF SHOULDER BEFORE SHIFTING TRAFFIC ONTO SHOULDER

NOT TO SCALE

I-24
M.O.T. TYPICAL SECTIONS

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M.O.T. TYPICAL SECTIONS

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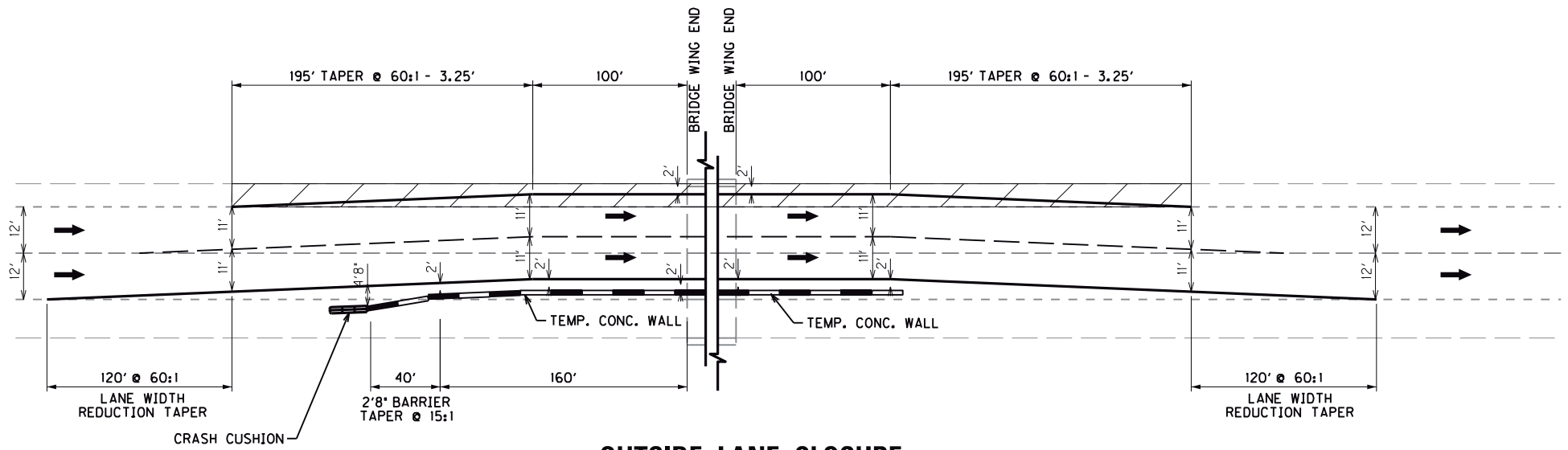
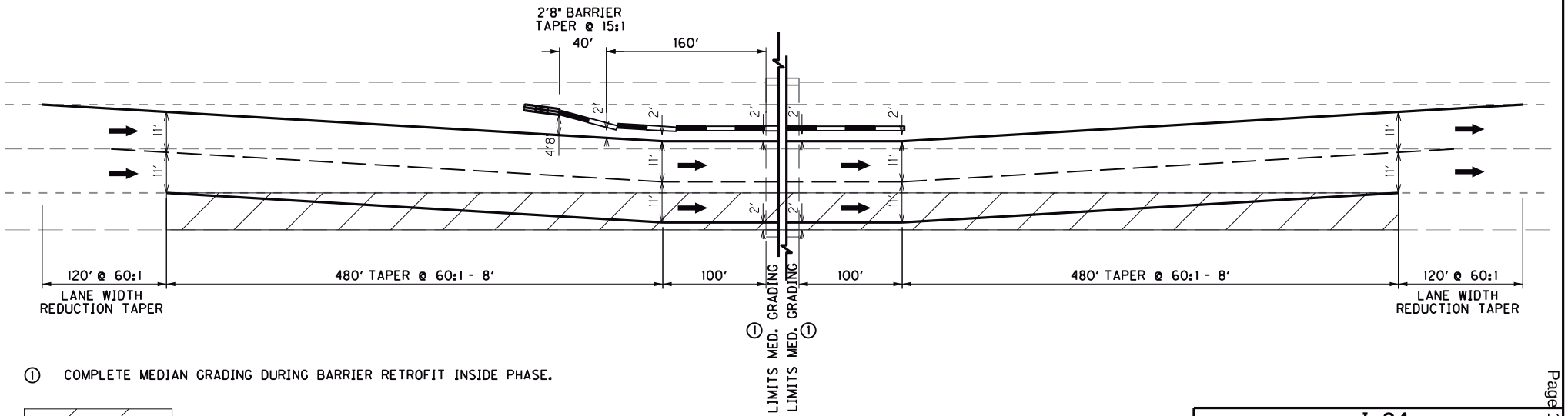
I–24
BRIDGE BARRIER RETROFIT
PLAN SCHEMATIC



OUTSIDE LANE CLOSURE



① COMPLETE MEDIAN GRADING DURING BARRIER RETROFIT INSIDE PHASE.

SHOULDER STRENGTHENING

INSIDE LANE CLOSURE

NOT TO SCALE

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M.O.T. TYPICAL SECTIONS

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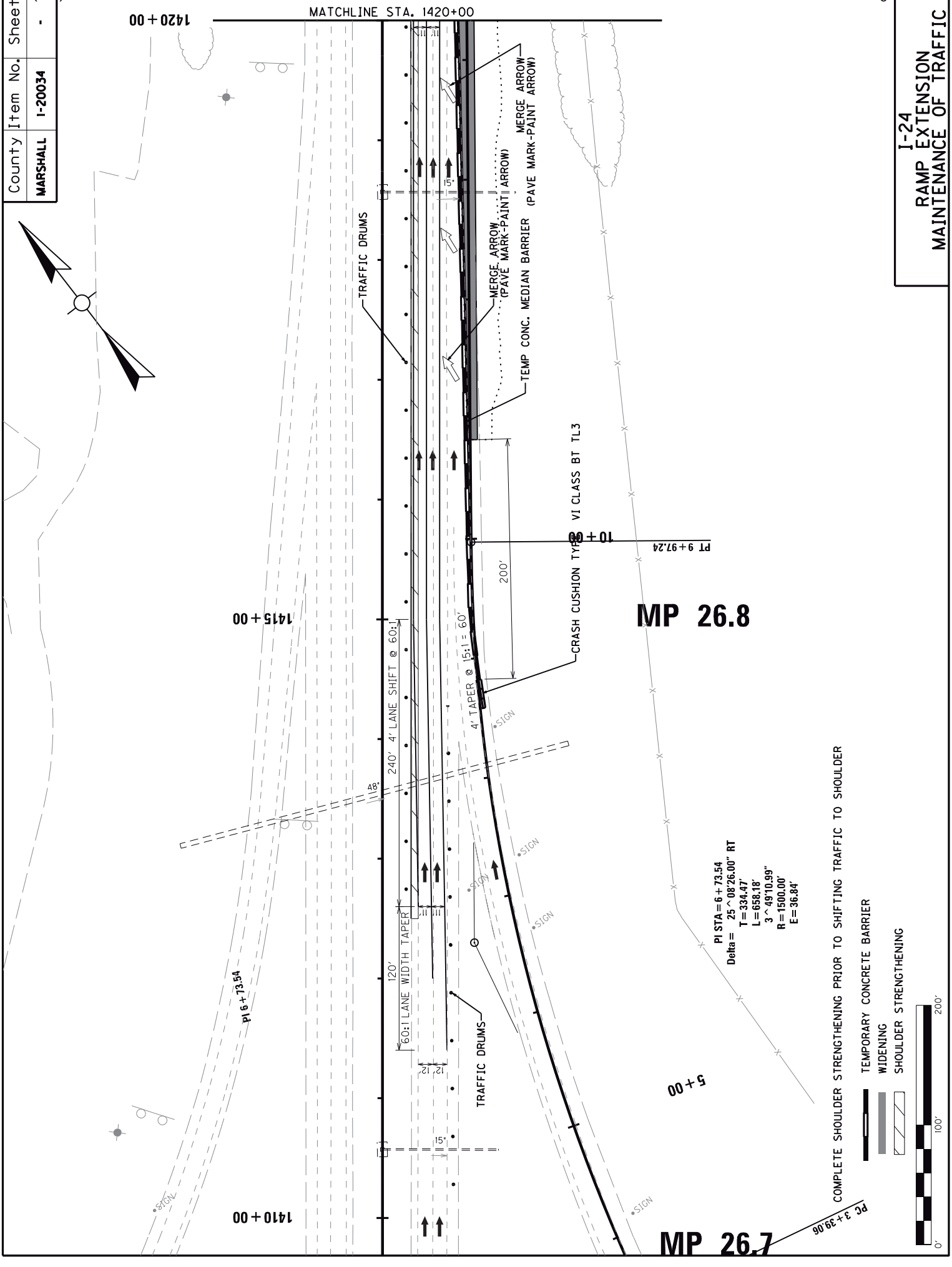
I-24 RAMP EXTENSION MAINTENANCE OF TRAFFIC



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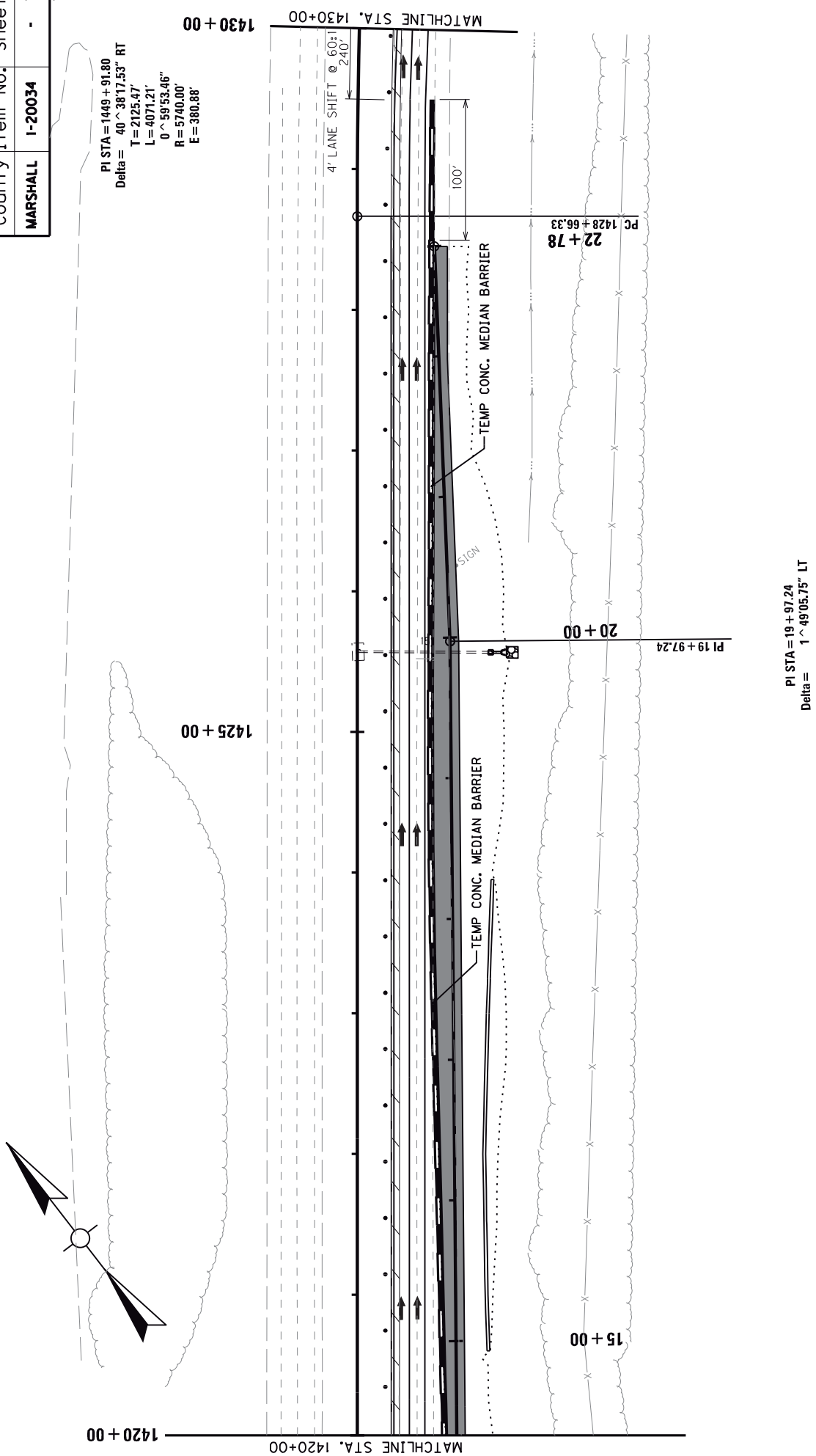
I-24 RAMP EXTENSION MAINTENANCE OF TRAFFIC



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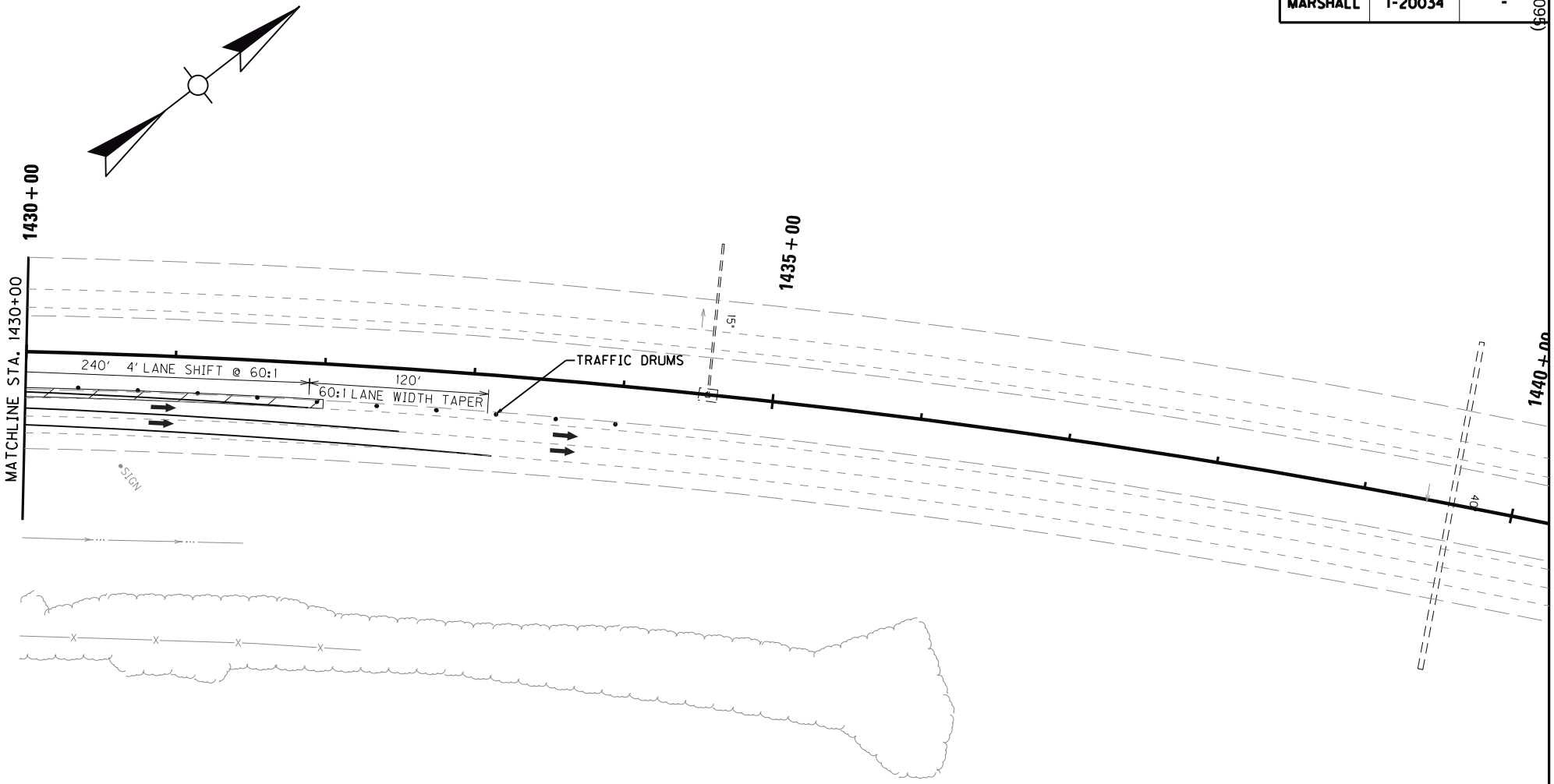

COMPLETE SHOULDER STRENGTHENING PRIOR TO SHIFTING TRAFFIC TO SHOULDER

TEMPORARY CONCRETE BARRIER
WIDENING
SHOULDER STRENGTHENING

0' 100' 200'

I-24
RAMP EXTENSION
MAINTENANCE OF TRAFFIC

TRAFFIC CONTROL PLAN
MARSHALL COUNTY
I-24
NHPP 0241(095)
FD52 079 0024 026-030
Item No. 1-20034

THIS PROJECT IS A FULLY CONTROLLED ACCESS HIGHWAY

TRAFFIC CONTROL GENERAL

Except as provided herein, “Maintain and Control Traffic” shall be in accordance with the Standard Specifications and the Standard Drawings, and the Manual on Uniform Traffic Control Devices (MUTCD), current Edition at the time of letting. Except for the roadway and traffic control bid items listed, all items of work necessary to maintain and control traffic will be paid at the lump sum bid price to "Maintain and Control Traffic". All lane closures used on the Project will be in compliance with the appropriate Standard Drawings.

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. Traffic control devices will conform to the current edition of the MUTCD.

Reduce the speed limit in work areas to 60 miles per hour (35 miles per hour for ramps if applicable) and establish higher fines for work zone speeding violations. The extent of these areas within the project limits will be restricted to the proximity of actual work areas as determined by the Engineer. Notify the Engineer a minimum of 12 hours prior to using the higher fine signs. At the beginning of the work zone, the “BEGIN HIGHER FINE ZONE” signs will be dual mounted. At the end of the work zone, the “END HIGHER FINE ZONE” signs will be dual mounted as well. Remove or cover the signs or turn off flashers when the highway work zone does not have workers present for more than a two-hour period of time. Payment for the signs will be at the unit bid price for Temporary Signs. Any relocation or covering of the signs or operation of flashers will be incidental to “Maintain and Control Traffic”, lump sum.

Night work will be required on this project. Obtain approval from the Engineer for the method of lighting prior to its use.

TRAFFIC PHASING OVERVIEW

This project will be completed by maintaining 2 lanes of travel open per direction during daytime hours and by reduction of traffic to 1 lane during off peak hours only.

Construction of barrier wall retrofits and ramp widening will be performed by shifting traffic partially onto shoulders, use of temporary concrete barrier, and while maintaining 2 lanes of traffic

per direction of travel. Most other items of work will be accomplished while maintaining one lane of traffic per direction of travel in the original traffic lane location, during off peak hours.

Any request for changes to the maintenance of traffic plan and phasing must be made by the contractor in writing and approved by the engineer prior to implementation.

PROJECT PHASING & CONSTRUCTION PROCEDURES

Reduction of Traffic to 1 Lane per direction

No work will be allowed on the project and all lane closures will be prohibited during the following holiday and event dates:

Labor Day	August 29th, 2025 – September 1st, 2025
Thanksgiving	November 27th, 2025 – November 30th, 2025
Christmas	December 24th, 2025 – December 25th, 2025
New Years	December 31st, 2025 - January 1st, 2026
Easter	April 3rd, 2026 – April 5th, 2026
Memorial Day	May 22nd, 2026 – May 25th, 2026
Independence Day	July 3rd, 2026 – July 5th, 2026
Labor Day	September 4th, 2026 – September 7th, 2026
Thanksgiving	November 26th, 2026 – November 29th, 2026

Additionally, lane closures will only be allowed during nighttime, off peak hours, and will be prohibited during the following times daily.

6:00 a.m. to 7:00 p.m.	Every Day of the Week, duration of the project.

Penalties as specified in the Special Note for Project Completion and Liquidated Damages will be applied for any time that a lane closure is in place during a prohibited time or date.

PROJECT PHASING:

The contractor will be allowed to establish the phasing sequence for proposed items of work on the project provided the proposed phasing complies with all requirements listed herein. The contractor shall establish his own schedule for completion of each segment of construction and each item of construction within the segment and establish the sequence of lane closures necessary to complete the work in each segment.

The contractor's schedule shall comply with the above allowable times of lane closures, and shall meet the following sequence requirements:

Complete Bridge Barrier Retrofit construction prior to final mill and inlay operations.

Complete Median Grading and Bullnose Terminal installation for twin structures prior to final mill and inlay operations.

Complete other guardrail replacement items prior to final mill and inlay operations.

Complete Ramp Acceleration Lane Extension construction through the top base course layer prior to final mill and inlay operations. Eliminate any resulting lip or drop-off between the existing roadway surface and the surface of the widening base by placement of a temporary wedge of leveling and wedging.

Bridge Barrier Retrofits

During times of allowable lane closure, perform milling and inlay for shoulder strengthening, place temporary concrete barrier, and reconfigure striping to partially shift traffic onto shoulders. Reduce lane widths to 11' in advance of the work zone utilizing a 60:1 lane reduction taper. Shift traffic partially onto shoulders utilizing a 60:1 lane shift taper and maintain 2 lanes of traffic per direction. Typical sections and a plan view schematic have been provided for guidance for construction of both inside and outside barrier retrofits. Complete median grading and construction of bullnose guardrail terminals during this operation and while inside lanes are closed.

Median Grading and Bullnose Terminals

During times of allowable lane closure, erect a shoulder closure and place temporary concrete median barrier along the inside shoulder both directions of travel. Complete median grading, CSB and Asphalt Seal Coat, and guardrail construction maintaining 2 lanes of traffic per direction of travel in the original lane locations.

Ramp Acceleration Lane Extension

During times of allowable reduction of traffic to 1 lane, perform milling and inlay for shoulder strengthening, place temporary concrete barrier, and reconfigure striping to partially shift traffic onto shoulders. Reduce lane widths to 11' in advance of the work zone utilizing a 60:1 lane reduction taper. Shift traffic partially onto shoulders utilizing a 60:1 lane shift taper and maintain 2 lanes of traffic per direction. Complete the ramp extension work through the final asphalt base course and place a temporary wedge of leveling and wedging to eliminate the lip or drop-off between the existing surface course and the new ramp asphalt base course.

Final Asphalt Surfacing and All Other Items of Work

During times of allowable lane closures, complete all other items of work including guardrail on outside shoulders, milling and inlay of the final asphalt surface, final pavement markings and all other items of work using alternating inside and outside lane closures maintaining traffic in the original lane locations.

Manage production rates and activities during milling and final asphalt paving to ensure traffic can be restored to 2 lanes by the time required daily. The contractor may elect to inlay all milled pavement daily and restore traffic to 2 lanes or may elect mill across both mainline lanes and both shoulders to a common point, ramping the milled pavement to match the existing surface

and restore 2 lanes of traffic on the milled surface. If traffic is allowed to travel on the milled surface, the contractor shall place the final asphalt surface on the previously milled segment on the next available work shift and prior to advancing ahead to begin the next segment of milling.

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".

The contractor is encouraged to perform multiple items of work utilizing the same lane closure when practical to do so in order to expedite the work and reduce the total duration of lane closures.

WINTER SHUTDOWN PERIOD

The contractor may elect to begin work on the project during the 2025 construction season. Complete all work that is initiated in the 2025 construction season, to a point where all pavement edge drop-offs and all roadside obstructions or slope irregularities are eliminated, all guardrail and other safety appurtenances are restored, remove all temporary concrete barriers, and restore traffic to original lane configuration prior to suspending the work for a winter shutdown or other significant period of inactivity. Remove all material stockpiles and equipment from the roadside and clear zone.

SHOULDER PREPARATION AND RESTORATION

Traffic will be required to travel on the existing shoulders for prescribed activities and prescribed locations on the project. 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. Repairs to shoulders are to be paid by the tons of milling measured, asphalt material for tack, and the measured tons of the asphalt mixture used. Use asphalt base, asphalt surface or leveling and wedging 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 will be considered for payment for these potential repairs.

LAW ENFORCEMENT OFFICER

Law enforcement officers will be required to be furnished on the project at any time that traffic is reduced to one lane and at other times as directed by the engineer. The contractor will be required to establish an agreement with a local law enforcement agency to provide an officer and police cruiser to be used to warn traffic of lane closures and stopped traffic ahead. The contractor will be responsible for reimbursing the agency of the costs for this service. This requirement is solely for the intent of warning traffic of a potential danger ahead and not for the purpose of the issuance of traffic violations. The officer should however have authority to issue citations if necessary and at his discretion. Patrolling for speeding and issuance of higher fine citations should be performed by a separate officer and the contractor will not be required to reimburse the agency for that operation.

LANE WIDTHS

The minimum clear lane width will be 11'. Make provisions for the passage of wide loads up to 16'. Use a lane closure all times when work is performed in the lane or adjacent shoulder.

SIGNS

Additional traffic control signs in addition to normal lane closure signing detailed on the Standard Drawings may be required by the Engineer. Additional signs needed for lane closures may include, but are not limited to, dual mounted LEFT/RIGHT LANE CLOSED 1 MILE, LEFT/RIGHT LANE CLOSED 2 MILE, LEFT/RIGHT LANE CLOSED 3 MILE, SLOWED/STOPPED TRAFFIC AHEAD, KEEP LEFT/RIGHT. Signage for reduced speed limits and higher fine work zones will be furnished, relocated, and maintained by the Contractor.

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.

A quantity of signs has been included for "Roadwork Ahead" signs on entrance ramps, extra higher fine signs, keep left/keep right and speed limit signs between interchanges. These are to be paid for only once regardless of how many times they are moved or relocated.

SPEED LIMIT REDUCTIONS AND HIGHER FINE ZONES

Install all signing for speed zone reductions in accordance with Standard Drawing TTD-130.

Reduce the speed limit to 60 MPH when conditions in the Special Note for Speed Zone Signing are met and utilize variable Speed Limit Signs for the duration of the project.

Utilize higher fine zone signs in strict accordance with Standard Drawing TTD-120-03.

TYPE III BARRICADES

Utilize Type III Barricades to deter traffic from entering a closed lane and at all other locations required by the Standard Drawings or MUTCD. During phases that temporary barrier is not employed, place Type III Barricades in the closed lanes at half mile intervals.

ARROW PANELS

Connected Arrow Panels will be required to be used on the project. The Department **WILL NOT** take possession of the flashing arrows upon completion of the work. See Special Note for Connected Arrow Panels.

PORTABLE CHANGEABLE MESSAGE SIGNS

Provide portable changeable message signs (PCMS) in advance of and within the project at locations to be determined by the Engineer. PCMS being bid independently of the Queue Warning System shall be used as directed by the engineer. The PCMS will be in operation at all times. In the event of damage or mechanical/electrical failure, the contractor will repair or replace the PCMS immediately. PCMS will be paid for once, no matter how many times they are moved or relocated. The Department **WILL NOT** take possession of the signs upon completion of the work.

TRUCK MOUNTED ATTENUATORS

Furnish and install MUTCD approved truck mounted attenuators (TMA) in advance of work areas when workers are present less than 12 feet from traffic and not protected by temporary barrier. If there is less than 500 feet between work sites, only a single TMA will be required at a location directed by the Engineer. Locate the TMAs at the individual work sites and move them as the work zone moves within the project limits. All details of the TMA installations shall be approved by the Engineer. TMA will not be measured for payment, but are incidental to “Maintain and Control Traffic,” Lump Sum. The Department **WILL NOT** take possession of the TMAs upon completion of the work.

GUARDRAIL

Guardrail may be removed and later reinstalled at the contractor’s expense to access the work areas. Reinstall guardrail that has been temporarily removed for access as soon as practical after completion of the activity necessitating the guardrail removal. Reinstall guardrail that has been removed for bridge end connector replacement, or other scheduled removal activities as soon as possible and upon completion of the activity necessitating the guardrail removal.

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 CSB. Maintain drums at 20’ spacing in any area in which guardrail has been removed until such time it is replaced.

The contractor shall be responsible for repairs to guardrail damaged by traffic during construction. Payment for the removal of damaged guardrail and installation of new guardrail and/or end treatments will be made at the contract unit price. Repairs to guardrail damaged by traffic during construction shall be made as soon as possible. Reduction of traffic to one lane during times of allowable closure to one lane will be permissible if necessary.

PAVEMENT MARKINGS

Remove or cover the lenses of raised pavement markers that do not conform to the traffic control scheme in use, or as directed by the Engineer. Replace or uncover lenses before a closed lane is reopened to traffic. No direct payment will be made for removing or covering and uncovering the lenses, but will be incidental to "Maintain and Control Traffic," lump sum.

Place temporary and permanent striping in accordance with Section 112, 713, and 714, except that:

1. Temporary and permanent striping will be 6" in width and see Standard Drawings for gore area and chevron width.
2. Edge lines will be required for temporary striping for lane closures greater than 3 days duration.
3. Existing, temporary, or permanent striping will be in place before a lane is opened to traffic.
4. Permanent striping will be Thermoplastic Pavement Markings on asphalt pavement and Durable Type I Tape on concrete bridge decks.
5. Striping removal will be performed by water blasting methods only in a non-destructive manner. The Contractor will be required to adjust his operations to ensure no damage results to ultimate pavement due to striping removal efforts. Temporary removable tape will be used to mask lines and for temporary striping on permanent pavement that is not to be replaced.

Should the Contractor change the existing striping pattern, the Contractor is to restripe the roadway back to its original configuration at his own expense if no work is anticipated for a period of time.

ADJACENT LANE DROP-OFFS

No vertical drop-off, two inches or greater, should occur between adjacent lanes where traffic is expected to cross in a lane-change maneuver.

- Less than two inches—no protection required

  Note: Warning signs (MUTCD - Uneven Lane, W8-11) should be placed in advance of and at 1500 feet intervals, or as directed by the Engineer, throughout the drop-off area. Dual posting on both sides of the traveled way shall be required. (MUTCD - Uneven Lane, W8-11)

- Two to four inches—plastic drums or vertical panels should be used in accordance with MUTCD and Kentucky Standard Drawings. Place Type III Barricades at the beginning of the lane or shoulder closures, and place additional Type III Barricades spaced at 2,500 feet, or as directed by the Engineer, during the time the lane closure is in place.

- Greater than four inches

  Channelizing devices should be used in accordance with MUTCD, Kentucky Standard Drawings and these notes. A 5 foot buffer between the edge of the travel lane and the drop-off should be provided with channelization devices. A positive separation is needed when the buffer cannot be achieved. In lieu of positive separation, a pavement wedge may be constructed with compacted cuttings from milling, CSB, or asphalt mixtures with a 3:1 or flatter slope when workers are not present. When the drop-off is greater than 4 inches and within 10 feet of the traveled lane, positive separation should be considered. Place Type III Barricades at the beginning of the lane or shoulder closures, and place

additional Type III Barricades spaced at 2,500 feet, or as directed by the Engineer, during the time the lane closure is in place, except when positive separation is in use. When concrete barriers are used, special reflective devices or steady-burn lights should be used for overnight installations.

- Temporary Conditions

  For temporary conditions, drop-off areas greater than 4", and less than 5' from the edge of traveled way, may be protected by drums at 50' spacing provided work is pursued continually until the drop-off is eliminated, with the utilization of adequate lighting to illuminate the area during nighttime operations.

PROJECT TRAFFIC COORDINATOR

Designate an employee to be traffic coordinator. The designated Traffic Coordinator must meet the requirements of section 112.03.12 of the Standard Specifications. The Traffic Coordinator will report all incidents throughout the work zone to the Engineer on the project. The Contractor will furnish the name and telephone number where the Traffic Coordinator can be contacted at all times.

This project is designated a "Significant Project" and subject to the requirements of section 112.03.12 of the Specifications for projects of that designation.

COORDINATION OF WORK

The Contractor is advised that 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. In case of conflict, the Engineer will determine the relative priority to give to work phasing on the various projects.

CONTRACTOR'S AND CONTRACTOR'S EMPLOYEES' VEHICLES

In accordance with Section 112.03.03 of the Specifications, place all construction equipment and materials outside the clear zone, beyond the ditch, behind guardrail or off the existing right of way when not in use.

WIDE LOADS

Wide load detours will not be established on this project. Provide for passage of wide loads up to 16 feet. Wide loads may use a portion of the shoulder to allow for passage.

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THIS PROJECT IS A FULLY CONTROLLED ACCESS HIGHWAY

I. DESCRIPTION

Perform all work in accordance with the Department's 2019 Standard Specifications, Supplemental Specifications, Applicable Special Provisions, and Applicable Standard and Sepia Drawings, except as hereafter specified. Article references are to the Standard Specifications. Furnish all materials, labor, equipment, and incidentals for the following work:

(1) Maintain and Control Traffic; (2) Guardrail; (3) Asphalt Pavement and Milling and Texturing; (4) Pavement Markers and Markings; (5) Ramp Acceleration Extension; (6) Bridge Barrier Retrofit; (7) Grading and Drainage; (8) All other work specified as part of this contract.

II. MATERIALS

Except as specified in these notes or on the drawings, all materials will be according to the Standard Specifications and applicable Special Provisions and Special Notes. The Department will sample and test all materials according to Department's Sampling Manual and the Contractor will have the 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. **Pavement Markings - 6 inch.** Use Thermoplastic Pavement Markings for permanent striping on asphalt pavement. Use Durable Type 1 Tape on Bridge Deck Surfaces.

C. **Asphalt Material for Tack Non-Tracking.** See “Special Note for Non-Tracking Tack Coat”.

D. **Joint Adhesive.** See “Special Note for Longitudinal Pavement Joint Adhesive”

E. **Portable Queue Warning Alert System.** See “Special Note for Portable Queue Warning Alert System”.

F. **Queue Protection Vehicle.** See "Special Note for Queue Protection Vehicle".

G. **Asphalt Seal Aggregate.** Use crushed limestone #8 or #9m meeting requirements of section 805 of the Specifications.

H. **Electronic Delivery Management System.** See Special Note for Electronic Delivery Management System for aggregate and See Special Note for Electronic Delivery Management System for asphalt.

I. **Connected Arrow Panels.** See Special Note for Connected Arrow Panels.

J. **Guardrail.** Contrary to Sepia 95, all median guardrail to be constructed between Thrie Beam Bridge Connectors and Thrie Beam Bull-Nose Terminals will be constructed with Thrie Beam Guardrail in lieu of Steel W Beam Guardrail.

III. CONSTRUCTION METHODS

A. **Maintain and Control Traffic.** See Traffic Control Plan. Use waterblasting methods only for striping removal when necessary, in lieu of abrasive or other methods.

B. **Site Preparation.** Be responsible for all site preparation. Do not disturb existing signs. This item will include, but is not limited to, incidental excavation and backfilling; removal of all obstructions or any other items; disposal of materials; sweeping and removal of debris; shoulder preparation and restoration, temporary and permanent erosion and pollution control; and all incidentals. Site preparation will be only as approved or directed by the Engineer.

C. **Disposal of Waste.** Dispose of all cuttings, debris, and other waste off the right-of-way at approved sites obtained by the Contractor. The contractor will be responsible for obtaining any necessary permits for this work. Temporary openings in the right of way fence for direct access to waste sites off the right of way or for access to other public roads will not be allowed. No separate payment will be made for obtaining the necessary permits but will be incidental to the other items of the work. Disposal of existing cuttings and brush shall adhere to Section 202 of the current Standard Specifications.

D. **Final Dressing, Clean Up, and Seeding and Protection.** After all work is completed, completely remove all debris from the job site. Perform Class A Final Dressing on all disturbed areas. Sow disturbed earthen areas with Seed Mixture No. I or Seed Mixture No. II as applicable and use erosion control blanket in lieu of "Seeding and Protection" in all seeding applications.

E. **Guardrail.** Remove guardrail where necessary to replace median guardrail and median grading, replace bridge end connectors, or other activities necessary requiring removal of guardrail for access. Replace guardrail as soon as practical at the conclusion of the work requiring the removal of the guardrail.

Locations are listed as station and offsets to the center of guardrail post for replacement of median guardrail at the twin structures. Minor adjustments to the post spacing may be allowed for bolt hole alignment only unless otherwise approved by the engineer.

Contrary to Sepia 95, guardrail will not be transitioned to Steel W Beam guardrail and rail laps will not be transitioned to mid post location. The 6'3" Non-Symmetrical Transition to W-Beam noted in BHS-014 will be replaced with Thrie Beam Guardrail and guardrail lap location adjusted to 25' from the end of the Thrie Beam Guardrail at the connection point at the bridge wing. The additional post at 21' 10.5" from the bridge wing as depicted in BHS-014 will be required. Field drill guardrail as necessary to connect to this post.

It is anticipated that one segment of Thrie Beam Guardrail will not be at the standard 12.5' length and will require field cutting and field drilling of holes for this one location per system. This proposed nonstandard length location has been identified on the plan sheets. Paint all field cut and field drilled exposed steel with galvanized paint.

For attachment of Thrie-Beam Guardrail Transitions drill through the full width of the existing wing concrete and attach with the same bolt diameter and same nut, bolt and washer requirements as described in BHS-014.

F. **Pavement Striping and Inlaid Pavement Markers.** Pavement striping will be in accordance with Section 112 for temporary striping and Section 714 for Thermoplastic Markings and Durable Type 1 Tape, except that:

(1). Striping will be 6" in width.
(2). Permanent striping or temporary striping will be in place before a lane is opened to traffic.
(3). Pavement Markers shall be installed per Sepia 7, 11, 13 or 14.

G. **On-Site Inspection.** In accordance with section 102.06, each Contractor submitting a bid for this work will make a thorough inspection of the site prior to submitting a bid and will thoroughly familiarize himself with existing conditions so that the work can be expeditiously performed after a contract is awarded. Submission of a bid will be considered evidence of this inspection having been made. Any claims resulting from site conditions will not be honored by the Department.

H. **Caution:** Information shown on the drawings and in this proposal, and the types and quantities of work listed are not to be taken as an accurate or complete evaluation of the material and conditions to be encountered during construction. The bidder must draw his own conclusions as to the conditions encountered. The Department does not give any guarantee as to the accuracy of the data and no claim will be considered for additional compensation if the conditions encountered are

not in accordance with the information above.

I. **Utility Clearance.** It is not anticipated that 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.

J. **Asphalt Material for Tack Non-Tracking.** See "Special Note for Non-Tracking Tack Coat".

K. **Joint Adhesive.** See "Special Note for Longitudinal Pavement Joint Adhesive".

L. **Portable Queue Warning Alert System.** See Special Note for Portable Queue Warning Alert System.

M. **Queue Protection Vehicle.** See Special Note for Queue Protection Vehicle.

N. **Electronic Delivery Management System.** See Special Note for Electronic Delivery Management System for aggregate and See Special Note for Electronic Delivery Management System for asphalt.

O. **Connected Arrow Panels.** See Special Note for Connected Arrow Panels.

P. **Fine Milling.** See Special Note for Fine Milling.

Q. **Merge Arrows.** Use Pave Mark-Paint Arrows for construction of temporary merge arrows in the ramp acceleration and merge area as shown in the Traffic Control Plan. Comply with Figure 3B-24 of the MUTCD for arrow shape.

R. **Fill and Cap Inlet.** Form and pour an 8" thick slab of Class A Concrete covering the entirety of the existing inlet chamber and chamber opening to allow placement of embankment over the existing inlet. Do not fill the inlet chamber, which must remain in service.

S. **Adjust Inlet.** Drill and grout #4 rebar on 8" centers to tie the existing box chamber and top slab of the existing inlet to the proposed concrete. Embed rebar into existing concrete a minimum length of 8" and extend into new concrete a minimum of 8". Form and pour a new top phase of the inlet, including the inlet apron, using similar dimensions and similar reinforcement depicted in RDB-005-09. Furnish and install a new frame and grate.

IV. METHOD OF MEASUREMENT

A. **Maintain and Control Traffic.** See Traffic Control Plan. Only the bid items listed will be measured for payment. No measurement or payment for striping removal or removal or covering of existing pavement marker lenses will be made and will be considered incidental to "Maintain and Control Traffic".

B. **Site Preparation.** Other than the bid items listed, site preparation will not be measured for payment but will be incidental to the other items of work.

C. **Asphalt Material for Tack Non-Tracking.** See "Special Note for Non-Tracking Tack Coat".

D. **Joint Adhesive.** See "Special Note for Longitudinal Pavement Joint Adhesive".

E. **Portable Queue Warning Alert System.** See Special Note for Portable Queue Warning Alert System.

F. **Queue Protection Vehicle.** See Special Note for Queue Protection Vehicle.

G. **Electronic Delivery Management System.** See Special Note for Electronic Delivery Management System for aggregate and See Special Note for Electronic Delivery Management System for asphalt.

H. **Connected Arrow Panels.** See Special Note for Connected Arrow Panels.

I. **Guardrail.** Thrie-Beam Guardrail Transition will be measured and include construction from the bridge wing to the post at 18'9" as in accordance with BHS-014. The Steel Thrie Beam Bullnose Terminal will be measured per each and includes construction to post number 13, in accordance with Sepia 95. All other guardrail between post 13 of the Bullnose Terminal and the pay limits of the Thrie Beam Guardrail Transition will be measured as Guardrail Thrie Beam.

J. **Pave Mark Thermo Chevron.** Chevron markings will be measured as the actual square feet of painted area and not the area of the entire gore area or island.

V. BASIS OF PAYMENT

No direct payment will be made other than for the bid items listed. All other items required to complete the construction will be incidental to the bid items listed. Existing signs damaged by the Contractor will be replaced by the Contractor at his expense. Payment will be made in accordance with the KYTC Standard Specifications, current edition with supplemental specifications and current Standard Drawings unless otherwise specified herein.

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

B. **Site Preparation.** Other than the bid items listed, no direct payment will be allowed for site preparation but will be incidental to the other items of work.

C. **Pavement Marker Removal.** No direct payment will be made for the removal of the existing pavement markers prior to the milling operation and shall be considered incidental to milling and texturing.

D. **Temporary Striping.** In accordance with Section 714.04.01, the Department will **NOT** measure temporary paint used for interim markings for Thermoplastic Paint applications.

E. **Lane Closures.** Contrary to Section 112, lane closures will not be measured for payment but will be incidental to the bid item "Maintain and Control Traffic". Arrow boards, portable message boards, and signs shall be paid for one time regardless of how many times they are moved.

F. **Waterblasting Striping Removal.** Waterblasting Striping Removal will be required for all striping removal applications and will be considered incidental to "Maintain and Control Traffic".

G. **Joint Adhesive.** See "Special Note for Longitudinal Pavement Joint Adhesive"

H. **Asphalt Material for Tack Non-Tracking.** See Special Note for Non Tracking Tack Coat.

I. **Guardrail.** The Department will only measure and pay for the removal of guardrail and placement of new guardrail for items of work that have an established contract quantity of guardrail items. Removal of guardrail may be allowed for other work items for access to the work area, however the removal and reinstallation of guardrail for these applications will be at the contractor's expense.

   Payment for Bullnose Terminals, Thrie Beam Transitions, and Guardrail Thrie Beam will include all work and materials necessary to complete the system as described in the plan sheets, Standard Drawings, and Sepia drawings, including but not limited to additional posts where shown, drilling existing concrete wing and installation of custom length bolts, and any modifications to guardrail lengths, field drilling, repair painting of field cuts or drill holes, and any other item of work required to complete the system.

J. **Portable Queue Warning Alert System.** See Special Note for Portable Queue Warning Alert System. No measurement or payment for Portable Queue Warning Alert System, Message Boards, or Sensors will be made for months that there is no activity on the project or lane closures.

K. **Queue Protection Vehicle.** See Special Note for Queue Protection Vehicle. No measurement or payment for Queue Protection Vehicle or Furnish Queue Protection Vehicle will be made for months that there is no activity on the project or lane closures.

L. **Truck Mounted Attenuator.** See Traffic Control Plan. No direct measurement or payment will be made for Truck Mounted Attenuator and will be considered incidental to Maintain and Control Traffic.

M. **Electronic Delivery Management System.** See Special Note for Electronic Delivery Management System for aggregate and See Special Note for Electronic Delivery Management System for asphalt.

N. **Connected Arrow Panels.** See Special Note for Connected Arrow Panels.

O. **Fine Milling.** See Special Note for Asphalt Milling and Texturing. Contrary to the Special Note for Fine Milling, all asphalt milling will be paid as "Asphalt Pave Milling & Texturing, regardless of methods employed.

P. **Tie to Existing Inlet.** Tying proposed pipe to an existing inlet will be considered incidental to other items in the contract.

Q. **Adjust Inlet.** The item adjust inlet includes all materials, equipment, and labor to construct a new top phase of the inlet including but not limited to concrete, steel reinforcement, and a new frame and grate.

R. **Seeding and Protection.** No direct payment will be made made for Seeding and Protection and will be considered incidental to Erosion Control Blanket in accordance with the Specifications.

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This project is intended to construct a thin mill and inlay both eastbound and westbound.

1. The dimensions shown on the typical section for pavement and shoulder widths and thickness are nominal or typical dimensions. The actual dimensions to be constructed may be varied to fit existing conditions as directed or approved by the Engineer. It is not intended that existing pavement or shoulders be widened unless otherwise specified in the Proposal.

2. The contractor as part of his site visit shall inventory for existing overhead utility locations and conduct any operations in the vicinity of an overhead utility observing safe minimum clearances. The following approximate overhead utility locations were observed on the project:

Mile	26.862	Mile	27.995	Mile	29.738
Mile	27.869	Mile	28.446		
Mile	27.875	Mile	29.704		

CAUTION: All utilities should be avoided on this project. If any utility is impacted, it will be the contractor's responsibility to contact the affected utility and cover any costs associated with the impact.

3. The contractor is advised that the planned locations of work were established by project mile point signs and may not match the official KYTC Mile Point Route Log.

4. Quantities of guardrail removal and installation of new guardrail have been established for areas requiring removal for specific repairs or replacement. The contractor will place traffic drums on 20' spacing in the areas and pin down exposed blunt ends until such time that guardrail is re-established. Either a lane closure or shoulder closure shall be in place at any time that a section of guardrail is not in place. Hang guardrail daily on all posts driven and eliminate all blunt ends by the end of each day's production shift. The contractor shall either install end treatments on the leading end of each string of guardrail by the end of each day's shift or pin the leading end guardrail down and cover with CSB or soil until such time that an end treatment can be installed.

5. The Contractor shall deliver existing salvaged guardrail system materials to the Central Sign Shop and Recycle center at 1224 Wilkinson Blvd in Frankfort, KY. Contact Section Supervisor at (502) 564-8187 to schedule the delivery of material. Deliver the material between the hours of 8:00AM and 3:30PM, Monday through Friday. There is a Guardrail Delivery Verification Sheet which must be completed

and signed by the Contractor, Engineer and a representative of the Central Sign Shop and Recycle Center. A copy of this sheet is included elsewhere in the proposal.

6. Flexible Delineators shall meet the requirements of Section 830 and 838 of the Standard Specifications and be placed in accordance with Section 3D of the M.U.T.C.D., current edition and current Standard Drawing.

7. This project requires the use of a Material Transfer Vehicle. In accordance with Section A of 403.03.05.

8. See Special Note for Signing Variable Work Zone Speed Limits in Construction Work Zones for speed posting requirements. Also, higher fine signs are set up in the project to be installed while workers are present in the work zone and not protected by barrier wall.

9. The contractor is to take care not to damage any existing roadway signs. Any roadway signs that are damaged during construction are to be replaced at the contractor's expense in accordance with section 105.08 of the standard specifications.

10. Quantities of Asphalt Seal Coat and Seal Aggregate, and CSB base have been established to wedge and eliminate greater than 1 inch drop offs. Due to the inconsistent nature of the slopes outside the paved shoulder, and due to the presence of existing guardrail, application of asphalt seal coat will not be practical in all locations. The intent is to provide a CSB wedge to eliminate drop-off situations and to re-establish the typical stone shoulder width where needed and where practical to do so. Minor grading of existing DGA shoulders may be required to remove excess material, debris, or vegetation, or on wide shoulders to eliminate rutted and shoved material, prior to placement of the new CSB material. Perform the minor grading as needed and flat roll the surface prior to placement of additional CSB or Asphalt Seal Coat.

11. Quantities of CSB Base, Asphalt Seal Coat and Seal Aggregate have been established to provide stone base with seal coat coverage in median locations where access will be severed by construction of new Bullnose Guardrail Terminal systems.

12. Coordinate activities of any adjacent contracts with this contract. The engineer will decide the relative priority concerning phasing and maintenance of traffic when conflicts arise with projects in close proximity with this project.

13. Any grading, sod removal or clearing of vegetation necessary to prepare the roadside shoulders for placement of the CSB wedge and asphalt seal coat will be considered site preparation and will not be measured for payment.

14. Remove any existing signs that may conflict with construction in the median grading areas or ramp acceleration extension area. Protect and store signs in a covered, dry building or shed, and reinstall signs at their prior installed locations at the conclusion of the grading operation. No direct payment will be made for removing, storing, and re-installation of existing roadway signs and will be considered incidental to Maintain and Control Traffic.

15. Guardrail quantities have been established to replace all bridge end connectors (both inside shoulder connectors and outside shoulder connectors), and to replace all median guardrail at twin bridge structures with Bull-Nose Terminals and Thrie Beam Guardrail.

16. A quantity of roadway excavation has been established to perform regrading of the median at the twin bridge structures in preparation for new guardrail, and for excavation for widening and extension of the eastbound US 62 interchange on ramp, see Cross Sections. Contrary to Sepia 95, construct median regrading slopes between 4% and 10% cross slope as shown in the cross sections and as designed to maintain drainage.

17. Quantities have been established to modify existing drainage systems where necessary to complete median regrading and complete the widening of the eastbound US 62 on ramp.

18. Cross sections have been provided for the US 62 eastbound on ramp extension and for median grading. Roadway Excavation will only be measured and paid for work items in which cross sections have been provided. Any other grading or excavation necessary to complete the project will be considered as site preparation and incidental to other items of work.

REFERENCES

1. Kentucky Transportation Cabinet, Department of Highways, Standard Specifications for Road and Bridge Construction, Edition of 2019.

2. FHWA Manual on Uniform Traffic Control Devices – 2023 Edition.

3. Kentucky Department of Highways Standard Drawings, Current Edition, as applicable:

BHS-014	THRIE-BEAM GUARDRAIL TRANSITION (TL-3)
RBI-001-12	TYPICAL GUARDRAIL INSTALLATIONS
RBI-002-07	TYPICAL GUARDRAIL INSTALLATIONS
RBM-020-09	DELINEATORS FOR CONCRETE BARRIERS
RBM-115-10	CONCRETE BARRIER WALL TYPE 9T (TEMPORARY)
RBR-001-13	STEEL BEAM GUARDRAIL (“W” BEAM)
RBR-005-11	GUARDRAIL COMPONENTS
RBR-015-06	STEEL GUARDRAIL POSTS
RBR-018	GUARDRAIL SYSTEM TRANSITION
RBR-055-01	DELINEATORS FOR GUARDRAIL
RBR-100-07	STEEL BEAM GUARDRAIL (THRIE BEAM)
RDB-005-09	DROP BOX INLET TYPE 5A-5B-5C-5D-5E & 5F
RDH-020-03	SLOPED & FLARED HEADWALLS FOR 12” TO 27” PIPE
RDI-001-10	CULVERT AND STORM SEWER PIPE TYPES AND COVER HEIGHTS
RDI-020-10	PIPE BEDDING FOR CULVERTS, ENTRANCE, AND STORM SEWER PIPE
RDI-021-01	PIPE BEDDING FOR CULVERTS, ENTRANCE, AND STORM SEWER REINFORCED CONC. PIPE
RDI-025-06	PIPE BEDDING TRENCH CONDITION
RDI-026-01	PIPE BEDDING TRENCH CONDITION REINFORCED CONC. PIPE
RDI-040-01	EROSION CONTROL BLANKET SLOPE INSTALLATION
RDI-041-01	EROSION CONTROL BLANKET CHANNEL INSTALLATION
RDX-060-04	INTERMEDIATE AND END ANCHORS FOR CIRCULAR PIPE
RDX-210-03	TEMPORARY SILT FENCE
RDX-220-05	SILT TRAP TYPE A
RDX-225-01	SILT TRAP TYPE B
RGS-002-06	SUPERELEVATION FOR MULTI-LANE PAVEMENT
RGX-001-06	MISCELLANEOUS STANDARDS
RPM-100-11	CURB AND GUTTER CURBS AND VALLEY GUTTER
TPM-170-01	FLEXIBLE DELINEATOR POST ARRANGEMENTS FOR HORIZONTAL CURVES
TPM-171-01	FLEXIBLE DELINEATOR POST ARRANGEMENTS FOR INTERCHANGE RAMPS AND CROSSOVERS
TPM-200	TYPICAL ENTRANCE RAMP MARKINGS FOR INTERSTATES AND PARKWAYS
TPM-201	TYPICAL EXIT RAMP MARKINGS FOR INTERSTATES AND PARKWAYS
TPR-130	RUMBLE STRIP DETAILS MULTI-LANE ROADWAYS AND RAMPS
TTC-115-04	LANE CLOSURE MULTI-LANE HIGHWAY CASE I
TTC-120-04	LANE CLOSURE MULTI-LANE HIGHWAY CASE II
TTC-135-03	SHOULDER CLOSURE
TTC-160-02	TEMPORARY PAVEMENT MARKER ARRANGEMENTS FOR LANE CLOSURES

TTD-125-03	PAVEMENT CONDITION WARNING SIGNS
TTS-110-02	MOBILE OPERATION FOR PAINT STRIPING CASE III
TTS-115-02	MOBILE OPERATION FOR PAINT STRIPING CASE IV
TTS-120-02	MOBILE OPERATION FOR DURABLE STRIPING CASE I

4. Kentucky Transportation Cabinet, Department of Highways, Standard Specifications for Road and Bridge Construction, Edition of 2019, Including - Supplemental Specifications, as applicable:

Special Note	Typical Section Dimensions *attached*
Special Note	Portable Changeable Message Signs *attached*
Special Note	Before You Dig *attached*
Special Note	Fixed Completion Date and Liquidated Damages *attached*
General Note	Asphalt Pavement Ride Quality (Cat A) *attached*
General Note	Compaction of Asphalt Mixtures (Option A) *attached*
Special Note	Asphalt Milling and Texturing *attached*
Special Note	Special Note for Ribbon Thermo Striping Application *attached*
Special Note	Special Note for Significant Project *attached*
Special Note	Guardrail Delivery Verification Sheet *attached*
Special Note	Special Note for Longitudinal Pavement Joint Adhesive *attached*
Special Note	Special Note for Paver Mounted Temperature Profiles *attached*
Special Note	Special Note for Non-Tracking Tack Coat *attached*
Special Note	Special Note for Experimental KYCT and Hamburg Testing *attached*
Special Note	Special Note for Recycled Asphalt Pavement (RAP) Stockpile Management *attached*
Special Note	Special Note for Portable Queue Warning Alert System *attached*
Special Note	Special Note for Queue Protection Vehicle *attached*
Special Note	Special Note for Electronic Delivery Management System (e-Ticketing) Aggregate *attached*
Special Note	Special Note for Electronic Delivery Management System (e-Ticketing) Asphalt *attached*
Special Note	Special Note for Connected Arrow Panels *attached*
Special Note	Special Note for Signing Variable Work Zone Speed Limits in Construction Work Zones *attached*
Special Note	Special Note for Fine Milling *attached*
Special Note	Special Note for Concrete Sealing *attached*

SPECIAL NOTE FOR TYPICAL SECTION DIMENSIONS
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The dimensions shown on the typical sections for pavement and shoulder widths are nominal or typical dimensions. The actual dimensions to be constructed may be varied to fit existing conditions as directed or approved by the Engineer. It is not intended that existing pavement or shoulders be widened or narrowed **EXCEPT** where specified elsewhere in the Proposal.

SPECIAL NOTE FOR BEFORE YOU DIG

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The contractor is instructed to call 1-800-752-6007 to reach KY 811, the one-call system for information on the location of existing underground utilities. The call is to be placed a minimum of two (2) and no more than ten (10) business days prior to excavation. The contractor should be aware that owners of underground facilities are not required to be members of the KY 811 one-call before-u-dig (bud) service. The contractor must coordinate excavation with the utility owners, including those whom do not subscribe to KY 811. It may be necessary for the contractor to contact the county court clerk to determine what utility companies have facilities in the area.

Special Note for Fixed Completion Date and

Liquidated Damages

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Liquidated Damages in the amount specified in the Standard Specifications, per calendar day, will be assessed for each day work remains incomplete beyond the Specified Project Completion Date. This project has a Fixed Project Completion Date of September 4th, 2026.

Holiday and event dates have been established in the Traffic Control Plan that prohibit all lane closures on the project. A penalty of $10,000 per day will be assessed for each day, or portion of a day, that a lane closure is in place or any work is performed on a date that lane closures are prohibited by the Traffic Control Plan.

Additionally, times and dates prohibiting mainline lane closures that reduce traffic to 1 lane in a direction of travel have been established in the Traffic Control Plan. An hourly penalty will be applied to each lane closure that is in place reducing traffic to 1 lane in a direction of travel during a time of day or date that is prohibited in the Traffic Control Plan. A penalty of $5,000 will be assessed for the first hour, or portion of an hour that traffic is reduced to one lane during a time of day or date prohibited in the Traffic Control Plan. A penalty of $10,000 will be assessed for the second hour or portion of an hour, and all successive hours or portion of an hour, that traffic is reduced to one lane during a time of day or date prohibited in the Traffic Control Plan until such time that traffic is restored to compliance with the Traffic Control Plan.

Multiple penalties will be applied for multiple lane closures that are not in compliance with the Traffic Control Plan. Penalties for non-compliant lane closures will be assessed in addition to any other applicable Liquidated Damages, or other penalties, if applicable.

All Liquidated Damages and any other applicable penalties will be applied cumulatively and concurrently.

Also contrary to Section 108, Liquidated Damages and penalties for non-compliant lane closures will be charged during the months of December through March.

SPECIAL NOTE FOR
ASPHALT MILLING AND TEXTURING
I-24
MARSHALL COUNTY
ITEM NO. 1-20034

The Contractor will take possession and dispose of the millings at a location off the right of way.

Removal of the existing pavement markers prior to the milling operation is considered incidental to the bid item “Asphalt Pave Milling & Texturing”.

All milling operations will be paid as “Asphalt Pave Milling & Texturing”, regardless of methods or equipment employed. If the contractor elects to allow traffic to travel on the milled surface, fine milling will be required and will be completed in accordance with the Special Note for Fine Milling.

Additionally, if traffic is allowed to travel on milled surfaces, a vacuum sweeper truck will be required to clean the entire milled surface prior to application of traffic, and prior to application of the asphalt overlay course. All costs associated with furnishing and operating the vacuum sweeper truck will be considered incidental to “Asphalt Pave Milling & Texturing”.

SPECIAL NOTE FOR
RIBBON THERMO STRIPING APPLICATION
I-24
MARSHALL COUNTY
ITEM NO. 1-20034

Contrary to Section 714.02.05 of the Standard Specifications for Road and Bridge Construction, application of 6 inch and 12 inch white and yellow “long-line” thermoplastic striping will be required to be by ribbon-extrusion gun at all locations that are to be applied over milled rumble strips in lieu of an extrusion die application. Also, ribbon-extrusion gun application may be used for all other 6 inch and 12 inch white and yellow “long-line” thermoplastic striping on this project in lieu of an extrusion die application.

Special Note for Connected Arrow Panels

1. DECRIPTION

Furnish, install, operate, and maintain connected arrow panels at the locations shown on the plans or designated by the Engineer. Remove and retain possession of arrow panels when they are no longer needed on the project. The connected arrows panels shall be capable of reporting real-time lane closure and location information to the Kentucky Transportation Operations Center as well as for third party GPS vendors (Mapping, Navigation, Connected Vehicles, etc).

2. MATERIALS & EQUIPMENT

2.1. General

Conform to the current requirements of the Standard Drawings and the MUTCD. Mount on traffic-worthy carriages that meet all applicable safety standards. Devices shall be compliant with current MASH standards. Use either diesel powered, electric, or solar powered. A portable dynamic message sign may be used to simulate an arrow panel if it meets the requirements in this section. The use of retrofit kits to modify older arrow panel equipment to become “connected” will be allowed as long as they are in compliance with this special note, meet the manufacturer's specifications and recommendations, and are approved by the Engineer.

Materials installed on the project shall be provided by the Contractor in new or like-new condition, shall be corrosion resistant, and in strict accordance with all the details shown within Contractor's Plans approved by KYTC. The Contractor shall maintain an adequate inventory of parts and replacement units to support maintenance and repair of the arrow panels. Pre-deployment is a condition of the system's acceptance and is based on the successful performance demonstration for a (5) day continuous period in accordance with this specification and as set forth in the plans.

2.2. Capabilities and Performance Requirements

2.2.1. Power System: The arrow panels power source shall be capable of maintaining power as well as ability to broadcast location and operations data for year-round deployment in a stand-alone state and without intervention.

2.2.2. Display: Type C Arrow panels as defined in Part 6 of the MUTCD are required for all applications. The following display requirement shall apply to Connected Arrow Panels:

- Minimum display size shall be 96 inches wide by 48 inches tall.
- Minimum legibility distance is 1 mile.
- Minimum number of elements (or pixels) is 15.
- Elements shall be capable of at least 50% dimming from full brightness. Use dimmed mode for nighttime operation.
- Color presented by elements shall be yellow.

2.2.3. Operating Modes: Connected Arrow Panel shall be switched between the following modes in accordance with the contract or as directed by the Engineer:

- Blank – The unit is turned ON, but the display shall be blank and the connected arrow panel shall make transmissions to the data feed.
- Flashing Left/Right Arrow
- Flashing Double Arrow
- Alternating Diamond/Flashing Caution

2.2.4. GPS and Remote Communications: The connected arrow panels shall be connected to the cloud and provide a data feed compliant with latest specification of the U.S Department of Transportation Work Zone Data Exchange (WZDx) Device Feed. Furthermore, the real time data program shall be in compliance with "Title 23 of the Code of Federal Regulations (CFR) Chapter 1 Subchapter F Part 511.305-315 (https://www.ecfr.gov/current/title-23/part-511/subpart-C)." Arrow panels shall have the ability to receive and transmit the GPS coordinates (latitude and longitude) within a 30-foot diameter of its true location. Arrow panels shall transmit status and location as follows: a). Mode change within 2 minutes. b). Location (if moved more than 500 feet) within 2 minutes. c). Health check every 30 minutes.

Data shall be accessible through a website and the Contractor shall provide a username and password for protection. The website shall be accessible seven (7) days a week and twenty - four (24) hours a day. The website shall provide historical & real-time data in graphical and numerical formats and shall have the capability of being integrated within the Department's Traffic Operations Center (if requested). The website should be compatible to most handheld devices. Data shall be saved on the manufacturer's network for up to (5) years from the deployment date of system and shall be provided at the request of the Department at any time within the (5) year window. The use of the website shall be included within the price of connected arrow panels.

3. CONSTRUCTION

The Contractor will be required to perform a trial run with the arrow panels to be utilized for a project at least 1 week prior to being deployed in the presence of the Engineer. The trial run shall go through a series of steps and meet all the following requirements to the satisfaction of the Engineer to ensure the devices are communicating and responding in the provided WZDx Device Feed:

- Make sure device is turned on, with a blank display, and at the start location – Make sure it is blank and the data feed accurately represents this.
- Right Arrow – Turn the arrow panel to right and wait at least 5 minutes, so the data is archived.
- Left Arrow – Turn the arrow panel to left and wait at least 5 minutes, so the data is archived.
- Move 500' – Blank the display. Move the arrow panel at least 500' (try to minimize as much as possible).

- Wait 5 minutes after 1st move – Turn on Right Arrow Display. Wait 5 minutes to see if the location is refined.
- Move 500' again – Blank the display. Move the arrow panel again at least 500' (try to minimize as much as possible).
- Wait 5 minutes after 2nd move – Turn on Left Arrow Display. Wait 5 minutes to see if the location is refined.
- Right Arrow again – Change to right arrow to make sure the device location and information is updated.
- Wait 1 hour (if on roadway wait as long as possible) – Wait 1 hour to see how much the check-in occurs.
- Turn Device Off – Turn the device off and record information.

Once the arrow panels are approved by the Engineer, install them at the beginning of the lane closure taper per plan or as the Engineer directs and ensure the panels operate continuously when deployed on the project. The Contractor shall have available one portable flashing arrow that has been approved in reserve. Place the reserve arrow panel in operation if one is damaged or if there is mechanical or electrical failure. A qualified technician will be responsible to correct any deficiencies in accordance with Section 112.03.15 deemed necessary by the Engineer.

When the connected arrow panel is not displaying the flashing left or right arrow, the display shall be blank and the connected arrow panel shall make transmissions to the data feed. When a connected arrow panel is switched to Flashing Left Arrow mode or Flashing Right Arrow mode, the display shall flash accordingly, and the connected arrow panel shall transmit its location and its current operating mode to the data feed. The Connected Arrow Panels central server shall provide real-time status change alerts to a list of designated personnel via text and/or email. An alert shall be sent each time a device is switched between operating modes (i.e., switched between ON mode and OFF mode; each time a connected arrow panel is switched between blank, flashing left arrow mode, flashing right arrow mode, flashing caution mode), each alert shall include the current operating mode, the previous operating mode, the date and time of the mode switch, and the location (latitude and longitude) of the device at the time of the mode switch.

4. MEASUREMENT

The Department will measure each item below in Months. For partial months the Department will pay in 0.25 increments based on the number of calendar days in the below table.

Partial Month Payment Schedule

Days	Increment
0-7 days	0.25
8-14 days	0.50
15-21 days	0.75
22-31 days	1.00

The Department will not measure any costs associated with the required cellular communications (SAT communications will be required, if cellular is not available), all supporting field equipment, website access, and unlimited data reports accessible by the Engineer, but will consider them incidental to this item of work. The Department will not measure the reserved flashing arrows for payment and will consider them incidental to this item of work. The Department will not measure installation, maintenance, or removal for payment and will consider them incidental to this item of work. Always maintain system components in good working condition. Repair or replace damaged or malfunctioning components, at no cost to the Department, as soon as possible and within (12) hours of notification by the Engineer. The quantity to be paid for arrow panels will be the maximum number of arrow panels in use at any one time on the project.

5. PAYMENT

Code	Pay Item	Pay Unit
26237EC	Connected Arrow Panels	MONTH

Special Note for Signing Variable Work Zone Speed Limits in Construction Work Zones

This note establishes criteria for implementing variable work zone speed limits in construction work zones.

1. Definition
A variable work zone speed limit is in effect only when specified work zone conditions are present.

2. Application of Variable Work Zone Speed Limits
Post a reduced work zone speed limit of 60 miles per hour only where any of the following work zone conditions are present **and** only for the length of the affected roadway:

- Workers present within 15 feet of the traveled way
- Frequent construction vehicle entry/exit
- Temporary barrier within 2 feet of a travel lane
- Drop-offs greater than 2 inches within 8 feet of a travel lane
- Uneven or milled surfaces

If the Engineer determines a condition that is present but not listed above warrants a reduced work zone speed limit, the Contractor shall lower the speed limit to 60 mph as directed by the Engineer.

3. Location and Placement of Speed Zone Signs
Install speed zone signs per Standard Drawing TTD-130, Option A, and every two (2) miles throughout the project. If an interchange is present, install a set of signs within 500 feet of the on-ramp termination, then every two (2) miles unless another interchange is located within that distance.

Put the reduced work zone speed limit into operation by switching on the flashing lights of the first speed zone sign located upstream of the work zone condition.

Operationalize the reduced speed limit **(a)** only in the direction affected by the work zone condition and **(b)** only for the length of roadway affected. For example, if a work zone condition is only present in the northbound direction along a three-mile segment, only put the reduced speed limit into effect on that segment. Retain the original posted speed limit along all remaining northbound segments and the entirety of the southbound direction.

The first speed limit sign located downstream of the point at which the work zone condition ends should **(a)** reinstate the original posted speed limit and **(b)** have no flashing lights activated.

4. Duration of Reduced Speed Limit Posting
The reduced work zone speed limit should remain in effect so long as the following are present:

- Any condition listed in Section 2, or
- Any other condition identified by the Engineer as warranting a speed limit reduction.

If a work zone condition is expected to be paused for less than **six hours**, do not reinstate the original posted speed limit during this period.

5. Penalties
If the Engineer observes the reduced work zone speed limit has not been put into effect as defined in Section 3, they should alert the Contractor of their failure to comply with this Special Note. If the signing is not in compliance within one (1) hour from initial notification by the Engineer, a penalty of $200 per hour will be assessed on an hourly basis beginning from the initial notification of non-compliance.

SPECIAL NOTE FOR FINE MILLING

Perform Fine Milling at areas outlined in the Typical Sections and as directed by the Engineer.

A). Equipment Provide a cold milling machine with a fine tooth milling drum and an electronic grade control system. The machine shall be equipped with a grade control system capable of determining a mean value from a minimum of three grade sensors. The sensors shall span a minimum length of 20 ft longitudinally. The drum must be capable of producing a macrotexture measurement greater than or equal to 9.5 inches as described in C) Testing.

B). Construction The milling machine shall be operated at a speed and drum revolution per minute such that the macrotexture measurement is greater than or equal to 9.5 inches as described in C) Testing and the milled pavement profile does not vary longitudinally more than ¼ inch from a 16' straightedge. Maintain the milling drum such that the cross–slope does not vary more than 1/8 inch from a 10 foot straightedge. Milling shall be performed so that the cross-slope breaks between driving lanes and shoulders remain at their existing locations. Depth of milling shall be set so as to remove rutting and profile errors. Contractor will take possession of all millings from milling operations. The milled surface shall be swept clean of all loose material after milling and prior to resurfacing.

C). Testing Testing shall be performed to determine the macrotexture of the milled pavement surface at a random location chosen in accordance with Kentucky Method KM 64-113- 14. Test area shall be cleaned with a stiff wire and or soft bristle brush and protected with a wind screen as necessary. Pour 200 ml of Type 1 glass beads (meeting AASHTO M 247) from a height of 4 inches or less onto the milled pavement surface. Using a round plexiglass disk (8 inches in diameter x ½ inch thick) with a round handle, place gently on pile of beads and spread in a slow circular motion to disperse the beads in a circular area and create a defined crest around the perimeter. Continue spreading until the beads are well dispersed and the disk rides on top of the high points of the milled pavement surface. Measure the diameter of the pile in inches at 0 degrees, 45 degrees, 90 degrees and 135 degrees. Determine the macrotexture measurement in inches by adding the four measurements and dividing by four. Frequency of testing shall be a minimum of once daily and additional testing will be performed as determined necessary by the project engineer.

D). Measurement The Department will measure Fine Milling in Square Yards of surface milled.

E). Payment Payment at the contract unit price per Square Yard of Fine Milling shall be full compensation for all equipment, work, and material necessary to complete the operations described herein.

SPECIAL NOTE FOR CONCRETE SEALING

These Notes or designated portions thereof, apply where so indicated on the plans, proposals or bidding instruction.

I. DESCRIPTION. Perform all work in accordance with the Department's 2019 Standard Specifications, and applicable Supplemental Specifications, the attached sketches, and these Notes. Section references are to the Standard Specifications.
This work consists of: (1) Furnish all labor, materials, tools, and equipment; (2) Clean the bridge deck; (3) Seal the bridge deck; (4) Maintain & control traffic; and, (5) Any other work specified as part of this contract.

II. MATERIALS.

A. Sealer. Use a sealer from the KYTC list of approved materials.

B. Coverage Rate: Follow all manufacturers recommendations for coverage rates except the application rate must not exceed the square footage coverage rate per gallon of sealer as given in the chart below. If the manufacturer recommends a coverage rate greater than given in the table below, apply sealer at the rate given in the table below for the chosen sealers silane percentage.

% Silane	Coverage rate (ft^2/gallon)
100	300
40	120
20	60

III. CONSTRUCTION.

A. Curing Compound. Contrary to Section 609.03.12 of the specifications, curing compound is not to be used on this deck due to potentially causing issues with the concrete sealer. During the deck pour, finishing, and tining operations the Class AA concrete shall be kept continuously moist with the use of a mister until burlap or curing blankets are applied to the surface. At no point should water be pooling or running off the surface or the surface of the concrete be allowed to become dry. After the burlap or curing blankets are installed, cure in accordance with the specifications. Include all costs in the unit price bid for Class AA concrete. Failure to properly cure the concrete in accordance with this note and the specifications may result in weakened or cracked concrete. If the concrete is weakened or cracked due to improper curing, the contractor will be responsible for providing alternates to fix the issues to the Engineer for review and the contractor will be solely responsible for all costs to do so, up to complete replacement. Do not begin any construction on fixing any issues without approval of the Engineer.

B. Contract Time. Concrete Sealing may need to be installed after contract time has elapsed in a separate mobilization and after the Engineer has declared the project otherwise complete. Liquidated damages shall not be charged provided Concrete Sealing is complete within 60 days after the last concrete pour on the structure. When the Contractor has not completed Concrete Sealing within the time frame allotted, Liquidated Damages shall be charged at 25 percent of the original contract daily charge from the expiration of the time allowed until the Contractor completes the work except the Department will not deduct liquated damages when weather limitations prohibit the Contractor from performing the work.

C. Cleaning the Deck. Dry clean the deck to remove all loose debris. Remove all visible hydrocarbons from the surface with detergent approved by the manufacturer of the deck sealant. Pressure wash all surfaces to be sealed at 2000 to 3000 psi. Install pressure gauges at each wand to verify pressure. Use 30° fan tip or as recommended by the manufacturer of the deck sealant. Hold pressure washing wand a minimum of 45° from the deck with a maximum stand-off distance of 12 inches.

D. Sealing the Deck. Allow new concrete to cure a minimum 28 days prior to application of sealer. Monitor weather conditions prior to sealer application. Refer to manufacturer's recommendations for proper ambient conditions. Do not apply sealer if precipitation is anticipated within the time stated by the manufacturer. Allow the deck to dry 24 hours (after washing or rain event) before sealer application. The deck can be reopened to traffic while drying. Sealer must be applied within 48 hours of washing or the deck must be rewashed. Divide the deck into predefined areas of specific square footage to aid in determining usage. Comply with manufacturer's usage recommendation. Using a low pressure pump, apply sealer and spread evenly with broom or squeegee; do not allow pooling to remain. When each predefined area is complete, measure the amount of sealer used to verify proper usage. After sealing, follow manufacturer's recommended cure time before opening to traffic. On vertical surfaces, apply the sealer in a flooding application from the bottom up, so the material runs down 6 to 8 inches below the spray pattern.

E. Inspection: Monitor all aspects of the project to assure compliance to this specification. Observe and document general conditions during the entirety of the project. Verify that each phase of work has been satisfactorily completed prior to beginning the next phase. Phases are described as follows:

1. Dry cleaning to remove loose debris, verify and document:
   a. All debris has been removed and disposed of properly.
2. Removal of hydrocarbons, verify and document:
   a. The manufacturer's recommended detergent is used for removal.
   b. Hydrocarbons have been satisfactorily removed.
3. Pressure washing, verify and document:
   a. Washing pressure at the wand.
   b. Tip size used.
   c. Wash angle and stand-off distance.

d. The deck is satisfactorily cleaned.

4. Sealer application, verify and document:
   a. Proper cure time for new concrete.
   b. Deck surface is dry.
      1. Document time since washed.
      2. Was deck opened to traffic after washing?
   c. Ambient conditions.
      1. Document ambient temperature, surface temperature, relative humidity, and dew point.
   d. Application and distribution method.
   e. Coverage to be complete and even.
   f. Material is not allowed to remain pooled.
   g. Monitor material usage.
   h. No traffic until proper cure time is allowed.

IV. MEASUREMENT

A. Concrete Sealing. The Department will measure the quantity per square feet of each area sealed.

B. Mobilization – For Concrete Surface Treatment. The Department will pay the lump sum bid for an additional mobilization when Concrete Sealing must be performed after the Engineer has deemed the project complete except for Concrete Sealing, structure is opened to traffic, and Contractor has fully demobilized.

V. PAYMENT

A. **23378EC - Concrete Sealing – Sq. Ft.** Payment at the contract unit price per square feet is full compensation for the following: (1) Furnish all labor, materials, tools, and equipment; (2) Clean the bridge deck; (3) Seal the bridge deck; (4) Maintain & control traffic; and, (5) Any other work specified as part of this contract.

B. **26233EC - Mobilization – For Concrete Surface Treatment – L.S.** Payment at the contract lump sum price bid shall be full compensation for the Contractor to remobilize on the project to perform Concrete Sealing as detailed herein this special note.

Rev 9/2021

SPECIAL NOTE FOR PAVER MOUNTED TEMPERATURE PROFILES

This Special Note will apply when indicated on the plans or in the proposal. Section references herein are to the Department's Standard Specifications for Road and Bridge Construction current edition.

1.0 DESCRIPTION. Provide a paver mounted infrared temperature equipment to continually monitor the temperature of the asphalt mat immediately behind all paver(s) during the placement operations for all mainline pavements (including ramps for Interstates and Parkways) within the project limits. Provide thermal profiles that include material temperature and measurement locations.

2.0 MATERIALS AND EQUIPMENT. In addition to the equipment specified in Subsection 403.02 Utilize a thermal equipment supplier that can provide a qualified representative for on-site technical assistance during the initial setup, pre-construction verification, and data management and processing as needed during the Project to maintain equipment within specifications and requirements.

Provide operator settings, user manuals, required viewing/export software for analysis. Ensure the temperature equipment will meet the following:

(A) A device with one or more infrared sensors that is capable of measuring in at least 1 foot intervals across the paving width, with a minimum width of 12 feet, or extending to the recording limits of the equipment, whichever is greater. A Maximum of two (2) brackets are allowed in the influence area under the sensors. A temperature profile must be made on at least 1 foot intervals longitudinally down the road:

(B) Infrared sensor(s):

(1) Measuring from 32°F to 400°F with an accuracy of ± 2.0% of the sensor reading.

(C) Ability to measure the following:

(1) The placement distance using a Global Positioning System (GPS) or a Distance Measuring Instrument (DMI) and a Global Positioning System (GPS).

(2) Stationing

(D) GPS: Accuracy ± 4 feet in the X and Y Direction

(E) Latest version of software to collect, display, retain and analyze the mat temperature readings during placement. The software must have the ability to create and analyze:

(1) Full collected width of the thermal profiles,

(2) Paver speed and

(3) Paver stops and duration for the entire Project.

(F) Ability to export data automatically to a remote data server ("the cloud").

At the preconstruction meeting, provide the Cabinet with rights to allow for web access to the data file location. Access to the data is not to be hindered in any way. The Contractor will provide the Cabinet with any vendor specific software, user id, passwords, etc. needed to access the data through this service, cost of this access is incidental to the thermal profile bid item. The Cabinet is to have access to all data as it is being collected. If a third party is used for collecting and distributing the data the Cabinet is to have the same access rights and time as the Contractor.

This web-based software must also provide the Department with the ability to download the raw files and software and to convert them into the correct format.

(G) The thermal profile data files must provide the following data in a neat easy to read table format.

(1) Project information including Road Name and Number, PCN, Beginning and Ending MPs.

(2) IR Bar Manufacturer and Model number

(3) Number of Temperature Sensors (N)

(4) Spacing between sensors and height of sensors above the asphalt mat

(5) Total number of individual records taken each day (DATA BLOCK)

(a) Date and Time reading taken
(b) Latitude and Longitude
(c) Distance paver has moved from last test location
(d) Direction and speed of the paver
(e) Surface temperature of each of the sensors

3.0 CONSTRUCTION. Provide the Engineer with all required documentation at the pre-construction conference.

(A) Install and operate equipment in accordance with the manufacturer's specifications.

(B) Verify that the temperature sensors are within ± 2.0% using an independent temperature device on a material of known temperature. Collect and compare the GPS coordinates from the equipment with an independent measuring device.

(1) Ensure the independent survey grade GPS measurement device is calibrated to the correct coordinate system (using a control point), prior to using these coordinates to validate the equipment GPS.

(2) The comparison is considered acceptable if the coordinates are within 4 feet of each other in the X and Y direction.

(C) Collect thermal profiles on all Driving Lanes during the paving operation and transfer the data to the "cloud" network or if automatic data transmission is not available, transfer the data to the Engineer at the end of daily paving.

(D) Contact the Department immediately when System Failure occurs. Daily Percent Coverage will be considered zero when the repairs are not completed within two (2) working days of System Failure. The start of this two (2) working day period begins the next working day after System Failure.

(E) Evaluate thermal profile segments, every 150 feet, and summarize the segregation of temperature results. Results are to be labeled as Minimal 0°-25°F, Moderate 25.1°-50°F and Severe >50°. Severe readings over 3 consecutive segments or over 4 or more segments in a day warrant investigation on the cause of the differential temperature distribution.

4.0 MEASUREMENT. The Department will measure the total area of the pavement lanes mapped by the infrared scanners. Full payment will be provided for all lanes with greater than 85% coverage. Partial payment will be made for all areas covered from 50% coverage to 85% coverage at the following rate Coverage area percentage X Total bid amount. And area with less than 50% coverage will not be measured for payment.

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

1. Payment is full compensation for all work associated with providing all required equipment, training, and documentation.
2. Delays due to GPS satellite reception of signals or equipment breakdowns will not be considered justification for contract modifications or contract extensions.

Code	Pay Item	Pay Unit
24891EC	PAVE MOUNT INFRARED TEMP EQUIPMENT	SQFT

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 - 18 103 - 105	15 - 16 106 - 107	14 108 - 109	≤13 ≥ 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, º 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

Code	Pay Item	Pay Unit
24970EC	Asphalt Material for Tack Non-Tracking	Ton

Revised: May 23, 2022

SPECIAL NOTE FOR ELECTRONIC DELIVERY MANAGEMENT SYSTEM (e-Ticketing) ASPHALT

This Special Note will apply when indicated on the plans or in the proposal. Section references herein are to the Department's Standard Specifications for Road and Bridge Construction current edition.

1.0 DESCRIPTION. Incorporate an e-Ticketing Delivery Software for weighed asphalt material delivered to the project to report loads and provide daily running totals of weighed asphalt material for pay items and incidental work during the construction processes from the point of measurement and loading to the point of incorporation to the project.

2.0 MATERIALS AND EQUIPMENT. Contractor shall supply material data in JavaScript Object Notation (JSON) documents to the KYTC e-Ticketing Delivery Software (KYTC e-Ticketing Portal) via Application Programming Interface (API) or direct connection. Test and verify that ticket data can be shared from the original source no fewer than 30 days prior to material placement activities. An e-Ticketing Delivery Software supplier can provide a qualified representative for on-site technical assistance during the initial setup, pre-construction verifications, and data management and processing as needed during the Project to maintain material data delivery capabilities. Virtual meetings may be hosted in lieu of on-site meetings when deemed appropriate by the Engineer.

Provide e-Ticketing Delivery Software that will meet the following:

1. The e-Ticketing Delivery Software shall be fully integrated with the Contractor's Load Read-Out scale system at the material source location.

2. The e-Ticketing Delivery Software shall provide real-time delivery to KYTC e-Ticketing Portal.

3. Transmit any updates to the ticket data within 5 minutes of a change.

3.0 CONSTRUCTION. Provide the Engineer with the manufacturer's specifications and all required documentation for data access at the pre-construction conference.

A. Construction Requirements

1. Install and operate software in accordance with the manufacturer's specifications.

2. Verify that all pertinent information is provided by the software within the requirements of this Special Note.

B. Data Deliverables

Provide to the Engineer a means in which to gather report summaries by way of iOS apps, web pages, or any other method at the disposal of the Engineer. The Engineer may request data at any time during the project.

1. Asphalt Material

a. **Real-time Continuous Data Items**

Provide the Engineer access to JSON documents capable of being transmitted through the KYTC's e-Ticketing Portal that displays the following information in real-time with a web-based system compatible with iOS and Windows environments.

- Each Truck
  - Supplier Name
  - Supplier Address
  - Supplier Phone
  - Plant location
  - Date
  - Time at source
  - Project Location

- Contract ID#
- Carrier Name
- Unique Truck ID
- Description of Material
- Mix Design Number
- Gross, Tare and Net Weight
- Weighmaster

4.0 MEASUREMENT. The Department will not measure the electronic delivery management system.

5.0 PAYMENT. The Department will not measure this work for payment and will consider all items contained in this note to be incidental to the asphalt mixtures on the project, as applicable.

May 5, 2025

SPECIAL NOTE FOR ELECTRONIC DELIVERY MANAGEMENT SYSTEM (e-Ticketing) AGGREGATE

This Special Note will apply when indicated on the plans or in the proposal. Section references herein are to the Department's Standard Specifications for Road and Bridge Construction current edition.

1.0 DESCRIPTION. Incorporate an e-Ticketing Delivery Software for weighed aggregate material delivered to the project to report loads and provide daily running totals of weighed aggregate material for pay items and incidental work during the construction processes from the point of measurement and loading to the point of incorporation to the project.

2.0 MATERIALS AND EQUIPMENT. Contractor shall supply material data in JavaScript Object Notation (JSON) documents to the KYTC e-Ticketing Delivery Software (KYTC e-Ticketing Portal) via Application Programming Interface (API) or direct connection. Test and verify that ticket data can be shared from the original source no fewer than 30 days prior to material placement activities. An e-Ticketing Delivery Software supplier can provide a qualified representative for on-site technical assistance during the initial setup, pre-construction verifications, and data management and processing as needed during the Project to maintain material data delivery capabilities. Virtual meetings may be hosted in lieu of on-site meetings when deemed appropriate by the Engineer.

Provide e-Ticketing Delivery Software that will meet the following:

1. The e-Ticketing Delivery Software shall be fully integrated with the Contractor's Load Read-Out scale system at the material source location.

2. The e-Ticketing Delivery Software shall provide real-time delivery to KYTC e-Ticketing Portal.

3. Transmit any updates to the ticket data within 5 minutes of a change.

3.0 CONSTRUCTION. Provide the Engineer with the manufacturer's specifications and all required documentation for data access at the pre-construction conference.

A. Construction Requirements

1. Install and operate software in accordance with the manufacturer's specifications.

2. Verify that all pertinent information is provided by the software within the requirements of this Special Note.

B. Data Deliverables

Provide to the Engineer a means in which to gather report summaries by way of iOS apps, web pages, or any other method at the disposal of the Engineer. The Engineer may request data at any time during the project.

1. Aggregate Material

a. **Real-time Continuous Data Items**

Provide the Engineer access to JSON documents capable of being transmitted through the KYTC's e-Ticketing Portal that displays the following information in real-time with a web-based system compatible with iOS and Windows environments.

- Each Truck
  - Supplier Name
  - Supplier Address
  - Supplier Phone
  - Plant location
  - Date
  - Time at source
  - Project Location

- Contract ID#
- Carrier Name
- Unique Truck ID
- Description of Material
- Load Number
- Gross, Tare and Net Weight
- Weighmaster

4.0 MEASUREMENT. The Department will measure the electronic delivery management system as a lump sum item.

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

1. Payment is full compensation for all work associated with providing all required equipment, training, and documentation.

2. Payment will be full compensation for costs related to providing the e-Ticketing Delivery Software, including integration with plant load-out systems, and report viewing/exporting process. All quality control procedures including the software representative's technical support and on-site training shall be included in the Contract lump sum price.

Code	Pay Item	Pay Unit
26248EC	ELECTRONIC DELIVERY MGMT SYSTEM-AGG	LS

May 5, 2025

SPECIAL NOTE FOR EXPERIMENTAL KYCT AND FIELD RUT TESTING
June 2025 Update

1.0 General

1.1 Description. The KYCT (Kentucky Method for Cracking Test) and the IDEAL-RT/IDT-HT test results will help determine if the mixture is susceptible to cracking and rutting. During the experimental phase, data will be gathered and analyzed by the Department to determine the durability and stability of the bituminous mixes. Additionally, the data will help the Department to create future performance-based specifications which will include the KYCT and field rutting test methods.

2.0 Equipment

2.1 KYCT Testing Equipment. The Department will require a Marshall Test Press with digital recording capabilities. Other CT testing equipment may be used for testing with prior approval by the Department.

2.2 Water Baths. One or more water baths will be required that can maintain a temperature of 77^{o} +/- 1.8^{o} F with a digital thermometer showing the water bath temperature. Also, one water bath shall have the ability to suspend gyratory specimen fully submerged in water in accordance with AASHTO T-166, current edition.

2.3 Field Rutting Tests. I f t he contractor elects to perform the IDEAL-RT test, in conformance with ASTM D8360-22, the acquisition of the “Option A” or “Option B” test fixture is required. If the IDT-HT is desired, the test press utilized for the KYTC is sufficient. The Department shall approve all test configurations at their discretion.

2.4 Gyratory Molds. Gyratory molds will be required to assist in the production of gyratory specimens in accordance with AASHTO T-312, current edition.

2.5 Ovens. Adequate (minimum of two ovens) will be required to accommodate the additional molds and asphalt mixture necessary to perform the acceptance testing as outlined in Section 402 of the Kentucky Standard Specifications for Road and Bridge Construction, current edition.

2.6 Department Equipment. The Department will provide gyratory molds, PINE 850 Test Press with digital recordation, and CT testing equipment to assist during this experimental phase so data can be gathered.

3.0 Testing Requirements

3.1 Acceptance Testing. Perform all acceptance testing and aggregate gradation as according with Section 402 and Section 403 of the Kentucky Standard Specifications for Road and Bridge Construction, current edition.

3.2 KYCT Testing. Perform crack resistance analysis (KYCT) in accordance with the current Kentucky Method for KYCT Index Testing during the plant production of all surface mixtures. Conform to KYTC Specifications for Mix Design approvals. All production testing is currently informational.

3.2.1 KYCT Frequency. Obtain an adequate sample of hot mix asphalt to ensure the acceptance testing, gradation, and KYCT gyratory samples can be fabricated and is representative of the bituminous mixture. Acceptance specimens shall be fabricated first, then after the specified amount of oven conditioning, fabricate the KYCT samples with the gyratory compactor in accordance with Section 2.4 of this Special Note. Analysis of the KYCT specimens will be required one per sublot produced from the same asphalt material and at the same time as the acceptance specimen is sampled and tested.

3.2.2 Number of Specimens and Conditioning. Fabricate specimens in accordance with the Kentucky Method for KYCT Index Testing. Contrary to the method, for field specimens, fabricate three replicates for cracking resistance analyses and three replicates for rutting resistance analyses. The specimens shall be compacted at the temperature in accordance with KM 64-411.

Contrary to the Kentucky Method, plant produced bituminous material shall be short-term conditioned immediately after sampling for two hours uncovered in the oven at compaction temperature in accordance with KM 64-411.

While the fabricated specimens are allowed to cool in air (fan is permissible) for 30 minutes +/- 5 minutes, find the bulk specific gravity of each specimen according to AASHTO T166. Next, condition the replicates in a 77 °F water bath for 30 minutes +/- 5 minutes. To ensure confidence and reliability of the test results provided by KYCT testing and Field Rut testing, reheating of the asphalt mixture is prohibited.

3.2.3 Long Term Aging CT's. For long-term aging and cracking resistance considerations in mix design, mix and condition 3 specimens uncovered for 20 hours at compaction temperature in accordance with KM 64-411. Perform KYCT testing in accordance with KM 64-450 and record the results on the Long-Term KYCT tab of the latest version of the MixPack.

3.2.4 Record Times. For each sublot, record the time required between drying aggregates in the plant to KYCT specimen fabrication. The production time may vary due to the time that the bituminous material is held in the silo. Record the preconditioning time when the time exceeds the one-hour specimen cool down time as required in accordance with The Kentucky Method for KYCT Index Testing. The preconditioning time may exceed an hour if the technician is unable to complete the test on the same day or within the specified times as outlined in The Kentucky Method for KYCT Index Testing. The production time and the preconditioning time shall be recorded on the AMAW.

3.2.5 File Name. As according to section 7.12 of The Kentucky Method for KYCT Index Testing, save the filename with the following format: "CID_Approved Mix Number_Lot Number_Sublot Number_ Date"

3.3 Field Rut Testing. Perform the rut resistance analysis (IDEAL-RT or IDT-HT) in accordance with ASTM D8360-22 or ALDOT458, respectively. Contrary to ASTM D8360 & ALDOT458, precondition the test specimens in a water bath or forced draft oven at 50 °C +/- 1 °C for 60 +/- 5 min before completing the test.

3.3.1 Field Rut Testing Frequency. Perform one test per lot of mixture produced. The plant produced bituminous material sampled for the field rut test does not have to be obtained at the same time as the acceptance and KYCT sample. If the field rut test sample is not obtained at the same time as the KYCT sample, determine the Maximum Specific Gravity of the KYCT sample in accordance with AASHTO T-209 coinciding with the test specimens.

3.3.2 Number of Specimens and Conditioning. Fabricate in accordance with the Kentucky Method for KYCT Index Testing. Contrary to the method, for field specimens, fabricate three

replicates for rutting resistance analyses. The specimens shall be compacted at the temperature in accordance with KM 64-411. Contrary to the Kentucky Method, plant produced bituminous material shall be short-term conditioned immediately after sampling for two hours uncovered in the oven at compaction temperature in accordance with KM 64-411.

3.3.3 Record Times. Record the production time as according to section 3.2.3 in this special note. Also record the time that the specimens were fabricated. All times shall be recorded on the AMAW.

3.3.4 File Name. Record all field rut data in the latest version of the AMAW.

4.0 Data

Submit the AMAW and all test data that was obtained for acceptance, gradation, KYCT, and field rut testing within five working days once all testing has been completed for a lot to Central Materials Lab and the District Materials Engineer. Also, any data and or comments that the asphalt contractor or district personnel deem informational during this experimental phase, shall also be submitted to the Central Materials Lab and the District Materials Engineer. Any questions or comments regarding any item in this Special Note can be directed to the Central Office, Division of Materials, Asphalt Branch.

5.0 Payment

Any additional labor and testing equipment that is required to fabricate and test the KYCT and field rut specimens shall be considered incidental to the asphalt surface line item. The Department will perform the testing for the KYCT and field rut specimens if a producer does not possess the proper equipment.

June 12th, 2025

SPECIAL NOTE FOR DOLOMITIC POLISH-RESISTANT AGGREGATE IN CLASS A 0.38-IN. AND 0.50-IN. NOMINAL ASPHALT MIXTURES

Contrary to Subsection 403.03.03, when utilizing a dolomitic polish-resistant aggregate as the coarse portion of the Class A 0.38-in. or 0.50-in.-nominal asphalt surface mixture, provide an asphalt mixture conforming to the following requirements:

- 70 percent of total combined aggregate is Class A polish-resistant aggregate.
- Any coarse aggregate utilized in the mixture shall be classified as Class A polish-resistant.
- Non-dolomitic substitutes from other Class A sources may be used as direct substitutes
- All mixes must have DFT testing/results submitted to Division of Materials with any supporting documentation prior to completion of the project.

Dynamic Friction Testing Procedure. Prepare samples for DFT analysis in accordance with PP 104. Friction testing shall be conducted by an AASHTO-accredited facility and data shall be provided in accordance with ASTM E1911 conforming to the following three-wheel polishing schedule. Variations to the testing frequency or methodology shall be coordinated with Division of Materials prior to testing.

Polishing Cycles
5,000
25,000
75,000
150,000

SPECIAL NOTE FOR RECYCLED ASPHALT PAVEMENT (RAP) STOCKPILE MANAGEMENT

I. GENERAL

The use of reclaimed asphalt pavement (RAP) from Department projects or other approved sources in hot mix asphalt (HMA) or warm mix asphalt (WMA) shall be subject to stockpile management and handling of material as described in this section.

The Department approves RAP on a stockpile basis, following the process set forth in this method. The contractor's responsibilities in the process are as follows:

- To obtain the Department's approval of all RAP prior to its use on a Department project and to deliver test data and samples as required
- To monitor and preserve the quality and uniformity of the approved material during storage and handling, adding no unapproved material to the existing stockpile
- To comply with the Department's requirements regarding replenishment of approved stockpiles

The Department will approve RAP based on its composition and variability in gradation and asphalt content, and on visual inspections of the stockpile, which the Department may conduct at its discretion. The Department may withdraw approval of a stockpile if the requirements of this specification are not followed in good faith.

The Maximum Percentage Allowed in a mix design will be based on these criteria and on the category of RAP source, as defined in this document.

II. APPROVAL PROCESS

Qualified asphalt producers (listed in List of Approved Materials-Asphalt Mixing Plants) may submit requests for RAP stockpile approval to the Asphalt Branch, Division of Materials, in the Annual Certification for Previously Approved Asphalt Mixing Plants and Related Equipment. The requester shall provide test results as prescribed in Part IID. The Division of Materials may, at their discretion, collect samples or inspect a RAP stockpile consistent with Section IIE.

Upon completion of the review of testing results and, if applicable, visual inspection, the Division of Materials, Asphalt Branch will approve or disapprove the material by letter and will assign a Stockpile Identification Number for each approved RAP stockpile. Note: The contractor's average gradation and asphalt content, as listed in the approval letter, shall be the gradation used in subsequent mix designs. The approval letter will state the applicable limits on the use of the material in mix designs and will summarize the Department's findings, listing the average gradation and asphalt content from the contractor's tests and the corresponding values found by the Department. Where the Maximum Percentage Allowed is low due to variability, the contractor may elect to improve the uniformity of the material by further processing and may again sample, test, and request approval for the material.

No material shall be added to a stockpile after it has been approved, except as provided in Parts V, VI, and VII below.

IIA. RAP Quality Management Plan

For a contractor to receive approval to use RAP on any department project, a RAP Quality Management Plan must first be approved by the department. The RAP Quality Management Plan shall be submitted to the

Division of Materials annually for approval as part of the Contractor's Quality Control Plan/Checklist. The Quality Management Plan is required to demonstrate how the Contractor will provide consistency and quality of material utilized in all asphalt mixes produced for use on Department projects. The Quality Management Plan shall include:

- Unprocessed RAP Stockpiles
  - Designation of stockpile(s) as single or multiple source
  - Designation of stockpile(s) as classified or unclassified
  - Designation of stockpile(s) as captive or continuously replenishing
  - Plan for how stockpile(s) is built (layers, slope, etc.)
  - Plan to minimize stockpile(s) contamination
- Processing and Crushing
  - Equipment used to feed screener or crusher
  - Excavation process based on equipment type
- Processing Millings
  - Single Project or Source
    - Screening, Fractionation, or Crushing plan
  - Multiple Source
    - Process to achieve uniform material from stockpile
    - Screening, Fractionation, or Crushing plan
- Processed RAP Stockpiles
  - Minimization of segregation
  - Minimization of moisture

IIB. RAP Stockpile Placement

All processed RAP stockpiles shall be placed on a sloped, paved surface. The requirement for a paved surface may be waived by the Cabinet if the Contractor's RAP Quality Management Plan demonstrates effective material handling that will minimize deleterious material from beneath the processed stockpile entering the plant. *No processed stockpile will be placed directly on grass or dirt.*

IIC. Stockpile Identification Signs

RAP stockpiles shall be identified with posted signs displaying the gradation of material in the stockpile (course, intermediate, or fine). These signs shall be made of weatherproof material and shall be highly visible. Numerals shall be easily readable from outside the stockpile area. If a stockpile exists in two or more parts, each part must have its own sign.

IID. Standard Approval Procedure

The Contractor shall obtain random samples representative of the entire stockpile and shall have each sample tested for gradation and asphalt content according to KM 64-426, KM 64-427, and AASHTO T308. The material samples must be in its final condition after all crushing and screening. At least one sample shall be obtained for each 1,000 tons of processed RAP, with a minimum of five samples per stockpile. Sampling shall be performed according to the method prescribed for asphalt mix aggregates in the Department's Materials Field Testing and Sampling Manual and KM 64-601. The minimum sampling size (after quartering) for tests of RAP samples is 1,500 g. except for samples containing particles more than one inch in diameter, for which the minimum is 2,000 g.

To request approval of a RAP stockpile, submit the following documents to the Division of Materials. It is the requester's responsibility to correctly address, label, and deliver these submittals:

• Submit request for approval at beginning of the paving season as part of the Annual Certification for Previously Approved Asphalt Mixing Plants and Related Equipment.

• If requesting approval after paving season begins, submit memo, including stockpile portion of the inspection list for Annual Certification for Previously Approved Asphalt Mixing Plants and Related Equipment, to Division of Materials.

• Reports of the tests prescribed above using the Stockpile <INSERT NAME> document.

• A drawing of the plant site showing the location of the stockpile to be approved *and all other stockpiles on the premises*

Mail, deliver or email the request form, with test reports and site drawing, to:

Kentucky Transportation Cabinet
Division of Materials
ATTN: Asphalt Branch Manager
1227 Wilkinson Boulevard
Frankfort, Kentucky 40601

Robert.Semones@ky.gov

IIE. Tests and inspections by the Department

The Department shall have the right to observe the collection of samples, or to perform the sampling and testing as a verification of contractor submittal. As a condition of approval, the Department may at any time inspect and sample RAP stockpiles for which approval has been requested and may perform additional quality control tests to determine the consistency and quality of the material.

The approval letter issued by the Department will include any results of verification testing performed by the Cabinet. The approved contractor results should be used by mix design technicians in the design calculations.

III. RAP STOCKPILE TIERED MANAGEMENT AND EFFECTIVE BINDER CONTENT

The stockpile management and approval requirements will be tiered based on the maximum cold feed percentages as defined in this section and Table 1. below.

Table 1. Tiered Testing Requirements

Mix Type	0-≤12%	12-≤20%	20-≤35%
Surface	Tier 1	Tier 2	Tier 3
Base	Tier 1	Tier 2	Tier 3

NOTE: All asphalt mixes and binder selection will be subject to Section 409 of the current Standard Specifications.

The following requirements will apply based on the percentage of RAP in the mix.

Tier 1

Tier 1 mixes (less than or equal to 12% RAP) will be subject to the requirements of sections IIA, IIB, and IIC.

Tier 2

Tier 2 mixes (12% to less than 20% RAP) will be subject to the requirements of Section II in its entirety and Table 2 requirements.

Tier 3

Tier 3 Asphalt Base mixes with 20% to less than 35% RAP, Tier 3 Asphalt Surface mixes with 20% to less than 30% RAP will be subject to Section II in its entirety and Table 2 requirements.

IV. MAXIMUM PERCENTAGE OF RAP ALLOWED

The Maximum Percent of RAP allowed in mix designs shall be the lowest percentage determined by the gradation and asphalt content of the RAP, as established under the criteria below, and requirements listed in Section III.

Limits according to range in gradation and bitumen content

The Maximum Percent of RAP Allowed, based on gradation and asphalt content, shall be determined by the Department using the standard deviation of these values. This standard deviation will be calculated using data provided by the contractor from at least five samples. While the contractor is required to provide the data from these tested samples, the Department retains the discretion to perform its own sampling and testing to support or verify its findings. An apparent outlier shall not be considered in determining these ranges. Where one result appears to be unrepresentative of the whole, two or more additional samples shall be tested. The outlying value of all tests shall then be excluded from the range. The maximum percentage of RAP allowable shall be the lowest percentage determined according to Table 2 below.

Table 2. Maximum Percent RAP According to Variability in Test Results

	Standard Deviation as calculated above:		
Surface			
% asphalt content	< 0.4	< 0.5	
% passing No. 200 sieve	< 1.25	< 1.5	
% passing Median Sieve	< 4.0	< 5.0	
	Allowable RAP Cold Feed %		
	Tier 3 - 20%-30%	Tier 2 - 12%-20%	Tier 1 - 0%-12%
Base			
% asphalt content	< 0.5	< 0.75	
% passing No. 200 sieve	< 1.5	< 2.25	
% passing Median sieve	< 5.0	< 7.0	
	Allowable RAP Cold Feed %		
	Tier 3 - 20%-35%	Tier 2 - 12%-20%	Tier 1 - 0%-12%

NOTE: These allowances notwithstanding, the Contractor is required to maintain the mixture within the Mixture Control Tolerances of Kentucky Method 443.
The percentage allowable in mix designs shall be limited to meet the design criteria for viscosity established in the Standard Specifications.

V. GENERAL STOCKPILE REQUIREMENTS AND REPLENISHMENT

V.A. Single Pavement Source

Early approval of material from a single pavement source. When a new stockpile is to consist entirely of millings removed from a single existing pavement, the stockpile may be approved based on samples taken during the milling and processing operations, prior to completion of milling. The initial stockpile may be approved as either a new stockpile or a new stockpile in continual replenishment status.

For continual replenishment status, samples shall be taken from the processed stockpile after it reaches 1,000 tons. A total of five initial samples, plus one additional sample for every 1,000 tons, is required. As prescribed in Part II above, the contractor shall test all samples and deliver the test results, together with a letter request for approval in Continual Replenishment status, to the address indicated. The stockpile shall be subject to initial approval as prescribed above in Part II. Once approved, it may be replenished without further approvals as provided in Part VII below.

V.B. Heterogeneous or contaminated material

Asphalt pavement millings containing traffic detection loops, raised pavement markers, or other debris must be separated and excluded before stockpiling RAP for approval for use in KYTC asphaltic concrete mixtures.

No material other than RAP from an approved stockpile shall be included in mixtures for State projects. The following materials are specifically excluded:

• Material contaminated with foreign matter such as liquids, soil, concrete, or debris

• Plant waste, especially waste containing abnormal concentrations of bitumen, drum build-up, or material from spills or plant clean-up operations

The following materials shall not be added to or placed in proximity to an approved stockpile but may be accumulated in a separate stockpile and submitted for approval according to Part III:

- Production mixtures returned to the plant for any reason.
- Mis-proportioned mixtures, especially those generated at start-up.

VI. REPLENISHMENT OF STOCKPILES

An approved RAP stockpile may be replenished with Department approval, provided the replenishment material meets all necessary requirements for approval and maintains uniformity in gradation and asphalt content as outlined in this document.

VI.A. Procedure and approval criteria

The procedure for requesting approval of a stockpile replenishment, that is not in continual replenishment status, shall be the same as for approval of an original stockpile, and the material for the replenishment shall meet all criteria for approval as a new stockpile. RAP proposed for replenishment shall be sampled and tested by the Contractor for gradation and asphalt cement as prescribed in Section II above. The Laboratory shall

review these results and provide approval for use in Department asphalt mix designs, according to Table 2 above.

VI.B. Effect of replenishment on existing approved mix designs

Replenishment of a stockpile may render certain mix designs invalid, depending on the percent RAP allowed in the design and on the difference in average properties between the old and new stockpiles. A replenished stockpile may be used as the RAP ingredient in an existing approved design provided that:

1. The Maximum Percent Allowed for the replenishment stockpile equals or exceeds the percent RAP called for in the mix design. In no case may the Maximum Percent Allowed be exceeded.

However, if a mix design calls for up to 5.0 percent more than the Maximum Percent Allowed for the replenishment, the *design* may be adjusted, with approval, to use the lower percent allowed, provided that the production mixture continues to meet all acceptance criteria. For example, a design which calls for 20 percent RAP may be adjusted and produced with 15 percent if it continues to meet for acceptance.

VII. CONTINUAL REPLENISHMENT WITHOUT RE-APPROVAL

At the request of the contractor, a previously approved stockpile may be placed in Continual Replenishment Status and may be replenished any number of times without re-approval provided that:

1. Replenishment is within six months of the last stockpile addition.
2. The contractor shall continue to monitor and test the materials added to the stockpile and shall forward these results to the Division of Materials for every 1,000 tons of RAP added to the stockpile.
3. The contractor must certify that replenishment materials are free of contaminants.
4. The Department shall be notified by letter to the Director of the Division of Materials that the stockpile is being replenished on a continual basis.
5. The RAP Maximum Percent Allowed for continual replenishment shall be limited by Sections III and IV.

Note: Upon request, one 20-pound sample bag of RAP for each Continual Replenishment Stockpile shall be submitted to the Division of Materials for petrographic analysis every 12 months.

The Department may inspect, sample, and test such stockpiles at its discretion and may, upon determining that the stockpile is unsuitable, withdraw approval of the material and all mix designs which include it. Approval of the stockpile may be withdrawn at any time based upon extreme or erratic ingredient proportions, unsuitable ingredients, or poor performance, as determined by the Division of Materials, Asphalt Branch. The Department will conduct periodic comparison testing on the opposite quarters of samples submitted by the Contractor for special replenishment approval category. The approval of the stockpile may be withdrawn if

erroneous information was found on the contractor's testing and/or improper sampling procedures were involved after a thorough investigation.

VIII. DEPLETION OF STOCKPILE AND EXPIRATION OF APPROVAL

When a stockpile has been fully depleted, the Contractor may replenish it within 24 months after the date of depletion; a depleted stockpile not replenished after 24 months will be removed from the approved list and may not be replenished.

Approval of a stockpile may be withdrawn if, in the finding of the Division of Materials, Asphalt Branch, the total amount of material used in new mixtures equals the total tonnage of the original stockpile plus all approved replenishments. Six years from the original approval of a stockpile or from its most recent replenishment, a stockpile shall be presumed to be depleted, and its approval shall expire. This shall apply to all stockpiles, regardless of status or history of use.

IX. RECORDS

The Contractor shall maintain records at the plant site on all RAP stockpiles. These records shall be available for inspection by representatives of the Department and shall include the following:

- All test results.
- The Department's approval letter for each stockpile and replenishment, together with the Contractor's requests for approval and all data submitted therewith.
- A current drawing of all stockpile locations at the plant site, including unapproved stockpiles, showing stockpile numbers of all stockpiles approved for State work.

X. RELOCATION OF STOCKPILE

If material from an approved RAP stockpile is to be moved to another location, the contractor shall seek approval from the Department prior to its further use on State projects. A letter request shall be submitted to the Division of Materials indicating the current stockpile location, the total quantity of material to be moved, and the amount, if any, to remain in the current location. The Division of Materials will issue an approval letter applicable to the new location.

June 18, 2025

SPECIAL NOTE FOR DOUBLE ASPHALT SEAL COAT

Use RS-2 or RS-2C asphalt material that is compatible with the seal aggregate. Apply the first course of asphalt seal coat at the rate of 3.2 lbs/sy of asphalt and 30 lbs/sy of size #78 seal coat aggregate. Apply the second course at 2.8 lbs/sy of asphaltt and 20 lbs/sy of size #9M seal coat aggregate. The Engineer may adjust the rate of application as conditions warrant. Use caution in applying liquid asphalt material to avoid over spray getting on curbs, gutter, barrier walls, bridges, guardrail, and other roadway appurtenances.

The Department will not measure any surface preparation required prior to applying the asphalt seal coat, but shall be incidental to “Asphalt Material for Asphalt Seal Coat”.

1-3215 Double Asphalt Seal Coat
01/02/2012

Andy Beshear
GOVERNOR

TRANSPORTATION CABINET
200 Mero Street
Frankfort, Kentucky 406 01

Jim Gray
SECRETARY

Asbestos Inspection Survey

To: Ross Mills

District: Central Office

Date: December 8, 2024

Conducted By: O'Dail Lawson

Report Prepared By: O'Dail Lawson

Project and Structure Identification

Project Number: Marshall 01-20034.00

Structure ID: 103B00113R

Structure Location: I-24 over US 32

Sample Description: Any suspect materials collected were negative for asbestos.

Inspection Date: November 27, 2024

Results and Recommendations

This asbestos survey was performed in accordance with the current USEPA regulations, specifically 40 CFR Part 61, Asbestos National Emissions Standards for Hazardous Air Pollutants (NESHAP) revision, final rule effective November 20, 1990.

The results of the samples collected were negative for the presence of asbestos above 1%. No abatement is required at this time. However, the OSHA Standard 1926.1101 applies if any level of asbestos is present in the samples collected.

It is recommended that this report accompany the 10-Day Notice of Intent for Demolition (Notification Form DEP 7036) which is to be submitted to the Kentucky Division of Air Quality prior to abatement, demolition, or renovation of any building or structure in the Commonwealth. This form can be submitted electronically at the EEC Forms Homepage

MRS, INC. *MRS, Inc. Analytical Laboratory Division*
332 West Broadway / Suite # 902
Louisville, Kentucky - 40202 - 2133
(502) 568 - 2088 or (502) 495 - 1212
Fax: (502) 495 - 0566

BULK SAMPLE ASBESTOS ANALYSIS

Analysis N# # 3412073 A
Client Name: K Y T C
Sampled By: O'Dail Lawson
Address: Marshall - 079B00113 R

				% FIBROUS ASBESTOS				% NON-ASBESTOS FIBERS			
Sample ID	Color	Layered	Fibrous	Chrysotile	Amosite	crocidolite	Others	Cellulose	Fiberglass	Syn. Fiber	Other/Mat.
# 113-1	Gray	Yes	No				None				100%
# 113-2	**Gray**	Yes	No	< 1 %				2%			98%

Methodology : EPA Method 600/R-93-116
Date Analyzed : 7-Dec-24
Analyst : Winterford Mensah
Reviewed By: Winterford Mensah
Signature

The test relates only to the items tested. This report does not represent endorsement by NVLAP or any agency of the U.S Government. Partial Reproduction of any part of this report is strictly prohibited. Samples shall be retained for (30) days.

AIHA # 102459
AJHA #1 02459

Chain of Custody Record

Kentucky Transportation Cabinet

200 Mero Street, 4th Floor West
Frankfort, Kentucky 40622
(502) 564-7250 fax (502) 564-5655

O'Dail Lawson o'dail.lawson@ky.gov W4-06-06 Address: 200 Mero Street Frankfort KY Phone: Fax: 502-564-5655 PO#:	**Client Information** KY TRANSPORTATION CABINET Area Square footage: I-24 over US 62 N/A = Not Applicable Samplers (signature):
Project ID Marshall 079B00113R	

Sample ID	Sample Description	Collected Date	Collected Time	Analysis Requested	Matrix	Color	Cont. Type	Preservative
113-1	John Compound	11-27-24	11:25	Asbestos Bulk	Neoprn	grey		N/A
113-2	Guard Rail Mastic	11-27-24	+	↓	Mastic	grey		

Relinquished By:	Date/Time:
Received By: Winterjeet Mendu	Date/Time: 12/04/24
Relinquished By:	Date/Time:
Received at Lab By:	Date/Time:

Andy Beshear
GOVERNOR

TRANSPORTATION CABINET
200 Mero Street
Frankfort, Kentucky 406 01

Jim Gray
SECRETARY

Asbestos Inspection Survey

To: Ross Mills

District: Central Office

Date: December 8, 2024

Conducted By: O'Dail Lawson

Report Prepared By: O'Dail Lawson

Project and Structure Identification

Project Number: Marshall 01-20034.00

Structure ID: 103B00118R

Structure Location: I-24 over Tennessee River

Sample Description: Any suspect materials collected were negative for asbestos.

Inspection Date: November 27, 2024

Results and Recommendations

This asbestos survey was performed in accordance with the current USEPA regulations, specifically 40 CFR Part 61, Asbestos National Emissions Standards for Hazardous Air Pollutants (NESHAP) revision, final rule effective November 20, 1990.

The results of the samples collected were negative for the presence of asbestos above 1%. No abatement is required at this time. However, the OSHA Standard 1926.1101 applies if any level of asbestos is present in the samples collected.

It is recommended that this report accompany the 10-Day Notice of Intent for Demolition (Notification Form DEP 7036) which is to be submitted to the Kentucky Division of Air Quality prior to abatement, demolition, or renovation of any building or structure in the Commonwealth. This form can be submitted electronically at the EEC Forms Homepage

MRS, INC. *MRS, Inc. Analytical Laboratory Division*
332 West Broadway / Suite # 902
Louisville, Kentucky - 40202 - 2133
(502) 568 - 2088 or (502) 495 - 1212
Fax: (502) 495 - 0566

BULK SAMPLE ASBESTOS ANALYSIS

Analysis N# # 3412073 B
Client Name: K Y T C
Sampled By: O'Dail Lawson
Address: Marshall - 079B00118 R

				% FIBROUS ASBESTOS				% NON-ASBESTOS FIBERS			
Sample ID	Color	Layered	Fibrous	Chrysotile	Amosite	crocidolite	Others	Cellulose	Fiberglass	Syn. Fiber	Other/Mat.
M118-1	Gray	Yes	No				None				100%

Methodology : EPA Method 600/R-93-116
Date Analyzed : 7-Dec-24
Analyst : Winterford Mensah
Reviewed By: Winterford Mensah
Signature

The test relates only to the items tested. This report does not represent endorsement by NVLAP or any agency of the U.S Government. Partial Reproduction of any part of this report is strictly prohibited. Samples shall be retained for (30) days.

AIHA # 102459
AJHA #1 02459

Chain of Custody Record

Kentucky Transportation Cabinet

200 Mero Street, 4th Floor West
Frankfort, Kentucky 40622
(502) 564-7250 fax (502) 564-5655

O'Dail Lawson o'dail.lawson@ky.gov W4-06-06 Address: 200 Mero Street Frankfort KY Phone: Fax: 502-564-5655 PO#:	**Client Information** KY TRANSPORTATION CABINET Area Square footage: I-24 over TN River N/A = Not Applicable Samplers (signature):
Project ID Marshall 079B00118R	

Sample ID	Sample Description	Collected Date	Collected Time	Analysis Requested	Matrix	Color	Cont. Type	Preservative
M18-1	Joint Compound	11/27/24	11:02	Asbestos bulk	Neoplas	grey		N/A

Relinquished By:	Date/Time:
Received By: Kristyna Mercer	Date/Time: 12/04/24
Relinquished By:	Date/Time:
Received at Lab By:	Date/Time:

ENVIRONMENTAL TRAINING CONCEPTS, INC
P.O Box 99603 Louisville, KY 40269
(502)640-2951

Certification Number: ETC-AIR-031324-00278

O'Dail Lawson

has on 03-13-2024 attended and successfully completed the requirements and passed the examination with a score of 70% or better on the entitled course.

ASBESTOS INSPECTOR REFRESHER

Training was in accordance with 40 CFR Part 763 (AHERA) approved by the Commonwealth of Kentucky, the Indiana Department of Environmental Management, Tennessee Department of Environment & Conservation and The Arkansas Department of Environmental Quality. The above student received requisite training for Asbestos Accreditation under Title II of the Toxic Substance Act (TSCA).

Conducted at: 1520 Alliant Ave., Louisville, KY

Name - Training Manager

Expiration Date: 03-13-2025

Name - Instructor

TEAM KENTUCKY TRANSPORTATION CABINET

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

☒ **Original** ☐ **Re-Certification** — **RIGHT OF WAY CERTIFICATION**

ITEM #	COUNTY	PROJECT # (STATE)	PROJECT # (FEDERAL)
1-20034.00	Marshall	FD52 079 0024 026-030	NHPP 0241 (095)

PROJECT DESCRIPTION

I-24 Asphalt Pavement Rehab Mill and Fill (MP 26.500-29.352)

☒ **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	
Signature		Signature	Frances Westlie — Digitally signed by Frances Westlie Date: 2025.06.04 09:32:27 -05'00'
Date		Date	

Right of Way Director		FHWA	
Printed Name		Printed Name	
Signature	Kelly Divine — Digitally signed by Kelly Divine Date: 2025.06.04 11:51:26 -05'00'	Signature	
Date		Date	

UTILITIES AND RAIL CERTIFICATION NOTE

Marshall County
NHPP 0241(095)
FD52 079 0024 026-030
Mile point: 26.558 TO 29.136
ADDRESS CONDITION OF I-024 FROM MILEPOINT 26.558 TO MILEPOINT 29.136
ITEM NUMBER: 01-20034.00

PROJECT NOTES ON UTILITIES

Please 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 activities. The contractor will coordinate his 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

UTILITIES AND RAIL CERTIFICATION NOTE

Marshall County
NHPP 0241(095)
FD52 079 0024 026-030
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ITEM NUMBER: 01-20034.00

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.

Utility coordination efforts determined that no significant utility relocation work is required to complete the project. Any work pertaining to these utility facilities is defined in the bid package and is to be carried out as instructed by the Kentucky Transportation Cabinet. The contractor will be responsible for any coordination or adjustments that are discussed or quantified in the proposal.

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

Not Applicable

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

UTILITIES AND RAIL CERTIFICATION NOTE

Marshall County
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THE FOLLOWING FACILITY OWNERS ARE RELOCATING/ADJUSTING THEIR FACILITIES WITHIN THE PROJECT LIMITS AND WILL BE COMPLETE PRIOR TO CONSTRUCTION

Not Applicable

THE FOLLOWING FACILITY OWNERS HAVE FACILITIES TO BE RELOCATED/ADJUSTED BY THE OWNER OR THEIR SUBCONTRACTOR AND IS TO BE COORDINATED WITH THE ROAD CONTRACT

Not Applicable

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

Not Applicable

UTILITIES AND RAIL CERTIFICATION NOTE

Marshall County
NHPP 0241(095)
FD52 079 0024 026-030
Mile point: 26.558 TO 29.136
ADDRESS CONDITION OF I-024 FROM MILEPOINT 26.558 TO MILEPOINT 29.136
ITEM NUMBER: 01-20034.00

RAIL COMPANIES HAVE FACILITIES IN CONJUNCTION WITH THIS PROJECT AS NOTED

☒ **No Rail Involvement** ☐ **Rail Involved** ☐ **Rail Adjacent**

UTILITIES AND RAIL CERTIFICATION NOTE

Marshall County
NHPP 0241(095)
FD52 079 0024 026-030
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ITEM NUMBER: 01-20034.00

AREA FACILITY OWNER CONTACT LIST

Facility Owner	Address	Contact Name	Phone	Email

GUARDRAIL DELIVERY VERIFICATION SHEET

Contract Id: _____ **Contractor: _____**

Section Engineer: _____ **District & County: _____**

DESCRIPTION	UNIT	QTY LEAVING PROJECT	QTY RECEIVED@BB YARD
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

STANDARD SPECIFICATIONS

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

1I

SPECIAL NOTE FOR PORTABLE CHANGEABLE MESSAGE SIGNS

This Special Note will apply when indicated on the plans or in the proposal.

1.0 DESCRIPTION. Furnish, install, operate, and maintain variable message signs at the locations shown on the plans or designated by the Engineer. Remove and retain possession of variable message signs when they are no longer needed on the project.

2.0 MATERIALS.

2.1 General. Use LED Variable Message Signs Class I, II, or III, as appropriate, from the Department's List of Approved Materials.

Unclassified signs may be submitted for approval by the Engineer. The Engineer may require a daytime and nighttime demonstration. The Engineer will make a final decision within 30 days after all required information is received.

2.2 Sign and Controls. All signs must:

1) Provide 3-line messages with each line being 8 characters long and at least 18 inches tall. Each character comprises 35 pixels.
2) Provide at least 40 preprogrammed messages available for use at any time. Provide for quick and easy change of the displayed message; editing of the message; and additions of new messages.
3) Provide a controller consisting of:
   a) Keyboard or keypad.
   b) Readout that mimics the actual sign display. (When LCD or LCD type readout is used, include backlighting and heating or otherwise arrange for viewing in cold temperatures.)
   c) Non-volatile memory or suitable memory with battery backup for storing pre-programmed messages.
   d) Logic circuitry to control the sequence of messages and flash rate.
4) Provide a serial interface that is capable of supporting complete remote control ability through land line and cellular telephone operation. Include communication software capable of immediately updating the message, providing complete sign status, and allowing message library queries and updates.
5) Allow a single person easily to raise the sign to a satisfactory height above the pavement during use, and lower the sign during travel.
6) Be Highway Orange on all exterior surfaces of the trailer, supports, and controller cabinet.
7) Provide operation in ambient temperatures from -30 to + 120 degrees Fahrenheit during snow, rain and other inclement weather.
8) Provide the driver board as part of a module. All modules are interchangeable, and have plug and socket arrangements for disconnection and reconnection. Printed circuit boards associated with driver boards have a conformable coating to protect against moisture.
9) Provide a sign case sealed against rain, snow, dust, insects, etc. The lens is UV stabilized clear plastic (polycarbonate, acrylic, or other approved material) angled to prevent glare.
10) Provide a flat black UV protected coating on the sign hardware, character PCB, and appropriate lens areas.
11) Provide a photocell control to provide automatic dimming.

1I

12) Allow an on-off flashing sequence at an adjustable rate.
13) Provide a sight to aim the message.
14) Provide a LED display color of approximately 590 nm amber.
15) Provide a controller that is password protected.
16) Provide a security device that prevents unauthorized individuals from accessing the controller.
17) Provide the following 3-line messages preprogrammed and available for use when the sign unit begins operation:

/KEEP/RIGHT/⇒⇒⇒/
/KEEP/LEFT/⇐⇐⇐/
/LOOSE/GRAVEL/AHEAD/
/RD WORK/NEXT/**MILES/
/TWO WAY/TRAFFIC/AHEAD/
/PAINT/CREW/AHEAD/
/REDUCE/SPEED/**MPH/
/BRIDGE/WORK/***0 FT/
/MAX/SPEED/**MPH/
/SURVEY/PARTY/AHEAD/
/MIN/SPEED/**MPH/
/ICY/BRIDGE/AHEAD/ /ONE LANE/BRIDGE/AHEAD/
/ROUGH/ROAD/AHEAD/
/MERGING/TRAFFIC/AHEAD/
/NEXT/***/MILES/
/HEAVY/TRAFFIC/AHEAD/
/SPEED/LIMIT/**MPH/
/BUMP/AHEAD/
/TWO/WAY/TRAFFIC/

*Insert numerals as directed by the Engineer.
Add other messages during the project when required by the Engineer.

2.3 Power.

1) Design solar panels to yield 10 percent or greater additional charge than sign consumption. Provide direct wiring for operation of the sign or arrow board from an external power source to provide energy backup for 21 days without sunlight and an on-board system charger with the ability to recharge completely discharged batteries in 24 hours.

3.0 CONSTRUCTION. Furnish and operate the variable message signs as designated on the plans or by the Engineer. Ensure the bottom of the message panel is a minimum of 7 feet above the roadway in urban areas and 5 feet above in rural areas when operating. Use Class I, II, or III signs on roads with a speed limit less than 55 mph. Use Class I or II signs on roads with speed limits 55 mph or greater.

Maintain the sign in proper working order, including repair of any damage done by others, until completion of the project. When the sign becomes inoperative, immediately repair or replace the sign. Repetitive problems with the same unit will be cause for rejection and replacement.

Use only project related messages and messages directed by the Engineer, unnecessary messages lessen the impact of the sign. Ensure the message is displayed in either one or 2 phases with each phase having no more than 3 lines of text. When no message is needed, but it is necessary to know if the sign is operable, flash only a pixel.

When the sign is not needed, move it outside the clear zone or where the Engineer directs. Variable Message Signs are the property of the Contractor and shall be removed from the project when no longer needed. The Department will not assume ownership of these signs.

4.0 MEASUREMENT. The final quantity of Variable Message Sign will be

1I

the actual number of individual signs acceptably furnished and operated during the project. The Department will not measure signs replaced due to damage or rejection.

5.0 PAYMENT. The Department will pay for the Variable Message Signs at the unit price each. The Department will not pay for signs replaced due to damage or rejection. Payment is full compensation for furnishing all materials, labor, equipment, and service necessary to, operate, move, repair, and maintain or replace the variable message signs. The Department will make payment for the completed and accepted quantities under the following:

Code	Pay Item	Pay Unit
02671	Portable Changeable Message Sign	Each

Effective June 15, 2012

11N

SPECIAL NOTE FOR LONGITUDINAL PAVEMENT JOINT ADHESIVE

1. DESCRIPTION. This specification covers the requirements and practices for applying an asphalt adhesive material to the longitudinal joint of the surface course of an asphalt pavement. Apply the adhesive to the face of longitudinal joint between driving lanes for the first lane paved. Then, place and compact the adjacent lane against the treated face to produce a strong, durable, waterproof longitudinal joint.

2. MATERIALS, EQUIPMENT, AND PERSONNEL.

2.1 Joint Adhesive. Provide material conforming to Subsection 2.1.1.

2.1.1 Provide an adhesive conforming to the following requirements:

Property	Specification	Test Procedure
Viscosity, 400 ° F (Pa·s)	4.0 – 10.0	ASTM D 4402
Cone Penetration, 77 ° F	60 – 100	ASTM D 5329
Flow, 140 ° F (mm)	5.0 max.	ASTM D 5329
Resilience, 77 ° F (%)	30 min.	ASTM D 5329
Ductility, 77 ° F (cm)	30.0 min.	ASTM D 113
Ductility, 39 ° F (cm)	30.0 min.	ASTM D 113
Tensile Adhesion, 77 ° F (%)	500 min.	ASTM D 5329, Type II
Softening Point, ° F	171 min.	AASHTO T 53
Asphalt Compatibility	Pass	ASTM D 5329

Ensure the temperature of the pavement joint adhesive is between 380 and 410 °F when the material is extruded in a 0.125-inch-thick band over the entire face of the longitudinal joint.

2.2. Equipment.

2.2.1 Melter Kettle. Provide an oil-jacketed, double-boiler, melter kettle equipped with any needed agitation and recirculating systems.

2.2.2 Applicator System. Provide a pressure-feed-wand applicator system with an applicator shoe attached.

2.3 Personnel. Ensure a technical representative from the manufacturer of the pavement joint adhesive is present during the initial construction activities and available upon the request of the Engineer.

3. CONSTRUCTION.

3.1 Surface Preparation. Prior to the application of the pavement joint adhesive, ensure the face of the longitudinal joint is thoroughly dry and free from dust or any other debris that would inhibit adhesion. Clean the joint face by the use of compressed air.

Ensure this preparation process occurs shortly before application to prevent the return of debris on the joint face.

3.2 Pavement Joint Adhesive Application. Ensure the ambient temperature is a minimum of 40 ^{o} F during the application of the pavement joint adhesive. Prior to applying the adhesive, demonstrate competence in applying the adhesive according to this note to the satisfaction of the Engineer. Heat the adhesive in the melter kettle to the specified temperature range. Pump the adhesive from the melter kettle through the wand onto the vertical face of the cold joint. Apply the adhesive in a continuous band over the entire face of the longitudinal joint. Do not use excessive material in either thickness or location. Ensure the edge of the extruded adhesive material is flush with the surface of the pavement. Then, place and compact the adjacent lane against the joint face. Remove any excessive material extruded from the joint after compaction (a small line of material may remain).

3.3 Pavement Joint Adhesive Certification. Furnish the joint adhesive's 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 random sample of pavement joint adhesive from each manufacturer's lot of material. Extrude two 5 lb. samples of the heated material and forward the sample to the Division of Materials for testing. Reynolds oven bags, turkey size, placed inside small cardboard boxes or cement cylinder molds have been found suitable. Ensure the product temperature is 400°F or below at the time of sampling.

4. MEASUREMENT. The Department will measure the quantity of Pavement Joint Adhesive in linear feet. 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 Pavement Joint Adhesive, the cleaning of the joint face, or furnishing and placing the adhesive. The Department will consider all such items incidental to the Pavement Joint Adhesive.

5. PAYMENT. The Department will pay for the Pavement Joint Adhesive 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. When a sample fails on two or more tests, the Department may add the deductions, but the total deduction will not exceed 100 percent.

11N

Pavement Joint Adhesive Price Adjustment Schedule						
Test	Specification	100% Pay	90% Pay	80% Pay	50% Pay	0% Pay
Joint Adhesive Referenced in Subsection 2.1.1						
Viscosity, 400 ° F (Pa•s)			3.0-3.4	2.5-2.9	2.0-2.4	≤1.9
ASTM D 3236	4.0-10.0	3.5-10.5	10.6-11.0	11.1-11.5	11.6-12.0	≥ 12.1
Cone Penetration, 77 ° F			54-56	51-53	48-50	≤ 47
ASTM D 5329	60-100	57-103	104-106	107-109	110-112	≥ 113
Flow, 140 ° F (mm) ASTM D 5329	≤ 5.0	≤ 5.5	5.6-6.0	6.1-6.5	6.6-7.0	≥ 7.1
Resilience, 77 ° F (%) ASTM D 5329	≥ 30	≥ 28	26-27	24-25	22-23	≤ 21
Tensile Adhesion, 77 ° F (%) ASTM D 5329	≥ 500	≥ 490	480-489	470-479	460-469	≤ 459
Softening Point, ° F AASHTO T 53	≥ 171	≥ 169	166-168	163-165	160-162	≤ 159
Ductility, 77 ° F (cm) ASTM D 113	≥ 30.0	≥ 29.0	28.0-28.9	27.0-27.9	26.0-26.9	≤ 25.9
Ductility, 39 ° F (cm) ASTM D 113	≥ 30.0	≥ 29.0	28.0-28.9	27.0-27.9	26.0-26.9	≤ 25.9

Code	Pay Item	Pay Unit
20071EC	Joint Adhesive	Linear Foot

May 7, 2014

PART III

EMPLOYMENT, WAGE AND RECORD REQUIREMENTS

FHWA-1273 – Revised October 23, 2023

REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under title 23, United States Code, as required in 23 CFR 633.102(b) (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services). 23 CFR 633.102(e).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider. 23 CFR 633.102(e).

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services) in accordance with 23 CFR 633.102. The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in solicitation-for-bids or request-for-proposals documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract). 23 CFR 633.102(b).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract. 23 CFR 633.102(d).

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. 23 U.S.C. 114(b). The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors. 23 U.S.C. 101(a).

II. NONDISCRIMINATION (23 CFR 230.107(a); 23 CFR Part 230, Subpart A, Appendix A; EO 11246)

The provisions of this section related to 23 CFR Part 230, Subpart A, Appendix A are applicable to all Federal-aid construction contracts and to all related construction subcontracts of $10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR Part 60, 29 CFR Parts 1625-1627, 23 U.S.C. 140, Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d et seq.), and related regulations including 49 CFR Parts 21, 26, and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding $10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR Part 60, and 29 CFR Parts 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with 23 U.S.C. 140, Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), and Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d et seq.), and related regulations including 49 CFR Parts 21, 26, and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR Part 230, Subpart A, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

1. Equal Employment Opportunity: Equal Employment Opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (*see* 28 CFR Part 35, 29 CFR Part 1630, 29 CFR Parts 1625-1627, 41 CFR Part 60 and 49 CFR Part 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140, shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR Part 35 and 29 CFR Part 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract. 23 CFR 230.409 (g)(4) & (5).

b. The contractor will accept as its operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, sexual orientation, gender identity, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."

2. EEO Officer: The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

3. Dissemination of Policy: All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action or are substantially involved in such action, will be made fully cognizant of and will implement the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer or other knowledgeable company official.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. Recruitment: When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

5. Personnel Actions: Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to ensure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action

within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs (i.e., apprenticeship and on-the-job training programs for the geographical area of contract performance). In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. 23 CFR 230.409. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

8. Reasonable Accommodation for Applicants / Employees with Disabilities: The contractor must be familiar with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established thereunder. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment: The contractor shall not discriminate on the grounds of race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors, suppliers, and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

10. Assurances Required:

a. The requirements of 49 CFR Part 26 and the State DOT's FHWA-approved Disadvantaged Business Enterprise (DBE) program are incorporated by reference.

b. The contractor, subrecipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate, which may include, but is not limited to:
(1) Withholding monthly progress payments;
(2) Assessing sanctions;
(3) Liquidated damages; and/or
(4) Disqualifying the contractor from future bidding as non-responsible.

c. The Title VI and nondiscrimination provisions of U.S. DOT Order 1050.2A at Appendixes A and E are incorporated by reference. 49 CFR Part 21.

11. Records and Reports: The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women.

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on Form FHWA-1391. The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of more than $10,000. 41 CFR 60-1.5.

As prescribed by 41 CFR 60-1.8, the contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, sexual orientation, gender identity, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location under the contractor's control where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding $2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size), in accordance with 29 CFR 5.5. The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. 23 U.S.C. 113. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. 23 U.S.C. 101. Where applicable law requires that projects be treated as a project on a Federal-aid highway, the provisions of this subpart will apply regardless of the location of the project. Examples include: Surface Transportation Block Grant Program projects funded under 23 U.S.C. 133 [excluding recreational trails projects], the Nationally Significant Freight and Highway Projects funded under 23 U.S.C. 117, and National Highway Freight Program projects funded under 23 U.S.C. 167.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 “Contract provisions and related matters” with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

1. Minimum wages (29 CFR 5.5)

a. *Wage rates and fringe benefits.* All laborers and mechanics employed or working upon the site of the work (or otherwise working in construction or development of the project under a development statute), will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of basic hourly wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics. As provided in paragraphs (d) and (e) of 29 CFR 5.5, the appropriate wage determinations are effective by operation of law even if they have not been attached to the contract. Contributions made or costs reasonably anticipated for bona fide fringe benefits under the Davis-Bacon Act (40 U.S.C. 3141(2)(B)) on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.e. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics must be paid the appropriate wage rate and fringe benefits on the wage determination for the classification(s) of work actually performed, without regard to skill, except as provided in paragraph 4. of this section. Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: *Provided,* That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classifications and wage rates conformed under paragraph 1.c. of this section) and the Davis-Bacon poster (WH–1321) must be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b. *Frequently recurring classifications.* (1) In addition to wage and fringe benefit rates that have been determined to be prevailing under the procedures set forth in 29 CFR part 1, a wage determination may contain, pursuant to § 1.3(f), wage and fringe benefit rates for classifications of laborers and mechanics for which conformance requests are regularly submitted pursuant to paragraph 1.c. of this section, provided that:

(i) The work performed by the classification is not performed by a classification in the wage determination for which a prevailing wage rate has been determined;

(ii) The classification is used in the area by the construction industry; and

(iii) The wage rate for the classification bears a reasonable relationship to the prevailing wage rates contained in the wage determination.

(2) The Administrator will establish wage rates for such classifications in accordance with paragraph 1.c.(1)(iii) of this section. Work performed in such a classification must be paid at no less than the wage and fringe benefit rate listed on the wage determination for such classification.

c. *Conformance.* (1) The contracting officer must require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract be classified in conformance with the wage determination. Conformance of an additional classification and wage rate and fringe benefits is appropriate only when the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(ii) The classification is used in the area by the construction industry; and

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) The conformance process may not be used to split, subdivide, or otherwise avoid application of classifications listed in the wage determination.

(3) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken will be sent by the contracting officer by email to *DBAconformance@dol.gov*. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30–day period that additional time is necessary.

(4) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer will, by email to *DBAconformance@dol.gov*, refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30–day period that additional time is necessary.

(5) The contracting officer must promptly notify the contractor of the action taken by the Wage and Hour Division under paragraphs 1.c.(3) and (4) of this section. The contractor must furnish a written copy of such determination to each affected worker or it must be posted as a part of the wage determination. The wage rate (including fringe benefits where appropriate) determined pursuant to paragraph 1.c.(3) or (4) of this section must be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

d. *Fringe benefits not expressed as an hourly rate.* Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor may either pay the benefit as stated in the wage determination or may pay another bona fide fringe benefit or an hourly cash equivalent thereof.

e. *Unfunded plans.* If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, *Provided,* That the Secretary of Labor has found, upon the written request of the contractor, in accordance with the criteria set forth in § 5.28, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

f. *Interest.* In the event of a failure to pay all or part of the wages required by the contract, the contractor will be required to pay interest on any underpayment of wages.

2. Withholding (29 CFR 5.5)

a. *Withholding requirements.* The contracting agency may, upon its own action, or must, upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor so much of the accrued payments or advances as may be considered necessary to satisfy the liabilities of the prime contractor or any subcontractor for the full amount of wages and monetary relief, including interest, required by the clauses set forth in this section for violations of this contract, or to satisfy any such liabilities required by any other Federal contract, or federally assisted contract subject to Davis-Bacon labor standards, that is held by the same prime contractor (as defined in § 5.2). The necessary funds may be withheld from the contractor under this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract that is subject to Davis-Bacon labor standards requirements and is held by the same prime contractor, regardless of whether the other contract was awarded or assisted by the same agency, and such funds may be used to satisfy the contractor liability for which the funds were withheld. In the event of a contractor's failure to pay any laborer or mechanic, including any apprentice or helper working on the site of the work all or part of the wages required by the contract, or upon the contractor's failure to submit the required records as discussed in paragraph 3.d. of this section, the contracting agency may on its own initiative and after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

b. *Priority to withheld funds.* The Department has priority to funds withheld or to be withheld in accordance with paragraph

2.a. of this section or Section V, paragraph 3.a., or both, over claims to those funds by:

(1) A contractor's surety(ies), including without limitation performance bond sureties and payment bond sureties;

(2) A contracting agency for its reprocurement costs;

(3) A trustee(s) (either a court-appointed trustee or a U.S. trustee, or both) in bankruptcy of a contractor, or a contractor's bankruptcy estate;

(4) A contractor's assignee(s);

(5) A contractor's successor(s); or

(6) A claim asserted under the Prompt Payment Act, 31 U.S.C. 3901–3907.

3. Records and certified payrolls (29 CFR 5.5)

a. *Basic record requirements* (1) *Length of record retention.* All regular payrolls and other basic records must be maintained by the contractor and any subcontractor during the course of the work and preserved for all laborers and mechanics working at the site of the work (or otherwise working in construction or development of the project under a development statute) for a period of at least 3 years after all the work on the prime contract is completed.

(2) *Information required.* Such records must contain the name; Social Security number; last known address, telephone number, and email address of each such worker; each worker's correct classification(s) of work actually performed; hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in 40 U.S.C. 3141(2)(B) of the Davis-Bacon Act); daily and weekly number of hours actually worked in total and on each covered contract; deductions made; and actual wages paid.

(3) *Additional records relating to fringe benefits.* Whenever the Secretary of Labor has found under paragraph 1.e. of this section that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in 40 U.S.C. 3141(2)(B) of the Davis-Bacon Act, the contractor must maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits.

(4) *Additional records relating to apprenticeship.* Contractors with apprentices working under approved programs must maintain written evidence of the registration of apprenticeship programs, the registration of the apprentices, and the ratios and wage rates prescribed in the applicable programs.

b. *Certified payroll requirements* (1) *Frequency and method of submission.* The contractor or subcontractor must submit weekly, for each week in which any DBA- or Related Acts-covered work is performed, certified payrolls to the contracting agency. The prime contractor is responsible for the submission of all certified payrolls by all subcontractors. A contracting agency or prime contractor may permit or require contractors to submit certified payrolls through an electronic system, as long as the electronic system requires a legally valid electronic signature; the system allows the contractor, the contracting agency, and the Department of Labor to access the certified payrolls upon request for at least 3 years after the work on the prime contract has been completed; and the contracting agency or prime contractor permits other methods of submission in situations where the contractor is unable or limited in its ability to use or access the electronic system.

(2) *Information required.* The certified payrolls submitted must set out accurately and completely all of the information required to be maintained under paragraph 3.a.(2) of this section, except that full Social Security numbers and last known addresses, telephone numbers, and email addresses must not be included on weekly transmittals. Instead, the certified payrolls need only include an individually identifying number for each worker (*e.g.,* the last four digits of the worker's Social Security number). The required weekly certified payroll information may be submitted using Optional Form WH–347 or in any other format desired. Optional Form WH–347 is available for this purpose from the Wage and Hour Division website at *https://www.dol.gov/sites/dolgov/files/WHD/legacy/files/wh347/.pdf* or its successor website. It is not a violation of this section for a prime contractor to require a subcontractor to provide full Social Security numbers and last known addresses, telephone numbers, and email addresses to the prime contractor for its own records, without weekly submission by the subcontractor to the contracting agency.

(3) *Statement of Compliance.* Each certified payroll submitted must be accompanied by a “Statement of Compliance,” signed by the contractor or subcontractor, or the contractor's or subcontractor's agent who pays or supervises the payment of the persons working on the contract, and must certify the following:

(i) That the certified payroll for the payroll period contains the information required to be provided under paragraph 3.b. of this section, the appropriate information and basic records are being maintained under paragraph 3.a. of this section, and such information and records are correct and complete;

(ii) That each laborer or mechanic (including each helper and apprentice) working on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in 29 CFR part 3; and

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification(s) of work actually performed, as specified in the applicable wage determination incorporated into the contract.

(4) *Use of Optional Form WH–347.* The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH–347 will satisfy the requirement for submission of the “Statement of Compliance” required by paragraph 3.b.(3) of this section.

(5) *Signature.* The signature by the contractor, subcontractor, or the contractor's or subcontractor's agent must be an original handwritten signature or a legally valid electronic signature.

(6) *Falsification.* The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under 18 U.S.C. 1001 and 31 U.S.C. 3729.

(7) *Length of certified payroll retention.* The contractor or subcontractor must preserve all certified payrolls during the course of the work and for a period of 3 years after all the work on the prime contract is completed.

c. *Contracts, subcontracts, and related documents.* The contractor or subcontractor must maintain this contract or subcontract and related documents including, without limitation, bids, proposals, amendments, modifications, and extensions. The contractor or subcontractor must preserve these contracts, subcontracts, and related documents during the course of the work and for a period of 3 years after all the work on the prime contract is completed.

d. *Required disclosures and access* (1) *Required record disclosures and access to workers.* The contractor or subcontractor must make the records required under paragraphs 3.a. through 3.c. of this section, and any other documents that the contracting agency, the State DOT, the FHWA, or the Department of Labor deems necessary to determine compliance with the labor standards provisions of any of the applicable statutes referenced by § 5.1, available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and must permit such representatives to interview workers during working hours on the job.

(2) *Sanctions for non-compliance with records and worker access requirements.* If the contractor or subcontractor fails to submit the required records or to make them available, or refuses to permit worker interviews during working hours on the job, the Federal agency may, after written notice to the contractor, sponsor, applicant, owner, or other entity, as the case may be, that maintains such records or that employs such workers, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available, or to permit worker interviews during working hours on the job, may be grounds for debarment action pursuant to § 5.12. In addition, any contractor or other person that fails to submit the required records or make those records available to WHD within the time WHD requests that the records be produced will be precluded from introducing as evidence in an administrative proceeding under 29 CFR part 6 any of the required records that were not provided or made available to WHD. WHD will take into consideration a reasonable request from the contractor or person for an extension of the time for submission of records. WHD will determine the reasonableness of the request and may consider, among other things, the location of the records and the volume of production.

(3) *Required information disclosures.* Contractors and subcontractors must maintain the full Social Security number and last known address, telephone number, and email address of each covered worker, and must provide them upon request to the contracting agency, the State DOT, the FHWA, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or other compliance action.

4. Apprentices and equal employment opportunity (29 CFR 5.5)

a. *Apprentices* (1) *Rate of pay.* Apprentices will be permitted to work at less than the predetermined rate for the work they perform when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship (OA), or with a State Apprenticeship Agency recognized by the OA. A person who is not individually registered in the program, but who has been certified by the OA or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice, will be permitted to work at less than the predetermined rate for the work they perform in the first 90 days of probationary employment as an apprentice in such a program. In the event the OA or a State Apprenticeship Agency recognized by the OA withdraws approval of an apprenticeship program, the contractor will no longer be permitted to use apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(2) *Fringe benefits.* Apprentices must be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringe benefits must be paid in accordance with that determination.

(3) *Apprenticeship ratio.* The allowable ratio of apprentices to journeyworkers on the job site in any craft classification must not be greater than the ratio permitted to the contractor as to the entire work force under the registered program or the ratio applicable to the locality of the project pursuant to paragraph 4.a.(4) of this section. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated in paragraph 4.a.(1) of this section, must be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under this section must be paid not less than the applicable wage rate on the wage determination for the work actually performed.

(4) *Reciprocity of ratios and wage rates.* Where a contractor is performing construction on a project in a locality other than the locality in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyworker's hourly rate) applicable within the locality in which the construction is being performed must be observed. If there is no applicable ratio or wage rate for the locality of the project, the ratio and wage rate specified in the contractor's registered program must be observed.

b. *Equal employment opportunity.* The use of apprentices and journeyworkers under this part must be in conformity with

the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

c. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. 23 CFR 230.111(e)(2). The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeyworkers shall not be greater than permitted by the terms of the particular program.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract as provided in 29 CFR 5.5.

6. Subcontracts. The contractor or subcontractor must insert FHWA-1273 in any subcontracts, along with the applicable wage determination(s) and such other clauses or contract modifications as the contracting agency may by appropriate instructions require, and a clause requiring the subcontractors to include these clauses and wage determination(s) in any lower tier subcontracts. The prime contractor is responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in this section. In the event of any violations of these clauses, the prime contractor and any subcontractor(s) responsible will be liable for any unpaid wages and monetary relief, including interest from the date of the underpayment or loss, due to any workers of lower-tier subcontractors, and may be subject to debarment, as appropriate. 29 CFR 5.5.

7. Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract as provided in 29 CFR 5.5.

9. Disputes concerning labor standards. As provided in 29 CFR 5.5, disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of eligibility. a. By entering into this contract, the contractor certifies that neither it nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of 40 U.S.C. 3144(b) or § 5.12(a).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of 40 U.S.C. 3144(b) or § 5.12(a).

c. The penalty for making false statements is prescribed in the U.S. Code, Title 18 Crimes and Criminal Procedure, 18 U.S.C. 1001.

11. Anti-retaliation. It is unlawful for any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, or to cause any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, any worker or job applicant for:

a. Notifying any contractor of any conduct which the worker reasonably believes constitutes a violation of the DBA, Related Acts, this part, or 29 CFR part 1 or 3;

b. Filing any complaint, initiating or causing to be initiated any proceeding, or otherwise asserting or seeking to assert on behalf of themselves or others any right or protection under the DBA, Related Acts, this part, or 29 CFR part 1 or 3;

c. Cooperating in any investigation or other compliance action, or testifying in any proceeding under the DBA, Related Acts, this part, or 29 CFR part 1 or 3; or

d. Informing any other person about their rights under the DBA, Related Acts, this part, or 29 CFR part 1 or 3.

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

Pursuant to 29 CFR 5.5(b), the following clauses apply to any Federal-aid construction contract in an amount in excess of $100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchpersons and guards.

1. Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek. 29 CFR 5.5.

2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph 1. of this section the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages and interest from the date of the underpayment. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or

mechanic, including watchpersons and guards, employed in violation of the clause set forth in paragraph 1. of this section, in the sum currently provided in 29 CFR 5.5(b)(2)* for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph 1. of this section.

* $31 as of January 15, 2023 (See 88 FR 88 FR 2210) as may be adjusted annually by the Department of Labor, pursuant to the Federal Civil Penalties Inflation Adjustment Act of 1990.

3. Withholding for unpaid wages and liquidated damages

a. *Withholding process.* The FHWA or the contracting agency may, upon its own action, or must, upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor so much of the accrued payments or advances as may be considered necessary to satisfy the liabilities of the prime contractor or any subcontractor for any unpaid wages; monetary relief, including interest; and liquidated damages required by the clauses set forth in this section on this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract subject to the Contract Work Hours and Safety Standards Act that is held by the same prime contractor (as defined in § 5.2). The necessary funds may be withheld from the contractor under this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract that is subject to the Contract Work Hours and Safety Standards Act and is held by the same prime contractor, regardless of whether the other contract was awarded or assisted by the same agency, and such funds may be used to satisfy the contractor liability for which the funds were withheld.

b. *Priority to withheld funds.* The Department has priority to funds withheld or to be withheld in accordance with Section IV paragraph 2.a. or paragraph 3.a. of this section, or both, over claims to those funds by:

(1) A contractor's surety(ies), including without limitation performance bond sureties and payment bond sureties;

(2) A contracting agency for its reprocurement costs;

(3) A trustee(s) (either a court-appointed trustee or a U.S. trustee, or both) in bankruptcy of a contractor, or a contractor's bankruptcy estate;

(4) A contractor's assignee(s);

(5) A contractor's successor(s); or

(6) A claim asserted under the Prompt Payment Act, 31 U.S.C. 3901–3907.

4. Subcontracts. The contractor or subcontractor must insert in any subcontracts the clauses set forth in paragraphs 1. through 5. of this section and a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor is responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs 1. through 5. In the event of any violations of these clauses, the prime contractor and any subcontractor(s) responsible will be liable for any unpaid wages and monetary relief, including interest from the date of the underpayment or loss, due to any workers of lower-tier subcontractors, and associated liquidated damages and may be subject to debarment, as appropriate.

5. Anti-retaliation. It is unlawful for any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, or to cause any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, any worker or job applicant for:

a. Notifying any contractor of any conduct which the worker reasonably believes constitutes a violation of the Contract Work Hours and Safety Standards Act (CWHSSA) or its implementing regulations in this part;

b. Filing any complaint, initiating or causing to be initiated any proceeding, or otherwise asserting or seeking to assert on behalf of themselves or others any right or protection under CWHSSA or this part;

c. Cooperating in any investigation or other compliance action, or testifying in any proceeding under CWHSSA or this part; or

d. Informing any other person about their rights under CWHSSA or this part.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System pursuant to 23 CFR 635.116.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term “perform work with its own organization” in paragraph 1 of Section VI refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions: (based on longstanding interpretation)

(1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;
(2) the prime contractor remains responsible for the quality of the work of the leased employees;

(3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and

(4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract. 23 CFR 635.102.

2. Pursuant to 23 CFR 635.116(a), the contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. Pursuant to 23 CFR 635.116(c), the contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract. (based on long-standing interpretation of 23 CFR 635.116).

5. The 30-percent self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements. 23 CFR 635.116(d).

VII. SAFETY: ACCIDENT PREVENTION

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR Part 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract. 23 CFR 635.108.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR Part 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704). 29 CFR 1926.10.

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR Part 635) in one or more places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 11, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT (42 U.S.C. 7606; 2 CFR 200.88; EO 11738)

This provision is applicable to all Federal-aid construction contracts in excess of $150,000 and to all related subcontracts. 48 CFR 2.101; 2 CFR 200.327.

By submission of this bid/proposal or the execution of this contract or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, subcontractor, supplier, or vendor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401-7671q) and the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251-1387). Violations must be reported to the Federal Highway Administration and the Regional Office of the Environmental Protection Agency. 2 CFR Part 200, Appendix II.

The contractor agrees to include or cause to be included the requirements of this Section in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements. 2 CFR 200.327.

X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost $25,000 or more – as defined in 2 CFR Parts 180 and 1200. 2 CFR 180.220 and 1200.220.

1**. Instructions for Certification – First Tier Participants:**

a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction. 2 CFR 180.320.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default. 2 CFR 180.325.

d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances. 2 CFR 180.345 and 180.350.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180, Subpart I, 180.900-180.1020, and 1200. “First Tier Covered Transactions” refers to any covered transaction between a recipient or subrecipient of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). “First Tier Participant” refers to the participant who has entered into a covered transaction with a recipient or subrecipient of Federal funds (such as the prime or general contractor). “Lower Tier Participant” refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction. 2 CFR 180.330.

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold. 2 CFR 180.220 and 180.300.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. 2 CFR 180.300; 180.320, and 180.325. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. 2 CFR 180.335. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the System for Award Management website (https://www.sam.gov/). 2 CFR 180.300, 180.320, and 180.325.

i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default. 2 CFR 180.325.

* * * * *

2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency, 2 CFR 180.335;.

(2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property, 2 CFR 180.800;

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification, 2 CFR 180.700 and 180.800; and

(4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default. 2 CFR 180.335(d).

(5) Are not a corporation that has been convicted of a felony violation under any Federal law within the two-year period preceding this proposal (USDOT Order 4200.6 implementing appropriations act requirements); and

(6) Are not a corporation with any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability (USDOT Order 4200.6 implementing appropriations act requirements).

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant should attach an explanation to this proposal. 2 CFR 180.335 and 180.340.

* * * * *

3. **Instructions for Certification - Lower Tier Participants:**

(Applicable to all subcontracts, purchase orders, and other lower tier transactions requiring prior FHWA approval or estimated to cost $25,000 or more - 2 CFR Parts 180 and 1200). 2 CFR 180.220 and 1200.220.

a. By signing and submitting this proposal, the prospective lower tier participant is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances. 2 CFR 180.365.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180, Subpart I, 180.900 – 180.1020, and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. “First Tier Covered Transactions” refers to any covered transaction between a recipient or subrecipient of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). “First Tier Participant” refers to the participant who has entered into a covered transaction with a recipient or subrecipient of Federal funds (such as the prime or general contractor). “Lower Tier Participant” refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated. 2 CFR 1200.220 and 1200.332.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold. 2 CFR 180.220 and 1200.220.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the System for Award Management website (https://www.sam.gov/), which is compiled by the General Services Administration. 2 CFR 180.300, 180.320, 180.330, and 180.335.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily

excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment. 2 CFR 180.325.

* * * * *

4. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:

a. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals:

(1) is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency, 2 CFR 180.355;

(2) is a corporation that has been convicted of a felony violation under any Federal law within the two-year period preceding this proposal (USDOT Order 4200.6 implementing appropriations act requirements); and

(3) is a corporation with any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability. (USDOT Order 4200.6 implementing appropriations act requirements)

b. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant should attach an explanation to this proposal.

* * * * *

XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed $100,000. 49 CFR Part 20, App. A.

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier subcontracts, which exceed $100,000 and that all such recipients shall certify and disclose accordingly.

XII. USE OF UNITED STATES-FLAG VESSELS:

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, or any other covered transaction. 46 CFR Part 381.

This requirement applies to material or equipment that is acquired for a specific Federal-aid highway project. 46 CFR 381.7. It is not applicable to goods or materials that come into inventories independent of an FHWA funded-contract.

When oceanic shipments (or shipments across the Great Lakes) are necessary for materials or equipment acquired for a specific Federal-aid construction project, the bidder, proposer, contractor, subcontractor, or vendor agrees:

1. To utilize privately owned United States-flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to this contract, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels. 46 CFR 381.7.

2. To furnish within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, ‘on-board’ commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph (b)(1) of this section to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Office of Cargo and Commercial Sealift (MAR-620), Maritime Administration, Washington, DC 20590. (MARAD requires copies of the ocean carrier's (master) bills of lading, certified onboard, dated, with rates and charges. These bills of lading may contain business sensitive information and therefore may be submitted directly to MARAD by the Ocean Transportation Intermediary on behalf of the contractor). 46 CFR 381.7.

ATTACHMENT A - EMPLOYMENT AND MATERIALS PREFERENCE FOR APPALACHIAN DEVELOPMENT HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS ROAD CONTRACTS (23 CFR 633, Subpart B, Appendix B)
This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:

a. To the extent that qualified persons regularly residing in the area are not available.

b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.

c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph (1c) shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph (4) below.

2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on which the participant estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, the participant shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within one week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph (1c) above.

5. The provisions of 23 CFR 633.207(e) allow the contracting agency to provide a contractual preference for the use of mineral resource materials native to the Appalachian region.

6. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work.

KENTUCKY TRANSPORTATION CABINET
DEPARTMENT OF HIGHWAYS

EMPLOYMENT REQUIREMENTS
RELATING TO
NONDISCRIMINATION OF EMPLOYEES
(APPLICABLE TO FEDERAL-AID SYSTEM CONTRACTS)

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.

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

Standard Title VI/Non-Discrimination Assurances

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "contractor") agrees as follows:

1. **Compliance with Regulations:** The contractor (hereinafter includes consultants) will comply with the Acts and the Regulations relative to Non-discrimination in Federally-assisted programs of the U.S. Department of Transportation, **Federal Highway Administration**, as they may be amended from time to time, which are herein incorporated by reference and made a part of this contract.

2. **Non-discrimination:** The contractor, with regard to the work performed by it during the contract, will not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor will not participate directly or indirectly in the discrimination prohibited by the Acts and the Regulations, including employment practices when the contract covers any activity, project, or program set forth in Appendix B of 49 CFR Part 21.

3. **Solicitations for Subcontracts, Including Procurements of Materials and Equipment:** In all solicitations, either by competitive bidding, or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials, or leases of equipment, each potential subcontractor or supplier will be notified by the contractor of the contractor's obligations under this contract and the Acts and the Regulations relative to Non-discrimination on the grounds of race, color, or national origin.

4. **Information and Reports:** The contractor will provide all information and reports required by the Acts, the Regulations, and directives issued pursuant thereto and will permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the Recipient or the **Federal Highway Administration** to be pertinent to ascertain compliance with such Acts, Regulations, and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish the information, the contractor will so certify to the Recipient or the **Federal Highway Administration**, as appropriate, and will set forth what efforts it has made to obtain the information.

5. **Sanctions for Noncompliance:** In the event of a contractor's noncompliance with the Non-discrimination provisions of this contract, the Recipient will impose such contract sanctions as it or the **Federal Highway Administration** may determine to be appropriate, including, but not limited to:

    a. withholding payments to the contractor under the contract until the contractor complies; and/or
    b. cancelling, terminating, or suspending a contract, in whole or in part.

6. **Incorporation of Provisions:** The contractor will include the provisions of paragraphs one through six in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Acts, the Regulations and directives issued pursuant thereto. The contractor will take action with respect to any subcontract or procurement as the Recipient or the **Federal Highway Administration** may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, that if the contractor becomes involved in, or is threatened with litigation by a subcontractor, or supplier because of such direction, the contractor may request the Recipient to enter into any litigation to protect the interests of the Recipient. In addition, the contractor may request the United States to enter into the litigation to protect the interests of the United States.

Standard Title VI/Non-Discrimination Statutes and Authorities

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "contractor") agrees to comply with the following non-discrimination statutes and authorities; including but not limited to:

- Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d *et seq*., 78 stat. 252), (prohibits discrimination on the basis of race, color, national origin); and 49 CFR Part 21;
- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 U.S.C. § 4601), (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);
- Federal-Aid Highway Act of 1973, (23 U.S.C. § 324 *et seq*.), (prohibits discrimination on the basis of sex);
- Section 504 of the Rehabilitation Act of 1973, (29 U.S.C. § 794 *et seq*.), as amended, (prohibits discrimination on the basis of disability); and 49 CFR Part 27;
- The Age Discrimination Act of 1975, as amended, (42 U.S.C. § 6101 *et seq*.), (prohibits discrimination on the basis of age);
- Airport and Airway Improvement Act of 1982, (49 USC § 471, Section 47123), as amended, (prohibits discrimination based on race, creed, color, national origin, or sex);
- The Civil Rights Restoration Act of 1987, (PL 100-209), (Broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, The Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms "programs or activities" to include all of the programs or activities of the Federal-aid recipients, sub-recipients and contractors, whether such programs or activities are Federally funded or not);
- Titles II and III of the Americans with Disabilities Act, which prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 U.S.C. §§ 12131 -- 12189) as implemented by Department of Transportation regulations at 49 C.F.R. parts 37 and 38;
- The Federal Aviation Administration's Non-discrimination statute (49 U.S.C. § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex);
- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures non-discrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations;
- Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs (70 Fed. Reg. at 74087 to 74100);
- Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 U.S.C. 1681 et seq).

EXECUTIVE BRANCH CODE OF ETHICS

The Executive Branch Code of Ethics created by Kentucky Revised Statutes (KRS) Chapter 11A, effective July 14, 1992, establishes the ethical standards that govern the conduct of all executive branch employees. The Executive Branch Code of Ethics, which states, in part:

> KRS 11A.040 (7) provides:
>
> A present or former public servant listed in KRS 11A.010(9)(a) to (g) shall not, within one (1) year following termination of his or her 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 one (1) year, he or she personally refrains from working on any matter in which he was directly involved during the last thirty-six (36) months of his or her 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 to obtain private benefits.

If you have worked for the executive branch of state government within the past year, 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 105, Frankfort, Kentucky 40601; telephone (502) 564-7954.

Revised: March 11, 2025

"General Decision Number: KY20250040 07/18/2025

Superseded General Decision Number: KY20240040

State: Kentucky

Construction Type: Highway

Counties: Allen, Ballard, Butler, Caldwell, Calloway, Carlisle, Christian, Crittenden, Daviess, Edmonson, Fulton, Graves, Hancock, Henderson, Hickman, Hopkins, Livingston, Logan, Lyon, Marshall, McCracken, McLean, Muhlenberg, Ohio, Simpson, Todd, Trigg, Union, Warren and Webster Counties in Kentucky.

HIGHWAY CONSTRUCTION PROJECTS (excluding tunnels, building structures in rest area projects & railroad construction; bascule, suspension & spandrel arch bridges designed for commercial navigation, bridges involving marine construction; and other major bridges).

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(1).

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:	. Executive Order 14026 generally applies to the contract. . The contractor must pay all covered workers at least $17.75 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2025.
If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:	. Executive Order 13658 generally applies to the contract. . The contractor must pay all covered workers at least $13.30 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2025.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at http://www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/03/2025
1	02/28/2025
2	04/04/2025
3	05/16/2025
4	07/11/2025
5	07/18/2025

BRIN0004-002 06/01/2024

BALLARD, BUTLER, CALDWELL, CARLISLE, CRITTENDEN, DAVIESS, EDMONSON, FULTON, GRAVES, HANCOCK, HENDERSON, HICKMAN, HOPKINS, LIVINGSTON, LYON, MARSHALL, MCCRACKEN, MCLEAN, MUHLENBERG, OHIO, UNION, and WEBSTER COUNTIES

	Rates	Fringes
BRICKLAYER		
Ballard, Caldwell, Carlisle, Crittenden, Fulton, Graves, Hickman, Livingston, Lyon, Marshall, and McCracken Counties	$ 33.70	16.57
Butler, Edmonson, Hopkins, Muhlenberg, and Ohio Counties	$ 33.70	16.57
Daviess, Hancock, Henderson, McLean, Union, and Webster Counties	$ 33.70	16.57

BRTN0004-005 06/01/2024

ALLEN, CALLOWAY, CHRISTIAN, LOGAN, SIMPSON, TODD, TRIGG, and WARREN COUNTIES

	Rates	Fringes
BRICKLAYER	$ 33.70	16.57

CARP0357-002 04/01/2025

	Rates	Fringes
CARPENTER	$ 33.89	24.02
DIVER	$ 51.21	24.02
PILEDRIVERMAN	$ 34.39	24.02

ELEC0369-006 05/29/2024

BUTLER, EDMONSON, LOGAN, TODD & WARREN COUNTIES:

	Rates	Fringes
ELECTRICIAN	$ 37.88	21.38

ELEC0429-001 06/01/2024

ALLEN & SIMPSON COUNTIES:

	Rates	Fringes
ELECTRICIAN	$ 34.92	14.75

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* ELEC0816-002 06/01/2025

BALLARD, CALDWELL, CALLOWAY, CARLISLE, CHRISTIAN, CRITTENDEN, FULTON (Except a 5 mile radius of City Hall in Fulton), GRAVES, HICKMAN, LIVINGSTON, LYON, MARSHALL, MCCRACKEN & TRIGG COUNTIES:

	Rates	Fringes
ELECTRICIAN	$ 36.75	28%+$8.85

Cable spicers receive $.25 per hour additional.

ELEC1701-003 07/01/2024

DAVIESS, HANCOCK, HENDERSON, HOPKINS, MCLEAN, MUHLENBERG, OHIO, UNION & WEBSTER COUNTIES:

	Rates	Fringes
ELECTRICIAN	$ 37.10	8.60+30.8%

Cable spicers receive $.25 per hour additional.

ELEC1925-002 01/01/2025

FULTON COUNTY (Up to a 5 mile radius of City Hall in Fulton):

	Rates	Fringes
CABLE SPLICER	$ 28.85	15.50
ELECTRICIAN	$ 28.60	15.49

ENGI0181-017 07/01/2025

	Rates	Fringes
POWER EQUIPMENT OPERATOR		
GROUP 1	$ 41.55	19.60
GROUP 2	$ 38.69	19.60
GROUP 3	$ 39.14	19.60
GROUP 4	$ 38.37	19.60

OPERATING ENGINEER CLASSIFICATIONS

GROUP 1 - A-Frame Winch Truck; Auto Patrol; Backfiller; Batcher Plant; Bituminous Paver; Bituminous Transfer Machine; Boom Cat; Bulldozer; Mechanic; Cableway; Carry-All Scoop; Carry Deck Crane; Central Compressor Plant; Cherry Picker; Clamshell; Concrete Mixer (21 cu. ft. or Over); Concrete Paver; Truck-Mounted Concrete Pump; Core Drill; Crane; Crusher Plant; Derrick; Derrick Boat; Ditching & Trenching Machine; Dragline; Dredge Operator; Dredge Engineer; Elevating Grader & Loaders; Grade-All; Gurries; Heavy Equipment Robotics Operator/Mechanic; High Lift; Hoe-Type Machine; Hoist (Two or More Drums); Hoisting Engine (Two or More Drums); Horizontal Directional Drill

Operator; Hydrocrane; Hyster; KeCal Loader; LeTourneau; Locomotive; Mechanic; Mechanically Operated Laser Screed; Mechanic Welder; Mucking Machine; Motor Scraper; Orangepeel Bucket; Overhead Crane; Piledriver; Power Blade; Pumpcrete; Push Dozer; Rock Spreader, attached to equipment; Rotary Drill; Roller (Bituminous); Rough Terrain Crane; Scarifier; Scoopmobile; Shovel; Side Boom; Subgrader; Tailboom; Telescoping Type Forklift; Tow or Push Boat; Tower Crane (French, German & other types); Tractor Shovel; Truck Crane; Tunnel Mining Machines, including Moles, Shields or similar types of Tunnel Mining Equipment

GROUP 2 - Air Compressor (Over 900 cu. ft. per min.); Bituminous Mixer; Boom Type Tamping Machine; Bull Float; Concrete Mixer (Under 21 cu. ft.); Dredge Engineer; Electric Vibrator; Compactor/Self-Propelled Compactor; Elevator (One Drum or Buck Hoist); Elevator (When used to Hoist Building Material); Finish Machine; Firemen & Hoist (One Drum); Flexplane; Forklift (Regardless of Lift Height); Form Grader; Joint Sealing Machine; Outboard Motor Boat; Power Sweeper (Riding Type); Roller (Rock); Ross Carrier; Skid Mounted or Trailer Mounted Conrete Pump; Skid Steer Machine with all Attachments; Switchman or Brakeman; Throttle Valve Person; Tractair & Road Widening Trencher; Tractor (50 H.P. or Over); Truck Crane Oiler; Tugger; Welding Machine; Well Points;& Whirley Oiler

GROUP 3 -All Off Road Material Handling Equipment, including Articulating Dump Trucks; Greaser on Grease Facilities servicing Heavy Equipment

GROUP 4 - Bituminous Distributor; Burlap & Curing Machine; Cement Gun; Concrete Saw; Conveyor; Deckhand Oiler; Grout Pump; Hydraulic Post Driver; Hydro Seeder; Mud Jack; Oiler; Paving Joint Machine; Power Form Handling Equipment; Pump; Roller (Earth); Steerman; Tamping Machine; Tractor (Under 50 H.P.); & Vibrator

CRANES - with booms 150 ft. & Over (Including JIB), and where the length of the boom in combination with the length of the piling equals or exceeds 150 ft. - $1.00 above Group 1 rate

EMPLOYEES ASSIGNED TO WORK BELOW GROUND LEVEL ARE TO BE PAID 10% ABOVE BASIC WAGE RATE. THIS DOES NOT APPLY TO OPEN CUT WORK.

IRON0070-005 06/01/2024

BUTLER COUNTY (Eastern eighth, including the Townships of Decker, Lee & Tilford);
EDMONSON COUNTY (Northern three-fourths, including the Townships of Asphalt, Bee Spring, Brownsville, Grassland, Huff, Kyrock, Lindseyville, Mammoth Cave, Ollie, Prosperity, Rhoda, Sunfish & Sweden)

	Rates	Fringes
IRONWORKER		
Structural; Ornamental; Reinforcing; Precast Concrete Erectors	$ 34.59	25.00

IRON0103-004 08/01/2024

DAVIESS, HANCOCK, HENDERSON, HOPKINS, MCLEAN, OHIO, UNION & WEBSTER COUNTIES
BUTLER COUNTY (Townships of Aberdeen, Bancock, Casey, Dexterville, Dunbar, Elfie, Gilstrap, Huntsville, Logansport, Monford, Morgantown, Provo, Rochester, South Hill & Welchs Creek);
CALDWELL COUNTY (Northeastern third, including the Township of Creswell);
CHRISTIAN COUNTY (Northern third, including the Townships of Apex, Crofton, Kelly, Mannington & Wynns);
CRITTENDEN COUNTY (Northeastern half, including the Townships of Grove, Mattoon, Repton, Shady Grove & Tribune);
MUHLENBERG COUNTY (Townships of Bavier, Beech Creek Junction, Benton, Brennen, Browder, Central City, Cleaton, Depoy, Drakesboro, Eunis, Graham, Hillside, Luzerne, Lynn City, Martwick, McNary, Millport, Moorman, Nelson, Paradise, Powderly, South Carrollton, Tarina & Weir)

	Rates	Fringes
Ironworkers:	$ 35.34	26.4

IRON0492-003 05/01/2024

ALLEN, LOGAN, SIMPSON, TODD & WARREN COUNTIES
BUTLER COUNTY (Southern third, including the Townships of Boston, Berrys Lick, Dimple, Jetson, Quality, Sharer, Sugar Grove & Woodbury);
CHRISTIAN COUNTY (Eastern two-thirds, including the Townships of Bennettstown, Casky, Herndon, Hopkinsville, Howell, Masonville, Pembroke & Thompsonville);
EDMONSON COUNTY (Southern fourth, including the Townships of Chalybeate & Rocky Hill);
MUHLENBERG COUNTY (Southern eighth, including the Townships of Dunnior, Penrod & Rosewood)

	Rates	Fringes
Ironworkers:	$ 33.73	16.38

IRON0782-006 08/01/2024

BALLARD, CALLOWAY, CARLISLE, FULTON, GRAVES, HICKMAN, LIVINGSTON, LYON, MARSHALL, MCCRACKEN & TRIGG COUNTIES
CALDWELL COUNTY (Southwestern two-thirds, including the Townships of Cedar Bluff, Cider, Claxton, Cobb, Crowtown, Dulaney, Farmersville, Fredonia, McGowan, Otter Pond & Princeton);
CHRISTIAN COUNTY (Western third, Excluding the Townships of Apex, Crofton, Kelly, Mannington, Wynns, Bennettstown, Casky, Herndon, Hopkinsville, Howell, Masonville, Pembroke & Thompsonville);
CRITTENDEN COUNTY (Southwestern half, including the Townships of Crayne, Dycusburg, Frances, Marion, Mexico, Midway, Sheridan & Told)

	Rates	Fringes
Ironworkers:		
Projects with a total		

contract cost of		
$20,000,000.00 or above	$ 35.75	26.34
All Other Work	$ 34.01	24.83

LABO0189-005 07/01/2024

BALLARD, CALLOWAY, CARLISLE, FULTON, GRAVES, HICKMAN,
LIVINGSTON, LYON, MARSHALL & MCCRACKEN COUNTIES

	Rates	Fringes
Laborers:		
GROUP 1	$ 23.96	18.58
GROUP 2	$ 24.21	18.58
GROUP 3	$ 24.26	18.58
GROUP 4	$ 24.86	18.58

LABORER CLASSIFICATIONS

GROUP 1 - Aging & Curing of Concrete; Asbestos Abatement Worker; Asphalt Plant; Asphalt; Batch Truck Dump; Carpenter Tender; Cement Mason Tender; Cleaning of Machines; Concrete; Demolition; Dredging; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Level D; Flagperson; Grade Checker; Hand Digging & Hand Back Filling; Highway Marker Placer; Landscaping, Mesh Handler & Placer; Puddler; Railroad; Rip-rap & Grouter; Right-of-Way; Sign, Guard Rail & Fence Installer; Signal Person; Sound Barrier Installer; Storm & Sanitary Sewer; Swamper; Truck Spotter & Dumper; Wrecking of Concrete Forms; General Cleanup

GROUP 2 - Batter Board Man (Sanitary & Storm Sewer); Brickmason Tender; Mortar Mixer Operator; Scaffold Builder; Burner & Welder; Bushammer; Chain Saw Operator; Concrete Saw Operator; Deckhand Scow Man; Dry Cement Handler; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Level C; Forklift Operator for Masonary; Form Setter; Green Concrete Cutting; Hand Operated Grouter & Grinder Machine Operator; Jackhammer; Pavement Breaker; Paving Joint Machine; Pipelayer; Plastic Pipe Fusion; Power Driven Georgia Buggy & Wheel Barrow; Power Post Hole Digger; Precast Manhole Setter; Walk-Behind Tamper; Walk-Behind Trencher; Sand Blaster; Concrete Chipper; Surface Grinder; Vibrator Operator; Wagon Driller

GROUP 3 - Asphalt Luteman & Raker; Gunnite Nozzleman; Gunnite Operator & Mixer; Grout Pump Operator; Blaster; Side Rail Setter; Rail Paved Ditches; Screw Operator; Tunnel (Free Air); Water Blaster

GROUP 4 - Caisson Worker (Free Air); Cement Finisher; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Levels A & B; Miner & Driller (Free Air); Tunnel Blaster; & Tunnel Mucker (Free Air); Directional & Horizontal Boring; Air Track Drillers (All Types); Powdermen & Blasters; Troxler & Concrete Tester if Laborer is Utilized

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LABO0189-006 07/01/2024

ALLEN, BUTLER, CALDWELL, CHRISTIAN, DAVIESS, EDMONSON, HANCOCK,
HOPKINS, LOGAN, MCLEAN, MUHLENBERG, OHIO, SIMPSON, TODD, TRIGG
& WARREN COUNTIES

	Rates	Fringes
Laborers:		
GROUP 1	$ 23.96	18.58
GROUP 2	$ 24.26	18.58
GROUP 3	$ 24.21	18.58
GROUP 4	$ 24.86	18.58

LABORER CLASSIFICATIONS

GROUP 1 - Aging & Curing of Concrete; Asbestos Abatement Worker; Asphalt Plant; Asphalt; Batch Truck Dump; Carpenter Tender; Cement Mason Tender; Cleaning of Machines; Concrete; Demolition; Dredging; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Level D; Flagperson; Grade Checker; Hand Digging & Hand Back Filling; Highway Marker Placer; Landscaping, Mesh Handler & Placer; Puddler; Railroad; Rip-rap & Grouter; Right-of-Way; Sign, Guard Rail & Fence Installer; Signal Person; Sound Barrier Installer; Storm & Sanitary Sewer; Swamper; Truck Spotter & Dumper; Wrecking of Concrete Forms; General Cleanup

GROUP 2 - Batter Board Man (Sanitary & Storm Sewer); Brickmason Tender; Mortar Mixer Operator; Scaffold Builder; Burner & Welder; Bushammer; Chain Saw Operator; Concrete Saw Operator; Deckhand Scow Man; Dry Cement Handler; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Level C; Forklift Operator for Masonary; Form Setter; Green Concrete Cutting; Hand Operated Grouter & Grinder Machine Operator; Jackhammer; Pavement Breaker; Paving Joint Machine; Pipelayer; Plastic Pipe Fusion; Power Driven Georgia Buggy & Wheel Barrow; Power Post Hole Digger; Precast Manhole Setter; Walk-Behind Tamper; Walk-Behind Trencher; Sand Blaster; Concrete Chipper; Surface Grinder; Vibrator Operator; Wagon Driller

GROUP 3 - Asphalt Luteman & Raker; Gunnite Nozzleman; Gunnite Operator & Mixer; Grout Pump Operator; Blaster; Side Rail Setter; Rail Paved Ditches; Screw Operator; Tunnel (Free Air); Water Blaster

GROUP 4 - Caisson Worker (Free Air); Cement Finisher; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Levels A & B; Miner & Driller (Free Air); Tunnel Blaster; & Tunnel Mucker (Free Air); Directional & Horizontal Boring; Air Track Drillers (All Types); Powdermen & Blasters; Troxler & Concrete Tester if Laborer is Utilized

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* LABO0561-001 04/01/2025

CRITTENDEN, HENDERSON, UNION & WEBSTER COUNTIES

	Rates	Fringes
Laborers:		
GROUP 1	$ 30.65	18.77
GROUP 2	$ 31.15	18.77
GROUP 3	$ 31.65	18.77
GROUP 4	$ 31.65	18.77

LABORER CLASSIFICATIONS

GROUP 1 - Aging & Curing of Concrete; Asbestos Abatement

Worker; Asphalt Plant; Asphalt; Batch Truck Dump; Carpenter Tender; Cement Mason Tender; Cleaning of Machines; Concrete; Demolition; Dredging; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Level D; Flagperson; Grade Checker; Hand Digging & Hand Back Filling; Highway Marker Placer; Landscaping, Mesh Handler & Placer; Puddler; Railroad; Rip-rap & Grouter; Right-of-Way; Sign, Guard Rail & Fence Installer; Signal Person; Sound Barrier Installer; Storm & Sanitary Sewer; Swamper; Truck Spotter & Dumper; Wrecking of Concrete Forms; General Cleanup

GROUP 2 - Batter Board Man (Sanitary & Storm Sewer); Brickmason Tender; Mortar Mixer Operator; Scaffold Builder; Burner & Welder; Bushammer; Chain Saw Operator; Concrete Saw Operator; Deckhand Scow Man; Dry Cement Handler; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Level C; Forklift Operator for Masonary; Form Setter; Green Concrete Cutting; Hand Operated Grouter & Grinder Machine Operator; Jackhammer; Pavement Breaker; Paving Joint Machine; Pipelayer; Plastic Pipe Fusion; Power Driven Georgia Buggy & Wheel Barrow; Power Post Hole Digger; Precast Manhole Setter; Walk-Behind Tamper; Walk-Behind Trencher; Sand Blaster; Concrete Chipper; Surface Grinder; Vibrator Operator; Wagon Driller

GROUP 3 - Asphalt Luteman & Raker; Gunnite Nozzleman; Gunnite Operator & Mixer; Grout Pump Operator; Blaster; Side Rail Setter; Rail Paved Ditches; Screw Operator; Tunnel (Free Air); Water Blaster

GROUP 4 - Caisson Worker (Free Air); Cement Finisher; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Levels A & B; Miner & Driller (Free Air); Tunnel Blaster; & Tunnel Mucker (Free Air); Directional & Horizontal Boring; Air Track Drillers (All Types); Powdermen & Blasters; Troxler & Concrete Tester if Laborer is Utilized

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PAIN0032-002 09/01/2024

BALLARD COUNTY

	Rates	Fringes
Painters:		
Bridges	$ 36.77	21.77
All Other Work	$ 34.47	21.77

Spray, Blast, Steam, High & Hazardous (Including Lead Abatement) and All Epoxy - $1.00 Premium

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PAIN0118-003 06/01/2014

EDMONSON COUNTY:

	Rates	Fringes
Painters:		
Brush & Roller	$ 18.50	11.97
Spray, Sandblast, Power Tools, Waterblast & Steam Cleaning	$ 19.50	11.97

PAIN0156-006 04/01/2024

DAVIESS, HANCOCK, HENDERSON, MCLEAN, OHIO, UNION & WEBSTER COUNTIES

	Rates	Fringes
Painters:		
BRIDGES		
GROUP 1	$ 30.77	20.30
GROUP 3	$ 31.77	20.30
GROUP 4	$ 35.00	20.30
ALL OTHER WORK:		
GROUP 1	$ 29.62	20.30
GROUP 2	$ 30.37	20.30
GROUP 3	$ 30.62	20.30
GROUP 4	$ 31.77	20.30

PAINTER CLASSIFICATIONS

GROUP 1 - Brush & Roller

GROUP 2 - Plasterers

GROUP 3 - Spray; Sandblast; Power Tools; Waterblast; Steamcleaning; Brush & Roller of Mastics, Creosotes, Kwinch Koate & Coal Tar Epoxy

GROUP 4 - Spray of Mastics, Creosotes, Kwinch Koate & Coal Tar Epoxy

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* PAIN0500-002 06/01/2025

CALDWELL, CALLOWAY, CARLISLE, CHRISTIAN, CRITTENDEN, FULTON, GRAVES, HICKMAN, HOPKINS, LIVINGSTON, LYON, MARSHALL, MCCRACKEN & TRIGG COUNTIES:

	Rates	Fringes
Painters:		
Bridges	$ 31.50	15.60
All Other Work	$ 25.25	15.60

Waterblasting units with 3500 PSI and above - $.50 premium
Spraypainting and all abrasive blasting - $1.00 premium
Work 40 ft. and above ground level - $1.00 premium

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* PLUM0184-002 07/01/2025

BALLARD, CALDWELL, CALLOWAY, CARLISLE, CHRISTIAN, CRITTENDEN, FULTON, GRAVES, HICKMAN, LIVINGSTON, LYON, MARSHALL, MCCRACKEN and TRIGG COUNTIES

	Rates	Fringes
Plumber; Steamfitter	$ 44.26	20.28

PLUM0502-004 08/01/2024

ALLEN, BUTLER, EDMONSON, SIMPSON & WARREN

	Rates	Fringes
Plumber; Steamfitter	$ 41.90	24.89

PLUM0633-002 08/01/2024

DAVIESS, HANCOCK, HENDERSON, HOPKINS, LOGAN, MCLEAN, MUHLENBERG, OHIO, TODD, UNION & WEBSTER COUNTIES:

	Rates	Fringes
PLUMBER/PIPEFITTER	$ 38.41	22.26

TEAM0089-003 03/31/2024

ALLEN, BUTLER, EDMONSON, LOGAN, SIMPSON & WARREN COUNTIES

	Rates	Fringes
Truck drivers:		
Zone 1:		
Group 1	$ 23.53	27.39
Group 2	$ 23.70	27.39
Group 3	$ 23.78	27.39
Group 4	$ 23.80	27.39

GROUP 1 - Greaser; Tire Changer

GROUP 2 - Truck Mechanic; Single Axle Dump; Flat Bed; All Terrain Vehicles when used to haul materials; Semi Trailer or Pole Trailer when used to pull building materials and equipment; Tandem Axle Dump; Driver of Distributors

GROUP 3 - Mixer All Types

GROUP 4 - Winch and A-Frame when used in transporting materials; Ross Carrier; Fork Lift when used to transport building materials; Driver on Pavement Breaker; Euclid and Other Heavy Earth Moving Equipment; Low Boy; Articulator Cat; Five Axle Vehicle

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TEAM0215-003 03/31/2024

DAVIESS, HANCOCK, HENDERSON, HOPKINS, MCLEAN, MUHLENBERG, OHIO & WEBSTER COUNTIES

	Rates	Fringes
TRUCK DRIVER		
Group 1	$ 25.15	27.39
Group 2	$ 25.38	27.39
Group 3	$ 25.45	27.39
Group 4	$ 25.46	27.39

GROUP 1: Greaser, Tire Changer

GROUP 2: Truck Mechanic

GROUP 3: Single Axle Dump; Flat Bed; All Terrain Vehicle when used to haul materials; Semi Trailer or Pole Trailer when used to pull building materials and equipment; Tandem Axle Dump; Driver of Distributors; Mixer All Types

GROUP 4: Euclid and other heavy earth moving equipment; Low Boy; Articulator Cat; 5 Axle Vehicle; Winch and A- Frame when used in transporting materials; Ross Carrier; Fork Lift when used to transport building materials; Driver on Pavement Breaker

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TEAM0236-001 03/31/2024

BALLARD, CALDWELL, CALLOWAY, CARLISLE, CHRISTIAN, CRITTENDEN, FULTON, GRAVES, HICKMAN, LIVINGSTON, LYON, MARSHALL, MCCRACKEN,TODD & TRIGG COUNTIES

	Rates	Fringes
TRUCK DRIVER		
Group 1	$ 23.52	27.39
Group 2	$ 23.70	27.39
Group 3	$ 23.70	27.39
Group 4	$ 23.78	27.39
Group 5	$ 23.80	27.39

GROUP 1: Greaser, Tire Changer

GROUP 2: Truck Mechanic

GROUP 3: Single Axle Dump; Flat Bed; All Terrain Vehicle when used to haul materials; Semi Trailer or Pole Trailer when used to pull building materials and equipment; Tandem Axle Dump; Drivers of Distributors

GROUP 4: Euclid and other heavy earth moving equipment; Low Boy; Articulator Cat; Five Axle Vehicle; Winch and A-Frame when used in transporting materials; Ross Carrier

GROUP 5: Mixer All Types

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at https://www.dol.gov/agencies/whd/government-contracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (iii)).

The body of each wage determination lists the classifications and wage rates that have been found to be prevailing for the type(s) of construction and geographic area covered by the wage determination. The classifications are listed in alphabetical order under rate identifiers indicating whether the particular rate is a union rate (current union negotiated rate), a survey rate, a weighted union average rate, a state adopted rate, or a supplemental classification rate.

Union Rate Identifiers

A four-letter identifier beginning with characters other than ""SU"", ""UAVG"", ?SA?, or ?SC? denotes that a union rate was prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2024. PLUM is an identifier of the union whose collectively bargained rate prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. The date, 07/01/2024 in the example, is the effective date of the most current negotiated rate.

Union prevailing wage rates are updated to reflect all changes over time that are reported to WHD in the rates
in the collective bargaining agreement (CBA) governing the classification.

Union Average Rate Identifiers

The UAVG identifier indicates that no single rate prevailed for those classifications, but that 100% of the data reported for the classifications reflected union rates. EXAMPLE: UAVG-OH-0010 01/01/2024. UAVG indicates that the rate is a weighted union average rate. OH indicates the State of Ohio. The next number, 0010 in the example, is an internal number used in producing the wage determination. The date, 01/01/2024 in the example, indicates the date the wage determination was updated to reflect the most current union average rate.

A UAVG rate will be updated once a year, usually in January, to reflect a weighted average of the current rates in the collective bargaining agreements on which the rate is based.

Survey Rate Identifiers

The ""SU"" identifier indicates that either a single non-union rate prevailed (as defined in 29 CFR 1.2) for this classification in the survey or that the rate was derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As a weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SUFL2022-007 6/27/2024. SU indicates the rate is a single non-union prevailing rate or a weighted average of survey data for that classification. FL indicates the State of Florida. 2022 is the

year of the survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 6/27/2024 in the example, indicates the survey completion date for the classifications and rates under that identifier.

?SU? wage rates typically remain in effect until a new survey is conducted. However, the Wage and Hour Division (WHD) has the discretion to update such rates under 29 CFR 1.6(c)(1).

State Adopted Rate Identifiers

The ""SA"" identifier indicates that the classifications and prevailing wage rates set by a state (or local) government were adopted under 29 C.F.R 1.3(g)-(h). Example: SAME2023-007 01/03/2024. SA reflects that the rates are state adopted. ME refers to the State of Maine. 2023 is the year during which the state completed the survey on which the listed classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 01/03/2024 in the example, reflects the date on which the classifications and rates under the ?SA? identifier took effect under state law in the state from which the rates were adopted.

WAGE DETERMINATION APPEALS PROCESS

1) Has there been an initial decision in the matter? This can be:

a) a survey underlying a wage determination
b) an existing published wage determination
c) an initial WHD letter setting forth a position on a wage determination matter
d) an initial conformance (additional classification and rate) determination

On survey related matters, initial contact, including requests for summaries of surveys, should be directed to the WHD Branch of Wage Surveys. Requests can be submitted via email to davisbaconinfo@dol.gov or by mail to:

Branch of Wage Surveys
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

Regarding any other wage determination matter such as conformance decisions, requests for initial decisions should be directed to the WHD Branch of Construction Wage Determinations. Requests can be submitted via email to BCWD-Office@dol.gov or by mail to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2) If an initial decision has been issued, then any interested party (those affected by the action) that disagrees with the decision can request review and reconsideration from the Wage

and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Requests for review and reconsideration can be submitted via email to dba.reconsideration@dol.gov or by mail to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210.

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END OF GENERAL DECISION"

Fringe benefit amounts are applicable for all hours worked except when otherwise noted.

No laborer, workman or mechanic shall be paid at a rate less than that of a Journeyman except those classified as bona fide apprentices.

Apprentices or trainees shall be permitted to work as such subject to Administrative Regulations adopted by the Commissioner of Workplace Standards. Copies of these regulations will be furnished upon request from any interested person.

Before using apprentices on the job the contractor shall present to the Contracting Officer written evidence of registration of such employees in a program of a State apprenticeship and training agency approved and recognized by the U. S. Bureau of Apprenticeship and Training. In the absence of such a State agency, the contractor shall submit evidence of approval and registration by the U. S. Bureau of Apprenticeship and Training.

The contractor shall submit to the Contracting Officer, written evidence of the established apprenticeship-journeyman ratios and wage rates in the project area, which will be the basis for establishing such ratios and rates for the project under the applicable contract provisions.

TO: EMPLOYERS/EMPLOYEES

PREVAILING WAGE SCHEDULE:

The wages indicated on this wage schedule are the least permitted to be paid for the occupations indicated. When an employee works in more than one classification, the employer must record the number of hours worked in each classification at the prescribed hourly base rate.

OVERTIME:

Overtime is to be paid to an employee at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty (40) hours in such workweek. Wage violations or questions should be directed to the designated Engineer or the undersigned.

Director
Division of Construction Procurement
Frankfort, Kentucky 40622
502-564-3500

PART IV

BID ITEMS

251115

PROPOSAL BID ITEMS

Report Date 7/24/25

251115

Section: 0001 - PAVING

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0010	00003		CRUSHED STONE BASE	8,041.00	TON		$	
0020	00100		ASPHALT SEAL AGGREGATE	813.00	TON		$	
0030	00103		ASPHALT SEAL COAT	98.00	TON		$	
0040	00194		LEVELING & WEDGING PG76-22	500.00	TON		$	
0050	00219		CL4 ASPH BASE 1.00D PG76-22	4,987.00	TON		$	
0060	00335		CL4 ASPH SURF 0.50A PG76-22	8,723.00	TON		$	
0070	02676		MOBILIZATION FOR MILL & TEXT	1.00	LS		$	
0080	02677		ASPHALT PAVE MILLING & TEXTURING	12,771.00	TON		$	
0090	20071EC		JOINT ADHESIVE	89,455.00	LF		$	
0100	21289ED		LONGITUDINAL EDGE KEY	1,195.00	LF		$	
0110	24970EC		ASPHALT MATERIAL FOR TACK NON-TRACKING	47.00	TON		$	

Section: 0002 - ROADWAY

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0120	01982		DELINEATOR FOR GUARDRAIL MONO DIRECTIONAL WHITE	20.00	EACH		$	
0130	01983		DELINEATOR FOR GUARDRAIL MONO DIRECTIONAL YELLOW	106.00	EACH		$	
0140	01984		DELINEATOR FOR BARRIER - WHITE	198.00	EACH		$	
0150	01985		DELINEATOR FOR BARRIER - YELLOW	272.00	EACH		$	
0160	02003		RELOCATE TEMP CONC BARRIER	5,640.00	LF		$	
0170	02014		BARRICADE-TYPE III	10.00	EACH		$	
0180	02200		ROADWAY EXCAVATION	6,175.00	CUYD		$	
0190	02381		REMOVE GUARDRAIL	3,912.50	LF		$	
0200	02545		CLEARING AND GRUBBING APPROXIMATELY 1.5 ACRES	1.00	LS		$	
0210	02562		TEMPORARY SIGNS	1,000.00	SQFT		$	
0220	02650		MAINTAIN & CONTROL TRAFFIC	1.00	LS		$	
0230	02671		PORTABLE CHANGEABLE MESSAGE SIGN	4.00	EACH		$	
0240	02697		EDGELINE RUMBLE STRIPS	60,282.00	LF		$	
0250	02703		SILT TRAP TYPE A	8.00	EACH		$	
0260	02704		SILT TRAP TYPE B	8.00	EACH		$	
0270	02705		SILT TRAP TYPE C	8.00	EACH		$	
0280	02706		CLEAN SILT TRAP TYPE A	8.00	EACH		$	
0290	02707		CLEAN SILT TRAP TYPE B	8.00	EACH		$	
0300	02708		CLEAN SILT TRAP TYPE C	8.00	EACH		$	
0310	02726		STAKING	1.00	LS		$	
0320	02898		RELOCATE CRASH CUSHION	4.00	EACH		$	
0330	03171		CONC BARRIER WALL TYPE 9T	15,120.00	LF		$	
0340	05950		EROSION CONTROL BLANKET	7,061.00	SQYD		$	
0350	05952		TEMP MULCH	4,707.00	SQYD		$	
0360	05963		INITIAL FERTILIZER	0.40	TON		$	

PROPOSAL BID ITEMS

251115

Report Date 7/24/25

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0370	05964		MAINTENANCE FERTILIZER	0.30	TON		$	
0380	05992		AGRICULTURAL LIMESTONE	4.40	TON		$	
0390	06401		FLEXIBLE DELINEATOR POST-M/W	334.00	EACH		$	
0400	06404		FLEXIBLE DELINEATOR POST-M/Y	48.00	EACH		$	
0410	06511		PAVE STRIPING-TEMP PAINT-6 IN	169,966.00	LF		$	
0420	06542		PAVE STRIPING-THERMO-6 IN W	37,180.00	LF		$	
0430	06543		PAVE STRIPING-THERMO-6 IN Y	30,141.00	LF		$	
0440	06546		PAVE STRIPING-THERMO-12 IN W	1,300.00	LF		$	
0450	06549		PAVE STRIPING-TEMP REM TAPE-B	4,613.00	LF		$	
0460	06550		PAVE STRIPING-TEMP REM TAPE-W	2,563.00	LF		$	
0470	06551		PAVE STRIPING-TEMP REM TAPE-Y	2,050.00	LF		$	
0480	06556		PAVE STRIPING-DUR TY 1-6 IN W	7,045.00	LF		$	
0490	06557		PAVE STRIPING-DUR TY 1-6 IN Y	5,636.00	LF		$	
0500	06568		PAVE MARKING-THERMO STOP BAR-24IN	30.00	LF		$	
0510	06585		PAVEMENT MARKER TY IVA-MW TEMP	2,071.00	EACH		$	
0520	06586		PAVEMENT MARKER TY IVA-MY TEMP	100.00	EACH		$	
0530	06613		INLAID PAVEMENT MARKER-B W/R	376.00	EACH		$	
0540	06614		INLAID PAVEMENT MARKER-B Y/R	29.00	EACH		$	
0550	08912		CRASH CUSHION TY VI CLASS T TL3	9.00	EACH		$	
0560	10020NS		FUEL ADJUSTMENT	25,012.00	DOLL	$1.00	$	$25,012.00
0570	10030NS		ASPHALT ADJUSTMENT	55,555.00	DOLL	$1.00	$	$55,555.00
0580	20208NC		PAVE MARK-PAINT ARROWS	3.00	EACH		$	
0590	20411ED		LAW ENFORCEMENT OFFICER	600.00	HOUR		$	
0600	21380ES719		GUARDRAIL THRIE BEAM	3,786.00	LF		$	
0610	21802EN		G/R STEEL W BEAM-S FACE (7 FT POST)	600.00	LF		$	
0620	24679ED		PAVE MARK THERMO CHEVRON	433.00	SQFT		$	
0630	24891EC		PAVE MOUNT INFRARED TEMP EQUIPMENT	711,693.00	SF		$	
0640	25075EC		QUEUE PROTECTION VEHICLE	600.00	HOUR		$	
0650	25078ED		THRIE BEAM GUARDRAIL TRANSITION TL-3	40.00	EACH		$	
0660	25117EC		FURNISH QUEUE PROTECTION VEHICLES	8.00	MONT		$	
0670	26136EC		PORTABLE QUEUE WARNING ALERT SYSTEM	8.00	MONT		$	
0680	26137EC		QUEUE WARNING PCMS	32.00	MONT		$	
0690	26138EC		QUEUE WARNING PORTABLE RADAR SENSORS	32.00	MONT		$	
0700	26233EC		MOBILIZATION FOR CONCRETE SURF TREATMENT	1.00	LS		$	
0710	26236EC		THRIE BEAM BULLNOSE TERMINAL	8.00	EACH		$	
0720	26237EC		CONNECTED ARROW PANEL	16.00	MONT		$	
0730	26248EC		ELECTRONIC DELIVERY MGMT SYSTEM - AGG	1.00	LS		$	
0740	40030		TEMPORARY SILT FENCE	2,000.00	LF		$	

Section: 0003 - DRAINAGE

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0750	00461		CULVERT PIPE-15 IN	8.00	LF		$	
0760	00521		STORM SEWER PIPE-15 IN	75.00	LF		$	
0770	01202		PIPE CULVERT HEADWALL-15 IN	1.00	EACH		$	

PROPOSAL BID ITEMS

251115

Report Date 7/24/25

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0780	01310		REMOVE PIPE	4.00	LF		$	
0790	01511		DROP BOX INLET TYPE 5D	1.00	EACH		$	
0800	01717		FILL AND CAP INLET	1.00	EACH		$	
0810	01719		ADJUST INLET	2.00	EACH		$	
0820	02483		CHANNEL LINING CLASS II	10.00	TON		$	
0830	02607		FABRIC-GEOTEXTILE CLASS 2 FOR PIPE	108.00	SQYD	$2.00	$	$216.00
0840	02625		REMOVE HEADWALL	1.00	EACH		$	
0850	08100		CONCRETE-CLASS A	0.86	CUYD		$	

Section: 0004 - BRIDGE - 079B00113R - US62

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0860	23032EN		BRIDGE BARRIER RETROFIT	1,012.00	LF		$	
0870	23378EC		CONCRETE SEALING	9,007.00	SQFT		$	

Section: 0005 - BRIDGE - TN RIVER - 079B00117R

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0880	23032EN		BRIDGE BARRIER RETROFIT	8,648.00	LF		$	
0890	23378EC		CONCRETE SEALING	76,967.00	SQFT		$	

Section: 0006 - TRAFFIC LOOPS

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0900	04793		CONDUIT-1 1/4 IN	80.00	LF		$	
0910	04795		CONDUIT-2 IN	20.00	LF		$	
0920	04820		TRENCHING AND BACKFILLING	90.00	LF		$	
0930	04829		PIEZOELECTRIC SENSOR	4.00	EACH		$	
0940	04830		LOOP WIRE	1,600.00	LF		$	
0950	04895		LOOP SAW SLOT AND FILL	360.00	LF		$	
0960	20359NN		GALVANIZED STEEL CABINET	2.00	EACH		$	
0970	20360ES818		WOOD POST	4.00	EACH		$	
0980	20391NS835		ELECTRICAL JUNCTION BOX TYPE A	2.00	EACH		$	

Section: 0007 - DEMOBILIZATION &/OR MOBILIZATION

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0990	02568		MOBILIZATION	1.00	LS		$	
1000	02569		DEMOBILIZATION	1.00	LS		$	