CALL NO. 200

CONTRACT ID. 234206

GRAYSON COUNTY

FED/STATE PROJECT NUMBER 043GR23T004-HSIP & STP

DESCRIPTION ANNETA ROAD (KY 259)

WORK TYPE ASPHALT PAVEMENT & ROADWAY REHAB

PRIMARY COMPLETION DATE 7/31/2024

LETTING DATE: January 26,2023

Sealed Bids will be received electronically through the Bid Express bidding service until 10:00 AM EASTERN STANDARD TIME January 26,2023. Bids will be publicly announced at 10:00 AM EASTERN STANDARD TIME.

NO PLANS ASSOCIATED WITH THIS PROJECT.

DBE CERTIFICATION REQUIRED - 12%

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

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ADMINISTRATIVE DISTRICT - 04

CONTRACT ID - 234206

043GR23T004-HSIP & STP

COUNTY - GRAYSON

PCN - 0404302592101
HSIP 0051(034)

ANNETA ROAD (KY 259) (MP 0.00) FROM THE GRAYSON/EDMONSON COUNTY LINE EXTENDING NORTHWEST TO THE INTERSECTION WITH BLOOMINGTON ROAD (MP 11.761), A DISTANCE OF 011.76 MILES.ASPHALT PAVEMENT & ROADWAY REHAB SYP NO. 04-09009.00.

GEOGRAPHIC COORDINATES LATITUDE 37:24:03.03 LONGITUDE 86:14:14.45

ADT 3,079

PCN - MP04302592101
STP 9040(044)

ANNETA ROAD (KY 259) (MP 0.000) BEGIN AT THE EDMONSON/GRAYSON COUNTY LINE EXTENDING NORTH TO KY 226 (MP 6.073), A DISTANCE OF 06.07 MILES.ASPHALT RESURFACING SYP NO. 04-20038.00.

GEOGRAPHIC COORDINATES LATITUDE 37:21:45.00 LONGITUDE 86:14:30.00

ADT 3,144

COMPLETION DATE(S):

COMPLETED BY 07/31/2024 APPLIES TO ENTIRE PROJECT

CONTRACT NOTES

PROPOSAL ADDENDA

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

BID SUBMITTAL

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

JOINT VENTURE BIDDING

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

UNDERGROUND FACILITY DAMAGE PROTECTION

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

REGISTRATION WITH THE SECRETARY OF STATE BY A FOREIGN ENTITY

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

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

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

SPECIAL NOTE FOR PROJECT QUESTIONS DURING ADVERTISEMENT

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

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

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

HARDWOOD REMOVAL RESTRICTIONS

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

INSTRUCTIONS FOR EXCESS MATERIAL SITES AND BORROW SITES

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

ACCESS TO RECORDS

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

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

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

BUILD AMERICA, BUY AMERICA ACT (BABA)

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

The Act will apply to construction materials as outlined in the guidance issued in OMB M-22-11.

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

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

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

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

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. Sub-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.

UPON AWARD AND BEFORE A WORK ORDER WILL BE ISSUED

Contractors must submit the signed subcontract between the contractor and the DBE contractor, along with the DBE's certificate of insurance. If the DBE is a supplier of materials for the project, a signed purchase order must be submitted to the Division of Construction Procurement.

Changes to DBE Participation Plans must be approved by the Cabinet. 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. Melvin Bynes. Mr. Bynes' current contact information is email address – melvin.bynes2@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.

SURFACING AREAS

The Department estimates the mainline surfacing width to be 22 feet.

The Department estimates the total mainline area to be surfaced to be 86,219 square yards.

The Department estimates the shoulder width to be 2 foot on each side.

The Department estimates the total shoulder area to be surfaced to be 14,251 square yards.

ASPHALT MIXTURE

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

DGA BASE

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

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.

ASPHALT PAVEMENT RIDE QUALITY CATEGORY B

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

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.

OPTION B

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

Special Note for Tree, Stump, and Brush Removal

I. DESCRIPTION

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

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

II. MATERIALS

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

A. Maintain and Control Traffic. The Contractor shall maintain and control traffic in accordance with the Traffic Control Plan.

B. Seeding and Protection. Use applicable Seed Mixture as specified per Section 212.03.03.

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

III. CONSTRUCTION METHODS

A. Maintain and Control Traffic. The Contractor shall maintain and control traffic in accordance with the Traffic Control Plan.

B. Cutting, Trimming, and/or Removing Trees, Stumps, and/or Brush. The Contractor shall cut, trim, and/or remove trees within the clearing dimensions as shown on the Tree Trimming Detail. On this detail, the horizontal width is taken from the edge of pavement measured perpendicular to the roadway, but not to extend beyond the obvious Right-of-Way limits, or as directed by the Engineer. To achieve the tree trimming/clearing dimensions shown on the Tree Trimming Detail, the complete removal of some trees may be necessary. The Department’s expectation is that if the trunk or any portion of the trunk of any tree is within the tree trimming/clearing dimensions shown on the Tree Trimming Detail, any such tree shall be cut and removed as part of this bid item. Additionally, if there are trees whose main trunk is not within the tree trimming/clearing dimensions, but more than approximately 50% of the tree’s canopy will be removed due to trimming, any such tree shall be cut and removed as part of this bid item. Cut trees and/or bushes as close to the ground as possible; three inches (3”) or less from ground line. All tree stumps within the mowing zone shall be removed

via mechanical grinding, or other methods approved by the Engineer, to a minimum depth of four inches (4") below the surrounding grade line. For trees that are cut but will not be required to have their stump removed, treat the stump, within one hour of cutting, with the herbicide solution specified below. The Contractor and Engineer should work together to identify the trees and/or stumps requiring removal. The Engineer will make the final determination on the decision to remove or leave any trees and/or stumps in question.

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

NOTE: Tree cutting restrictions apply. See the Special Note for Tree Removal for details on the restrictions.

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

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

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

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

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

a. Glyphosate

Active ingredient: (**Glyphosate**)
*Glyphosate, N-(phosphonomethyl)glycine, in the form of its potassium salt.....48.7%
Inert ingredients 51.3%
Total 100.0%
* Contains 660 grams per liter or 5.5 pounds per U.S. gallon of the active ingredient glyphosate, in the form of its potassium salt. Equivalent to 540 grams per liter or 4.5 pounds per U.S. gallon of the acid, glyphosate.
EPA Reg. No. 524-579

b. Imazapyr

Active ingredient: (**Imazapyr**)
*Isopropylamine salt of Imazapyr 2-[4,5-dihydro-4-methyl-4-(1methylethyl)-5oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid) 26.7%
Inert ingredients 73.3%
Total 100%
* Equivalent to 21.8 percent 2-[4,5-dihydro-4-methyl-4-(1methylethyl)-5oxo-1H-imidazolyl]-3-pyridinecarboxylic acid or 2 pounds acid per gallon.
EPA Reg. No. 241-431

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

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

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

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

H. Clean Up, Disposal of Waste. Clean up and dispose of all removed debris by the end of each workday,

and other waste as per Section 204.03.08. The Department will incur no cost to obtain the disposal sites. The Department will NOT make direct payment for clean up or disposal of waste and debris from the project. See the Special Provision for Waste and Borrow Sites.

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

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

IV. METHOD OF MEASUREMENT

A. Maintain and Control Traffic. See the Traffic Control Plan.

B. Site preparation. Other than the bid items listed, site preparation will NOT be measured for payment, but shall be incidental to the project bid items.

C. Trim & Remove Trees & Brush. The Department will measure the quantity by Linear Foot, per side of the highway. See the Tree Trimming Detail for the horizontal and vertical tree trimming/clearing dimensions.

D. Stump Treatment. The Department will NOT measure for payment the operation of Stump Treatment. This activity shall be incidental to the bid item "Trim & Remove Trees & Brush."

E. Clean Up, Disposal of Waste. The Department will NOT measure for payment the operations of Clean Up and Disposal of Waste. These activities shall be incidental to the project bid items.

F. Final Dressing, Seeding and Protection. The Department will NOT measure for payment the operations of Final Dressing. Seeding and Protection will be measured according to Section 212.

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

V. BASIS OF PAYMENT

A. Maintain and Control Traffic. See the Traffic Control Plan.

B. Trim & Remove Trees & Brush. The Department will make payment for the completed and accepted quantities per Linear Foot. The Department will consider payment at the contract unit price as full compensation for furnishing all materials, equipment, labor, other expenses, and all incidentals necessary to complete the work of trimming and removing the trees and brush.

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

SPECIAL NOTE

For Tree Removal

Grayson County
PERFORM LOW COST SAFETY IMPROVEMENTS ON KY 259 FROM MP 0.000 TO MP 11.761
Item No. 4-9009

NO CLEARING OF TREES 5 INCHES OR GREATER (DIAMETER BREAST HEIGHT) FROM JUNE 1- JULY 31.

If there are any questions regarding this note, please contact Danny Peake, Director, Division of Environmental Analysis, 200 Mero Street, Frankfort, KY 40601, Phone: (502) 564-7250.

Special Note for Box Culvert Extensions

I. DESCRIPTION

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

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

II. MATERIALS

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

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

B. Erosion Control. See Special Note for Erosion Control.

C. Foundation Preparation. Furnish materials according to Section 603, the drawings, and as directed by the Engineer.

D. Reinforced Concrete Box Culvert Extensions. Furnish Class A Concrete and deformed Steel Reinforcement according to Sections 601 and 602. Contrary to Section 602.03.03, field bending bars will be allowed; however, obtain the Engineers approval of proposed field bending methods prior to bending. Furnish additional reinforcement to provide adequate splice lengths with existing box culvert steel as determined by the Engineer.

E. Steel Reinforcement. See Section 811.

III. CONSTRUCTION

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

B. Erosion Control. See Special Note for Erosion Control.

C. Site Preparation. Be responsible for all Site Preparation, including but not limited to Clearing and Grubbing; Removing pavement; Tree and Stump removal; Temporary Fencing; Roadway Excavation and Structure Excavation; Embankment and Embankment in Place; removal of obstructions or any other items; Grading, Reshaping, and Compacting; Roadside Regrading, obtaining borrow and waste

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

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

D. Remove Headwall. Remove the existing headwall(s) and wingwalls at the existing box culvert end(s) to sound concrete masonry, or as directed by the Engineer. Before removing any concrete masonry saw around the perimeter of the removal area on the interior and exterior to a depth of 1 inch. When sawing, take care not to cut into the existing steel reinforcement. Do not kink or unnecessarily bend exposed existing steel reinforcement. Remove structure excavation to solid rock, or as directed by the Engineer, and prepare foundation. Existing steel reinforcement shall be thoroughly cleaned of concrete and straightened for use to bond the new concrete and reinforcement with a minimum overlap of 1'-9", unless otherwise shown in the drawings. Coat exposed ends of cut reinforcement with a bituminous produce to prevent corrosion of the ends of the exposed reinforcement. As an alternative, if the existing headwall is sound, the Engineer may approve leaving the existing headwall in place, in which case the existing parapet should be removed to 6" below proposed roadway elevation. If the Engineer approves leaving the existing headwall in place, center 3'-0" long, #6 dowel bars at 12" spacing into the existing slabs and walls, embedded 1'-6" deep into the existing box culvert concrete, and set with an adhesive anchorage system to provide a pullout strength of equal or greater capacity than the corresponding reinforcing steel.

E. Box Culvert Extensions. Construct the box culvert extension(s) according to the notes and details in the drawings, and Sections 601, 602, 603, 610, and/or any other applicable Standard Specifications. Class A Concrete shall be used throughout. Bond the proposed plastic concrete to the existing hardened concrete in all locations using a Type V Epoxy Resin or other approved structural adhesive, as prescribed in Section 826. Follow the manufacturer's application instructions. All exposed concrete edges shall be beveled ¾", unless otherwise noted. Reinforcement shall have a 2" clear distance to the proposed face of concrete, unless otherwise noted. Obtain the Engineer's approval

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

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

F. Remove Concrete Masonry. If the Engineer approves leaving the existing headwall(s) in place, a portion of the existing parapet(s) may need to be removed in order to construct a shoulder of suitable depth from the edge of pavement to the proposed headwall. Any necessary removal of a portion of the existing parapet shall be considered Site Preparation and shall be incidental to the box culvert bid items. Also, if the existing headwall(s) are left in place, one or both of the existing wingwalls, or a portion of either wingwall may need to be removed in order to construct the proposed box culvert extension(s) and/or headwall(s). In this situation, any necessary removal of the existing wingwall(s), or any portion thereof, shall be considered Site Preparation and shall be incidental to the box culvert bid items.

G. Embankments. Backfill box culvert extensions and construct embankments, slopes, roadway shoulders, and ditches as shown on the drawings, or as directed by the Engineer. Warp and tie the embankment slopes into the adjacent existing roadway to match the existing slopes and ditches. Provide positive drainage of slopes and ditches at all times during and upon completion of construction.

H. Roadside Regrading. Construct ditches and shoulders to provide positive drainage. Transition the ditches and shoulders between the existing typical section and the reconstructed roadway at the box culvert extension site(s). Clean all new and existing cross drainage and entrance structures within the limits of the roadside regrading and/or ditching areas according to Section 209.03.B.

I. Clean Culvert. Remove all deleterious material and objects not native to the box culvert barrel, such as, but not limited to debris and silt. The Contractor may choose to clean the box culvert prior to, or after, the proposed box culvert extension work. If the Contractor chooses to clean the box culvert prior to the proposed box culvert extension work, and additional debris, silt, etc. builds up during the box culvert extension operations, the Contractor shall remove the additional debris, silt, etc. at no additional cost to the Department, after the box culvert extension operations are complete.

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

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

J. Property Damage. Be responsible for all damage to public and/or private property resulting from the work. Restore damaged roadway features and private property at no additional cost to the Department.

K. On-Site Inspection. Before submitting a bid for the work, make a thorough inspection of the site and determine existing conditions so that the work can be expeditiously performed after a contract is awarded. The Department will consider submission of a bid to be evidence of this inspection having been made. The Department does not warrant or give any guarantee as to the accuracy of the data and information shown and no claims for money or time extensions will be considered if the conditions encountered, items used or omitted, and final quantities required are not in accordance with the information shown.

L. Coordination with Utility Companies. Locate all underground, above ground, and overhead utilities prior to beginning construction. Be responsible for contacting and maintaining liaison with all utility companies that have utilities located within the project limits. Do not disturb existing overhead or underground utilities. It is not anticipated that any utility facilities will need to be relocated and/or adjusted; however, in the event that it is discovered that the work does require utilities to be relocated and/or adjusted, the utility companies will work concurrently with the Contractor while relocating their facilities. Be responsible for repairing all utility damage that occurs as a result of the Contractor's operations at no additional cost to the Department.

M. Right of Way Limits. The Department has not established the exact limits of the Right-of-Way. Limit work activities to obvious Right-of-Way, permanent or temporary easements, and work areas secured by the Department through consent and release of the adjacent property owners. Be responsible for all encroachments onto private lands.

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

O. Clean Up, Disposal of Waste. Dispose of all removed concrete, debris, and other waste and debris off the Right-of-Way at sites obtained by the Contractor at no additional cost to the Department. See the Special Provision for Waste and Borrow Sites.

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

IV. MEASUREMENT

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

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

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

C. Site Preparation. Other than the bid items listed, the Department will not measure Site Preparation for separate payment but shall be incidental to the applicable project bid items.

D. Remove Headwall. The Department will measure the removal of existing headwalls as Each. If the Engineer allows a proposed box culvert extension to be constructed without removing the existing headwall, the Remove Headwall bid item shall not be measured for payment.

E. Foundation Preparation. The Department will measure Foundation Preparation of box culvert extensions as Lump Sum. The Lump Sum unit price shall include all extensions at each identified box culvert and shall not be measured as individual units per inlet or outlet. Except for the Foundation Preparation bid items listed, the Department will NOT measure Foundation Preparation for any other items of work and shall consider it incidental to the other items of work, as applicable.

F. Concrete-Class A. See Section 601.04.

G. Steel Reinforcement. See Section 602.04.

H. Clean Culvert. The Department will measure each box culvert cleaned as Lump Sum. The bid item Clean Culvert will not be measured when a box culvert must be cleaned due to buildup of debris, silt, etc. that occurs during the Contractor's construction operations.

V. PAYMENT

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

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

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

C. Foundation Preparation. Payment at the Lump Sum unit price shall be full compensation for furnishing all labor, materials, and equipment necessary for Foundation Preparation of all extensions at each identified box culvert.

D. Concrete-Class A. See Section 601.05.

E. Steel Reinforcement. See Section 602.05.

F. Clean Culvert. The Department will make payment for the completed and accepted quantities of each box culvert cleaned, as approved by the Engineer. Payment at the Lump Sum unit price shall be full compensation for furnishing all labor, materials, and equipment necessary to clean each box culvert measured for payment. Any box culverts that require cleaning but are not approved by the Engineer for measurement of payment, shall be incidental to the box culvert bid items.

Special Note for Pipe Replacements and Extensions

I. DESCRIPTION

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

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

II. MATERIALS

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

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

B. Culvert Pipe. Furnish pipe meeting the requirements of Section 810. Select pipe for pH range Medium and minimum fill cover height according to the applicable Standard or Sepia Drawings, current editions. Verify maximum and minimum fill cover height required for new pipe prior to construction and obtain the Engineer’s approval of the class or gauge of pipe and type of coating prior to delivering pipe to project. Furnish approved connecting bands or pipe anchors and toe walls.

C. Flowable Fill. Furnish Flowable Fill for Pipe Backfill per Section 601.03.03(B).

D. Erosion Control. See Special Note for Erosion Control.

III. CONSTRUCTION METHODS

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

B. Erosion Control. See Special Note for Erosion Control.

C. Site Preparation. Be responsible for all site preparation including, but not limited to, saw cutting and removing existing pavement; clearing and grubbing; staking; incidental excavation and backfilling; common and solid rock excavation; embankment in place; removal of obstructions, or any other items; restoration of pavements, slopes, and all disturbed areas; final dressing and cleanup; and disposal of materials. Limit clearing and grubbing to the absolute minimum required to construct the drainage features. Perform all site preparation only as approved or directed by the Engineer.

D. Removing Headwalls, Pipe, and Excavation. Remove existing headwalls and lengths of culvert

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

E. Constructing Pipe, Headwalls, and Drainage Boxes. Construct culvert and/or entrance pipes, pipe extensions, headwalls, drainage boxes, and other drainage structures at the locations shown in the proposal or as designated by the Engineer. The Contractor will establish, with the approval of the Engineer, the final centerlines, flow lines, and skews to obtain the best fit with the existing and/or proposed ditches and other proposed improvements. (See the Special Note for Staking.) Construct pipe bedding according to Section 701 and the applicable Standard or Sepia Drawings, current editions. Use approved connecting bands or concrete anchors as required. Prior to backfilling pipe, obtain the Engineer's approval of the pipe installation. Provide positive drainage upon completion of pipe installation.

F. Pipe Backfill. Backfill entrance pipes according to Section 701.03.06. Contrary to Section 701.03.06, regardless of cover height, backfill culvert pipes with flowable fill as shown on the Culvert Pipe Replacement Detail from the outside edge of shoulder or back of curb to outside edge of shoulder or back of curb. Steel plates will likely be required to maintain traffic while the flowable fill cures. Once the flowable fill has sufficiently cured, place the Asphalt Base in lifts with thicknesses of 3-4 inches, up to the surface of the existing pavement. Seal with Leveling & Wedging. Allow the asphalt base and leveling & wedging to be exposed to traffic for a minimum of 14 days to allow for settlement. During the waiting period, level & wedge any settlement as directed by the Engineer. After the waiting period has been met for the last pipe replacement constructed, the final milling and/or surfacing operations can begin, unless directed otherwise by the Engineer. For culvert pipe beyond the outside edge of shoulder or back of curb, backfill according to Section 701.03.06.

G. Embankments. Backfill pipe and culvert extensions, and construct shoulder embankments as directed by the Engineer. The Contractor shall bench into the existing slope and apply proper compaction according to Section 206. For more information and details on benching, refer to Note 2 on the detail sheet titled: ROADSIDE REGRADING AND EMBANKMENT BENCHING DETAILS, found elsewhere in the Proposal. Provide positive drainage of ditches, shoulders, and slopes at all times during and upon completion of construction.

H. Property Damage. Be responsible for all damage to public and/or private property resulting from the work. Repair or replace damaged roadway features in like kind materials and design, as directed by the Engineer at no additional cost to the Department. Repair or replace damaged private property in like kind materials and design to the satisfaction of the owner and the Engineer at no additional cost to the Department.

I. Coordination with Utility Companies. Locate all underground, above ground, and overhead utilities prior to beginning construction. Be responsible for contacting and maintaining liaison with all utility companies that have utilities located within the project limits. Do not disturb existing overhead or

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

J. Right-of-Way Limits. The Department has not established exact limits of the Right-of-Way. Unless a consent and release form is obtained from the adjoining property owner, limit work activities to the obvious Right-of-Way and staging areas secured by the Contractor at no additional cost to the Department. In the event that private improvements (i.e. fences, buildings, etc.) encroach upon the Right-of-Way, the Contractor shall notify the Engineer and limit work activities in order to NOT disturb the improvements. If they become necessary, the Department will secure consent and releases from property owners through the Engineer. Be responsible for all encroachments onto private lands.

K. Clean Up, Disposal of Waste. Clean up the project area as work progresses. Dispose of all removed concrete, pipe, pavement, debris, excess and unsuitable excavation, and all other waste at approved sites off the Right of Way obtained by the Contractor at no additional cost to the Department. See the Special Provision for Waste and Borrow Sites.

L. Final Dressing, Seeding and Protection. Grade all disturbed areas to blend with the adjacent roadways features and to provide a suitable seed bed. Apply Class A Final Dressing to all disturbed areas, both on and off the Right-of-Way. Sow all disturbed earthen areas with the applicable seed mixture(s) according to Section 212.03.03.

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

IV. METHOD OF MEASUREMENT

A. Maintain and Control Traffic. See the Traffic Control Plan.

B. Site Preparation. Other than the bid items listed, site preparation will NOT be measured for payment, but shall be incidental to culvert and/or entrance pipe bid items, as applicable.

C. Remove Headwall. The Department will measure the removal of existing headwalls as Each. Any excavation, including rock excavation, necessary to remove existing headwalls will NOT be measured for payment, but shall be incidental to the bid item "Remove Headwall".

D. Remove Pipe. Removal of existing culvert and entrance pipe shall be measured according to Section

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

E. Culvert and Entrance Pipe. The Department will measure the quantities according to Section 701.04. Any excavation, including rock excavation, necessary to install culvert or entrance pipe shall be incidental to the corresponding pipe bid items.

F. Headwalls, Drainage Boxes. The Department will measure according to Section 710. Any excavation, including rock excavation, necessary to construct headwalls and/or drainage boxes will NOT be measured for payment, but shall be incidental to the applicable bid item.

G. Excavation, Pipe Backfill, Embankments. The Department will NOT measure for payment the following items: any excavation, including rock excavation, necessary to remove the existing pipe and/or install the proposed culvert or entrance pipe, pipe backfill material, geotextile fabric, flowable fill, and re-constructing shoulder embankments, but shall considered these items incidental to the bid items for culvert and entrance pipe.

H. Clean Up, Disposal of Waste, Final Dressing, Seeding and Protection. The Department will NOT measure for payment the following activities: Clean Up, Disposal of Waste, and Final Dressing. These activities shall be incidental to the project bid items. Seeding and Protection shall be measured according to Section 212.

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

V. BASIS OF PAYMENT

A. Maintain and Control Traffic. See the Traffic Control Plan.

B. Remove Headwall. The Department will make payment for the completed and accepted quantities of Each headwall removed. Payment at the Contract unit price per Each shall be full compensation for furnishing all labor, materials, equipment, and incidentals for removing the existing headwall.

C. Remove Pipe. The Department will make payment according to Section 701.05. Payment at the Contract unit price per linear foot shall be full compensation for furnishing all labor, materials, equipment, and incidentals for removing the existing pipe.

D. Culvert and Entrance Pipe. The Department will make payment according to Section 701.05. Payment at the Contract unit price per linear foot shall be full compensation for furnishing all labor, materials, equipment, and incidentals necessary for installing and backfilling new culvert and entrance pipe.

E. Headwalls, Drainage Boxes. The Department will make payment according to Section 710.

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

SPECIAL NOTE FOR PIPELINE INSPECTION

1.0 DESCRIPTION. The Department will perform visual inspections on all pipe on the project. A video inspection will be required on projects having more than 250 linear feet of storm sewer and/or culvert pipe and on routes with an ADT of greater than 1,000 vehicles. Conduct video inspections on all pipe located under the roadway and 50 percent of the remaining pipe not under the roadway. Storm sewer runs and outfall pipes not under the roadway take precedence over rural entrance pipes. Contractors performing this item of work must be prequalified with the Department in the work type J51 (Video Pipe Inspection and Cleaning). Deflection testing shall be completed using a mandrel in accordance with the procedure outlined below or by physical measurement for pipes greater than 36inches in diameter. Mandrel testing for deflection must be completed prior to the video inspection testing. Unless otherwise noted, Section references herein are to the Department's most current version of the Standard Specifications for Road and Bridge Construction.

2.0 VIDEO INSPECTION. Ensure pipe is clear of water, debris or obstructions. Complete the video inspection and any necessary measurement prior to placing the final surface over any pipe. When paving will not be delayed, take measurements 30 days or more after the completion of earthwork to within 1 foot of the finished subgrade. Notify the Engineer a minimum of 24 hours in advance of inspection and notify the Engineer immediately if distresses or locations of improper installation are logged.

2.1 INSPECTION FOR DEFECTS AND DISTRESSES

A) Begin at the outlet end and proceed through to the inlet at a speed less than or equal to 30 ft/minute. Remove blockages that will prohibit a continuous operation.

B) Document locations of all observed defects and distresses including but not limited to: cracking, spalling, slabbing, exposed reinforcing steel, sags, joint offsets, joint separations, deflections, improper joints/connections, blockages, leaks, rips, tears, buckling, deviation from line and grade, damaged coatings/paved inverts, and other anomalies not consistent with a properly installed pipe.

C) During the video inspection provide a continuous 360 degree pan of every pipe joint.

D) Identify and measure all cracks greater than 0.1" and joint separations greater than 0.5".

E) Video Inspections are conducted from junction to junction which defines a pipe run. A junction is defined as a headwall, drop box inlet, curb box inlet, manhole, buried junction, or other structure that disturbs the continuity of the pipe. Multiple pipe inspections may be conducted from a single set up location, but each pipe run must be on a separate video file and all locations are to be referenced from nearest junction relative to that pipe run.

F) Record and submit all data on the TC 64-765 and TC 64-766 forms.

3.0 MANDREL TESTING. Mandrel testing will be used for deflection testing. For use on Corrugated Metal Pipe, High Density Polyethylene Pipe, and Polyvinyl Chloride Pipe,

use a mandrel device with an odd number of legs (9 minimum) having a length not less than the outside diameter of the mandrel. The diameter of the mandrel at any point shall not be less than the diameter specified in Section 3.6. Mandrels can be a fixed size or a variable size.

3.1 Use a proving ring or other method recommended by the mandrel manufacturer to verify mandrel diameter prior to inspection. Provide verification documentation for each size mandrel to the Engineer.

3.2 All deflection measurements are to be based off of the AASHTO Nominal Diameters. Refer to the chart in section 3.6.

3.3 Begin by using a mandrel set to the 5.0% deflection limit. Place the mandrel in the inlet end of the pipe and pull through to the outlet end. If resistance is met prior to completing the entire run, record the maximum distance achieved from the inlet side, then remove the mandrel and continue the inspection from the outlet end of the pipe toward the inlet end. Record the maximum distance achieved from the outlet side.

3.4 If no resistance is met at 5.0% then the inspection is complete. If resistance occurred at 5.0% then repeat 3.1 and 3.2 with the mandrel set to the 10.0% deflection limit. If the deflection of entire pipe run cannot be verified with the mandrel then immediately notify the Engineer.

3.5 Care must be taken when using a mandrel in all pipe material types and lining/coating scenarios. Pipe damaged during the mandrel inspection will be video inspected to determine the extent of the damage. If the damaged pipe was video inspected prior to mandrel inspection then a new video inspection is warranted and supersedes the first video inspection. Immediately notify the Engineer of any damages incurred during the mandrel inspection and submit a revised video inspection report.

3.6 AASHTO Nominal Diameters and Maximum Deflection Limits.

Base Pipe Diameter	AASHTO Nominal Diameter	Max. Deflection Limit	
		5.0%	10.0%
(inches)	(inches)	(inches)	
15	14.76	14.02	13.28
18	17.72	16.83	15.95
24	23.62	22.44	21.26
30	29.53	28.05	26.58
36	35.43	33.66	31.89
42	41.34	39.27	37.21
48	47.24	44.88	42.52
54	53.15	50.49	47.84
60	59.06	56.11	53.15

4.0 PHYSICAL MEASUREMENT OF PIPE DEFLECTION. Alternate method for deflection testing when there is available access or the pipe is greater than 36 inches in diameter, as per 4.1. Use a contact or non-contact distance instrument. A leveling device is recommended for establishing or verifying vertical and horizontal control.

4.1 Physical measurements may be taken after installation and compared to the AASHTO Nominal Diameter of the pipe as per Section 3.6. When this method is used, determine the smallest interior diameter of the pipe as measured through the center point of the pipe (D2). All measurements are to be taken from the inside crest of the corrugation. Take the D2 measurements at the most deflected portion of the pipe run in question and at intervals no greater than ten (10) feet through the run. Calculate the deflection as follows:

% Deflection = [(AASHTO Nominal Diameter - D2) / AASHTO Nominal Diameter] x 100%

Note: The Engineer may require that preset monitoring points be established in the culvert prior to backfilling. For these points the pre-installation measured diameter (D1) is measured and recorded. Deflection may then be calculated from the following formula:

$$\% \text{ Deflection} = [(D1 - D2) / D1] (100\%)$$

4.2 Record and submit all data.

5.0 DEDUCTION SCHEDULE. All pipe deductions shall be handled in accordance with the tables shown below.

FLEXIBLE PIPE DEFLECTION	
Amount of Deflection (%)	Payment
0.0 to 5.0	100% of the Unit Bid Price
5.1 to 9.9	50% of the Unit Bid Price [(1)]
10 or greater	Remove and Replace [(2)]

[(1)] Provide Structural Analysis for HDPE and metal pipe. Based on the structural analysis, pipe may be allowed to remain in place at the reduced unit price. [(2)] The Department may allow the pipe to remain in place with no pay to the Contractor in instances where it is in the best interest to the public and where the structural analysis demonstrates that the pipe should function adequately.

RIGID PIPE REMEDIATION TABLE PIPE	
Crack Width (inches)	Payment
≤ 0.1	100% of the Unit Bid Price
Greater than 0.1	Remediate or Replace [(1)]

[(1)] Provide the Department in writing a method for repairing the observed cracking. Do not begin work until the method has been approved.

6.0 PAYMENT. The Department will measure the quantity in linear feet of pipe to inspect. The Department will make payment for the completed and accepted quantities under the following:

Code	Pay Item	Pay Unit
24814EC	Pipeline Inspection	Linear Foot
10065NS	Pipe Deflection Deduction	Dollars

March 29, 2017

SPECIAL NOTE FOR PIPE CLEANING

PART 1 -- GENERAL

1.01 SCOPE OF WORK

A. Furnish all labor, materials, equipment, and incidentals required to clean all pipes, as specified herein.

B. Cleaning shall include the proper high pressure water jetting, rodding, snaking, bucketing, brushing, and flushing of pipes prior to inspection by closed circuit television, pipeline rehabilitation, and testing operations.

C. Cleaning shall dislodge, transport, and remove all sludge, mud, sand, gravel, rocks, bricks, grease, roots, sticks, and all other debris from the interior of the sewer pipe and structures as required for pipeline rehabilitation.

PART 2 -- PRODUCTS

2.01 MATERIALS

A. Hydraulically propelled Sewer Cleaning Equipment

1. Hydraulically propelled sewer cleaning equipment shall be the movable dam type constructed such that a portion of the dam may be collapsed during cleaning to prevent flooding of the sewer.

2. The movable dam shall be the same diameter as the pipe being cleaned and shall provide a flexible scraper around the outer periphery to ensure total removal of grease.

3. Contractor shall take precautions against flooding prior to using sewer cleaning balls or other such equipment that cannot be collapsed instantly.

B. High Velocity Hydro-Cleaning Equipment shall have the following:

1. A minimum of 500-ft of high-pressure hose.

2. Two or more high velocity nozzles capable of producing a scouring action from 15 to 45 degrees in all size lines to be cleaned.

3. A high velocity gun for washing and scouring manhole walls and floor.

4. Capability of producing flows from a fine spray to a long-distance solid stream.

5. A water tank, auxiliary engines and pumps and a hydraulically driven hose reel.

6. Equipment operating controls located above ground.

C. Mechanical cleaning equipment for sewer mains shall be either power buckets or power rodders.

1. Bucket machines
   a. To be furnished with buckets in pairs
   b. Use V-belts for power transmission or have an overload device. No direct drive machines will be permitted.
   c. To be equipped with a take up drum and a minimum of 500-ft of cable.
   d. Have sufficient dragging power to perform the work efficiently.

2. Power rodding machine
   a. Either sectional or continuous.
   b. Hold a minimum of 750-ft of rod.
   c. The machine shall have a positive rod drive to produce 2000 pounds of rod pull.

PART 3 -- EXECUTION

3.01 PERFORMANCE

A. Selection of cleaning equipment shall be based on the conditions of the structures and lines at the time the work commences based on the pre-construction CCTV inspection to be conducted by the Contractor under this Contract.

B. Use properly selected equipment to remove all dirt, grease, rock and other deleterious materials, and obstructions.

C. Protect existing lines from damage caused by improper use of cleaning equipment.

D. Take precautions to avoid damage or flooding to public or private property being served by the line being cleaned.

F. Removal of Materials

1. Remove all solids and semi-solids at the downstream opening of the section being cleaned.

2. Passing material from one section of a line to another will not be permitted, unless access to any one section of line cannot be achieved.

G. Remove from the site and properly dispose of all solids or semi-solids recovered during the cleaning operation.

H. No cleaning shall take place in a particular segment until all upstream pipe segments have been cleaned. If cleaning is done in a downstream pipe segment in order to facilitate overall cleaning

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

3.02 FIELD QUALITY CONTROL

A. Acceptance of this portion of the work shall be dependent upon the results of the television inspection. Lines not acceptably clean as to permit television inspection and rehabilitation shall be re-cleaned and re-inspected at no additional cost to the Owner

B. Following cleaning, the Contractor shall inspect each section in accordance with the Special Note for Pipe Liner Acceptance Testing.

C. Upon the Engineer's final structure to structure inspection of the system, if any foreign matter is still present in the system, clean the sections and portions of the lines as required.

PART 4 – MEASUREMENT & PAYMENT

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

SPECIAL NOTE FOR HDPE PIPE LINER

The bid item(s) "HDPE Pipe Liner (__ Inch)" is to be used to line the existing culvert pipes at the locations noted in the Proposal.

The diameter of the HDPE Pipe Liner(s) shall be compatible and appropriate for the size(s) of the existing culvert pipe(s) to be lined, based on the recommendations of the manufacturer, and as approved by the Engineer. Some, or all, of the existing pipes may have proposed pipe extensions. If an existing pipe is proposed to be extended, the existing pipe shall be extended prior to lining. Additionally, HDPE Pipe Liner shall adhere to the following specifications:

Material Specifications:
Except as provided herein, conform to all requirements of AASHTO Designation: M 326-08 and ASTM Designation: F894 as specified by size in contract.

Method of Measurement:
The completed and accepted quantities of HDPE Pipe Liner will be measured in linear feet.

Pipe:
The Contractor must provide one trained and experienced technician to assist the Engineer in determining the needed pipe liner size (length and diameter) and to help determine blocking and grout tube placement. This will be provided at no cost to the Department.

Grout:
Grout shall meet specifications of the Kentucky Standard Specifications for Road and Bridge Construction, current edition. Grout ingredients and proportions may be adjusted by the Engineer to meet field conditions. Work shall include installing grout material into annular space between existing pipe and pipe liner. The Contractor will be responsible for providing any needed traffic control, constructing bulkheads, vent tubes, grout tubes, and blocking if needed. The Contractor shall provide a concrete pump and air foam generator to deliver desired pressure and material as determined by the Engineer. The Contractor shall supply at least **two** (2) trained and experienced technicians per job. The Contractor shall ensure all voids are filled by pumping grout from upstream or downstream of culvert and continue pumping until grout is expelled from the highest vent pipe on the inlet end. The Contractor shall take appropriate precautions to avoid over pressurization, buckling, and floating of the pipe liner during the grouting process. The Contractor shall comply with the pipe manufacture's recommendations for grouting procedures. Multiple grout lifts may be required to avoid buckling the liner pipe. The Contactor shall take all necessary precautions to protect and preserve the interior of the pipe from damage. Spills shall be minimized and cleaned up immediately. Any damage to the pipe caused by or occurring during the grouting operation shall be repaired by a method approved by the Engineer at no additional cost to the Department.

SPECIAL NOTE FOR Sheet R42

Approximate Station 561+25 – 563+50 Rt. – Storm Sewer to be installed by property owner adjacent to right of way by Permit. Contractor will extend existing culvert pipe and install DBI TY II at 562+48.04 as depicted on plan/pipe sheet, construct fore slopes at 3:1 as shown on cross sections or as close to 3:1 as is feasible and approved by the engineer while maintaining positive drainage. Property owner will be required to address storm sewer, cover, back slope grading, and any damage to fore slopes constructed by contractor.

Special Note for Completion Date & Liquidated Damages

I. COMPLETION DATE

The ultimate fixed completion date for this project will be July 31, 2024. Liquidated Damages for failure to complete the project on time will be assessed following Section 108.09.

II. LIQUIDATED DAMAGES

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

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

NOTE: At the sole discretion of the Engineer, all, or part, of these Liquidated Damages may be waived due to unforeseen circumstances, such as unexpected weather.

Trees and/or bushes that are 5 inches or greater (diameter at breast height) shall not be cut or trimmed between June 1st and July 31st. Any trees and/or bushes that are cut or trimmed between June 1st and July 31st will NOT receive payment at the contract unit price. Furthermore, failure to adhere to these restrictions shall result in Liquidated Damages in the amount of **$352.80** per affected tree. Activities that are a part of this contract that do not involve the initial trimming and/or cutting of trees and/or bushes will be permitted under the ultimate fixed completion date.

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

All liquidated damages will be applied accumulatively.

All other applicable portions of Section 108 apply.

SPECIAL PROVISION FOR WASTE AND BORROW SITES

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

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

SPECIAL NOTE FOR NON-TRACKING TACK COAT

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

2. MATERIALS, EQUIPMENT, AND PERSONNEL.

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

2.1.1 Provide a tack conforming to the following material requirements:

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

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

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

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

3. CONSTRUCTION.

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

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

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

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

4. MEASUREMENT. The Department will measure the quantity of non-tracking tack in tons. The Department will not measure for payment any extra materials, labor, methods, equipment, or construction techniques used to satisfy the requirements of this note. The Department will not measure for payment any trial applications of non-tracking tack, the cleaning of the pavement surface, or furnishing and placing the non-tracking tack. The Department will consider all such items incidental to the non-tracking tack.

5. PAYMENT. The Department will pay for the non-tracking tack at the Contract unit bid price and apply an adjustment for each manufacturer's lot of material based on the degree of compliance as defined in the following schedule. Non-tracking tack will not be permitted for use from October 1st to May 15th. During this timeframe, the department will allow the use of an approved asphalt emulsion in lieu of a non-tracking tack product but will not adjust the unit bid price of the material. When a sample fails on two or more tests, the Department may add the deductions, but the total deduction will not exceed 100 percent.

Non-Tracking Tack Price Adjustment Schedule						
Test	Specification	100% Pay	90% Pay	80% Pay	50% Pay	0% Pay
Viscosity, SFS, 77 ˚ F	20 – 100	19 - 102	17 - 18 103 - 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 EXPERIMENTAL KYCT AND HAMBURG TESTING

1.0 General

1.1 Description. The KYCT (Kentucky Method for Cracking Test) and the Hamburg 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 of the bituminous mixes. Additionally, the data will help the Department to create future performance-based specifications which will include the KYCT and Hamburg test methods.

2.0 Equipment

2.1 KYCT Testing Equipment. The Department will require a Marshall Test Press with digital recordation 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 Hamburg Wheel Track Testing. The department encourages the use of the PTI APA/Hamburg Jr. test equipment to perform the loaded wheel testing. The Department will allow different equipment for the Hamburg testing, but the testing device must be approved by the Department prior to testing.

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. Hamburg test specimens will be submitted to the Division of Materials for testing on the PTI APA/Hamburg Jr if the asphalt contractor or district materials office does not have an approved Hamburg testing device.

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 mix design phase and during the plant production of all surface mixtures. For mix design approvals, submit KYCT results on the Department MixPack. For Class 4 mixtures, submit ingredient materials to the Division of Materials for verification.

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 immediately after, fabricate the KYCT samples with the gyratory compactor in accordance with Section 2.4 of this Special Note. Analysis of the KYCT specimens and gradation 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 a minimum of 3 and up to 6 test specimens. The specimens shall be compacted at the temperature in accordance with KM 64-411. KYCT mix design specimens shall be short-term conditioned uncovered for four hours at compaction 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. Additionally, fabricated specimens shall be allowed to cool in air (fan is permissible) for 30 minutes +/- 5 minutes and conditioned 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 Hamburg testing, reheating of the asphalt mixture is prohibited.

3.2.3 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.

3.2.4 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 Hamburg Testing. Perform the rut resistance analysis (Hamburg) in accordance with AASTHO T-324, not to exceed 20,000 passes for all bituminous mixtures during the mix design phase and production. For mix design approvals, submit Hamburg results on the Department MixPack. For Class 4 mixtures, submit ingredient materials to the Division of Materials for informational verification.

3.3.1 Hamburg Testing Frequency. Perform testing and analysis per lot of material. The plant produced bituminous material sampled for the Hamburg test does not have to be obtained at the same time as the acceptance and KYCT sample. If the Hamburg 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 Hamburg specimens.

3.3.2 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 and the time the Hamburg testing was started. All times shall be recorded on the AMAW.

3.3.3 File Name. Save the Excel spreadsheet with the following file name; "Hamburg_CID_Approved Mix Number_Lot Number_Sublot Number_Date" and upload the file into the AMAW.

4.0 Data

Submit the AMAW and all test data that was obtained for acceptance, gradation, KYCT, and Hamburg 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 Hamburg specimens shall be considered incidental to the asphalt surface line item. The Department will perform the testing for the KYCT and Hamburg specimens if a producer does not possess the proper equipment.

June 15th, 2022

COORDINATION OF WORK WITH OTHER CONTRACTS

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

1-3193 Coordination Contracts
01/02/2012

SPECIAL NOTE FOR PAVEMENT WEDGE AND SHOULDER MONOLITHIC OPERATION

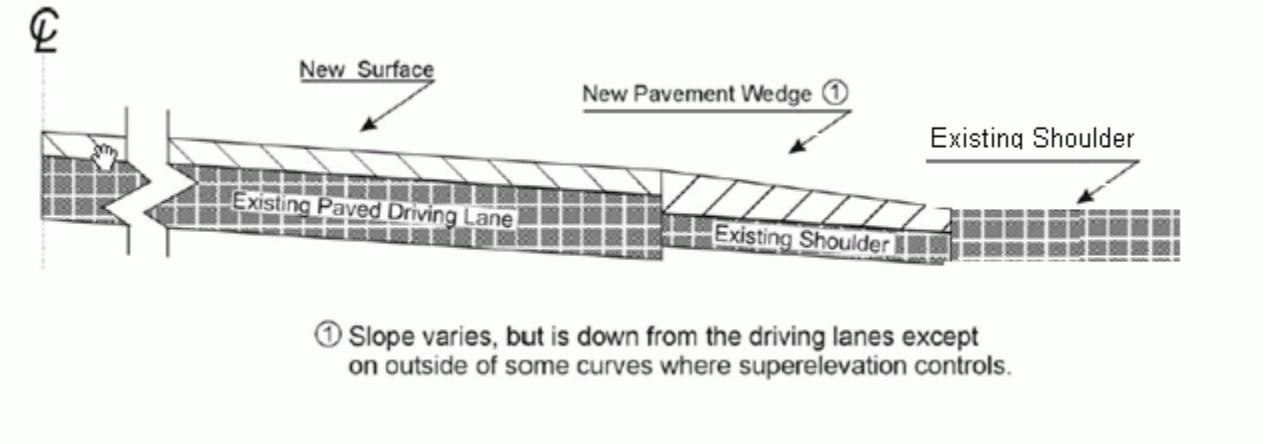
1.0 MATERIALS. Provide an Asphalt Surface Mixture conforming to Section 403 of the Standard Specifications, as applicable to the project, for the pavement wedge.

2.0 CONSTRUCTION. Place the specified Asphalt Surface Mixture on shoulders monolithically with the driving lane. Prime the existing shoulder with tack material as the Engineer directs before placing the wedge. Construct according to Section 403.03 of the Standard Specifications.

Equip the paver with a modified screed that extends the full width of the wedge being placed and is tapered to produce a wedge. Obtain the Engineer's approval of the modified screed before placing shoulder wedge monolithically with the driving lane.

The wedge may vary in thickness at the edge of the milled area in the shoulder. If the area to receive the shoulder wedge is milled prior to placement, during rolling operations pinch the outside edge of the new inlay wedge to match the existing shoulder elevation not being resurfaced. Unless required otherwise by the Contract, construct rolled or sawed rumble strips according to Section 403.03.08, as applicable.

The following sketch is primarily for the computation of quantities; however, the wedge will result in a similar cross-section where sufficient width exists. Do not construct a shoulder for placing the wedge unless specified elsewhere in the Contract.



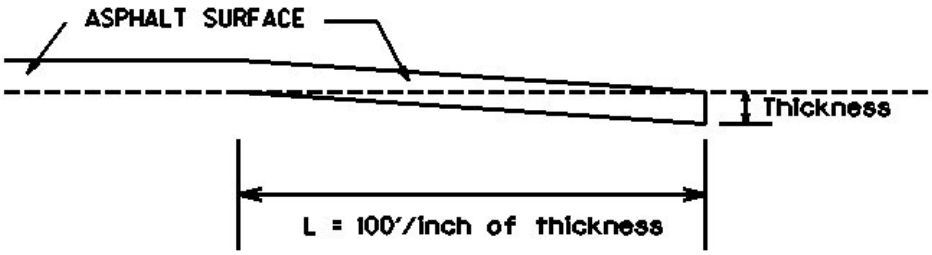
3.0 MEASUREMENT. The Department will measure Asphalt Surface Mixture placed as the pavement wedge according to Section 403.

4.0 PAYMENT. The Department will make payment for the completed and accepted quantities of Asphalt Surface Mixtures on pavement wedges according to Section 403.

SPECIAL NOTE FOR EDGE KEY

Construct Edge Keys at the beginning of project, end of project, at railroad crossings, and at ramps, as applicable. Unless specified in the Contract or directed by the Engineer, do not construct edge keys at intersecting streets, roads, alleys, or entrances. Cut out the existing asphalt surface to the required depth and width shown on the drawing and heel the new surface into the existing surface. The Department will make payment for this work at the Contract unit price per ton for Asphalt Pavement Milling and Texturing, which shall be full compensation for all labor, materials, equipment, and incidentals for removal and disposal of the existing asphalt surface required to construct the edge key.

EDGE KEY



Thickness = 1.0 Inches

L = 100 LF

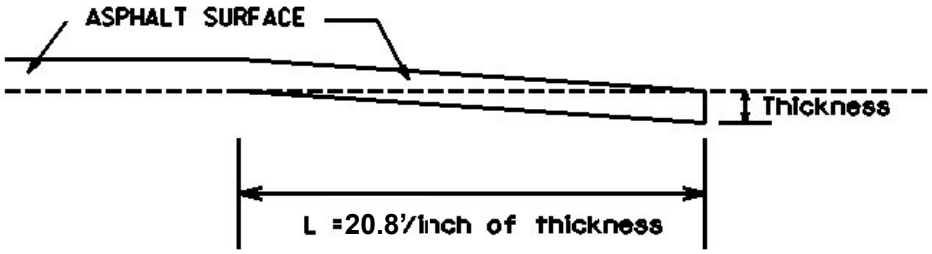
L= Length of Edge Key

1-3309 Edge key by Ton
01/02//2012

SPECIAL NOTE FOR EDGE KEY

Construct Edge Keys at the beginning of project, end of project, at railroad crossings, and at intersections with ramps, as applicable. Unless specified in the Contract or directed by the Engineer, do not construct edge keys at intersecting streets, roads, alleys, or entrances. Cut out the existing asphalt surface to the required depth and width shown on the drawing and heel the new surface into the existing surface. The Department will measure the Edge Key at the joint as the width of the pavement perpendicular to the centerline in linear feet. The Department will pay for this work at the Contract unit price per linear foot, which shall be full compensation for all labor, materials, equipment, and incidentals for removal and disposal of the existing asphalt surface required to construct the edge key.

EDGE KEY



Thickness = 1.5 Inches

L = 31.25 LF

L = Length of Edge Key

SPECIAL NOTE FOR ASPHALT MILLING AND TEXTURING

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

Contrary to Section 408, the Department will retain possession of the material obtained from the milling operations. Deliver this material to WK Parkway median area at MP 108, east of KY 259/WK Parkway Interchange Exit 107.

NOTICE TO CONTRACTOR: The Department considers transfer of millings to the designated location above to be a part of the construction project, therefore truck operators are subject to receiving prevailing wages.

SPECIAL NOTE FOR BASE FAILURE REPAIR

Repair locations listed on the summary are approximate only. The Engineer will determine actual repair locations and dimensions at the time of construction. Prior to overall milling and/or leveling and wedging, excavate the designated base failure areas by milling to a depth 6 inches below the existing asphalt pavement surface level. Dispose of the excavated materials at waste sites off the Right-of-Way obtained by the Contractor at no additional cost to the Department. See Special Note for Waste and Borrow.

Backfill the excavated areas with Class 2 Asphalt Base 1.00D PG64-22. Compact the asphalt base to the compaction required in Section 403.03.10. Seal the asphalt base with leveling and wedging. Perform all base failure repairs in such a manner that removal and replacement are completed on the same day. Do this work as one of the Contractor's first operations in order to allow further compaction by traffic. Do not mill or place new asphalt surface over repaired base failure areas until a minimum of 7 calendar days have elapsed after placement of the asphalt base. After a minimum of 7 calendar days and when the Engineer determines the base failure repair areas have sufficiently stabilized, begin milling and/or resurfacing operations. Prior to milling and/or constructing the new asphalt surface, level and wedge any settlement of the repair areas.

The bidder must draw conclusions as to the conditions encountered. The Department does not give any guarantee as to the accuracy of the data and will not consider any claim for additional compensation if the materials encountered that are not in accord with the classification shown.

Accept payment at the Contract unit prices per ton for Asphalt Milling and Texturing, Asphalt Base, and Leveling and Wedging as full compensation for all labor, materials, equipment, and incidentals for removing pavement and disposing of the materials, furnishing and placing asphalt base, leveling and wedging, and all other items necessary to complete the work according to these notes to the satisfaction of the Engineer.

1-3605 basefailurerepairmillinlaypayton
01/02/2012

SPECIAL NOTE FOR TYPICAL SECTION DIMENSIONS

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

1-3725 Typical Section Dimensions
01/02/2012

TRAFFIC CONTROL PLAN

TRAFFIC CONTROL GENERAL

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

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

PROJECT PHASING & CONSTRUCTION PROCEDURES

Maintain alternating one-way traffic during construction. Provide a minimum clear lane width of 9 feet; however, provide for passage of vehicles of up to 16 feet in width. If traffic should be stopped due to construction operations, and a school bus or emergency vehicle on an official run arrives on the scene, make provisions for the passage of the school bus or emergency vehicle as quickly as possible.

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

As indicated on the General Summary, Sheet R2D, Note 10: A temporary signal may be used for the duration of the project if necessary and MUST be coordinated with the Engineer to for location to minimize red time.

For all other construction activities, utilize a lane closure, and maintain alternating one-way traffic. This may require part-width construction of certain elements. Provide a minimum clear lane width of 9 feet; however, provide for passage of vehicles of up to 16 feet in width. If traffic should be stopped due to construction operations, and a school bus or emergency vehicle on an official run arrives on the scene, make provisions for the passage of the school bus or emergency vehicle as quickly as possible.

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

Easter Weekend	3 pm Friday, April 7, 2023 – 8 pm Sunday, April 9, 2023
Memorial Day Weekend	3 pm Friday, May 26, 2023 – 8 pm Monday, May 29, 2023
Independence Day	7 am Saturday, July 1, 2023 – 11 pm Tuesday, July 4, 2023
Labor Day Weekend	3 pm Friday, September 1, 2023 – 8 pm Monday, September 4, 2023
Thanksgiving Holiday	3 pm Wednesday, November 22, 2023 – 8 pm Sunday, November 26, 2023
Christmas Holiday	3 pm Friday, December 22, 2023 – 8 pm Monday, December 25, 2023
New Year's Day Holiday	7 am Saturday, December 30, 2023 – 8 pm Monday, January 1, 2024
Easter Weekend	3 pm Friday, March 29, 2024 – 8 pm Sunday, March 31, 2024
Memorial Day Weekend	3 pm Friday, May 24, 2024 – 8 pm Monday, May 27, 2024
Independence Day	7 am Thursday, July 4, 2024 – 8 pm Sunday, July 7, 2024

Labor Day Weekend	3 pm Friday, August 30, 2024 – 8 pm Monday, September 2, 2024
Thanksgiving Holiday	3 pm Wednesday, November 27, 2024 – 8 pm Sunday, December 1, 2024
Christmas Holiday	7 am Tuesday, December 24, 2024 – 8 pm Wednesday, December 25, 2024
New Year's Day Holiday	7 am Tuesday, December 31, 2024 – 8 pm Wednesday, January 1, 2025

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

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

TEMPORARY SIGNAL 2 PHASE

A Temporary Signal 2 Phase has been included in the project. The Contractor and the Engineer shall work together to determine the best use of this device. Each Temporary Signal 2 Phase consists of two portable temporary signals at each end of the work zone that work together to manage traffic through the work zone. If used, the Department will measure the Temporary Signal 2 Phase only once for payment, regardless of how many times each pair of temporary signals are set, reset, removed, and/or relocated during the duration of the project. The Department will not measure for payment any replacements of the Temporary Signal 2 Phase if it becomes damaged or non-functioning, nor if the Engineer directs that it be replaced due to poor condition or visibility. The Contractor shall retain possession of the Temporary Signal 2 Phase upon completion of construction.

LANE CLOSURES

Long term lane closures shall not be allowed; therefore, lane closures will not be measured for payment. Do not leave lane closures in place during non-working hours and prohibited periods

The Contractor shall be required to remove all long-term lane closures after four consecutive calendar days of inactivity on the project, unless approved otherwise by the Engineer. Once notified by the Engineer that a long-term lane closure must be removed due to inactivity, the Contractor shall have 12 hours to remove the long-term lane closure; otherwise, liquidated damages of $1,000 per hour or any fraction of an hour shall apply. The Department will not make any payment to the Contractor for the removal or the reinstallation of a long-term lane closure other than the initial payment of the initial lane closure installation. If the Contractor is required to remove a long-term lane closure, the roadway must be returned to a condition that satisfies the Pavement Edge Drop-Off requirements noted below.

TEMPORARY SIGNS

Temporary signposts and splices shall be compliant with NCHRP 350 or MASH. Manufacturer's documentation validating this compliance shall be provided to the Engineer prior to installation. Temporary

signs, including any splices, shall be installed according to manufacturer's specifications and installation recommendations. Contrary to section 112.04.02, only long-term temporary signs (temporary signs intended to be continuously in place for more than 3 days) will be measured for payment. Short-term temporary signs (temporary signs intended to be left in place for 3 days or less) will not be measured for payment but will be incidental to Maintain and Control Traffic.

CHANGEABLE MESSAGE SIGNS

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

BARRICADES

The Department will not measure barricades used in lieu of barrels and cones for channelization or delineation but shall be incidental to Maintain and Control Traffic according to Section 112.04.01.

TEMPORARY ENTRANCES

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

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

THERMOPLASTIC INTERSECTION MARKINGS

Consider the locations listed on the summary and/or shown on the plan sheets as approximate only. Prior to milling and/or resurfacing, locate and document the locations of the existing markings. After final surfacing operations, replace the markings at their approximate existing locations, as shown on the plan sheets, or as directed by the Engineer. Place markings not existing prior to resurfacing as shown on the plan sheets or as directed by the Engineer.

PAVEMENT MARKINGS

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

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

PAVEMENT EDGE DROP-OFFS

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

Protect pavement edges that traffic is not expected to cross, except accidentally, as follows:

> Less than 2" - No protection required.
>
> 2" to 4" - Place plastic drums, vertical panels, or barricades every 50 feet. During daylight working hours only, the Engineer will allow the Contractor to use cones in lieu of plastic drums, panels, and barricades. Wedge the drop-off with DGA or asphalt mixture for leveling and wedging with a 1:1 or flatter slope in daylight hours, or 3:1 or flatter slope during nighttime hours, when work is not active in the drop-off area.

Greater than 4” - Protect drop-offs greater than 4 inches within 10 feet of traffic by placing drums, vertical panels, or barricades every 25 feet. The Engineer will not allow the use of cones in lieu of drums, vertical panels, or barricades for drop-offs greater than 4”. Place Type III Barricades directly in front of the drop-off facing oncoming traffic in both directions of travel. Provide warning signs as shown on the Standard Drawings or as directed by the Engineer

Pedestrians & Bicycles - Protect pedestrian and bicycle traffic as directed by the Engineer.

USE AND PLACEMENT OF CHANGEABLE MESSAGE SIGNS

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

Application

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

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

CMS should not be used for:

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

Messages

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

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

Placement

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

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

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Standard Abbreviations

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

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

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Standard Abbreviations (cont.)

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

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

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

Typical Messages

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

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

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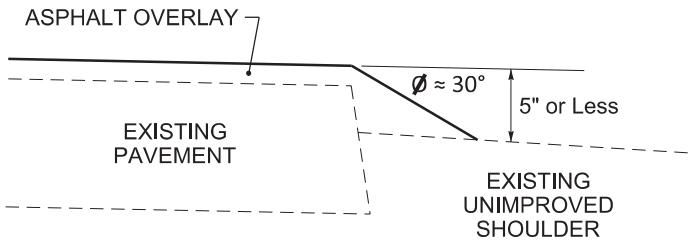
Typical Messages (cont.)

Reason/Problem	**Action**
FOG XX MILES	PASS TO RIGHT
FREEWAY CLOSED	PREPARE TO STOP
FRESH OIL	REDUCE SPEED
HAZMAT SPILL	SLOW
ICE	SLOW DOWN
INCIDENT AHEAD	STAY IN LANE
LANES (NARROW, SHIFT, MERGE, ETC.)	STOP AHEAD
LEFT LANE CLOSED	STOP XX MILES
LEFT LANE NARROWS	TUNE RADIO 1610 AM
LEFT 2 LANES CLOSED	USE NN ROAD
LEFT SHOULDER CLOSED	USE CENTER LANE
LOOSE GRAVEL	USE DETOUR ROUTE
MEDIAN WORK XX MILES	USE LEFT TURN LANE
MOVING WORK ZONE, WORKERS IN ROADWAY	USE NEXT EXIT
NEXT EXIT CLOSED	USE RIGHT LANE
NO OVERSIZED LOADS	WATCH FOR FLAGGER
NO PASSING	
NO SHOULDER	
ONE LANE BRIDGE	
PEOPLE CROSSING	
RAMP CLOSED	
RAMP (SLIPPERY, ICE, ETC.)	
RIGHT LANE CLOSED	
RIGHT LANE NARROWS	
RIGHT SHOULDER CLOSED	
ROAD CLOSED	
ROAD CLOSED XX MILES	
ROAD (SLIPPERY, ICE, ETC.)	
ROAD WORK	
ROAD WORK (OR CONSTRUCTION) (TONIGHT, TODAY, TOMORROW, DATE)	
ROAD WORK XX MILES	
SHOULDER (SLIPPERY, ICE, SOFT, BLOCKED, ETC.)	
NEW SIGNAL XX MILES	
SLOW 1 (OR 2) - WAY TRAFFIC	
SOFT SHOULDER	
STALLED VEHICLES AHEAD	
TRAFFIC BACKUP	
TRAFFIC SLOWS	
TRUCK CROSSING	
TRUCKS ENTERING	
TOW TRUCK AHEAD	
UNEVEN LANES	
WATER ON ROAD	
WET PAINT	
WORK ZONE XX MILES	
WORKERS AHEAD	

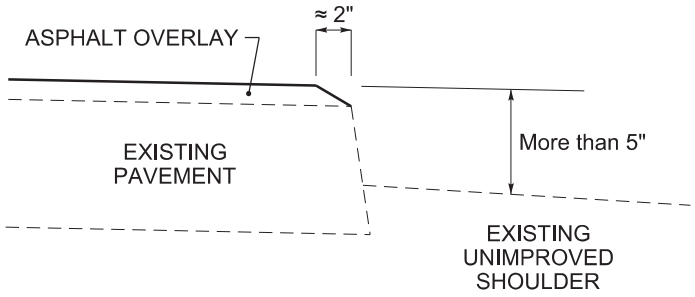
DURABLE PAVEMENT EDGE DETAIL

(Resurfacing adjacent to low shoulder with dropoff of 5 inches or less)



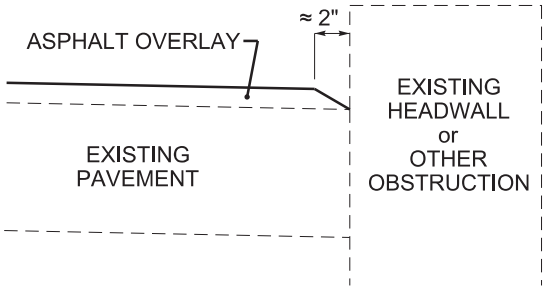
DURABLE PAVEMENT EDGE DETAIL

(Resurfacing adjacent to low shoulder with dropoff of more than 5 inches)



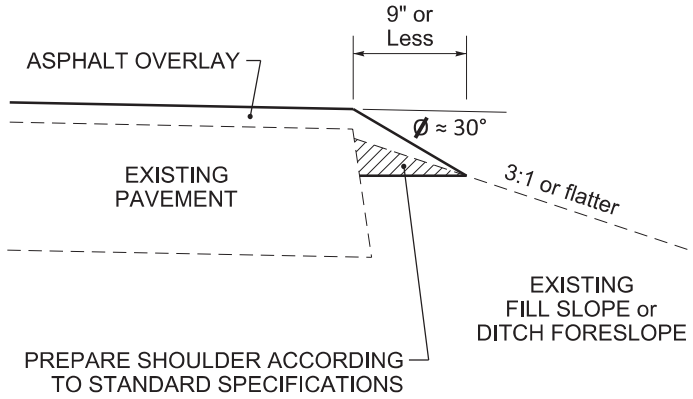
DURABLE PAVEMENT EDGE DETAIL

(Resurfacing adjacent to an obstruction, such as an existing headwall)



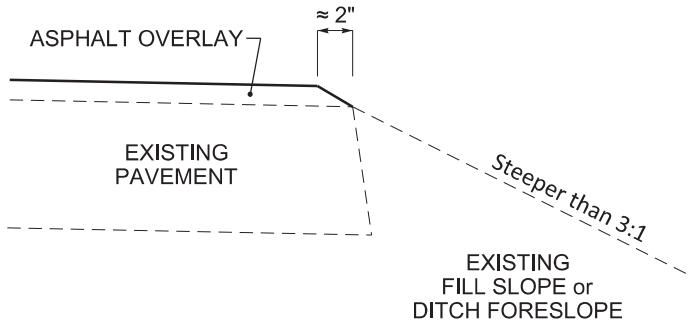
DURABLE PAVEMENT EDGE DETAIL

(Resurfacing adjacent to fill slope or ditch foreslope that is 3:1 or less)



DURABLE PAVEMENT EDGE DETAIL

(Resurfacing adjacent to fill slope or ditch foreslope that is steeper than 3:1)



NOTES

1. DETAILS DO NOT APPLY TO OVERLAYS LESS THAN 1 INCH THICK.
2. THE DURABLE PAVEMENT EDGE DEVICE MAY BE DISENGAGED AT DRIVEWAYS, SIDE STREETS, HIGH SHOULDERS, AND OTHER LOCATIONS NOT FEASIBLE TO CONSTRUCT, AS APROVED BY THE ENGINEER.

DRAWING NOT TO SCALE

DURABLE PAVEMENT EDGE DETAILS

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)**
4-9009.00	Grayson	FD52 043 0259 000-012	HSIP 0051(034)
PROJECT DESCRIPTION			
Low cost safety inprovements on KY 259 from MP 0.000 to 11.761 in Grayson County.			

☒ **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	0		
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	Michaelh.Price
Signature		Signature	Michael H Price
Date		Date	8/4/2022
Right of Way Director		**FHWA**	
Printed Name		Printed Name	
Signature	Kelly Divine Digitally signed by Kelly Divine Date: 2022.08.04 13:11:54 -05'00'	Signature	No Signature Required as per FHWA-KYTC Current Stewardship Agreement
Date		Date	

Consent & Release Summary

Parcel	Begin Station	End Station	Side	Owner(s)	Consent & Release Description	Status	Additional Notes
5	132+25	135+00	RT	JEFFRY & PENNY DUVALL	PER PLAN SHEET R5	Signed	Address: 10124 KY HWY 259, N BEE SPRING, KY 42207
7	137+00	149+50	RT	MARK SCHULTZ (POAFOR HELEN R. FAMILY IRREVOCABLE TRUST)	PER PLAN SHEET R5 & 6	Signed	Address: 132 SHELTON DR, LEITCHFIELD, KY 42754
10	144+25	147+25	LT	MARK W. & MARIE L. WARE	PER PLAN SHEET R6	Signed	Address: 1601 IROQUOIS PKWY, LOUISVILLE, KY 40214
11	147+25	168+00	LT	EUREKA LUMBER & PALLET, INC	PER PLAN SHEET R6, 7, & 8	Signed	Address: 11951 ANNETA RD, LEITCHFIELD, KY 42754
15	197+75	204+50	LT	RODNEY J. DUVALL	PER PLAN SHEET R11 & 12	Signed	Address:11627 ANNETA RD, LEITCHFIELD, KY 42754
16	204+50	215+00	LT	MARK C. COTTRELL	PER PLAN SHEET R12, 13, 14 & 15	Signed	Address: 11059 ANNETA RD, LEITCHFIELD, KY 42754
20	208+00	214+75	RT	VANMETER BOAT & RV STORAGE	PER PLAN SHEET R12 & 13	Signed	Address: 700 VANMETER SCHOOL RD, LEITCHFIELD KY, 42754
25	219+75	224+00	RT	TOMMY L & DORIS J DUVALL	PER PLAN SHEET R13 & 14	Signed	Address: 11144 ANNETA RD, LEITCHFIELD, KY, 42754
30	215+00	233+75	LT	MARK C. COTTRELL	PER PLAN SHEET R13, 14 & 15	Signed	Address: 11059 ANNETA RD, LEITCHFIELD, KY 42754
35	214+50	244+75	LT	ROBERT W. & TINA MARIE GOLDSMITH	PER PLAN SHEET R16	Signed	Address: 11 MCGREW CHURCH RD, LEITCHFIELD, KY 42754

Consent & Release Summary

Parcel	Begin Station	End Station	Side	Owner(s)	Consent & Release Description	Status	Additional Notes
40	247+00	264+00	RT	GAYLE FORD	PER PLAN SHEET R16, 17, & 18	Signed	Address: 10434 ANNETA RD, LEITCHFIELD, KY
45	247+50	278+75	LT	MICHAEL KEVIN & MELISSA HENDERSON	PER PLAN SHEET R19	Signed	Address: 10075 ANNETA RD, LEITCHFIELD, KY 42754
47	291+25	294+00	RT	DOUG & DONNA REED	PER PLAN SHEET R21	Signed	Address: 102 CHILDERS CT, ELIZABETHTOWN, KY 42701
51	294+00	297+50	RT	ARTHUR & JANICE HARREL	PER PLAN SHEET R21	Signed	Address: 9556 ANNETA RD, LEITCHFIELD, KY 42754
53	318+75	321+25	RT	ERIC & KAY AFFORD C/O CASCADE FINANCIAL SERVICES	PER PLAN SHEET R23 & 24	Signed	Address: 3345 S VAL VISTA DR STE 300, GILBERT, AZ, 85297
55	332+00	338+25	LT	LISA L. PAYTON	PER PLAN SHEET R25	Signed	Address: 8935 ANNETA RD, LEITCHFIELD, KY, 42754
59, 120	351+75, 553+50	352+75, 556+00	LT, RT	RENEGADE BASS TOURNAMENTS, LLC	PER PLAN SHEET R27 & 41	Signed	Address: 415 COMMERCE DR, LEITCHFIELD, KY 42754
62	352+75	357+00	LT	JESSE TOMES	PER PLAN SHEET R27	Signed	Address: 1045 DICKIES MILL RD, LEITCHFIELD, KY 42754
65	356+75	376+75	RT	KY ANNUAL CONFERENCE OF THE UNITED METHODIST CHURCH	PER PLAN SHEET R27, 28 & 29	Signed	Address: 7400 FLOYDSBURG RD, CRESTWOOD, KY 40014
70, 75, 85	3537+50, 384+00, 393+00	377+00, 390+50, 399+50	LT, RT, LT	RALPH & SUSAN HIGDON	PER PLAN SHEET R27, 28, 29, 30, & 31	Signed	Address: 7990 ANNETA RD, LEITCHFIELD, KY 42754

Consent & Release Summary

Parcel	Begin Station	End Station	Side	Owner(s)	Consent & Release Description	Status	Additional Notes
76	386+75	393+00	LT	CLIFFORD T & MARGIE HIGDON	PER PLAN SHEET R30 & 31	Signed	Address: 7745 ANNETA RD, LEITCHFIELD, KY 42754
80	390+50	397+00	RT	GENEVA SALTSMAN	PER PLAN SHEET R31	Signed	Address: 7820 ANNETA RD, LEITCHFIELD,KY 42754
92	401+50	403+50	RT	STACY KINKADE COCKRELL	PER PLAN SHEET R32, **DO NOT DISTURB LARGE ~36" DIAMETER TREE IN FRONT YARD. OK TO REMOVE TREES NEAR PIPE**	Signed	Address: 15 HUFFMAN RD, LEITHCFIELD, KY 42754
95	418+25	427+75	LT	TERRELL SALSMAN & BERNICE DECKER	PER PLAN SHEET R33 & 34	Signed	Address: 7265 ANNETA RD, LEITCHFIELD, KY, 42754
100	430+00, 500+00	432+25, 505+00	LT, LT	NU MANAGEMENT, LLC	PER PLAN SHEET R35 & 36	Signed	Address: 7103 ANNETA RD, LEITCHFIELD, KY 42754
102	512+75	515+50	LT	PERRY & FREIDA ALEXANDER	PER PLAN SHEET R37	Signed	Address: 6825 ANNETA RD, LEITCHFIELD, KY 42754
105	516+50	524+75	LT	KAREN L PIERCE & GLENN R WEST	PER PLAN SHEET R37 & 38	Signed	Address: 15 LONG BRANCH RD, LEITCHFIELD, KY, 42754
110, 115	524+75, 538+25	545+75, 546+00	LT, RT	ANNA JANE HOLDEN	PER PLAN SHEET R38, 39, & 40	Signed	Address: 142 LOGAN LN, LEITCHFIELD, KY, 42754
111, 145	532+50, 655+25	538+25, 662+50	LT, RT	JOYCE DUVALL	PER PLAN SHEET R39, 51 & 52	Signed	Address: 4974 ANNETA RD, LEITCHFIELD, KY, 42754
121	545+75	558+50	LT	CANN PROPERTIES LLC	PER PLAN SHEET R40 & 41	Signed	Address: STE 9, 1100 GLENSBORO RD, LAWRENCEBURG, KY, 40342

Consent & Release Summary

Parcel	Begin Station	End Station	Side	Owner(s)	Consent & Release Description	Status	Additional Notes
125	556+00	557+00	RT	CODY & SAMANTHA MCGREW	PER PLAN SHEET R41	Signed	Address: 6000 ANNETA RD, LEITCHFIELD, KY, 42754
130	568+25	585+00	RT	KENNETH & PATRICIA & GROVER DECKER	PER PLAN SHEET R42, 43 & 44	Signed	Address: 7628 PEONIA RD, CLARKSON, KY, 42726
135	568+25	591+75	LT	EDWARD & PHYLILIS ANDERSON	PER PLAN SHEET R42, 43, 44 & 45	Signed	Address: PO BOX 501, LEITCHFIELD, KY 42754
137, 150	624+25, 655+00	641+00, 661+25	LT, LT	JEFFREY G & RACHEL KIPER	PER PLAN SHEET R48, 49, 50, 51, & 52	Signed	Address: 4751 ANNETA RD, LEITCHFIELD, KY, 42754
138	641+00	643+00	LT	MAXUMUS & ANNETTE GEARY	PER PLAN SHEET R50	Signed	Address: 4395 ANNETA RD, LEITCHFIELD, KY, 42754
140	623+00	655+25	RT	MARK P. DUVALL (TRUSTEE FOR MADISON DUVALL)	PER PLAN SHEET R48, 49, 50, & 51	Signed	Address: 4972 ANNETA RD, LEITCHFIELD, KY, 42754
151	661+25	663+75	LT	DEAN OSTROE & KIMBERLY (CORTEZ) OSTROE	PER PLAN SHEET R52	Signed	Address: 16263 N 30TH DR PHOENIX, AZ, 85053

Consent & Release Summary

Parcel	Begin Station	End Station	Side	Owner(s)	Consent & Release Description	Status	Additional Notes

UTILITIES AND RAIL CERTIFICATION NOTE

Grayson County
0HSIP0051034
FD52 043 9454301U
Mile point: 0.000 TO 11.761
PERFORM LOW COST SAFETY IMPROVEMENTS ON KY 259 FROM MP 0.000 TO MP 11.761 IN GRAYSON COUNTY. (2018BOP)
ITEM NUMBER: 04-9009.00

PROJECT NOTES ON UTILITIES

The contractor should be aware that there is UTILITY WORK INCLUDED IN THIS ROAD CONSTRUCTION CONTRACT. The Contractor shall review the GENERAL UTILITY NOTES AND INSTRUCTIONS which may include KYTC Utility Bid Item Descriptions, utility owner supplied specifications, plans, list of utility owner preapproved subcontractors, and other instructions. Utility contractors may be added via addendum if KYTC is instructed to do so by the utility owner. Potential contractors must seek prequalification from the utility owner. Any revisions must be sent from the utility owner to KYTC a minimum of one week prior to bid opening.

For all projects under 2000 Linear feet which require a normal excavation locate request pursuant to KRS 367.4901-4917, the awarded contractor shall field mark the proposed excavation or construction boundaries of the project (also called white lining) using the procedure set forth in KRS 367.4909(9)(k). For all projects over 2000 linear feet, which are defined as a “Large Project” in KRS 367.4903(18), the awarded contractor shall initially mark the first 2000 linear feet minimally of proposed excavation or construction boundaries of the project to be worked using the procedure set forth in KRS 367.4909(9)(k). This temporary field locating of the project excavation boundary shall take place prior to submitting an excavation location request to the underground utility protection Kentucky Contact Center. For large projects, the awarded contractor shall work with the impacted utilities to determine when additional white lining of the remainder of the project site will take place. This provision shall not alter or relieve the awarded contractor from complying with requirements of KRS 367.4905 to 367.4917 in their entirety.

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

UTILITIES AND RAIL CERTIFICATION NOTE

Grayson County
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ITEM NUMBER: 04-9009.00

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.

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

Grayson County Water District – Water - Existing Service line at approximate Station 661+30 will be impacted. Coordinate with GCWD. GCWD will lower service. Give at least 2 weeks advance notice to the water district.

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

THE FOLLOWING FACILITY OWNERS ARE RELOCATING/ADJUSTING THEIR FACILITIES WITHIN THE PROJECT LIMITS AND WILL BE COMPLETE PRIOR TO CONSTRUCTION

Warren Rural Electric Cooperative Corporation – Electric – Relocations plans available via Supplemental folder and should be used for information purposes only.

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

Windstream Holdings II, LLC – Telephone – Windstream has relocated underground Copper and Fiber facilities along the right of way through the majority of the project corridor as well as some aerial relocation. Relocation plans are available via the Supplemental folder and should be used for information purposes only. Anticipated completion date May 31, 2023.

UTILITIES AND RAIL CERTIFICATION NOTE

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

Edmonson County Water District – Water - See General Utility note for attached list of ECWD approved contractors. ECWD relocation work is intended to be performed first and continuous throughout the project corridor.

RAIL COMPANIES HAVE FACILITIES IN CONJUNCTION WITH THIS PROJECT AS NOTED

☒ **No Rail Involvement** ☐ **Rail Involved** ☐ **Rail Adjacent**

Form Revised 6/24/16

UTILITIES AND RAIL CERTIFICATION NOTE

Grayson County
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AREA FACILITY OWNER CONTACT LIST

Facility Owner	Address	Contact Name	Phone	Email
Edmonson County Water District - Water	P.O. Box 208 Brownsville KY 42210	Tony Sanders	2705972166	tonysanders@ecwdwater.com
Grayson County Water District - Water	21 Shull White Road Leitchfield ky 42754	Jeremy Woosley	2702592917	jwoosley@graysonwater.com
Warren Rural Electric Cooperative Corporation - Electric	P.O. Box 1118 Bowling Green KY 42102	Jonathan Lindsey	2708426541	jonathanl@wrecc.com
Windstream Holdings II, LLC - Telephone	111 South Main Street Elizabethtown KY 42701	Steve Johnson	8593576209	steve.johnson@windstream.com

GENERAL UTILITY NOTES AND INSTRUCTIONS APPLICABLE TO ALL UTILITY WORK MADE A PART OF THE ROAD CONSTRUCTION CONTRACT

The contractor should be aware the following utility notes and KYTC Utility Bid Item Descriptions shall supersede, replace and take precedence over any and all conflicting information that may be contained in utility owner supplied specifications contained in the contract, on plans supplied by the utility owner, or any utility owner specifications or information externally referenced in this contract.

Where information may have been omitted from these notes, bid item descriptions, utility owner supplied specifications or plans; the KYTC Standard Specifications for Road and Bridge Construction shall be referenced.

PROTECTION OF EXISTING UTILITIES

The existing utilities shown on the plans are shown as best known at the time the plans were developed and are to be used as a guide only by the Contractor. The Contractor shall use all means at his disposal to accurately locate all existing utilities, whether shown on the plans or not, prior to excavation. The contractor shall protect these utilities during construction. Any damage to existing utilities during construction that are shown or not shown on the plans shall be repaired at the Contractor's expense.

PREQUALIFIED UTILITY CONTRACTORS

Some utility owners may require contractors that perform relocation work on their respective facilities as a part of the road contract be prequalified or preapproved by the utility owner**. Utility contractors may be added via addendum if KYTC is instructed to do so by the utility owner. Potential contractors must seek prequalification from the utility owner. Any revisions must be sent from the utility owner to KYTC a minimum of one week prior to bid opening.** Those utility owners with a prequalification or preapproval requirement are as follows:

- *Edmonson County Water District – See attachment for list of approved contractos.*

The bidding contractor needs to review the attached list and choose from the list of approved subcontractors at the end of these general notes as identified above before bidding. When the list of approved subcontractors is provided, only subcontractors shown on the following list(s) will be allowed to work on that utility as a part of this contract. In such instances, the utility subcontractor is not required to be prequalified with the KYTC Division of Construction Procurement.

IF A UTILITY SUPPLIED CONTRACTOR LIST IS NOT PROVIDED

When the above list of approved subcontractors for the utility work is not provided, the utility work can be completed by the prime contractor, or a prime contractor-chosen subcontractor. In such instances, the subcontractor shall be prequalified with the KYTC Division of Construction Procurement in the work type of "Utilities" (I33). Those who would like to become prequalified may contact the Division of Construction Procurement at (502) 564-3500. Please note: it could take up to 30 calendar days for prequalification to be approved. The prequalification does not have to be approved prior to the bid, but must be approved before the subcontract will be approved by KYTC and the work can be performed.

CONTRACT ADMINISTRATION RELATIVE TO UTILITY WORK

All utility work is being performed as a part of a contract administered by KYTC; there is not a direct contract between the utility contractor and utility owner. The KYTC Section Engineer is ultimately responsible for the administration of the road contract and any utility work included in the contract.

SUBMITTALS AND CORRESPONDENCE

All submittals and correspondence of any kind relative to utility work included in the road contract shall be directed to the KYTC Section Engineer, a copy of which may also be supplied to the utility owner by the contractor to expedite handling of items like material approvals and shop drawings. All approvals and correspondence generated by the utility owner shall be directed to the KYTC Section Engineer. The KYTC Section Engineer will relay any approvals or correspondence to the utility contractor as appropriate. At no time shall any direct communication between the utility owner and utility contractor without the communication flowing through the KYTC Section Engineer be considered official and binding under the contract.

ENGINEER

Where the word "Engineer" appears in any utility owner specifications included in this proposal, utility owner specifications included as a part of this contract by reference or on the utility relocation plans, it shall be understood the "Engineer" is the Kentucky Transportation Cabinet (KYTC) Section Engineer or designated representative and the utility owner engineer or designated representative jointly. Both engineers must mutually agree upon all decisions made with regard to the utility construction. The Transportation Cabinet, Section Engineer shall make all final decisions in all disputes.

INSPECTOR OR RESIDENT PROJECT REPRESENTATIVE

Where the word "Inspector" or "Resident Project Representative" appears in the utility specifications included in this proposal, utility owner specifications included as a part of this contract by reference or on the utility relocation plans, it shall be understood the "Inspector" or "Resident Project Representative" is the utility owner inspector and KYTC inspector jointly. The Transportation Cabinet, Section Engineer shall make all final decisions in all disputes.

NOTICE TO UTILITY OWNERS OF THE START OF WORK

One month before construction is to start on a utility, the utility contractor shall make notice to the KYTC Section Engineer and the utility owner of when work on a utility is anticipated to start. The utility contractor shall again make confirmation notice to the KYTC Section Engineer and the utility owner one week before utility work is to actually start.

UTILITY SHUTDOWNS

The Contractor shall not shut down any active and in-service mains, utility lines or services for any reason unless specifically given permission to do so by the utility owner. The opening and closing of valves and operating of other active utility facilities for main, utility line or utility service shut downs are to be performed by the utility owner unless specific permission is given to the contractor by the owner to make shutdowns . If and when the utility owner gives the contractor permission to shutdown mains, utility lines or utility services, the contractor shall do so following the rules, procedures and regulations of the utility owner. Any permission given by the utility owner to the contractor to shutdown active and in-service mains, utility lines or services shall be communicated to the KYTC Section Engineer by the utility owner that such permission has been given.

Notice to customers of utility shut downs is sometimes required to be performed by the utility contractor. The contractor may be required; but, is not limited to, making notice to utility customers in a certain minimum amount of time in advance of the shut down and by whatever means of communication specified by the utility owner. The means of communication to the customer may be; but is not limited to, a door hanger, notice by newspaper ad, telephone contact, or any combination of communication methods deemed necessary, customary and appropriate by the utility owner. The contractor should refer to the utility owner specifications for requirements on customer notice.

Any procedure the utility owner may require the contractor to perform by specification or plan note and any expense the contractor may incur to comply with the utility owner's shut down procedure and notice to customers shall be considered an incidental expense to the utility construction.

CUSTOMER SERVICE AND LATERAL ABANDONMENTS When temporary or permanent abandonment of customer water, gas, or sewer services or laterals are necessary during relocation of utilities included in the contract, the utility contractor shall perform these abandonments as part of the contract as incidental work. No separate payment will be made for service line and lateral abandonments. The contractor shall provide all labor, equipment and materials to accomplish the temporary or permanent abandonment in accordance with the plans, specifications and/or as directed by the engineer. Abandonment may include, but is not limited to, digging down on a water or gas main at the tap to turn off the tap valve

or corporation stop and/or capping or plugging the tap, digging down on a sewer tap at the main and plugging or capping the tap, digging down on a service line or lateral at a location shown on the plans or agreeable to the engineer and capping or plugging, or performing any other work necessary to abandon the service or lateral to satisfactorily accomplish the final utility relocation.

STATIONS AND DISTANCES

All stations and distances, when indicated for utility placement in utility relocation plans or specifications, are approximate; therefore, some minor adjustment may have to be made during construction to fit actual field conditions. Any changes in excess of 6 inches of plan location shall be reviewed and approved jointly by the KYTC Section Engineer or designated representative and utility owner engineer or designated representative. Changes in location without prior approval shall be remedied by the contractor at his own expense if the unauthorized change creates an unacceptable conflict or condition.

RESTORATION

Temporary and permanent restoration of paved or stone areas due to utility construction shall be considered incidental to the utility work. No separate payment will be made for this work. Temporary restoration shall be as directed by the KYTC Section Engineer. Permanent restoration shall be "in-kind" as existing.

Restoration of seed and sod areas will be measured and paid under the appropriate seeding and sodding bid items established in the contract for roadway work.

BELOW ARE NOTES FOR WHEN "INST" ITEMS ARE IN THE CONTRACT MEANING THE UTILITY COMPANY IS PROVIDING CERTAIN MATERIALS FOR UTILITY RELOCATION

MATERIAL

Contrary to Utility Bid Item Descriptions, those bid items that have the text **"Inst"** at the end of the bid item will have the major components of the bid item provided by the utility owner. No direct payment will be made for the major material component(s) supplied by the utility company. All remaining materials required to construct the bid item as detailed in utility bid item descriptions, in utility specifications and utility plans that are made a part of this contract will be supplied by the contractor. The contractor's bid price should reflect the difference in cost due to the provided materials.

The following utility owners have elected to provide the following materials for work under this contract:

No materials are being supplied by the utility owner(s). All materials are to be supplied by the contractor per bid item descriptions, utility specifications and utility plans.

SECURITY OF SUPPLIED MATERIALS

If any utility materials are to be supplied by the utility owner, it will be the responsibility of the utility contractor to secure all utility owner supplied materials after delivery to the project site. The utility contractor shall coordinate directly with the utility owner and their suppliers for delivery and security of

the supplied materials. Any materials supplied by the utility owner and delivered to the construction site that are subsequently stolen, damaged or vandalized and deemed unusable shall be replaced with like materials at the contractor's expense.

GRW | engineering | architecture | geospatial
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615.366.1600 | www.grwinc.com

August 3, 2022

Jared D. Clemons PE, PLS
KYTC D4 Utilities Supervisor
634 E Dixie Hwy PO Box 309
Elizabethtown Ky 42702

RE: KDOH 4-9009.00, KY 259 South
Approved List of Utility Contractors

Dear Mr. Clemons:

On behalf of the Edmonson County Water District, the following list of approved utility contractors for the KY 259 South improvements project is hereby submitted:

Bobby Luttrell & Sons, LLC, 190 Bank Circle Drive, Dundee, KY 42338
270-276-9439 (Phone); email: Jerianna.conner@luttrellandsons.com

Cumberland Pipeline, LLC, 4129 Hwy 379, Russell Springs, KY 42642
270-343-5030 (Phone); 270-343-5031 (Fax); email: cp@cumberlandpipeline.com

Cleary Construction, Inc., 2006 Edmonton Road, Tompkinsville, KY 42167
270-487-1784 (Phone); 270-487-8029 (Fax); email: estimating@clearyconst.com

Scott & Ritter, Inc., 2385 Barren River Road, Bowling Green, KY 42101
270-781-9988 (Phone); 270-782-3267 (Fax)

Stotts Construction Co., Inc., 203 Burkesville Street, Ste. 101, Columbia, KY 42728
270-384-2677 Phone); 270-384-4490 (Fax); email: stotts@windstream.net

Twin States Utilities, Inc., 9440 Old Glasgow Road, Mount Hermon, KY 42157
270-427-5300 (Phone); 270-427-5400 (Fax); email: jfinley@twinstatesinc.com

If you have any questions, please do not hesitate to contact myself or Tony Sanders.

Sincerely,

Louis E. Robbins, P.E.

cc: Tony Sanders, ECWD
File 3621-09 A

Standard Water Bid Item Descriptions

W AIR RELEASE VALVE This bid item description shall apply to all air release valve installations of every size except those defined as "Special". This item shall include the air release valve, main to valve connecting line or piping, manhole, vault, structure, access casting or doors, tapping the main, labor, equipment, excavation, proper backfill and restoration required to install the air release valve at the location shown on the plans or as directed in accordance with the specifications and standard drawings complete and ready for use. All air release/vacuum valves on a project shall be paid under one bid item regardless of size. No separate pay items will be established for size variations. Only in the case of the uniqueness of a particular air release valve would a separate bid item be established. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

BOLLARDS This item is for payment for furnishing and installing protective guard posts at above ground utility installations. A bollard may consist of, but not limited to, a steel post set in concrete or any other substantial post material. This item shall include all labor, equipment, and materials needed for complete installation of the bollard as specified by the utility owner specifications and plans. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

NOTE: A bid code for this item has been established in standard roadway bid items and shall be used for payment of this item. The bid code is 21341ND

W CAP EXISTING MAIN This item shall include the specified cap, concrete blocking and/or mechanical anchoring, labor, equipment, excavation, backfill, and restoration required to install the cap at the location shown on the plans or as directed in accordance with the specifications. This item is not to be paid on new main installations. This pay item is only to be paid to cap existing mains. Caps on new mains are incidental to the new main. Any and all caps on existing mains shall be paid under one bid item included in the contract regardless of size. No separate bid items will be established for size variations. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W DIRECTIONAL BORE Payment under this item is made whenever the plans or specifications specifically show directional boring is to be utilized in order to minimize the impact of open cut for the installation of water main under streets, creeks, and etc. Payment under this item shall include the specified bore pipe, labor, and equipment. No separate payment shall be made for bore pipe installed in the bore whether used as a carrier pipe or an encasement of a separate carrier pipe. This item shall also include pipe anchors at each end of the bore when specified to prevent the creep or contraction of the bore pipe. Carrier pipe installed within a bore pipe shall be paid separately under pipe items. Payment under this item shall not be size specific and no separate bid items will be established for size variations. The bore pipe sizes to be included under this item shall be as shown on the plans and/or in the specifications. Any and all directional bores in each contract shall be paid under one directional bore bid item included in the contract regardless of size. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid LINEAR FEET (LF) when complete.

W ENCASEMENT CONCRETE Includes all labor, equipment, excavation, concrete, reinforcing steel, backfill, restoration, and etc., to construct the concrete encasement of the water main as shown on the plans, and in accordance with the specifications and standard drawings. Payment under this item shall be in addition to the carrier pipe as paid under separate bid items. Carrier pipe is not included in this bid item. Any and all concrete encasement shall be paid under one bid item included in the contract regardless of the size of the carrier pipe or the volume of concrete or steel reinforcement as specified in the plans and specifications. No separate bid items will be established for size variations. Measurement of pay quantity shall be from end of concrete to end of concrete. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid LINEAR FEET (LF) when complete.

W ENCASEMENT STEEL BORED This item shall include the steel encasement pipe size as specified on the plans and in the specifications, casing spacers, end seals, labor, and equipment to bore and install the encasement in accordance with the plans and specifications, complete and ready for use. The size shall be the measured internal diameter of the encasement pipe. The sizes of encasement to be paid under the size ranges specified in the bid items shall be as follows:

Range 1 = All encasement sizes greater than 2 inches to and including 6 inches
Range 2 = All encasement sizes greater than 6 inches to and including 10 inches
Range 3 = All encasement sizes greater than 10 inches to and including 14 inches
Range 4 = All encasement sizes greater than 14 inches to and including 18 inches
Range 5 = All encasement sizes greater than 18 inches to and including 24 inches
Range 6 = All encasement sizes greater than 24 inches

(Encasement sizes of 2 inches internal diameter or less shall not be paid separately; but, shall be considered incidental to the carrier pipe.) Payment under this bid item shall not include the carrier pipe. Carrier pipe shall be paid under a separate bid item. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid LINEAR FEET (LF) when complete.

W ENCASEMENT STEEL OPEN CUT This item shall include the steel encasement pipe size as specified on the plans and in the specifications, casing spacers, end seals, labor, and equipment to open cut and install the encasement in accordance with the plans and specifications, complete and ready for use. The size shall be the measured internal diameter of the encasement pipe. The size encasement to be paid under the size ranges specified in the bid items shall be as follows:

Range 1 = All encasement sizes greater than 2 inches to and including 6 inches
Range 2 = All encasement sizes greater than 6 inches to and including 10 inches
Range 3 = All encasement sizes greater than 10 inches to and including 14 inches
Range 4 = All encasement sizes greater than 14 inches to and including 18 inches
Range 5 = All encasement sizes greater than 18 inches to and including 24 inches
Range 6 = All encasement sizes greater than 24 inches

(Encasement sizes of 2 inches internal diameter or less shall not be paid separately; but, shall be considered incidental to the carrier pipe.) Payment under this bid item shall not include the carrier pipe. Carrier pipe shall be paid under a separate bid item. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid LINEAR FEET (LF) when complete.

W FIRE HYDRANT ADJUST Includes all labor, equipment, excavation, materials, and backfill to adjust the existing fire hydrant using the fire hydrant manufacturer's extension kit for adjustments of 18" or less. Adjustments greater than 18" require anchoring couplings and vertical bends to adjust to grade. The Contractor will supply and install all anchor couplings, bends, fire hydrant extension, concrete blocking, restoration, granular drainage material, etc, needed to adjust the fire hydrant complete and ready for use as shown on the plans, and in accordance with the specifications and standard drawings. This also includes allowing for the utility owner inspector to inspect the existing fire hydrant prior to adjusting, contractor returning unusable fire hydrants to the utility owner warehouse and picking up a replacement hydrant. No additional payment will be made for rock excavation. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete and ready for use.

W FIRE HYDRANT ASSEMBLY Includes all labor, equipment, new fire hydrant, isolating valve and valve box, concrete pad around valve box (when specified in specifications or plans), piping, anchoring tee, anchoring couplings, fire hydrant extension, excavation, concrete blocking, granular drainage material, backfill, and restoration, to install a new fire hydrant assembly as indicated on plans and on standard drawings compete and ready for use. No additional payment will be made for rock excavation. Please refer to the Utility Company's

Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W FIRE HYDRANT RELOCATE This item includes all labor and equipment to remove the existing fire hydrant from its existing location and reinstalling at a new location. This item shall include a new isolating valve and valve box, concrete pad around valve box (when required in specifications or plans), new piping, new anchoring tee, anchoring couplings, fire hydrant extensions, concrete blocking, restoration, granular drainage material, excavation, and backfill as indicated on plans, specifications, and on standard drawings compete and ready for use. This item shall also include allowing for utility owner inspector to inspect the existing fire hydrant prior to reuse, contractor returning unusable fire hydrants to the utility owner warehouse and picking up a replacement hydrant for use, if the existing fire hydrant is determined unfit for reuse. No additional payment will be made for rock excavation. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W FIRE HYDRANT REMOVE This bid item includes removal of an abandoned fire hydrant, isolating valve, and valve box to the satisfaction of the engineer. The removed fire hydrant, isolating valve and valve box shall become the property of the contractor for his disposal as salvage or scrap. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W FLUSH HYDRANT ASSEMBLY This item shall include the flushing hydrant assembly, service line, tapping the main, labor, equipment, excavation, backfill, and restoration required to install the flush hydrant at the location shown on the plans and in accordance with the specifications and standard drawings, complete and ready for use. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W FLUSHING ASSEMBLY This item shall include the flushing device assembly, service line, meter box and lid, tapping the main, labor, equipment, excavation, backfill, and restoration required to install the flushing device at the location shown on the plans and in accordance with the specifications and standard drawings, complete and ready for use. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W LEAK DETECTION METER This item is for payment for installation of a water meter at main valve locations where shown on the plans for detection of water main leaks. The meter shall be of the size and type specified in the plans or specifications. This item shall include all labor, equipment, meter, meter box or vault, connecting pipes between main and meter, main taps, tapping saddles, casting, yoke, and any other associated material needed for installation of a functioning water meter in accordance with the plans and specifications, complete and ready for use. No separate payment will be made under any other contract item for connecting pipe or main taps. Any and all leak detection meters shall be paid under one bid item included in the contract regardless of size. No separate bid items will be established for size variations. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete and ready for use.

W LINE MARKER This item is for payment for furnishing and installing a water utility line marker as specified by the utility owner specifications and plans. A line marker may consist of a post or monument of whatever materials specified and shall include markings and/or signage on same as specified by plans or specifications. This item shall include all labor, equipment, and materials needed for complete installation of the marker. This item shall be paid EACH (EA) when complete.

W LINE STOP SIZE 1 OR 2: This item shall include the line stop saddle/sleeve, valve, completion plug and any other material, labor, and equipment necessary to complete the line stop as indicated in the plans and/or specifications. This installation shall allow the waterline system to operate as usual without any interruption of service. The size shall be the measured internal diameter of the live pipe to be tapped. The line stop size to be

paid under sizes 1 or 2 shall be as follows:

Size 1 = All live tapped main sizes up to and including 8 inches
Size 2 = All live tapped main sizes greater than 8 inches

Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W MAIN POINT RELOCATE This item is intended for payment for horizontal and/or vertical relocation of a short length of an existing main at the locations shown on the plans. This bid item is to be used to relocate an existing water main at point locations such as to clear a conflict at a proposed drainage structure, pipe or any other similar short relocation situation, and where the existing pipe material is to be reused. The contractor shall provide any additional pipe or fitting material needed to complete the work as shown on the plans and specifications. The materials provided shall be of the same type and specification as those that exist. Substitution of alternative materials shall be approved by the engineer in advance on a case by case basis. New polyethylene wrap is to be provided (if wrap exists or is specified in the specifications to be used). If it is necessary that the pipe be disassembled for relay, payment under this item shall also include replacement of joint gaskets as needed. Bedding and backfill shall be provided and performed the same as with any other pipe installation as detailed in the plans and specifications. Payment under this item shall be for each location requiring an existing main to be relocated horizontally or vertically regardless of pipe size or relocation length. No separate pay items will be established for pipe size variations or relocation segment length variations. Water Main Relocate shall not be paid on a linear feet basis; but, shall be Paid EACH (EA) at each location when complete and placed in service. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced.

W METER This item is for payment for installation of all standard water meters of all sizes 2 inches ID or less as specified on the plans. This item shall include all labor, equipment, meter, meter box, casting, yoke, and any other associated material needed for installation of a functioning water meter in accordance with the plans and specifications, complete and ready for use. This item shall include connections to the new or existing water service line. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W METER ADJUST This item includes all labor, equipment, excavation, materials, backfill, restoration, and etc., to adjust the meter casting to finished grade (whatever size exists) at the location shown on the plans or as directed in accordance with the specifications and standard drawings complete and ready for use. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W METER RELOCATE This item includes all labor, equipment, excavation, additional fittings, disinfection, testing, restoration, and etc., to relocate the existing water meter (whatever size exists), meter yoke, meter box, casting, and etc., from its old location to the location shown on the plans or as directed, in accordance with the specifications and standard drawings complete and ready for use. The new service pipe (if required) will be paid under short side or long side service bid items. Any and all meter relocations of 2 inches or less shall be paid under one bid item included in the contract regardless of size. Each individual relocation shall be paid individually under this item; however, no separate bid items will be established for meter size variations of 2 inches ID or less. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W METER VAULT SIZE RANGE 1 OR 2 This item is for payment for installation of an underground structure for housing of a larger water meter, fittings, and valves as required by the plans and specifications. This item shall include all labor, equipment, excavation, concrete, manhole castings or access doors, the specified meter(s) valve(s), all piping, and fitting materials associated with installing a functioning meter and vault in accordance with the plans, standard drawings, and specifications, complete and ready for use. The size shall be the measured internal diameter of the meter and piping to be installed. The size meter vault to be paid under size 1 or 2 shall be as follows:

Size Range 1 = All meter and piping sizes greater than 2 inches up to and including 6 inches
Size Range 2 = All meter and piping sizes greater than 6 inches

This item shall be paid EACH (EA) when complete. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced.

W METER/FIRE SERVICE COMBO VAULT This item is for payment for installation of an underground structure for housing of a water meter and fire service piping, fittings, and valves as required by the plans and specifications. This item shall include all labor, equipment, excavation, concrete, manhole castings or access doors, the specified meter(s), valve(s), all piping, and fitting materials associated with installing a functioning meter and fire service vault in accordance with the plans and specifications, complete and ready for use. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W METER WITH PRESSURE REDUCING VALVE (PRV) This item is for payment for installation of all standard water meters with pressure reducing valves (PRV) of all sizes 2 inches ID or less as specified on the plans. This item shall include all labor, equipment, meter, PRV, meter box, casting, yoke, and any other associated material needed for installation of a functioning water meter with PRV in accordance with the plans and specifications, complete and ready for use. This item shall include connections to the new or existing water service line. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W PIPE This description shall apply to all PVC, ductile iron, and polyethylene/plastic pipe bid items of every size and type to be used as water main, except those bid items defined as "Special". This item includes the pipe specified by the plans and specifications, all fittings (including, but not limited to, bends, tees, reducers, plugs, and caps), tracing wire with test boxes (if required by specification), polyethylene wrap (when specified), labor, equipment, excavation, bedding, restoration, testing, sanitizing, backfill, and etc., required to install the specified new pipe and new fittings at the locations shown on the plans, or as directed, in accordance with the specifications and standard drawings complete and ready for use. No additional payment will be made for rock excavation. This bid item includes material and placement of flowable fill under existing and proposed pavement, and wherever else specified on the plans or in the specifications. This item shall include all temporary and permanent materials and equipment required to pressure test and sanitize mains including, but not limited to, pressurization pumps, hoses, tubing, gauges, main taps, saddles, temporary main end caps or plugs and blocking, main end taps for flushing, chlorine liquids or tablets for sanitizing, water for testing/sanitizing and flushing (when not supplied by the utility), chlorine neutralization equipment and materials, and any other items needed to accomplish pressure testing and sanitizing the main installation. This item shall also include pipe anchors, at each end of polyethylene pipe runs when specified to prevent the creep or contraction of the pipe. Measurement of quantities under this item shall be through fittings, encasements, and directional bores (only when a separate carrier pipe is specified within the directional bore pipe). Measurements shall be further defined to be to the center of tie-in where new pipe contacts existing pipe at the center of connecting fittings, to the outside face of vault or structure walls, or to the point of main termination at dead ends. No separate payment will be made under pipe items when the directional bore pipe is the carrier pipe. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid LINEAR FEET (LF) when complete.

W PLUG EXISTING MAIN This item shall include the specified plug, concrete blocking and/or anchoring, labor, equipment, excavation, backfill, and restoration required to install the plug in an existing in-service main that is to remain at the location shown on the plans or as directed in accordance with the specifications. Any and all plugs on all existing in-service mains shall be paid under one bid item included in the contract regardless of size. No separate bid items will be established for size variations. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

NOTE: This utility bid item is not to be paid on new main installations or abandoned mains. This pay item is to plug existing in-service mains only. Plugs on new mains are incidental to the new main just like all other fittings.

NOTE: Plugging of existing abandon mains shall be performed and paid in accordance with Section 708.03.05 of KYTC Standard Specifications For Road And Bridge Construction and paid using Bid Code 01314 Plug Pipe.

W PRESSURE REDUCING VALVE This description shall apply to all pressure reducing valves (PRV) of every size required in the plans and specifications except those bid items defined as "Special". Payment under this description is to be for PRVs being installed with new main. This item includes the PRV as specified in the plans and specifications, polyethylene wrap (if required by specification), labor, equipment, excavation, anchoring (if any), pit or vault, backfill, restoration, testing, disinfection, and etc., required to install the specified PRV at the location shown on the plans in accordance with the specifications and standard drawings complete and ready for use. If required on plans and/or proposed adjoining DIP is restrained, PRVs shall be restrained. PRV restraint shall be considered incidental to the PRV and adjoining pipe. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W PUMP STATION This item is for payment for installation of pumps and an above or below ground structure for housing of the pumps. This item shall include all pumps, piping, fittings, valves, electrical components, building materials, concrete, any other appurtenances, labor, equipment, excavation, and backfill, to complete the pump station installation as required by the plans, standard drawings, and specifications, complete and ready for use. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid LUMP SUM (LS) when complete.

W REMOVE TRANSITE (AC) PIPE This item shall include all labor, equipment, and materials needed for removal and disposal of the pipe as hazardous material. All work shall be performed by trained and certified personnel in accordance with all environmental laws and regulations.
Any and all transite AC pipe removed shall be paid under one bid item included in the contract regardless of size. No separate bid items will be established for size variations. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid LINEAR FEET (LF) when complete.

W SERVICE LONG SIDE This bid item description shall apply to all service line installations of every size bid up to and including 2 inch inside diameter, except those service bid items defined as "Special". This item includes the specified piping material, main tap, tapping saddle (if required), and corporation stop materials, coupling for connecting the new piping to the surviving existing piping, encasement of 2 inches or less internal diameter (if required by plan or specification), labor, equipment, excavation, backfill, testing, disinfection, and restoration, at the locations shown on the plans or as directed, in accordance with the specifications and standard drawings, complete and ready for use. This bid item is to pay for service installations where the ends of the service connection are on opposite sides of the public roadway and the service line crosses the centerline of the public roadway as shown on the plans. The length of the service line is not to be specified. Payment under this item shall not be restricted by a minimum or maximum length. The contractor shall draw his own conclusions as to the length of piping that may be needed. Payment under this item shall include boring, jacking, or excavating across the public roadway for placement. Placement of a service across a private residential or commercial entrance alone shall not be reason to make payment under this item. Private or commercial entrances shall not be considered a public roadway in defining payment under this item. This pay item does not include installation or relocation of meters. Meters will be paid separately. No additional payment will be made for rock excavation or for special bedding required in rock excavation. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W SERVICE SHORT SIDE This bid item description shall apply to all service line installations of every size up to and including 2 inch internal diameter, except those service bid items defined as "Special". This item includes installation of the specified piping material of the size specified on plans, encasement of 2 inches or less internal diameter (if required by plan or specification), main tap, tapping saddle (if required), corporation stop, coupling for connecting the new piping to the surviving existing piping, labor, equipment, excavation, backfill,

testing, disinfection, and restoration, at the locations shown on the plans or as directed, in accordance with the specifications and standard drawings, complete and ready for use. This bid item is to pay for service installations were both ends of the service connection are on the same side of the public roadway, or when an existing service crossing a public roadway will remain and is being extended, reconnected, or relocated with all work on one side of the public roadway centerline as shown on the plans. The length of the service line is not to be specified and shall not be restricted to any minimum or maximum length. Payment shall be made under this item even if the service crosses a private residential or commercial entrance; but, not a public roadway. Private or commercial entrances shall not be considered a public roadway in defining payment under this item. The contractor shall draw his own conclusions as to the length of piping that may be needed. This pay item does not include installation or relocation of meters. Meters will be paid separately. No additional payment will be made for rock excavation or for bedding required in rock excavation. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W SERVICE RELOCATE This item is for the relocation of an existing water service line where a meter is not involved, and where an existing service line can easily be adjusted by excavating alongside and moving the line horizontally and/or vertically a short distance without cutting the service line to avoid conflicts with road construction. This item shall include excavation, labor, equipment, bedding, and backfill to relocate the line in accordance with the plans and specifications complete and ready for use. Payment under this item shall be for each location requiring relocation. Payment shall be made under this item regardless of service size or relocation length. No separate pay items will be established for size or length variation. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W STRUCTURE ABANDONMENT This item is to be used to pay for abandonment of larger above or below ground water structures such as meter vaults, fire pits, pump stations, tanks, and etc. Payment under this time shall not be limited to size or scope; however structures with connecting pipes of 2 inches or less shall not be paid under this item; but, shall be considered incidental to water construction, (i.e., abandonment of standard water meters up to and including 2 inches would not be paid under this item). Payment under this item shall include all labor, equipment, and compacted fill or flowable fill for abandonment of the structure in place and restoration complete. No separate bid items will be established for size or structure variations. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W STRUCTURE REMOVAL This item is to be used to pay for removal of larger above or below ground water structures such as meter vaults, fire pits, pump stations, tanks, and etc. Payment under this time shall not be limited to size or scope; however structures with connecting pipes of 2 inches or less shall not be paid under this item; but, shall be considered incidental to water construction, (i.e., removal of standard water meters up to and including 2 inches would not be paid under this item). Payment under this item shall include all labor, equipment, and compacted backfill for removal of the structure and restoration complete. No separate bid items will be established for size or structure variations. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W TAPPING SLEVE AND VALVE SIZE 1 OR 2 This item shall include the specified tapping sleeve, valve, valve box, concrete pad around valve box (when required in specifications or plans), labor, and equipment to install the specified tapping sleeve and valve, complete and ready for use in accordance with the plans and specifications. The size shall be the measured internal diameter of the live pipe to be tapped. The size tapping sleeve and valve to be paid under sizes 1 or 2 shall be as follows:

Size 1 = All live tapped main sizes up to and including 8 inches
Size 2 = All live tapped main sizes greater than 8 inches

Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W TIE-IN This bid description shall be used for all main tie-in bid items of every size except those defined as "Special". This item includes all labor, equipment, excavation, fittings, sleeves, reducers, couplings, blocking, anchoring, restoration, disinfection, testing and backfill required to make the water main tie-in as shown on the plans, and in accordance with the specifications complete and ready for use. Pipe for tie-ins shall be paid under separate bid items. This item shall be paid EACH (EA) when complete.

W VALVE This description shall apply to all valves of every size required in the plans and specifications except those bid items defined as "Special". Payment under this description is to be for gate or butterfly valves being installed with new main. This item includes the valve as specified in the plans and specifications, polyethylene wrap (if required by specification), labor, equipment, excavation, anchoring (if any), valve box and valve stem extensions, backfill, concrete pad around valve box (if required by specification), restoration, testing, disinfection, and etc., required to install the specified valve at the location shown on the plans in accordance with the specifications and standard drawings complete and ready for use. If required on plans and/or proposed adjoining DIP is restrained, valves shall be restrained. Valve restraint shall be considered incidental to the valve and adjoining pipe. This description does not apply to cut-in valves. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W VALVE ANCHOR EXISTING This bid item is intended to pay for installation of restraint hardware on an existing valve where no restraint exists to hold the valve in place to facilitate tie-ins and other procedures where restraint is prudent. This work shall be performed in accordance with water specifications and plans. This bid item shall include all labor equipment, excavation, materials and backfill to complete restraint of the designated valve, regardless of size, at the location shown on the plans, complete and ready for use. Materials to be provided may include, but is not limited to, retainer glands, lugs, threaded rod, concrete, reinforcing steel or any other material needed to complete the restraint. Should the associated valve box require removal to complete the restraint, the contractor shall reinstall the existing valve box, the cost of which shall be considered incidental to this bid item. No separate bid items are being provided for size variations. All sizes shall be paid under one bid item. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W VALVE BOX ADJUST Includes all labor, equipment, valve box and valve stem extensions (if required), excavation, backfill, concrete pad around valve box (when specified in specifications or plans), restoration, and etc., to adjust the top of the box to finished grade complete and ready for use. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W VALVE CUT-IN This bid description is for new cut-in valve installations of all sizes where installation is accomplished by cutting out a section of existing main. This item shall include cutting the existing pipe, supplying the specified valve, couplings or sleeves, valve box, concrete pad around valve box (when required in specifications or plans), labor, equipment, and materials to install the valve at the locations shown on the plans, or as directed by the engineer, complete and ready for use. Any pipe required for installation shall be cut from that pipe removed or supplied new by the contractor. No separate payment will be made for pipe required for cut-in valve installation. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W VALVE VAULT This item is for payment for installation of an underground structure for housing of specific valve(s) as required by the plans and specifications. This item shall include all labor, equipment, excavation, concrete, manhole castings or doors, the specified valve(s), all piping, and fitting materials associated with installing a functioning valve vault in accordance with the plans, standard drawing, and specifications, complete and ready for use. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

ECWD WATER LINE DRAWINGS

WATER LINE RELOCATIONS – EDMONSON COUNTY WATER DISTRICT

EDMONSON AND GRAYSON COUNTIES, KENTUCKY

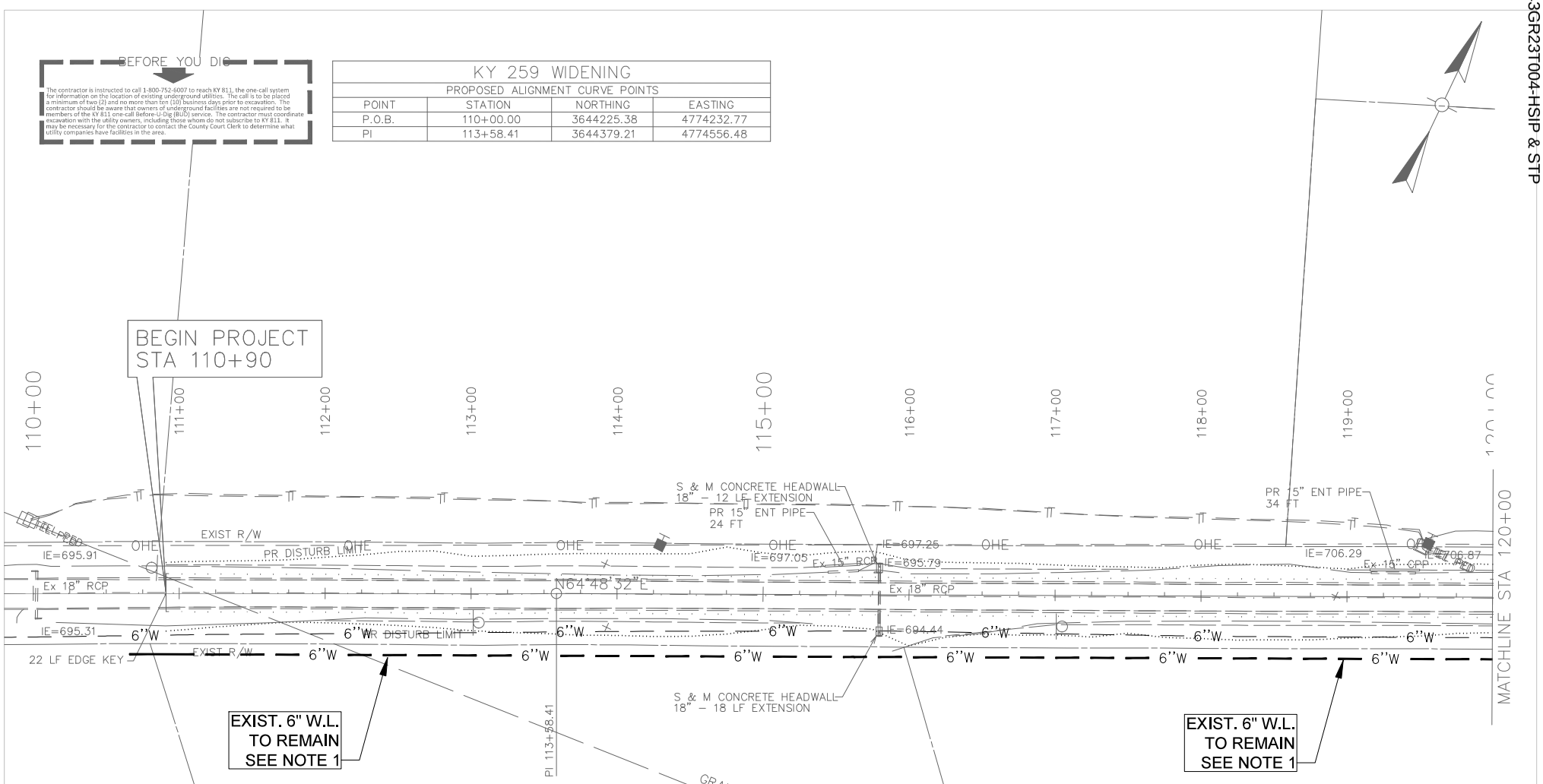
GRW Project 3621-09

KYTC ITEM # 4-9009.00, KY 259 SOUTH, GRAYSON COUNTY

BEFORE YOU DIG

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.

KY 259 WIDENING			
PROPOSED ALIGNMENT CURVE POINTS			
POINT	STATION	NORTHING	EASTING
P.O.B.	110+00.00	3644225.38	4774232.77
PI	113+58.41	3644379.21	4774556.48



DESIGN NOTES:

1. WATER LINE HAS BEEN FIELD LOCATED. ACTUAL LOCATION DIFFERENT THAN SHOWN ON HWY. PLANS.
2. WATER METER LOCATIONS AND/OR OTHER FIELD EVIDENCE INDICATE POSSIBLE WATER MAIN LOCATION DIFFERENT THAN SHOWN ON HWY. PLANS.

ENTRANCE PIPE	
SHEET TOTALS	
PIPE SIZE	LF
15"	58
18"	--

STATE OF KENTUCKY
LOUIS E. ROBBINS
12662
LICENSED PROFESSIONAL ENGINEER
6/1/22
FOR WATER LINE ONLY

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DRAWING SCALE CHECK:
THIS MARK SHOULD MEASURE EXACTLY 1" WHEN PLOTTED

Edmonson County Water District

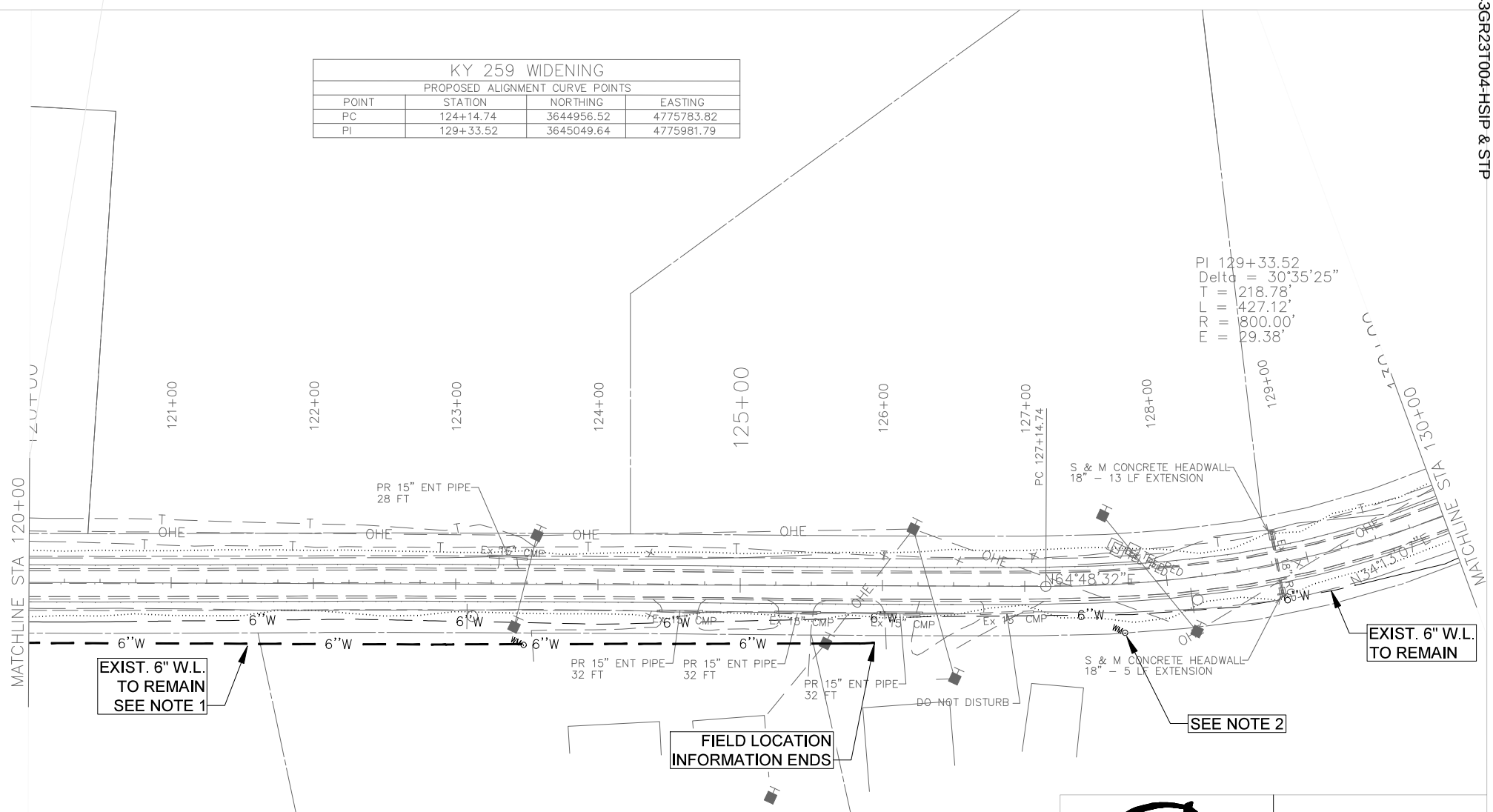
SCALE: 1"= 100' MAY 2022

COUNTY OF	ITEM NO.	SHEET NO.	
GRAYSON	4-9005	R3	ECWD-1

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

STA 110+00 TO STA 120+00

KY 259 WIDENING			
PROPOSED ALIGNMENT CURVE POINTS			
POINT	STATION	NORTHING	EASTING
PC	124+14.74	3644956.52	4775783.82
PI	129+33.52	3645049.64	4775981.79



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ENTRANCE PIPE	
SHEET TOTALS	
PIPE SIZE	LF
15"	124
18"	--

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COUNTY OF	ITEM NO.	SHEET NO.	
GRAYSON	4-9005	R4	ECWD-2

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

STA 120+00 TO STA 130+00

KY 259 WIDENING			
PROPOSED ALIGNMENT CURVE POINTS			
POINT	STATION	NORTHING	EASTING
PT	131+41.86	3645230.55	4776104.83
PI	138+79.24	3645840.29	4776519.50

PROJECT STA. 137+49
MAKE CONNECTION TO EX. 6" W.L.
INSTALL:
1 - W TAPPING SLEEVE AND VALVE SIZE 1
1 - W VALVE SPECIAL (INSERTA-VALVE)
90 L.F. W PIPE (DCTL IRON RSTRND JOINT 06 IN)
161 L.F. W PIPE (SDR 21 PVC 06 IN)
1 - W CAP EXISTING MAIN
1.75 CY SAFELOADING

PROJECT STA. 137+14 & 137+22
W SERV PE/PLST LONG SIDE 3/4 INCH
CONNECT TO EXIST. W METER
SEE X-SECTION SHEET ECWD-47

2" WATER LINE TO BE RETIRED-IN-PLACE

6" WATER LINE TO BE RETIRED-IN-PLACE

PLACE NEW W.L. 10' OUTSIDE R/W

MATCHLINE STA 130+00

MATCHLINE STA 140+00

131+00 | 132+00 | 133+00 | 134+00 | 135+00 | 136+00 | 137+00 | 138+00 | 139+00

PT 131+41.86

S & M CONCRETE HEADWALL
18" – 24 LF EXTENSION

S & M CONCRETE HEADWALL
18" – 9 LF EXTENSION

DO NOT DISTURB

EXIST R/W

PR DISTURB LIMIT

OHE

N34°13'07"E

N34°24'40"E

Ex 18" RCP

Ex 15" CMP

PR 15" ENT PIPE
28 FT

6"W

EXIST. 6" W.L.
TO REMAIN

SEE NOTE 1

NEW 6" W.L.

PI 138+79.24

MOUTARDIER RD

STANLEY DUVALL, JR
JEFFREY DUVALL
DB 120
PG 344

HELEN R FAMILY
IRREVOCABLE TRUST
DB 473
PG 421

DESIGN NOTES:
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ENTRANCE PIPE	
SHEET TOTALS	
PIPE SIZE	LF
15"	28
18"	--

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Edmonson County Water District

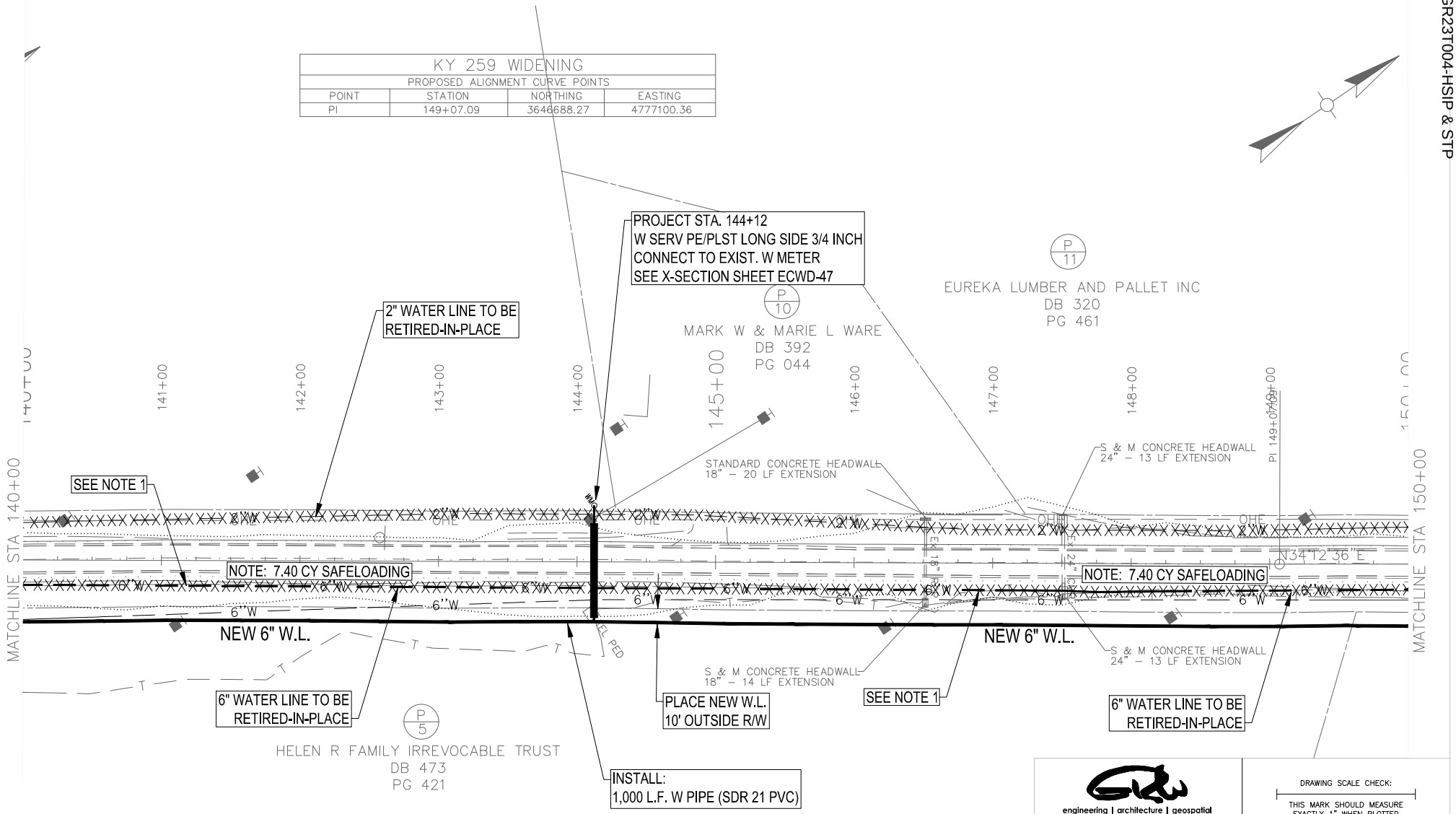
SCALE: 1"= 100' MAY 2022

COUNTY OF	ITEM NO.	SHEET NO.	
GRAYSON	4-9005	R5	ECWD-3

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

STA 130+00 TO STA 140+00

KY 259 WIDENING			
PROPOSED ALIGNMENT CURVE POINTS			
POINT	STATION	NORTHING	EASTING
PI	149+07.09	3646688.27	4777100.36



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ENTRANCE PIPE	
SHEET TOTALS	
PIPE SIZE	LF
15"	--
18"	--

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Edmonson County Water District

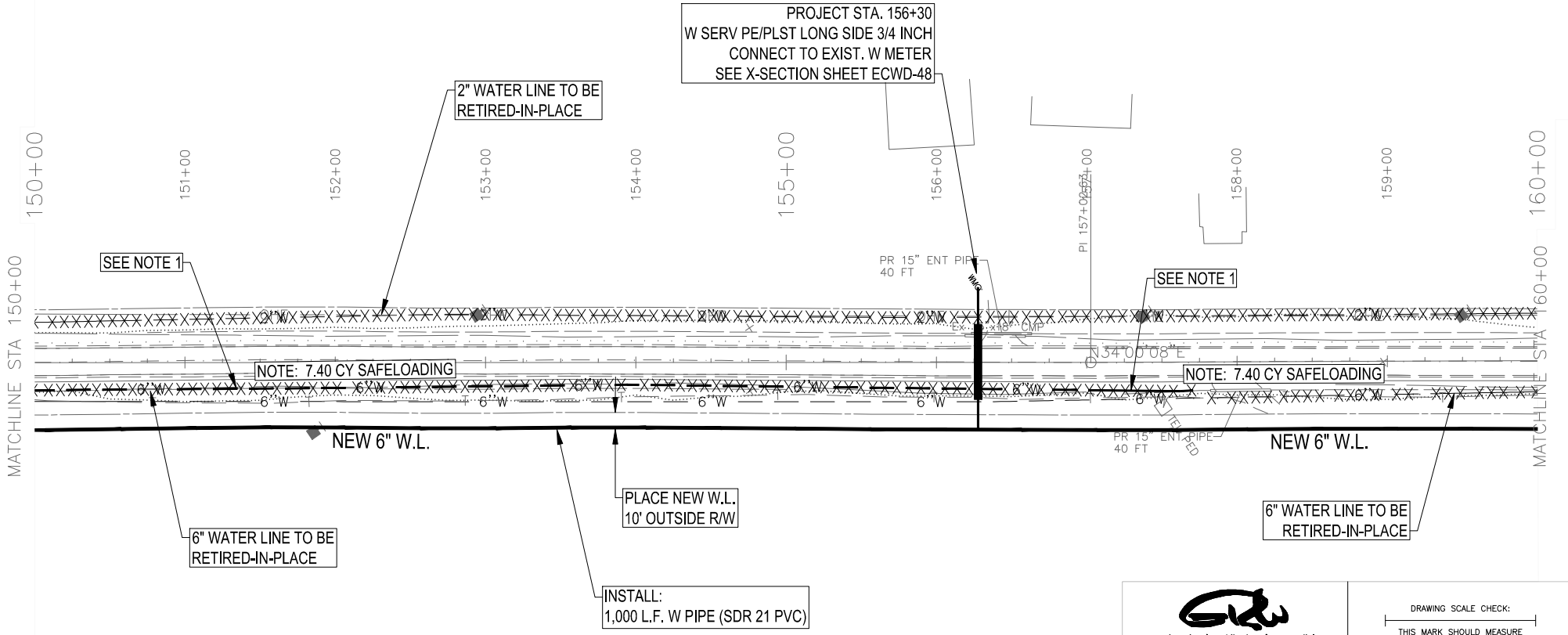
SCALE: 1"= 100' MAY 2022

COUNTY OF	ITEM NO.	SHEET NO.	
GRAYSON	4-9005	R6	ECWD-4

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

STA 140+00 TO STA 150+00

KY 259 WIDENING			
PROPOSED ALIGNMENT CURVE POINTS			
POINT	STATION	NORTHING	EASTING
PI	157+02.63	3647346.17	4777547.63



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ENTRANCE PIPE	
SHEET TOTALS	
PIPE SIZE	LF
15"	80
18"	--

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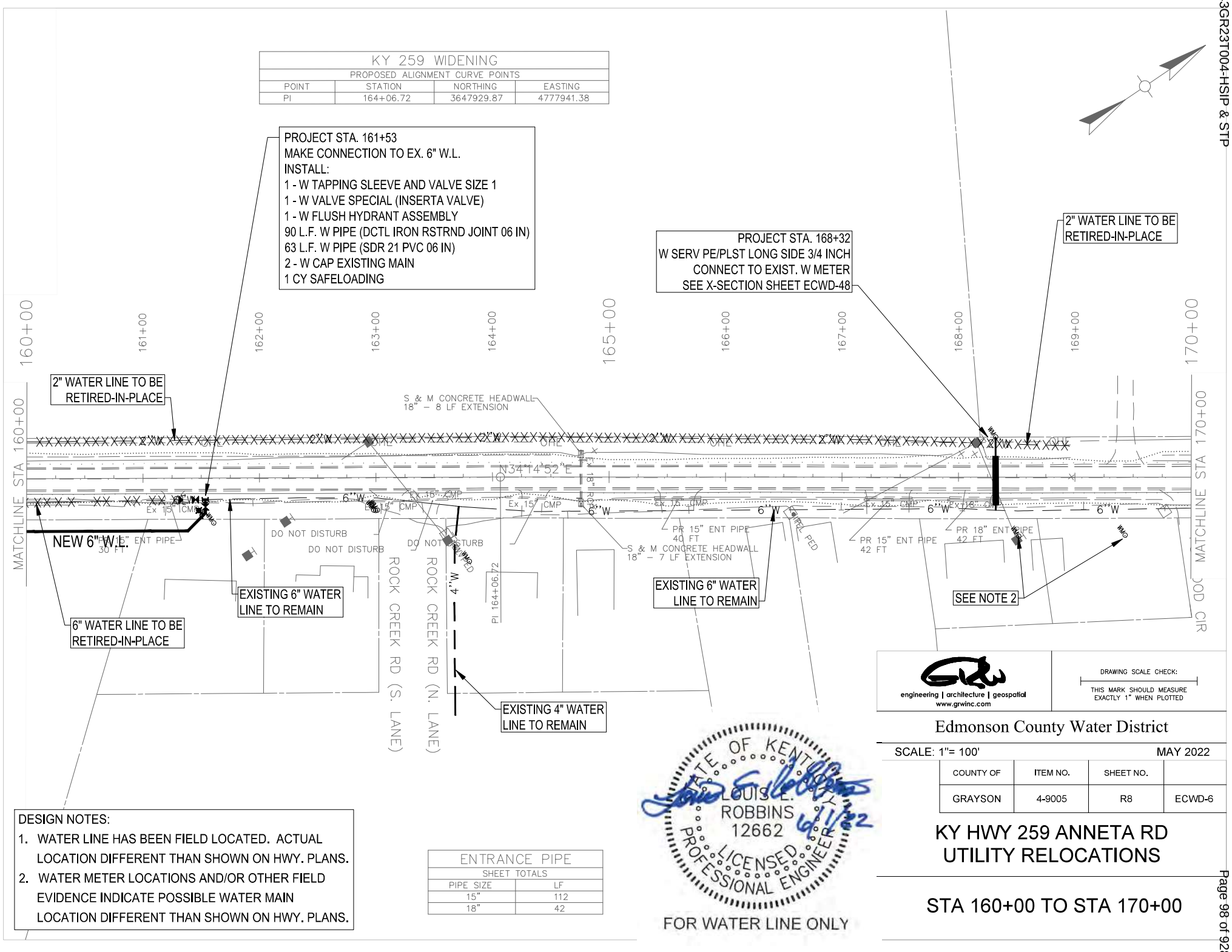
COUNTY OF	ITEM NO.	SHEET NO.	
GRAYSON	4-9005	R7	ECWD-5

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

STA 150+00 TO STA 160+00

KY 259 WIDENING			
PROPOSED ALIGNMENT CURVE POINTS			
POINT	STATION	NORTHING	EASTING
PI	164+06.72	3647929.87	4777941.38



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ENTRANCE PIPE	
SHEET TOTALS	
PIPE SIZE	LF
15"	112
18"	42

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Edmonson County Water District

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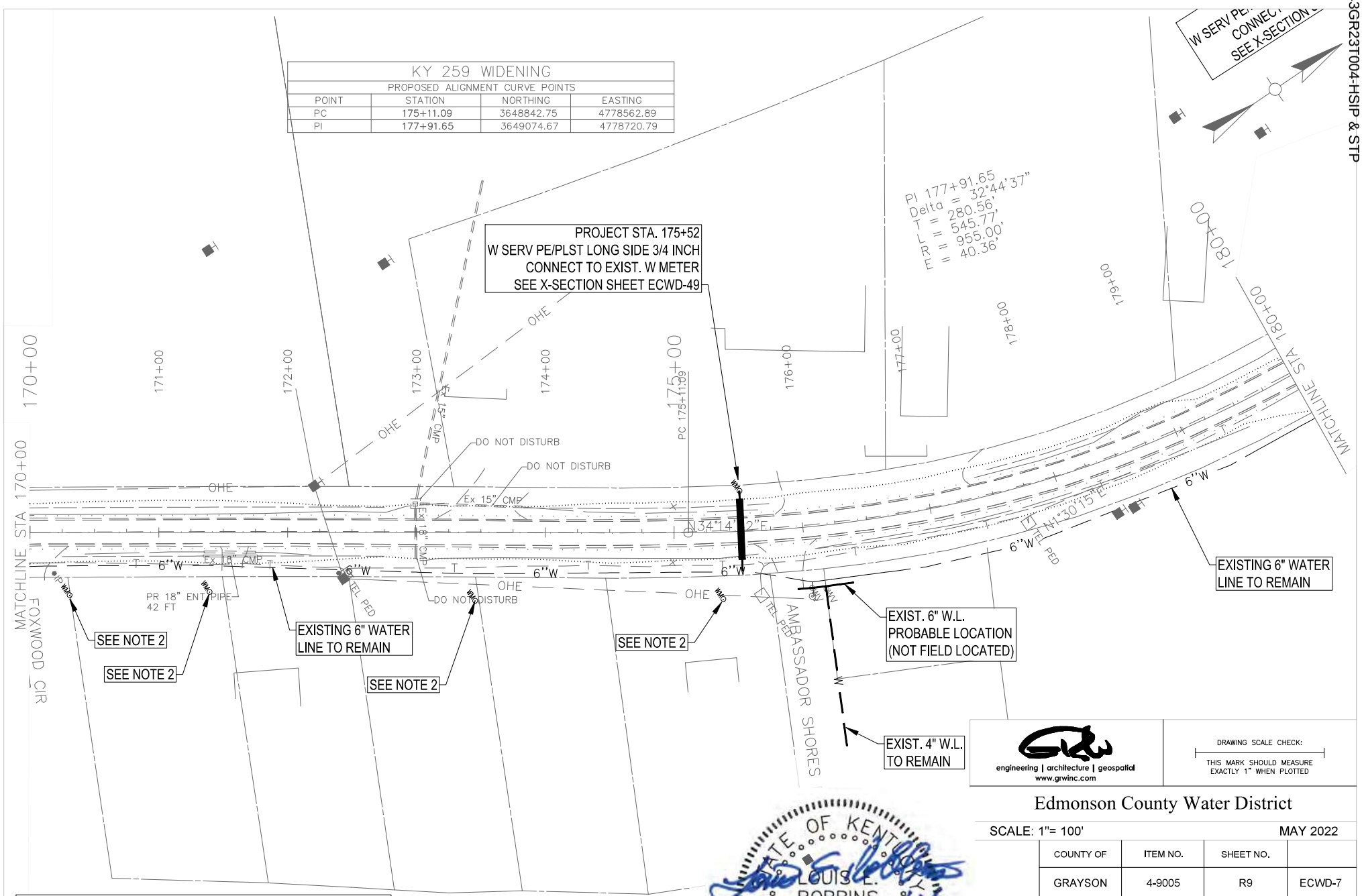
COUNTY OF	ITEM NO.	SHEET NO.	
GRAYSON	4-9005	R8	ECWD-6

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

STA 160+00 TO STA 170+00

KY 259 WIDENING			
PROPOSED ALIGNMENT CURVE POINTS			
POINT	STATION	NORTHING	EASTING
PC	175+11.09	3648842.75	4778562.89
PI	177+91.65	3649074.67	4778720.79



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ENTRANCE PIPE	
SHEET TOTALS	
PIPE SIZE	LF
15"	--
18"	42

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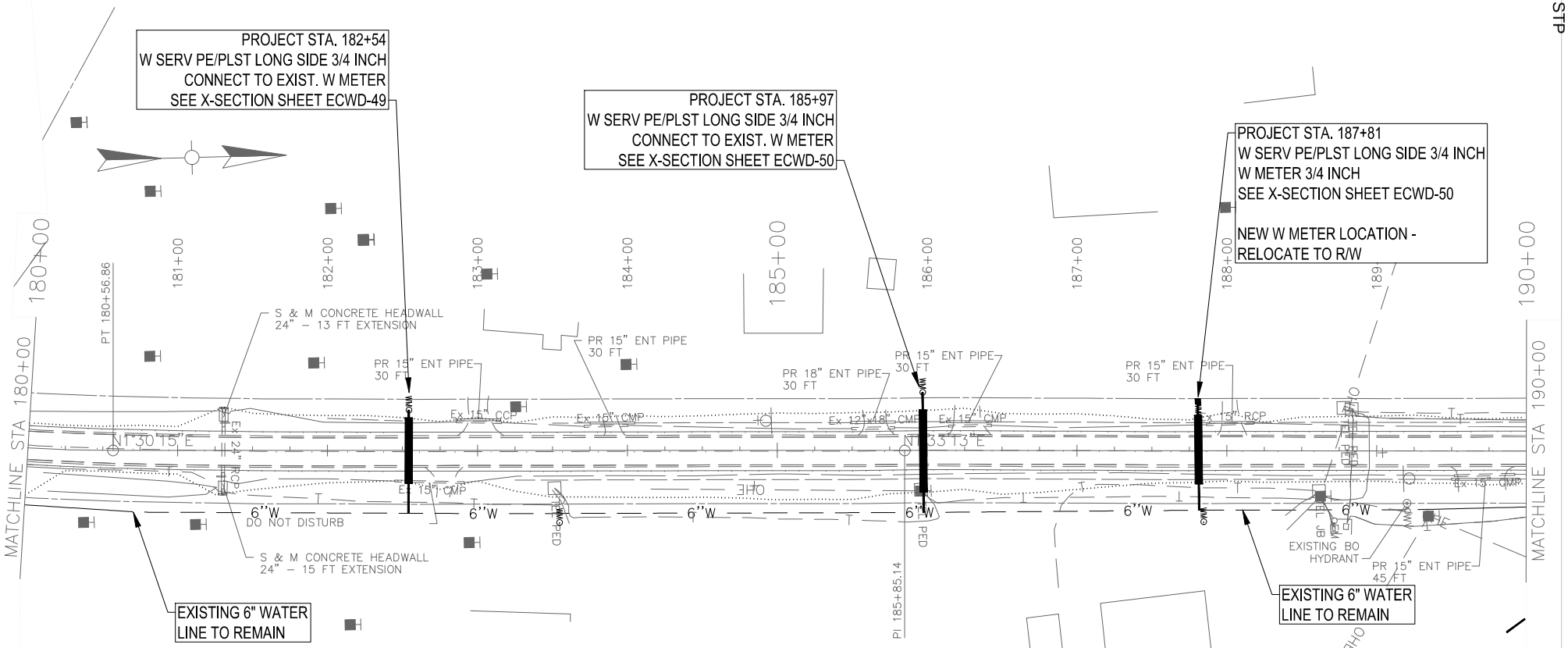
COUNTY OF	ITEM NO.	SHEET NO.	
GRAYSON	4-9005	R9	ECWD-7

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

STA 170+00 TO STA 180+00

KY 259 WIDENING			
PROPOSED ALIGNMENT CURVE POINTS			
POINT	STATION	NORTHING	EASTING
PT	180+56.86	3649355.13	4778728.15
PI	185+85.14	3649883.23	4778742.02



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ENTRANCE PIPE	
SHEET TOTALS	
PIPE SIZE	LF
15"	165
18"	30

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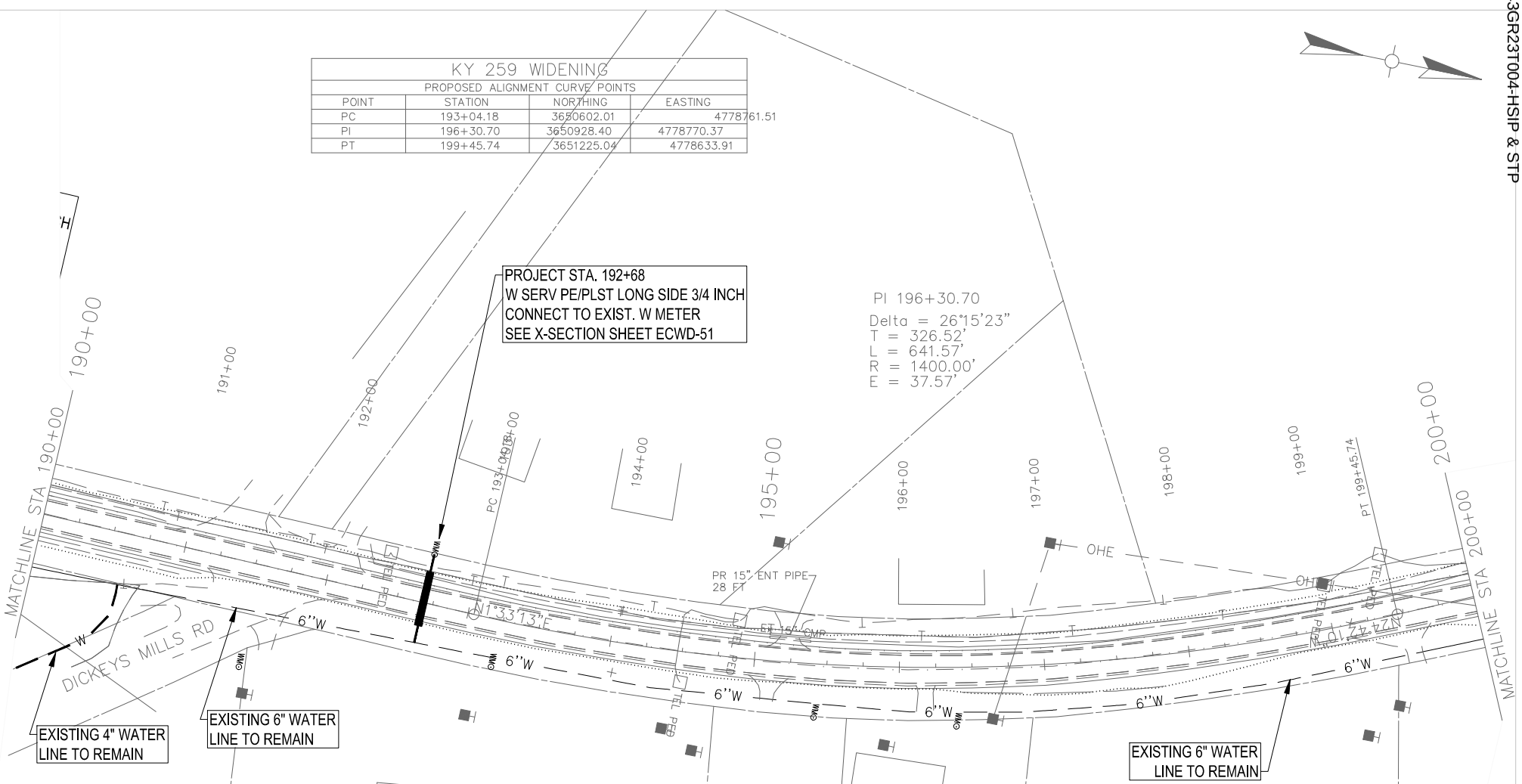
COUNTY OF	ITEM NO.	SHEET NO.	
GRAYSON	4-9005	R10	ECWD-8

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

STA 180+00 TO STA 190+00

KY 259 WIDENING			
PROPOSED ALIGNMENT CURVE POINTS			
POINT	STATION	NORTHING	EASTING
PC	193+04.18	3650602.01	4778761.51
PI	196+30.70	3650928.40	4778770.37
PT	199+45.74	3651225.04	4778633.91



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ENTRANCE PIPE	
SHEET TOTALS	
PIPE SIZE	LF
15"	28
18"	---

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Edmonson County Water District

SCALE: 1"= 100' MAY 2022

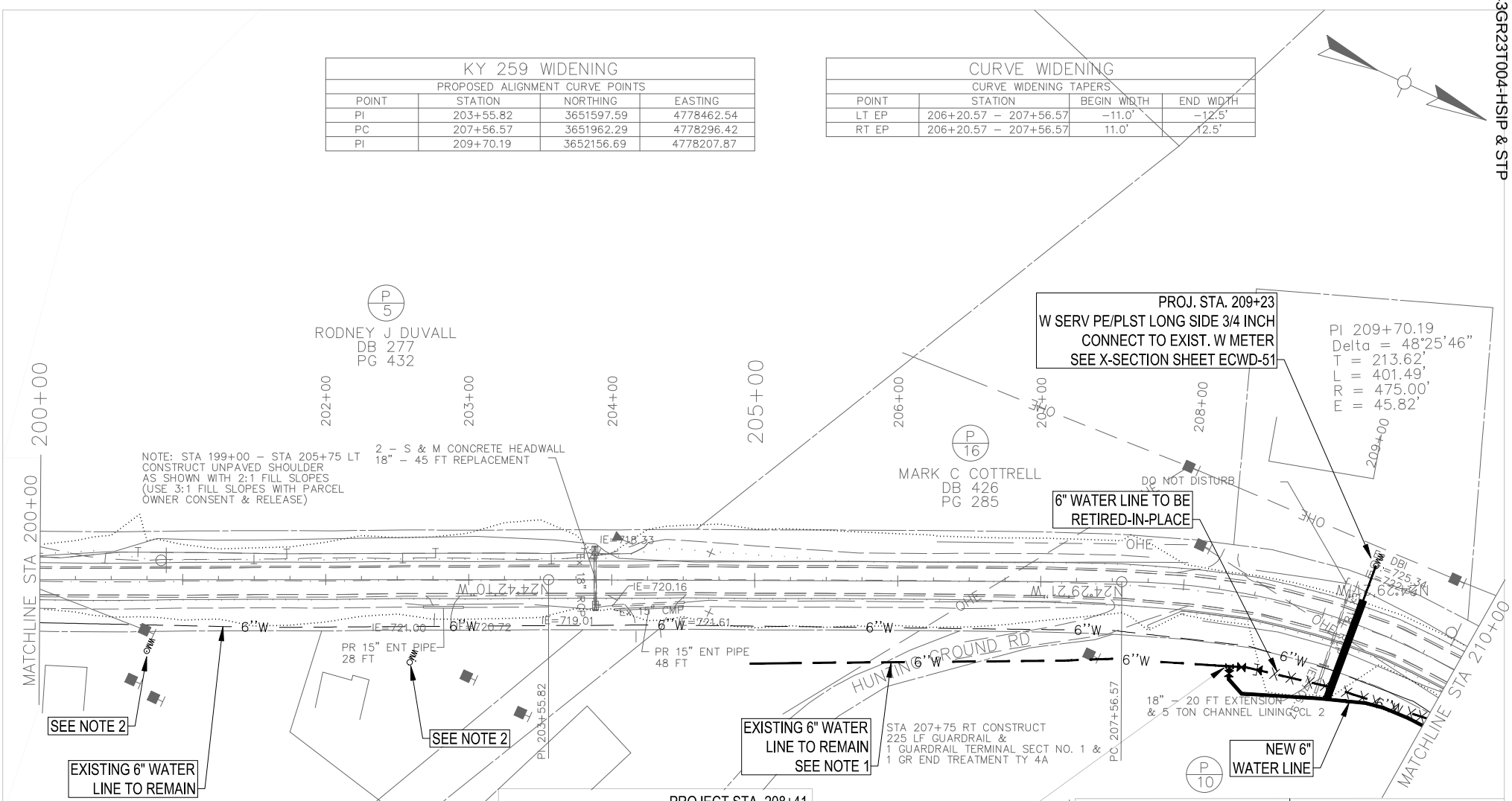
COUNTY OF	ITEM NO.	SHEET NO.	
GRAYSON	4-9005	R11	ECWD-9

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

STA 190+00 TO STA 200+00

KY 259 WIDENING			
PROPOSED ALIGNMENT CURVE POINTS			
POINT	STATION	NORTHING	EASTING
PI	203+55.82	3651597.59	4778462.54
PC	207+56.57	3651962.29	4778296.42
PI	209+70.19	3652156.69	4778207.87

CURVE WIDENING			
CURVE WIDENING TAPERS			
POINT	STATION	BEGIN WIDTH	END WIDTH
LT EP	206+20.57 – 207+56.57	–11.0'	–12.5'
RT EP	206+20.57 – 207+56.57	11.0'	12.5'



PROJECT STA. 208+41
MAKE CONNECTION TO EX. 6" W.L.
INSTALL:
1 - W TAPPING SLEEVE AND VALVE SIZE 1
1 - W VALVE SPECIAL (INSERTA VALVE)
90 L.F. W PIPE (DCTL IRON RSTRND JOINT 06 IN)
69 L.F. W PIPE (SDR 21 PVC 06 IN)
1 - W CAP EXISTING MAIN
1 CY SAFELOADING

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ENTRANCE PIPE	
SHEET TOTALS	
PIPE SIZE	LF
15"	76
18"	--

COMMONWEALTH OF KENTUCKY
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COUNTY OF	ITEM NO.	SHEET NO.	
GRAYSON	4-9005	R12	ECWD-10

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

STA 200+00 TO STA 210+00

KY 259 WIDENING			
PROPOSED ALIGNMENT CURVE POINTS			
POINT	STATION	NORTHING	EASTING
PT	211+58.07	3652351.93	4778294.55
PC	213+52.91	3652530.01	4778373.61
PI	216+84.03	3652832.65	4778507.98

CURVE WIDENING			
CURVE WIDENING TAPERS			
POINT	STATION	BEGIN WIDTH	END WIDTH
LT EP	211+58.07 – 212+94.07	–12.5'	–11.0'
RT EP	211+58.07 – 212+94.07	12.5'	11.0'

PROJECT STA. 219+82
MAKE CONNECTION TO EX. 6" W.L.
INSTALL:
1 - W TAPPING SLEEVE AND VALVE SIZE 1
1 - W VALVE SPECIAL (INSERTA VALVE)
1 - W FLUSH HYDRANT ASSEMBLY
90 L.F. W PIPE (DCTL IRON RSTRND JOINT 06 IN)
892 L.F. W PIPE (SDR 21 PVC 06 IN)
1 - W CAP EXISTING MAIN
7 CY SAFELOADING

PI 216+
Delta =
T = 331.13'
L = 654.06'
R = 1700.00'
E = 31.95'

6" WATER LINE TO BE RETIRED-IN-PLACE

6" WATER LINE TO BE RETIRED-IN-PLACE

SEE NOTE 1

SEE NOTE 1

PC 213+52.91

PT 211+58.07

MATCHLINE STA 210+00

MATCHLINE STA 220+00

211+00 212+00 213+00 214+00 215+00 216+00 217+00 218+00 219+00 220+00

OHE

N23°56'24"E

S & M CONCRETE HEADWALL
18" – 19 LF EXTENSION

PROJECT STA. 219+21
W SERV PE/PLSTSHORT SIDE 3/4 INCH
W METER 3/4 INCH

NOTE: STA 216+50 – STA 222+00 LT
CONSTRUCT UNPAVED SHOULDER
AS SHOWN WITH 2:1 FILL SLOPES
(USE 3:1 FILL SLOPES WITH PARCEL
OWNER CONSENT & RELEASE)

IE=729.81

IE=730.25

IE=729.86

IE=730.92

Ex 15" CMP

Ex 15" CMP

NEW 6" W.L.

PLACE NEW W.L.
10' OUTSIDE R/W

S & M CONCRETE HEADWALL
18" – 8 LF EXTENSION

PR 15" ENT PIPE
30 FT

PR 15" ENT PIPE
30 FT

NEW 6" W.L.

PLACE NEW W.L.
10' OUTSIDE R/W

P
5

VANMETER BOAT AND RV STORAGE
DB 287
PG 048

PROJECT STA. 216+40
W SERV PE/PLSTSHORT SIDE 3/4 INCH
W METER 3/4 INCH

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ENTRANCE PIPE	
SHEET TOTALS	
PIPE SIZE	LF
15"	60
18"	--

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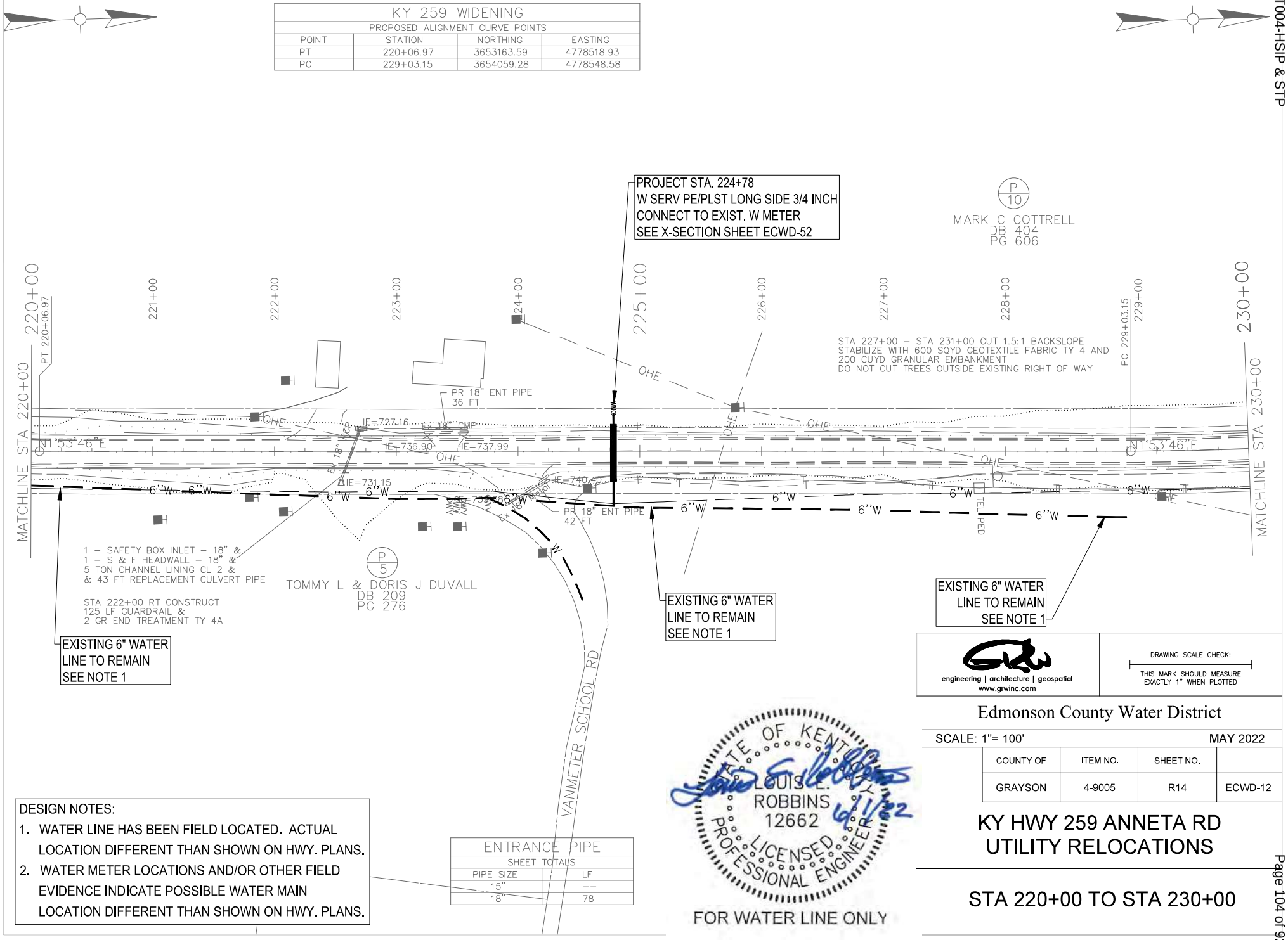
COUNTY OF	ITEM NO.	SHEET NO.	
GRAYSON	4-9005	R13	ECWD-11

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

STA 210+00 TO STA 220+00

KY 259 WIDENING			
PROPOSED ALIGNMENT CURVE POINTS			
POINT	STATION	NORTHING	EASTING
PT	220+06.97	3653163.59	4778518.93
PC	229+03.15	3654059.28	4778548.58



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ENTRANCE PIPE	
SHEET TOTALS	
PIPE SIZE	LF
15"	--
18"	78

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COUNTY OF	ITEM NO.	SHEET NO.	
GRAYSON	4-9005	R14	ECWD-12

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

STA 220+00 TO STA 230+00

KY 259 WIDENING			
PROPOSED ALIGNMENT CURVE POINTS			
POINT	STATION	NORTHING	EASTING
PI	231+30.10	3654286.11	4778556.09
PT	233+55.75	3654510.45	4778521.81

PI 231+30.10
Delta = 10°35'05"
T = 226.95'
L = 452.60'
R = 2450.00'
E = 10.49'

P 5
MARK C COTTRELL
DB 404
PG 606

230+00 231+00 232+00 233+00 234+00 235+00 236+00 237+00 238+00 239+00 240+00

MATCHLINE STA 230+00

MATCHLINE STA 240+00

PT 233+55.75

PROJECT STA. 239+03
W SERV PE/PLST LONG SIDE 3/4 INCH
CONNECT TO EXIST. W METER
SEE X-SECTION SHEET ECWD-52

EXISTING 6" WATER LINE TO REMAIN

SEE NOTE 2

SEE NOTE 2

EXISTING 6" WATER LINE TO REMAIN

POSSIBLE LOCATION OF EXISTING W.L. (NOT FIELD LOCATED)

OHE

6"W

PR/15" ENT PIPE 30 FT

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ENTRANCE PIPE	
SHEET TOTALS	
PIPE SIZE	LF
15"	30
18"	--

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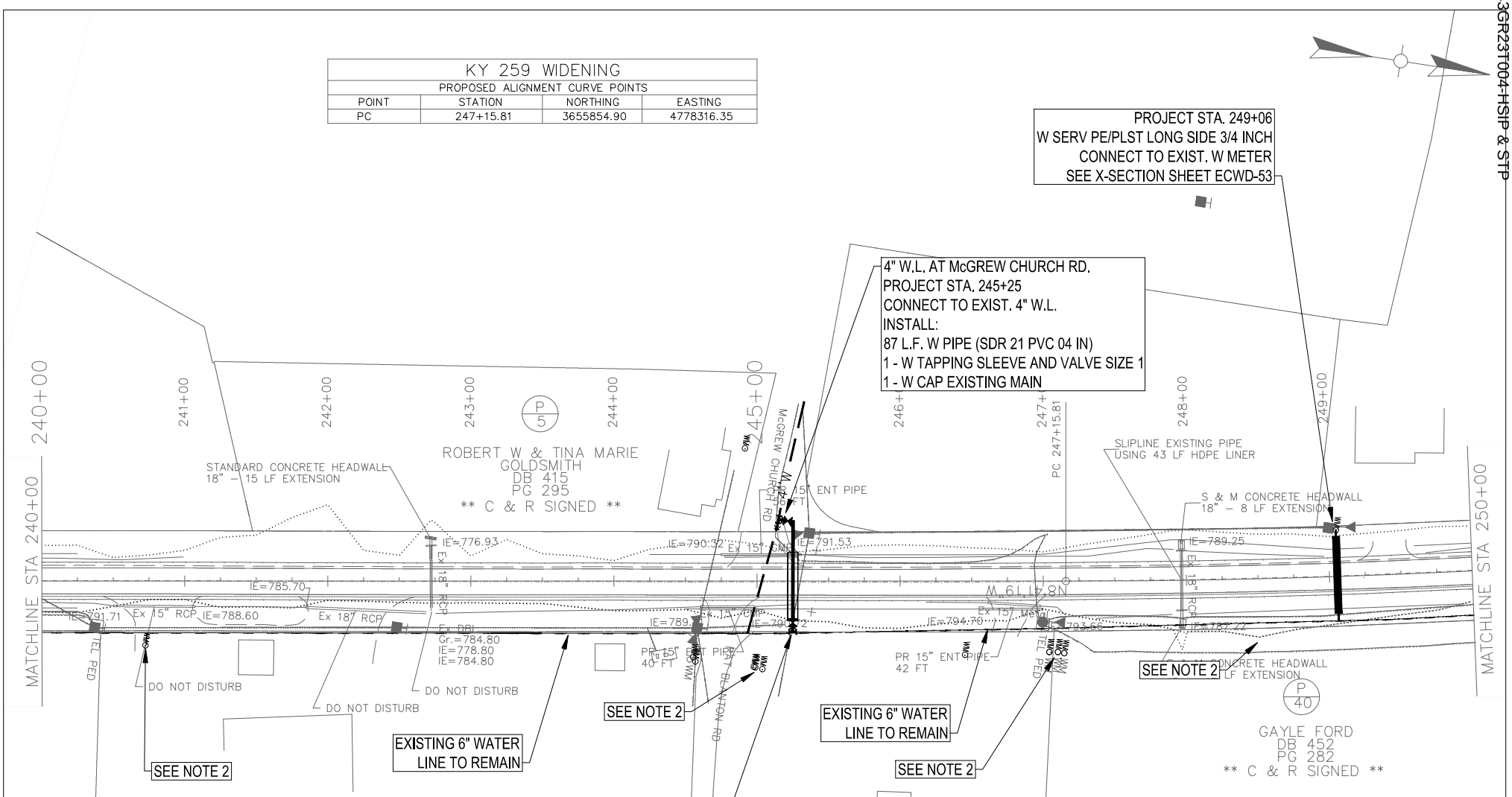
COUNTY OF	ITEM NO.	SHEET NO.	
GRAYSON	4-9005	R15	ECWD-13

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

STA 230+00 TO STA 240+00

KY 259 WIDENING			
PROPOSED ALIGNMENT CURVE POINTS			
POINT	STATION	NORTHING	EASTING
PC	247+15.81	3655854.90	4778316.35



DESIGN NOTES:

1. WATER LINE HAS BEEN FIELD LOCATED. ACTUAL LOCATION DIFFERENT THAN SHOWN ON HWY. PLANS.
2. WATER METER LOCATIONS AND/OR OTHER FIELD EVIDENCE INDICATE POSSIBLE WATER MAIN LOCATION DIFFERENT THAN SHOWN ON HWY. PLANS.

ENTRANCE PIPE	
SHEET TOTALS	
PIPE SIZE	LF
15"	138
18"	--

FOR WATER LINE ONLY

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DRAWING SCALE CHECK:
THIS MARK SHOULD MEASURE EXACTLY 1" WHEN PLOTTED

Edmonson County Water District

SCALE: 1"= 100' MAY 2022

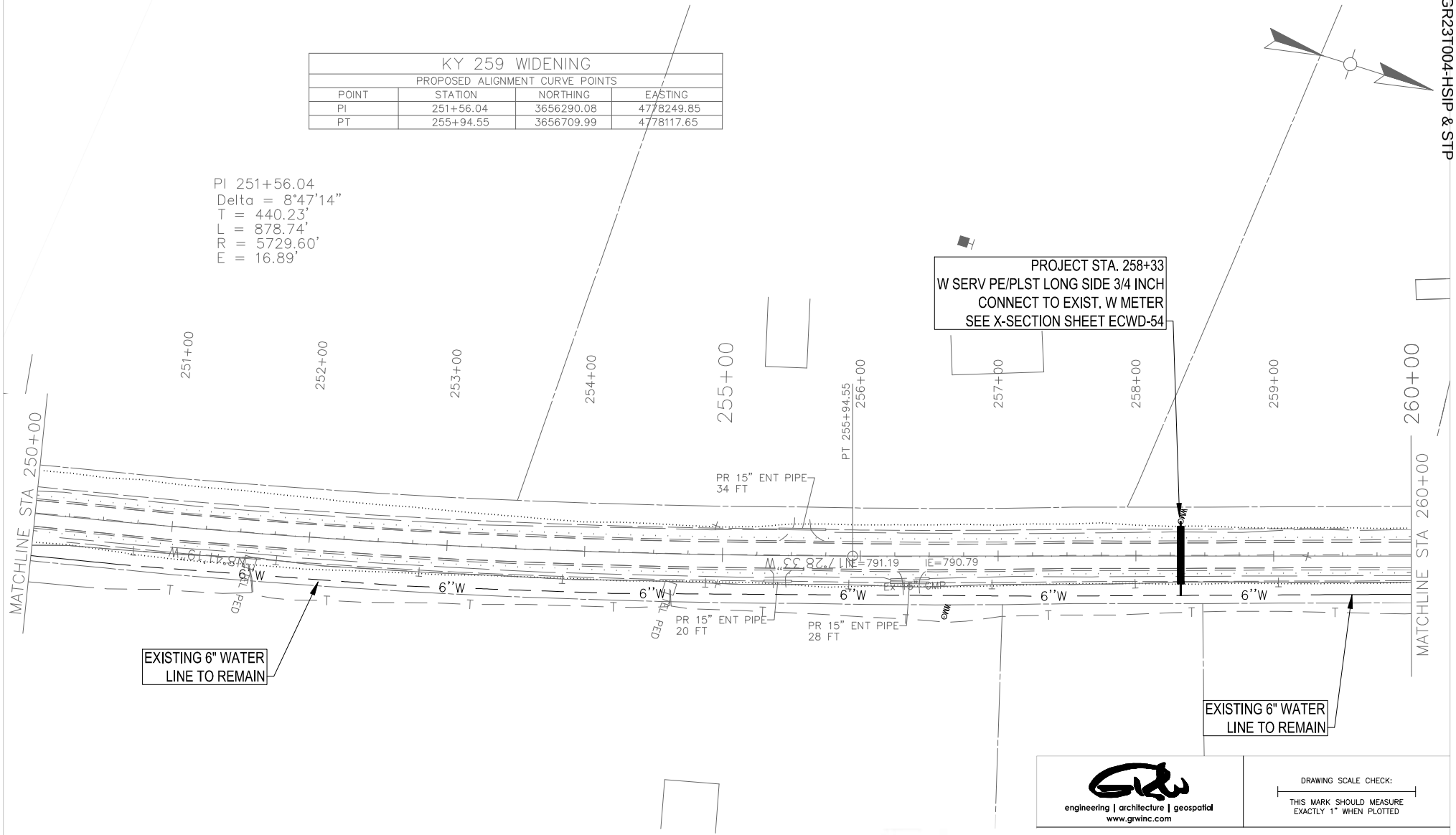
COUNTY OF	ITEM NO.	SHEET NO.	
GRAYSON	4-9005	R16	ECWD-14

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

STA 240+00 TO STA 250+00

KY 259 WIDENING			
PROPOSED ALIGNMENT CURVE POINTS			
POINT	STATION	NORTHING	EASTING
PI	251+56.04	3656290.08	4778249.85
PT	255+94.55	3656709.99	4778117.65

PI 251+56.04
Delta = 8°47'14"
T = 440.23'
L = 878.74'
R = 5729.60'
E = 16.89'



DESIGN NOTES:
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2. WATER METER LOCATIONS AND/OR OTHER FIELD EVIDENCE INDICATE POSSIBLE WATER MAIN LOCATION DIFFERENT THAN SHOWN ON HWY. PLANS.

ENTRANCE PIPE	
SHEET TOTALS	
PIPE SIZE	LF
15"	82
18"	--

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DRAWING SCALE CHECK:
THIS MARK SHOULD MEASURE EXACTLY 1" WHEN PLOTTED

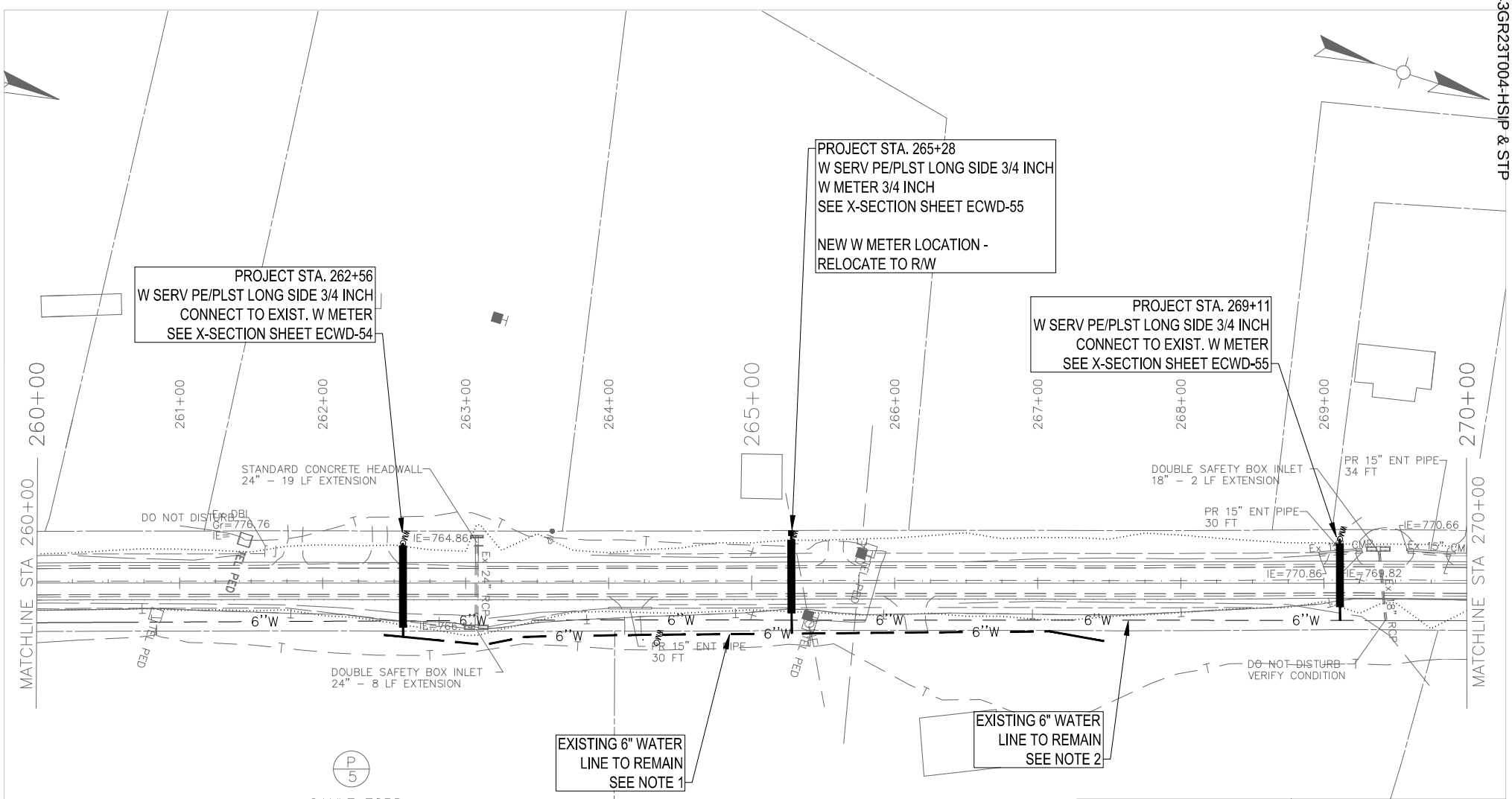
Edmonson County Water District

SCALE: 1"= 100' MAY 2022

COUNTY OF	ITEM NO.	SHEET NO.	
GRAYSON	4-9005	R17	ECWD-15

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

STA 250+00 TO STA 260+00



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ENTRANCE PIPE	
SHEET TOTALS	
PIPE SIZE	LF
15"	64
18"	--

STATE OF KENTUCKY
LOUIS E. ROBBINS
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6/1/22
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DRAWING SCALE CHECK:
THIS MARK SHOULD MEASURE EXACTLY 1" WHEN PLOTTED

Edmonson County Water District

SCALE: 1"= 100' MAY 2022

COUNTY OF	ITEM NO.	SHEET NO.	
GRAYSON	4-9005	R18	ECWD-16

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

STA 260+00 TO STA 270+00

KY 259 WIDENING			
PROPOSED ALIGNMENT CURVE POINTS			
POINT	STATION	NORTHING	EASTING
TS	277+21.66	3658738.92	4777478.87

CURVE WIDENING			
CURVE WIDENING TAPERS			
POINT	STATION	BEGIN WIDTH	END WIDTH
LT EP	277+21.66 – 280+21.66	–11.0'	–12.5'
RT EP	277+21.66 – 280+21.66	11.0'	12.5'

PROJECT STA. 274+40
W SERV PE/PLST LONG SIDE 3/4 INCH
CONNECT TO EXISTING W METER
SEE X-SECTION SHEET ECWD-56

PROJECT STA. 273+80
W SERV PE/PLST LONG SIDE 3/4 INCH
W METER 3/4 INCH
SEE X-SECTION SHEET ECWD-56

NEW W METER LOCATION -
RELOCATE TO R/W

PROJECT STA. 274+78
W SERV PE/PLST LONG SIDE 3/4 INCH
CONNECT TO EXISTING W METER
SEE X-SECTION SHEET ECWD-57

PLACE SERVICE TO AVOID
PROPOSED CULVERT

L = 300.00'
Theta = 17°54'18"
LT = 201.03'
ST = 100.94'
Re = 480.00'

MICHAEL KEVIN &
MELISSA HENDERSON
DB 404
PG 520

MATCHLINE STA 270+00

270+00 271+00 272+00 273+00 274+00 275+00 276+00 277+00 278+00 279+00 280+00

TS 277+21.66

MATCHLINE STA 280+00

PR 15" ENT PIPE
36 FT

STANDARD CONCRETE HEADWALL
18" – 16 LF EXTENSION

IE=758.08

IE=768.03

IE=767.53 IE=766.90

IE=762.21

IE=767.22

PR 15" ENT PIPE
36 FT

PR 15" ENT PIPE
30 FT

S & M CONCRETE HEADWALL
18" – 10 LF EXTENSION

6"W

OHE

FEED

EXISTING 6" WATER
LINE TO REMAIN
SEE NOTE 2

EXISTING 6" WATER
LINE TO REMAIN
SEE NOTE 1

EXISTING 6" WATER
LINE TO REMAIN
SEE NOTE 2

DESIGN NOTES:
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2. WATER METER LOCATIONS AND/OR OTHER FIELD EVIDENCE INDICATE POSSIBLE WATER MAIN LOCATION DIFFERENT THAN SHOWN ON HWY. PLANS.

ENTRANCE PIPE	
SHEET TOTALS	
PIPE SIZE	LF
15"	102
18"	--

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DRAWING SCALE CHECK:
THIS MARK SHOULD MEASURE EXACTLY 1" WHEN PLOTTED

Edmonson County Water District

SCALE: 1"= 100' MAY 2022

COUNTY OF	ITEM NO.	SHEET NO.	
GRAYSON	4-9005	R19	ECWD-17

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

STA 270+00 TO STA 280+00

KY 259 WIDENING			
PROPOSED ALIGNMENT CURVE POINTS			
POINT	STATION	NORTHING	EASTING
SC	280+21.66	3659012.98	4777360.05
PI	281+87.36	3659148.08	4777264.1
PT	283+40.77	3659195.22	4777105.25
PC	284+37.84	3659222.83	4777012.19
PI	286+16.54	3659273.67	4776840.87
CS	287+88.07	3659399.13	4776713.61

CURVE WIDENING			
CURVE WIDENING TAPERS			
POINT	STATION	BEGIN WIDTH	END WIDTH
LT EP	287+88.07 – 291+13.07	–12.5'	–11.0'
RT EP	287+88.07 – 291+13.07	12.5'	11.0'

PROJECT STA. 285+55
W SERV PE/PLST LONG SIDE 3/4 INCH
W METER 3/4 INCH
SEE X-SECTION SHEET ECWD-58

NEW W METER LOCATION -
RELOCATE TO R/W

PROJECT STA. 285+78
W SERV PE/PLST LONG SIDE 3/4 INCH
W METER 3/4 INCH
SEE X-SECTION SHEET ECWD-58

NEW W METER LOCATION -
RELOCATE TO R/W

PROJECT STA. 288+00
W SERV PE/PLST LONG SIDE 3/4 INCH
CONNECT TO EXIST. W METER
SEE X-SECTION SHEET ECWD-59

PROJECT STA. 289+14
W SERV PE/PLST LONG SIDE 3/4 INCH
CONNECT TO EXIST. W METER
SEE X-SECTION SHEET ECWD-59

PI 281+21.12
Delta = 38°05'28"
T = 165.70'
L = 319.11'
R = 480.00'
E = 27.80'

L = 325.00'
Theta = 13°01'18"
LT = 217.26'
ST = 108.87'
Rb = 715.00'

MATCHLINE STA 280+00

MATCHLINE STA 290+00

SC 280+21.66

PT 283+40.77

CS 287+88.07

PC 284+37.84

2 – S & M CONCRETE HEADWALL
18" – 60 LF REPLACEMENT

PR 15" ENT PIPE
24 FT

PR 15" ENT PIPE
48 FT

2 – S & M CONCRETE HEADWALL
18" – 50 LF REPLACEMENT

EXISTING 6" WATER
LINE TO REMAIN
SEE NOTE 2

EXISTING 6" WATER
LINE TO REMAIN
SEE NOTE 1

EXISTING 6" WATER
LINE TO REMAIN

DO NOT DISTURB

DESIGN NOTES:
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ENTRANCE PIPE	
SHEET TOTALS	
PIPE SIZE	LF
15"	72
18"	--

STATE OF KENTUCKY
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6/1/22

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DRAWING SCALE CHECK:
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Edmonson County Water District

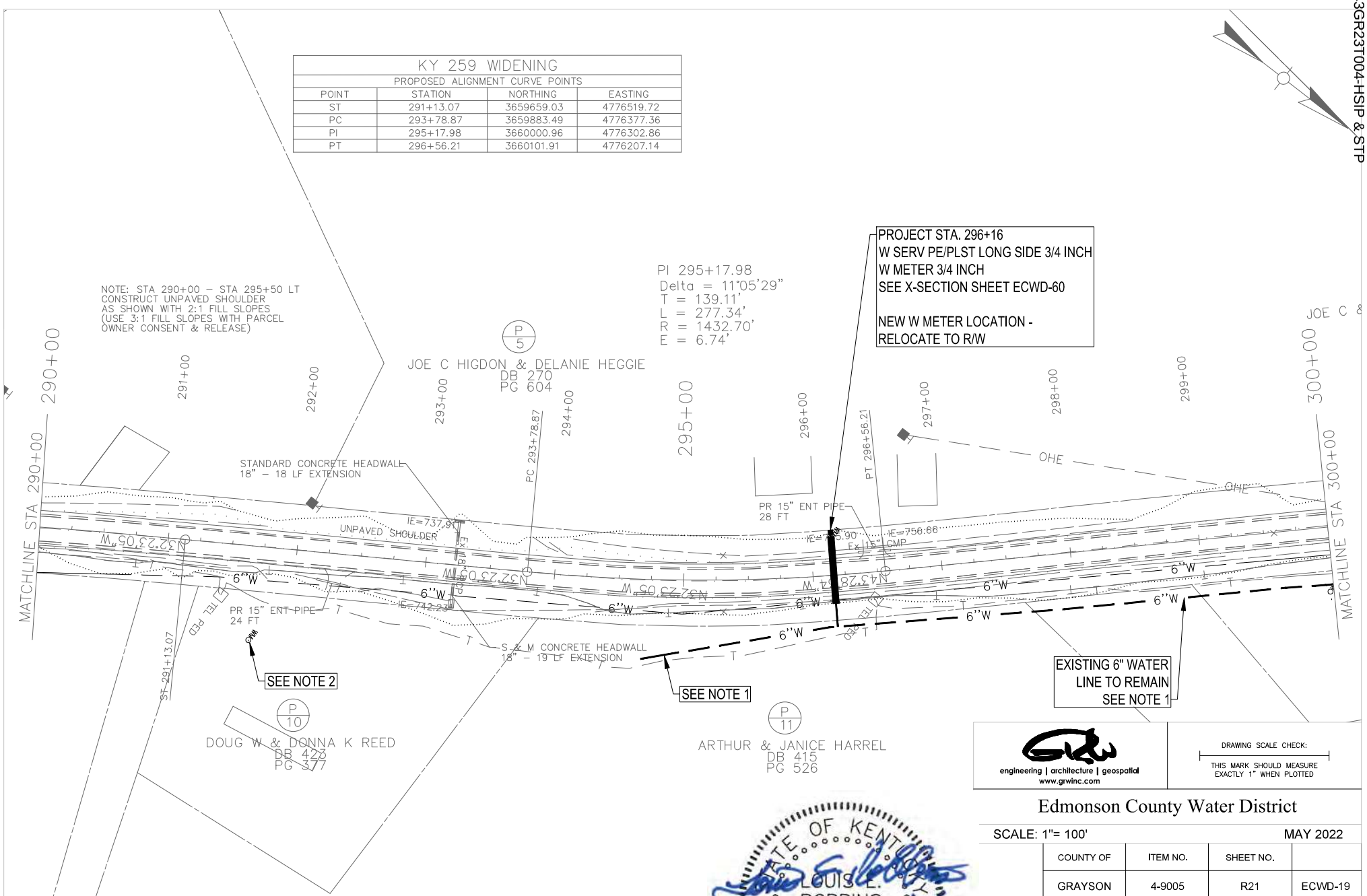
SCALE: 1"= 100' MAY 2022

COUNTY OF	ITEM NO.	SHEET NO.	
GRAYSON	4-9005	R20	ECWD-18

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

STA 280+00 TO STA 290+00

KY 259 WIDENING			
PROPOSED ALIGNMENT CURVE POINTS			
POINT	STATION	NORTHING	EASTING
ST	291+13.07	3659659.03	4776519.72
PC	293+78.87	3659883.49	4776377.36
PI	295+17.98	3660000.96	4776302.86
PT	296+56.21	3660101.91	4776207.14



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2. WATER METER LOCATIONS AND/OR OTHER FIELD EVIDENCE INDICATE POSSIBLE WATER MAIN LOCATION DIFFERENT THAN SHOWN ON HWY. PLANS.

ENTRANCE PIPE	
SHEET TOTALS	
PIPE SIZE	LF
15"	52
18"	--

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DRAWING SCALE CHECK:
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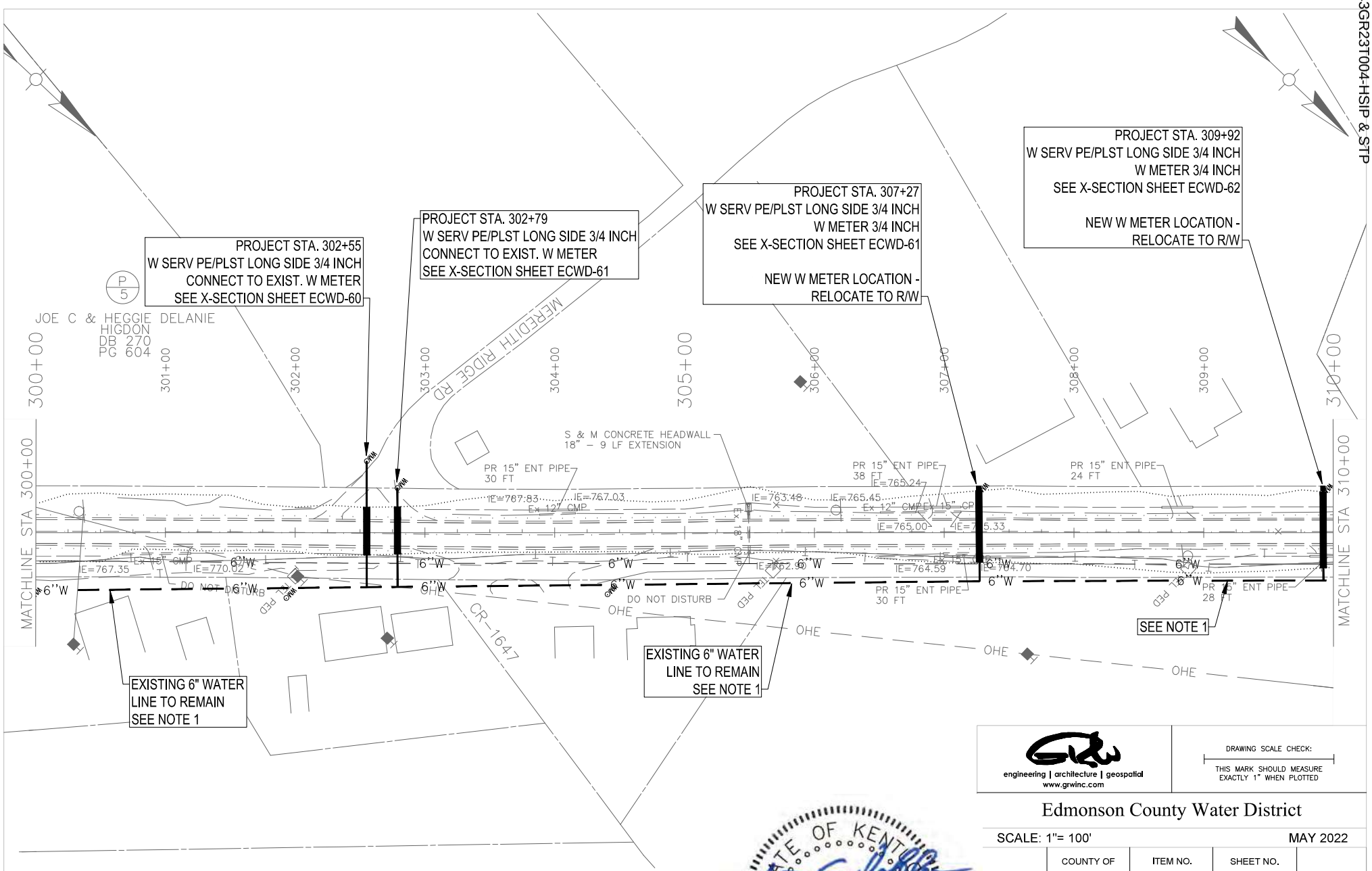
Edmonson County Water District

SCALE: 1"= 100' MAY 2022

COUNTY OF	ITEM NO.	SHEET NO.	
GRAYSON	4-9005	R21	ECWD-19

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

STA 290+00 TO STA 300+00



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ENTRANCE PIPE	
SHEET TOTALS	
PIPE SIZE	LF
15"	150
18"	--

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Edmonson County Water District

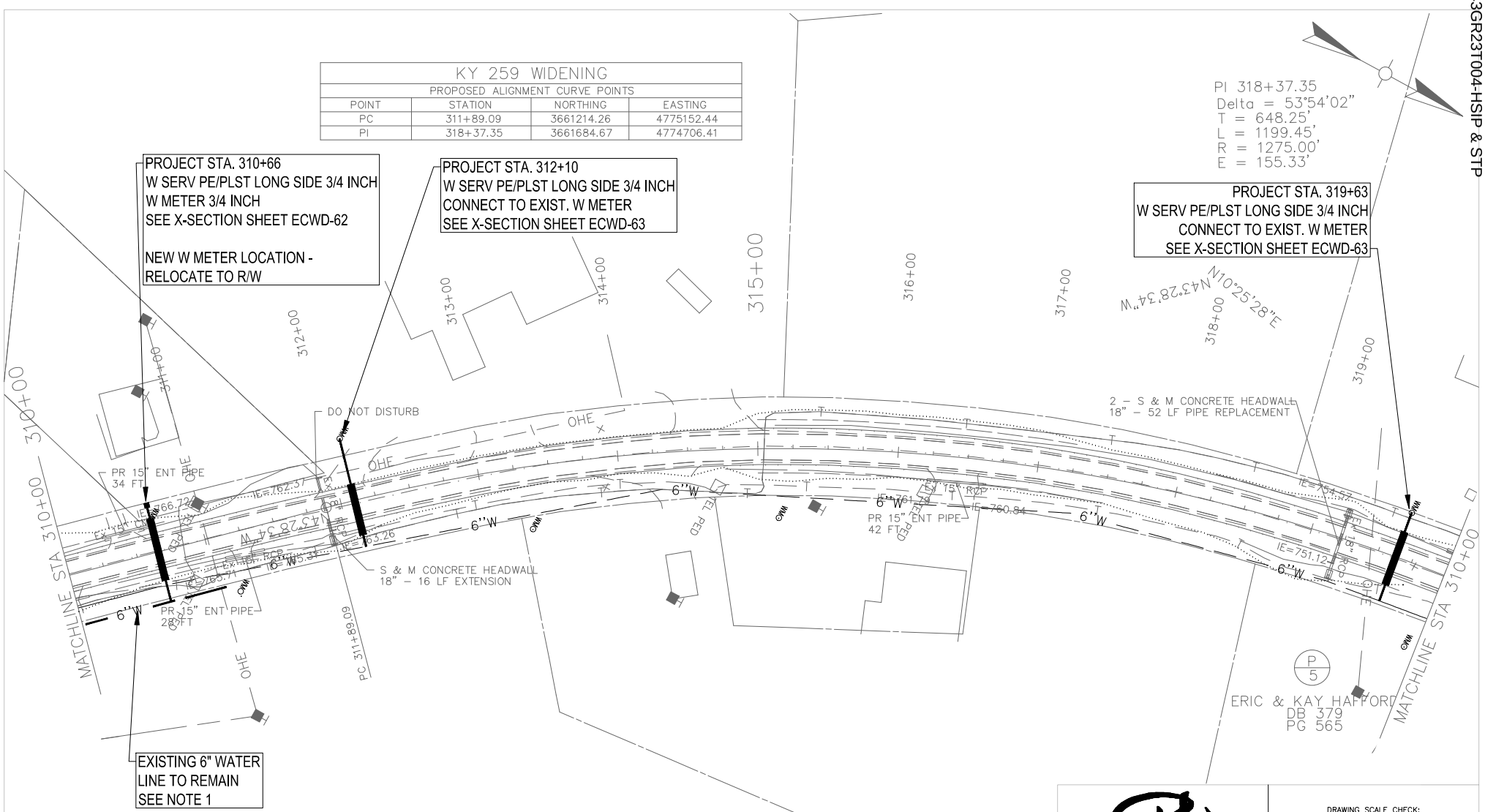
SCALE: 1"= 100' MAY 2022

COUNTY OF	ITEM NO.	SHEET NO.	
GRAYSON	4-9005	R22	ECWD-20

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

STA 300+00 TO STA 310+00

KY 259 WIDENING			
PROPOSED ALIGNMENT CURVE POINTS			
POINT	STATION	NORTHING	EASTING
PC	311+89.09	3661214.26	4775152.44
PI	318+37.35	3661684.67	4774706.41



ENTRANCE PIPE	
SHEET TOTALS	
PIPE SIZE	LF
15"	104
18"	--

DESIGN NOTES:

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DRAWING SCALE CHECK:
THIS MARK SHOULD MEASURE EXACTLY 1" WHEN PLOTTED

Edmonson County Water District

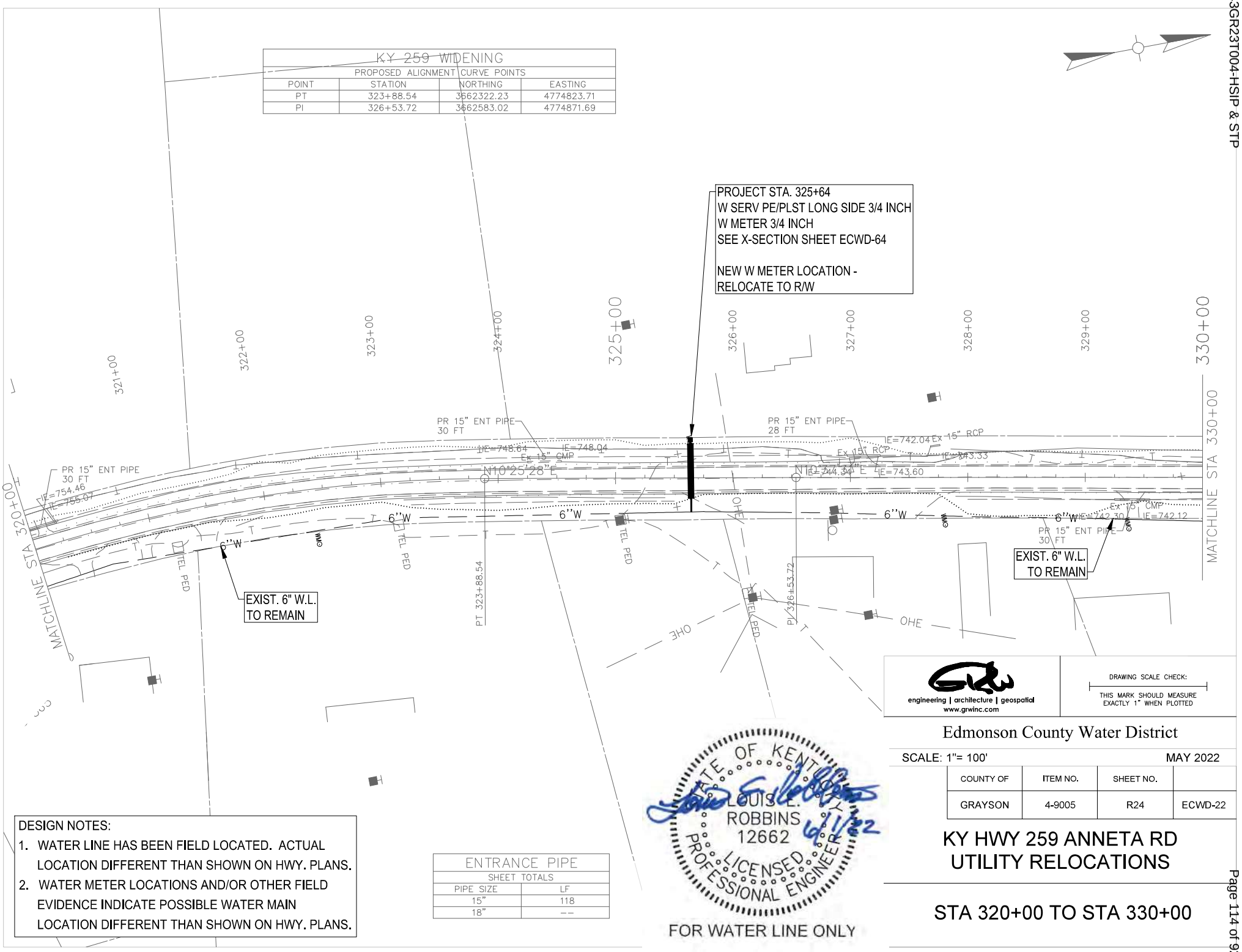
SCALE: 1"= 100' MAY 2022

COUNTY OF	ITEM NO.	SHEET NO.	
GRAYSON	4-9005	R23	ECWD-21

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

STA 310+00 TO STA 320+00

KY 259 WIDENING			
PROPOSED ALIGNMENT CURVE POINTS			
POINT	STATION	NORTHING	EASTING
PT	323+88.54	3662322.23	4774823.71
PI	326+53.72	3662583.02	4774871.69



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ENTRANCE PIPE	
SHEET TOTALS	
PIPE SIZE	LF
15"	118
18"	--

COMMONWEALTH OF KENTUCKY
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DRAWING SCALE CHECK:
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Edmonson County Water District

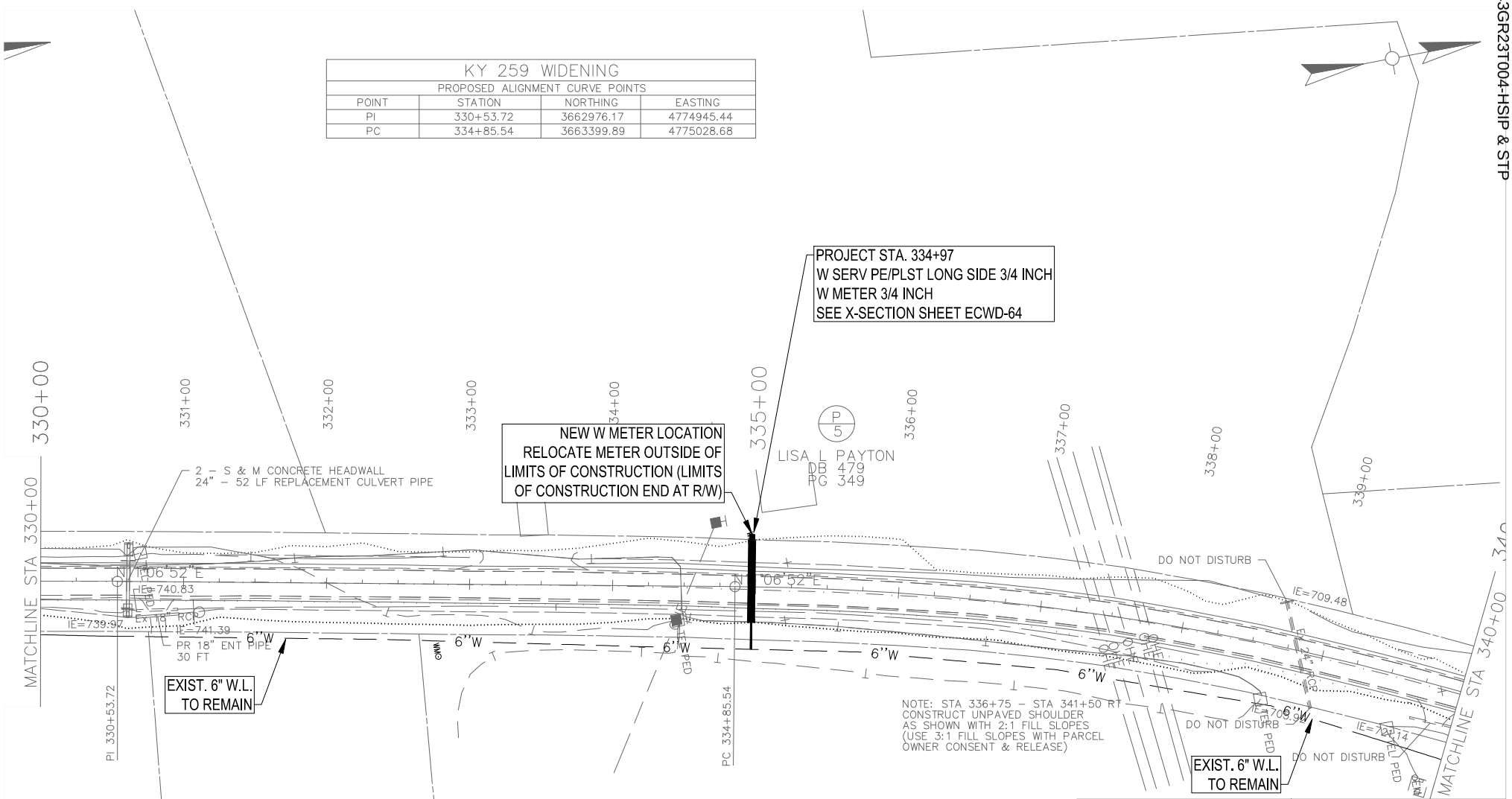
SCALE: 1"= 100' MAY 2022

COUNTY OF	ITEM NO.	SHEET NO.	
GRAYSON	4-9005	R24	ECWD-22

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

STA 320+00 TO STA 330+00

KY 259 WIDENING			
PROPOSED ALIGNMENT CURVE POINTS			
POINT	STATION	NORTHING	EASTING
PI	330+53.72	3662976.17	4774945.44
PC	334+85.54	3663399.89	4775028.68



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ENTRANCE PIPE	
SHEET TOTALS	
PIPE SIZE	LF
15"	--
18"	30

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DRAWING SCALE CHECK:
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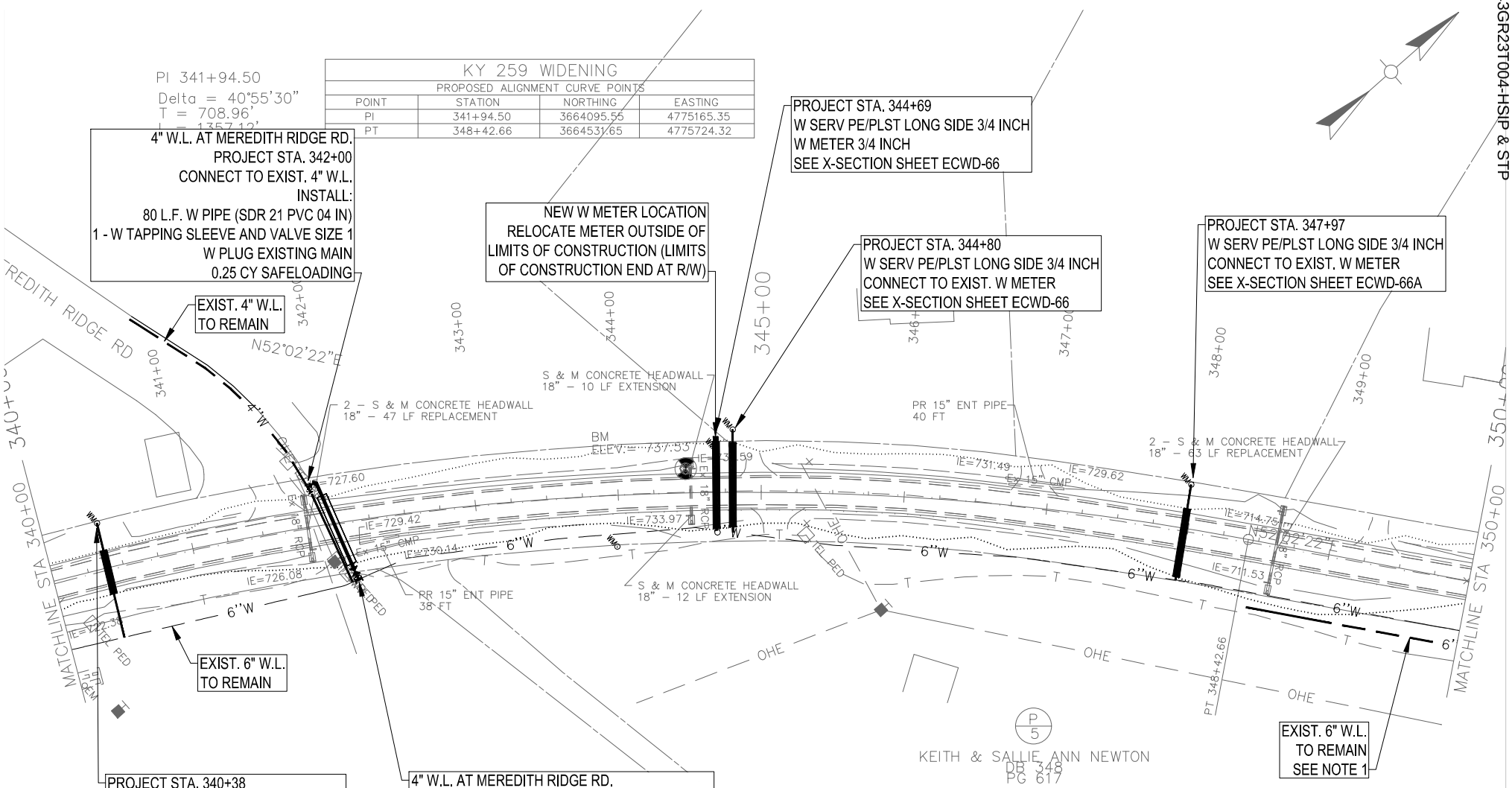
Edmonson County Water District

SCALE: 1"= 100' MAY 2022

COUNTY OF	ITEM NO.	SHEET NO.	
GRAYSON	4-9005	R25	ECWD-23

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

STA 330+00 TO STA 340+00



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ENTRANCE PIPE	
SHEET TOTALS	
PIPE SIZE	LF
15"	78
18"	--

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DRAWING SCALE CHECK:
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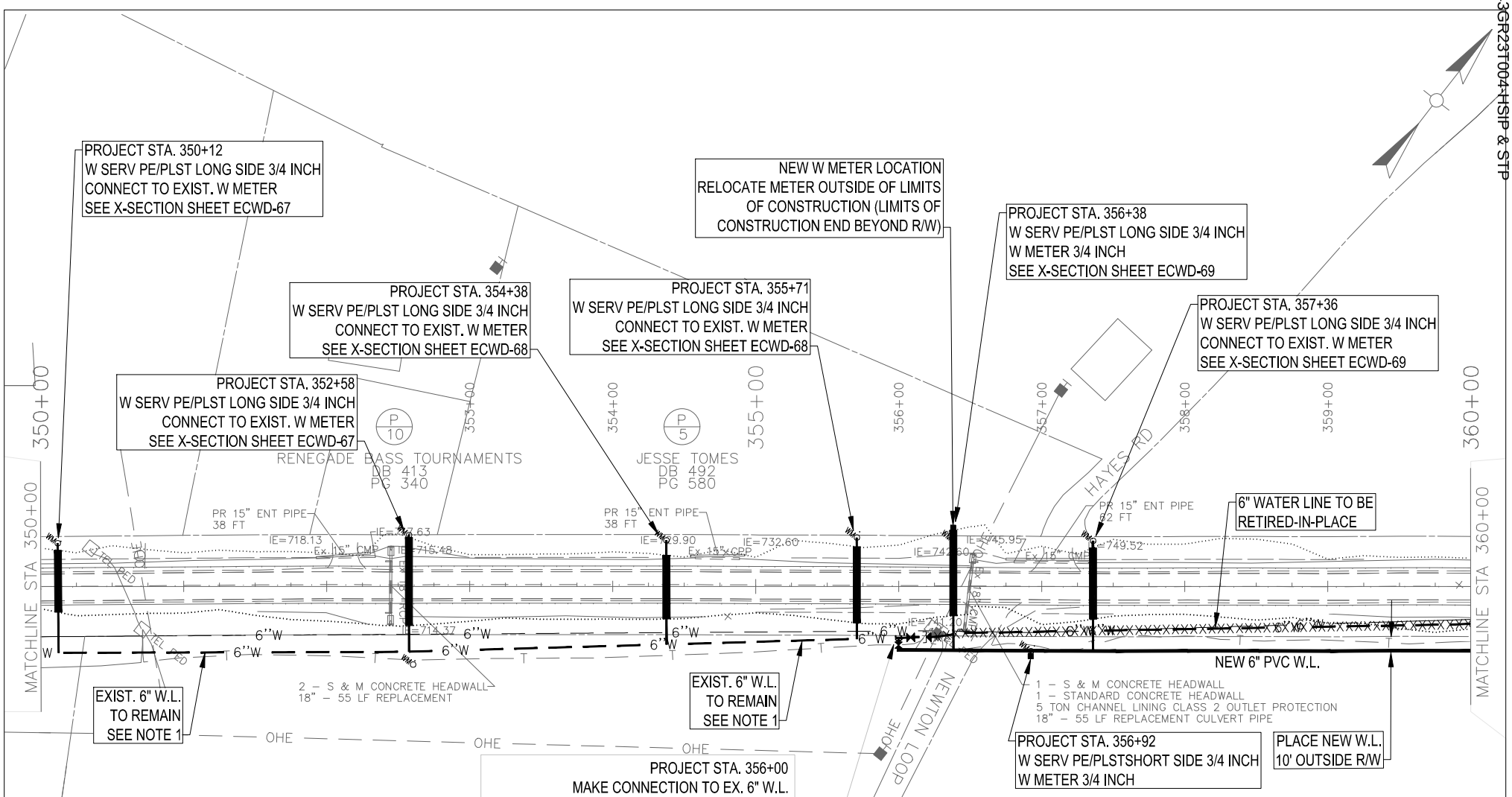
Edmonson County Water District

SCALE: 1"= 100' MAY 2022

COUNTY OF	ITEM NO.	SHEET NO.	
GRAYSON	4-9005	R26	ECWD-24

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

STA 340+00 TO STA 350+00



PROJECT STA. 356+00
MAKE CONNECTION TO EX. 6" W.L.
INSTALL:
1 - W TAPPING SLEEVE AND VALVE SIZE 1
1 - W VALVE SPECIAL (INSERTA VALVE)
90 L.F. W PIPE (DCTL IRON RSTRND JOINT 06 IN)
310 L.F. W PIPE (SDR 21 PVC 06 IN)
1 - W CAP EXISTING MAIN
3 CY SAFELOADING

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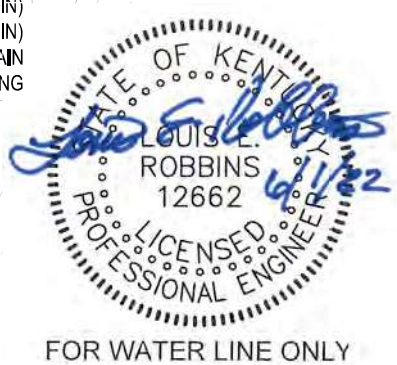
ENTRANCE PIPE	
SHEET TOTALS	
PIPE SIZE	LF
15"	138
18"	--



FOR WATER LINE ONLY

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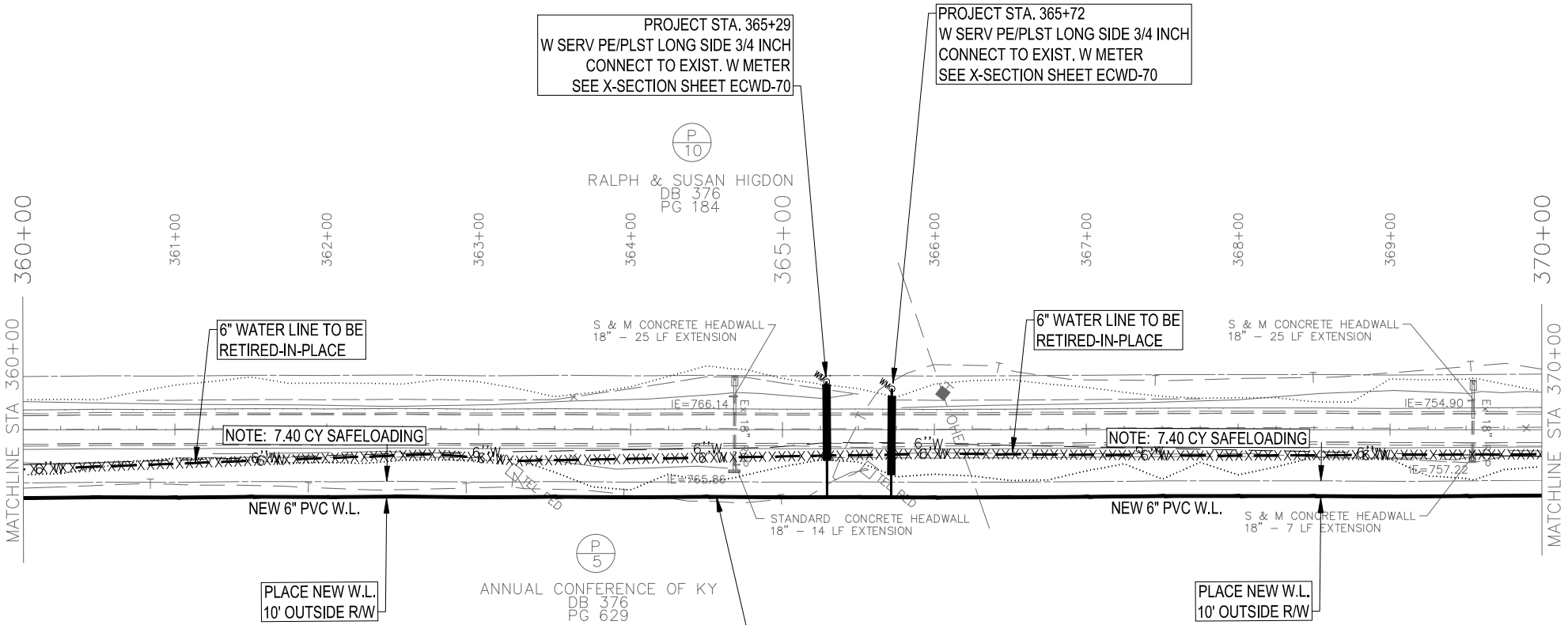
Edmonson County Water District

SCALE: 1"= 100' MAY 2022

COUNTY OF	ITEM NO.	SHEET NO.	
GRAYSON	4-9005	R27	ECWD-25

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

STA 350+00 TO STA 360+00



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ENTRANCE PIPE	
SHEET TOTALS	
PIPE SIZE	LF
15"	--
18"	--

FOR WATER LINE ONLY

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DRAWING SCALE CHECK:
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Edmonson County Water District

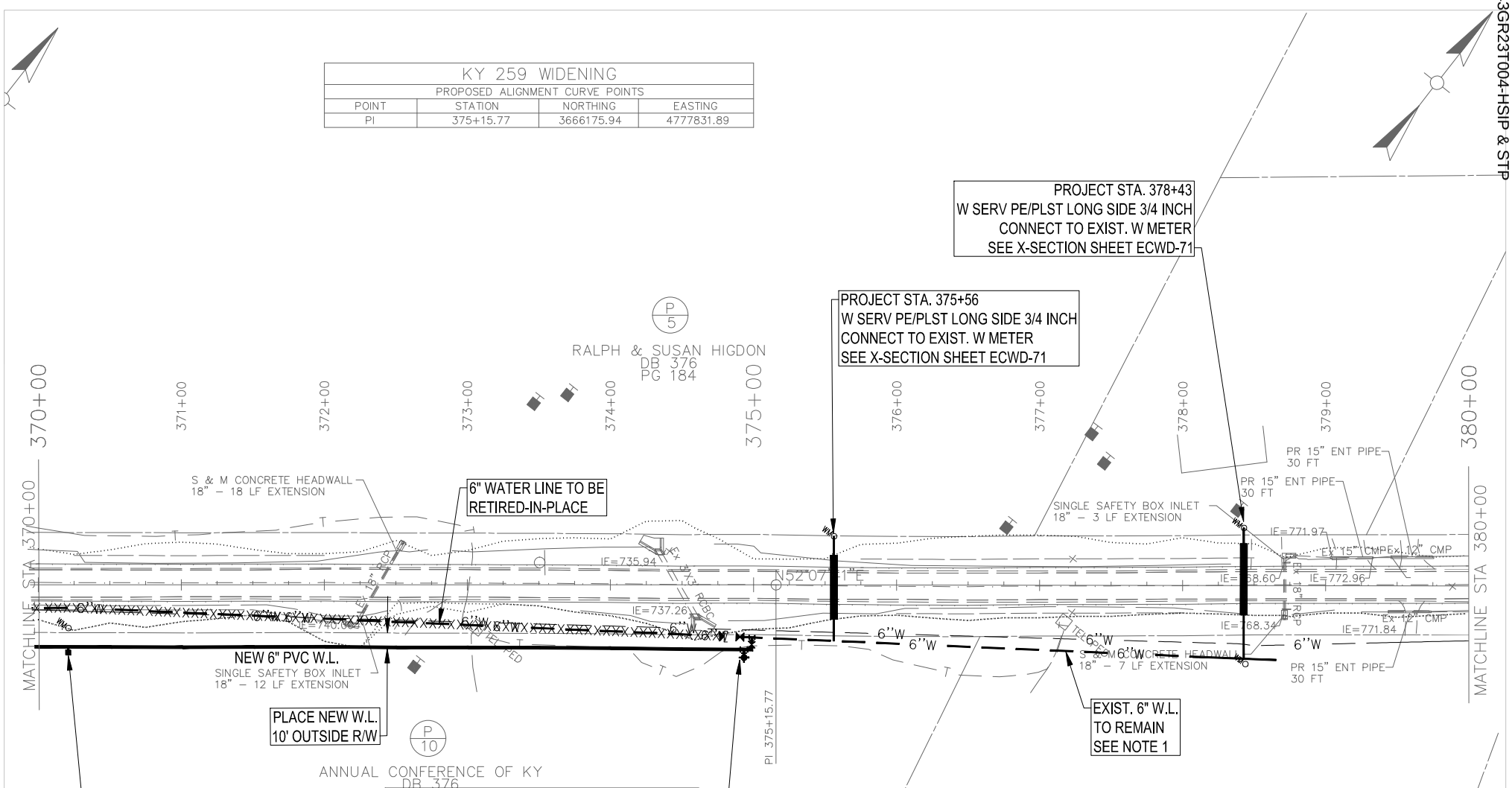
SCALE: 1"= 100' MAY 2022

COUNTY OF	ITEM NO.	SHEET NO.	
GRAYSON	4-9005	R28	ECWD-26

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

STA 360+00 TO STA 370+00

KY 259 WIDENING			
PROPOSED ALIGNMENT CURVE POINTS			
POINT	STATION	NORTHING	EASTING
PI	375+15.77	3666175.94	4777831.89



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2. WATER METER LOCATIONS AND/OR OTHER FIELD EVIDENCE INDICATE POSSIBLE WATER MAIN LOCATION DIFFERENT THAN SHOWN ON HWY. PLANS.

ENTRANCE PIPE	
SHEET TOTALS	
PIPE SIZE	LF
15"	90
18"	--

FOR WATER LINE ONLY

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DRAWING SCALE CHECK:
THIS MARK SHOULD MEASURE EXACTLY 1" WHEN PLOTTED

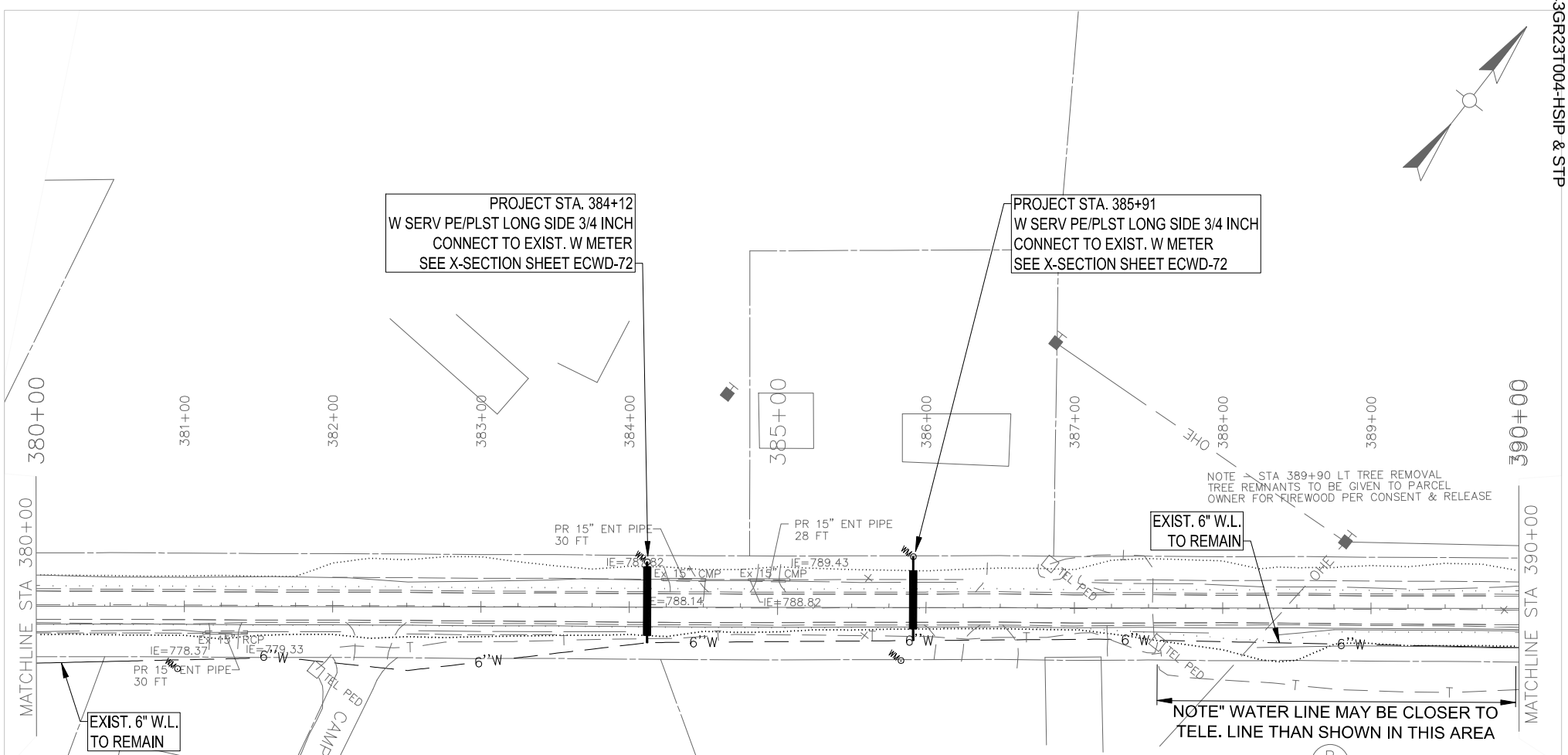
Edmonson County Water District

SCALE: 1"= 100' MAY 2022

COUNTY OF	ITEM NO.	SHEET NO.	
GRAYSON	4-9005	R29	ECWD-27

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

STA 370+00 TO STA 380+00



DESIGN NOTES:

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2. WATER METER LOCATIONS AND/OR OTHER FIELD EVIDENCE INDICATE POSSIBLE WATER MAIN LOCATION DIFFERENT THAN SHOWN ON HWY. PLANS.

ENTRANCE PIPE	
SHEET TOTALS	
PIPE SIZE	LF
15"	88
18"	--

FOR WATER LINE ONLY

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DRAWING SCALE CHECK:
THIS MARK SHOULD MEASURE EXACTLY 1" WHEN PLOTTED

Edmonson County Water District

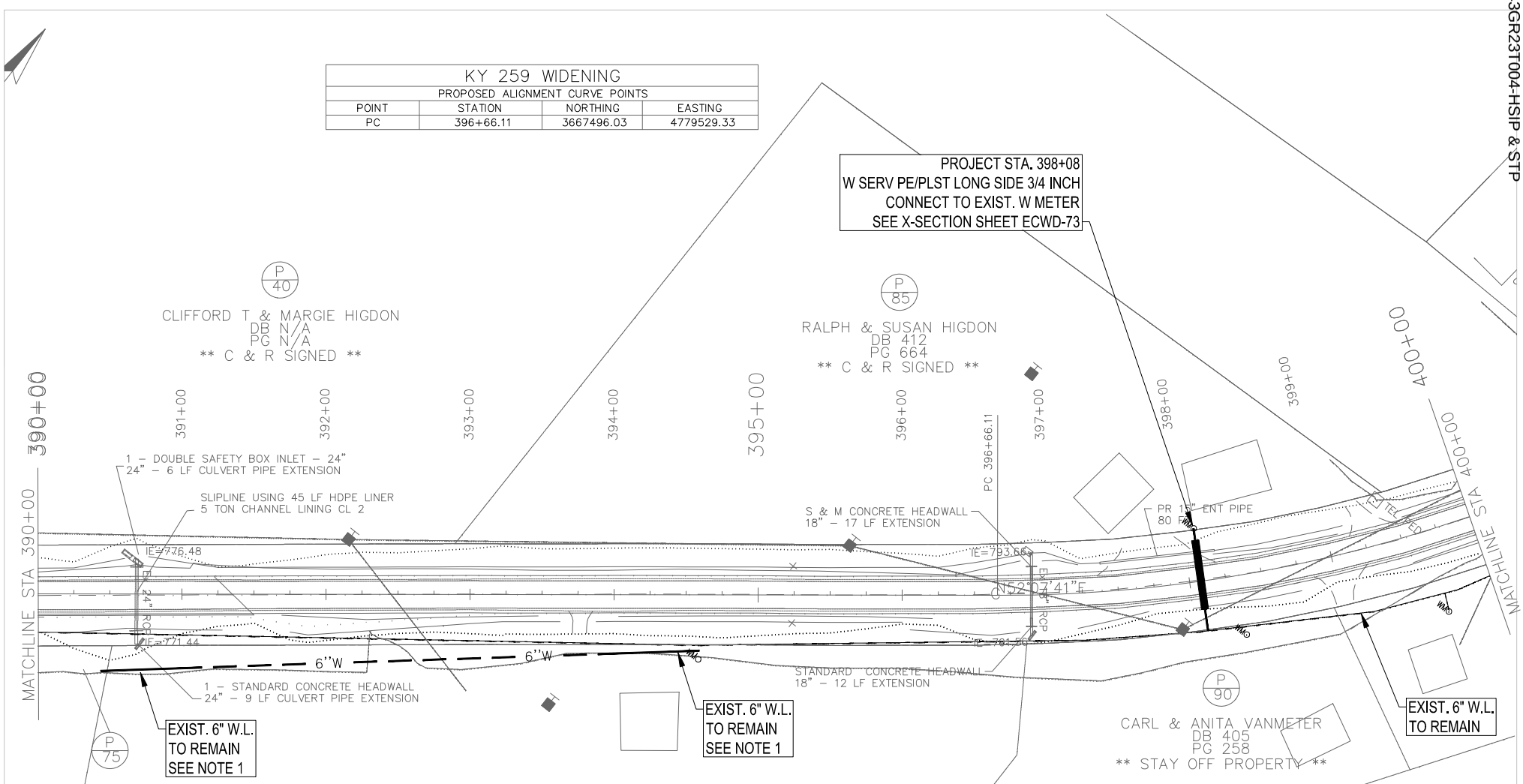
SCALE: 1"= 100' MAY 2022

COUNTY OF	ITEM NO.	SHEET NO.	
GRAYSON	4-9005	R30	ECWD-28

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

STA 380+00 TO STA 390+00

KY 259 WIDENING			
PROPOSED ALIGNMENT CURVE POINTS			
POINT	STATION	NORTHING	EASTING
PC	396+66.11	3667496.03	4779529.33



DESIGN NOTES:

1. WATER LINE HAS BEEN FIELD LOCATED. ACTUAL LOCATION DIFFERENT THAN SHOWN ON HWY. PLANS.
2. WATER METER LOCATIONS AND/OR OTHER FIELD EVIDENCE INDICATE POSSIBLE WATER MAIN LOCATION DIFFERENT THAN SHOWN ON HWY. PLANS.

ENTRANCE PIPE	
SHEET TOTALS	
PIPE SIZE	LF
15"	80
18"	--

STATE OF KENTUCKY
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12662
LICENSED PROFESSIONAL ENGINEER
6/1/22
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DRAWING SCALE CHECK:
THIS MARK SHOULD MEASURE EXACTLY 1" WHEN PLOTTED

Edmonson County Water District

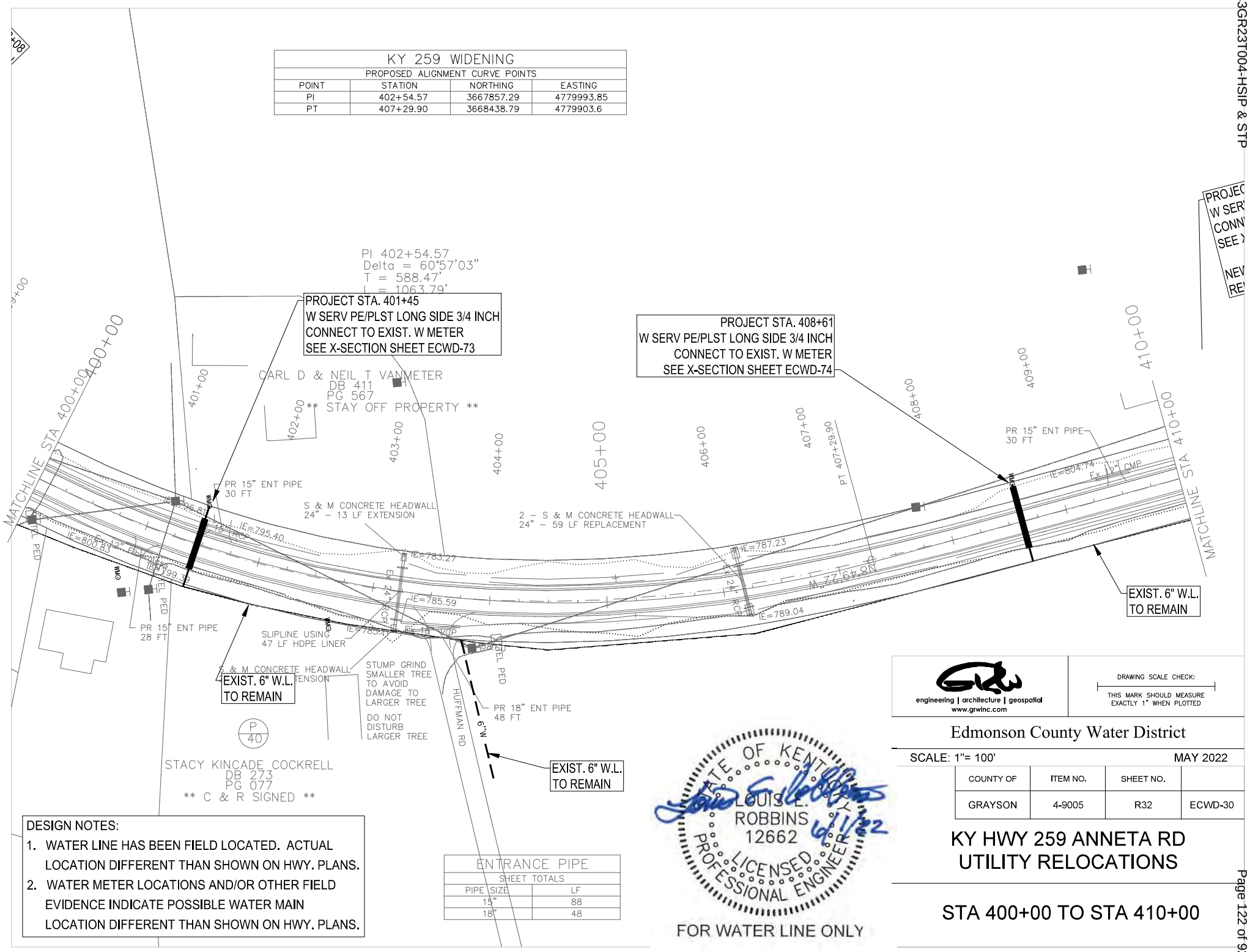
SCALE: 1"= 100' MAY 2022

COUNTY OF	ITEM NO.	SHEET NO.	
GRAYSON	4-9005	R31	ECWD-29

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

STA 390+00 TO STA 400+00

KY 259 WIDENING			
PROPOSED ALIGNMENT CURVE POINTS			
POINT	STATION	NORTHING	EASTING
PI	402+54.57	3667857.29	4779993.85
PT	407+29.90	3668438.79	4779903.6



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2. WATER METER LOCATIONS AND/OR OTHER FIELD EVIDENCE INDICATE POSSIBLE WATER MAIN LOCATION DIFFERENT THAN SHOWN ON HWY. PLANS.

ENTRANCE PIPE	
SHEET TOTALS	
PIPE SIZE	LF
15"	88
18"	48

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DRAWING SCALE CHECK:
THIS MARK SHOULD MEASURE EXACTLY 1" WHEN PLOTTED

Edmonson County Water District

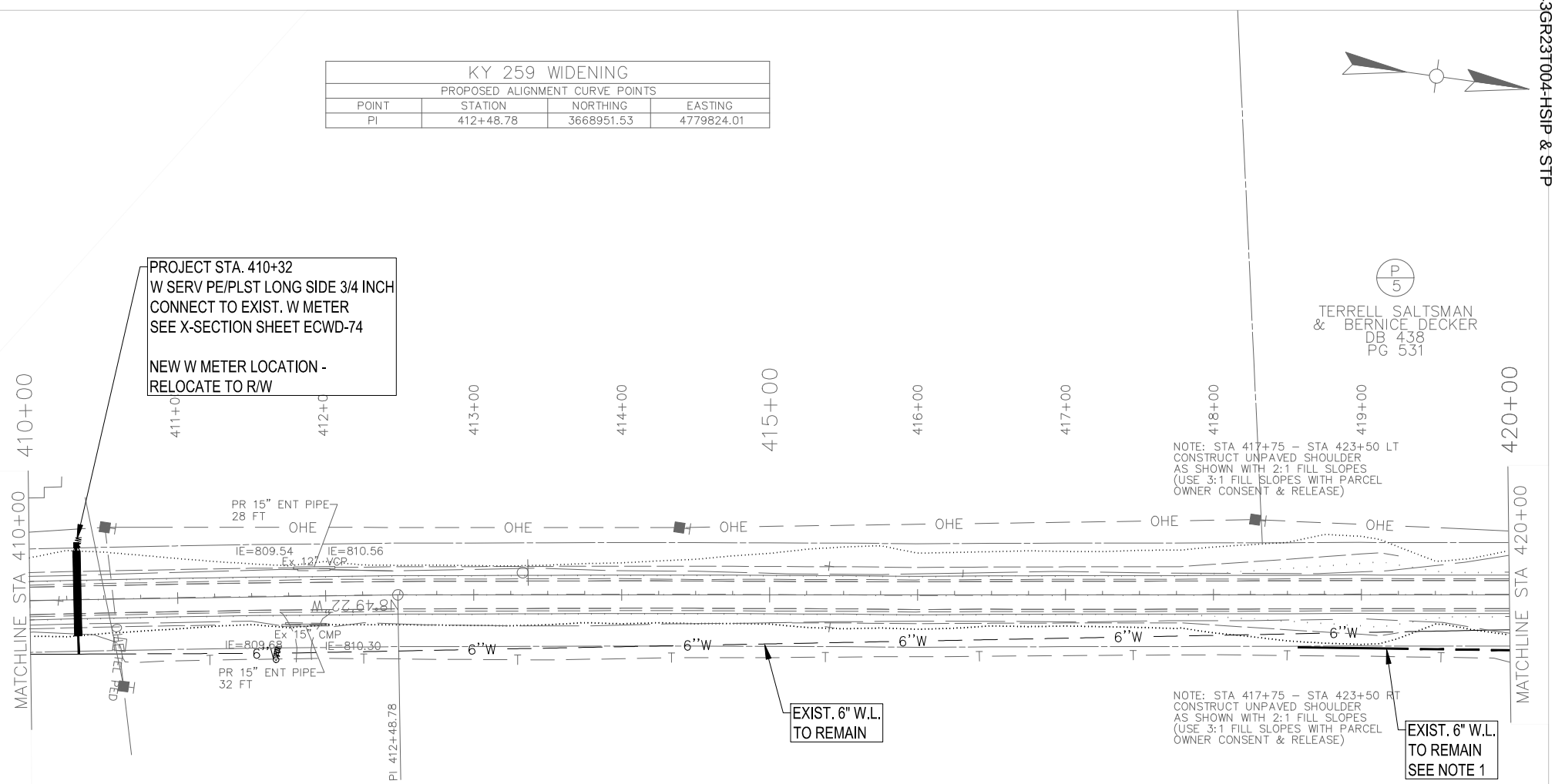
SCALE: 1"= 100' MAY 2022

COUNTY OF	ITEM NO.	SHEET NO.	
GRAYSON	4-9005	R32	ECWD-30

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

STA 400+00 TO STA 410+00

KY 259 WIDENING			
PROPOSED ALIGNMENT CURVE POINTS			
POINT	STATION	NORTHING	EASTING
PI	412+48.78	3668951.53	4779824.01



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ENTRANCE PIPE	
SHEET TOTALS	
PIPE SIZE	LF
15"	60
18"	--

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DRAWING SCALE CHECK:
THIS MARK SHOULD MEASURE EXACTLY 1" WHEN PLOTTED

Edmonson County Water District

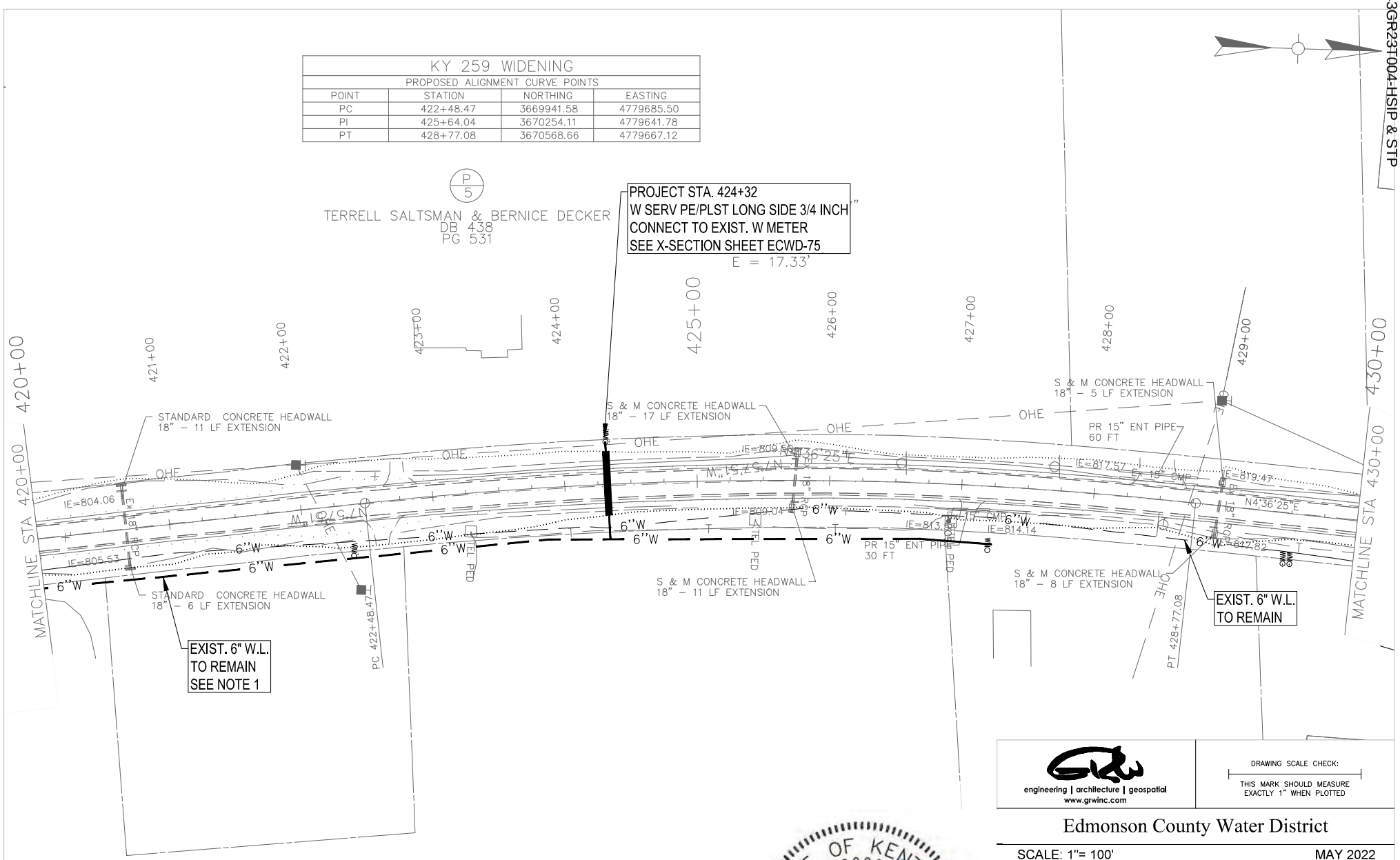
SCALE: 1"= 100' MAY 2022

COUNTY OF	ITEM NO.	SHEET NO.	
GRAYSON	4-9005	R33	ECWD-31

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

STA 410+00 TO STA 420+00

KY 259 WIDENING			
PROPOSED ALIGNMENT CURVE POINTS			
POINT	STATION	NORTHING	EASTING
PC	422+48.47	3669941.58	4779685.50
PI	425+64.04	3670254.11	4779641.78
PT	428+77.08	3670568.66	4779667.12



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ENTRANCE PIPE	
SHEET TOTALS	
PIPE SIZE	LF
15"	90
18"	--

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DRAWING SCALE CHECK:
THIS MARK SHOULD MEASURE EXACTLY 1" WHEN PLOTTED

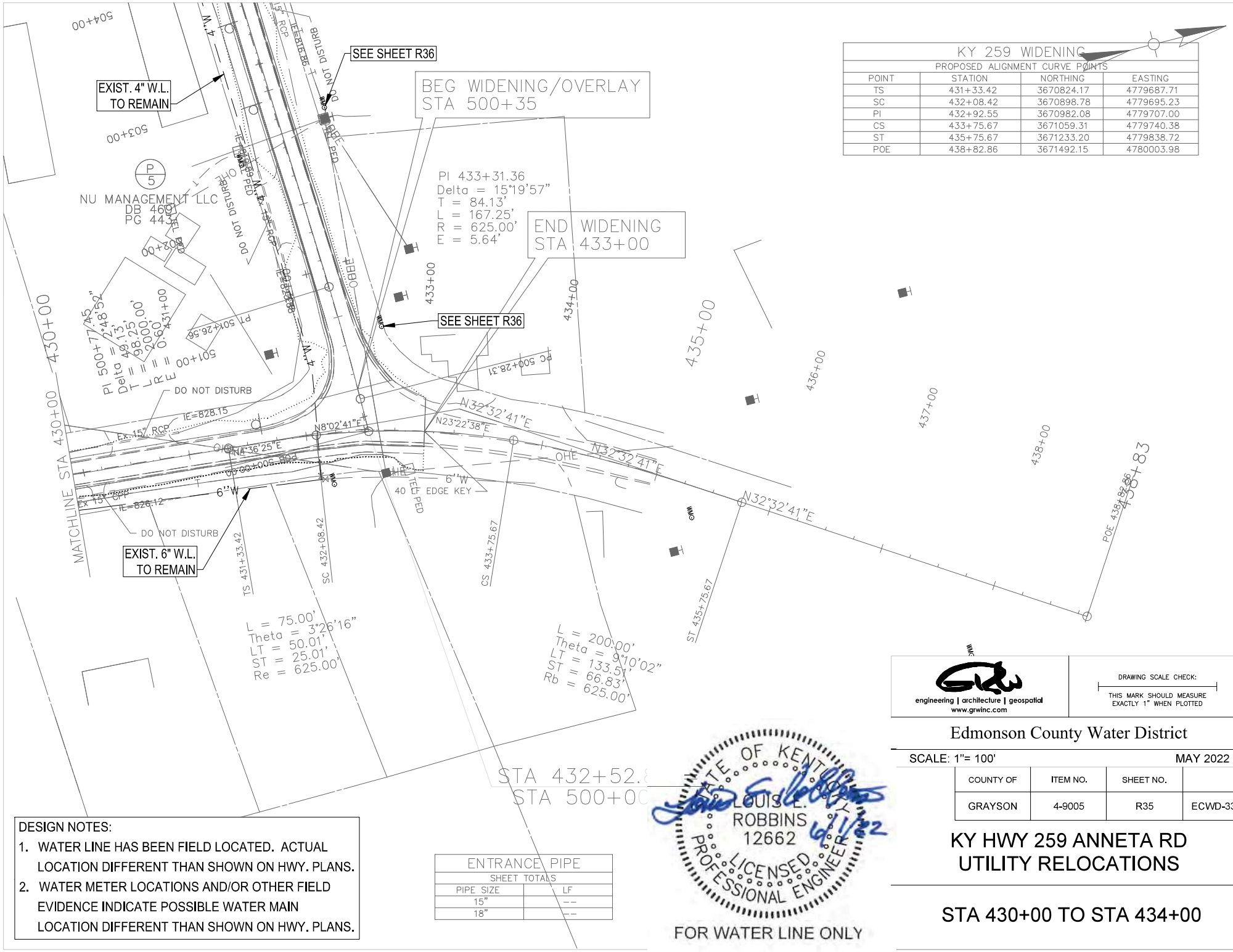
Edmonson County Water District

SCALE: 1"= 100' MAY 2022

COUNTY OF	ITEM NO.	SHEET NO.	
GRAYSON	4-9005	R34	ECWD-32

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

STA 420+00 TO STA 430+00



KY 259 WIDENING			
PROPOSED ALIGNMENT CURVE POINTS			
POINT	STATION	NORTHING	EASTING
TS	431+33.42	3670824.17	4779687.71
SC	432+08.42	3670898.78	4779695.23
PI	432+92.55	3670982.08	4779707.00
CS	433+75.67	3671059.31	4779740.38
ST	435+75.67	3671233.20	4779838.72
POE	438+82.86	3671492.15	4780003.98

DESIGN NOTES:
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ENTRANCE PIPE	
SHEET TOTALS	
PIPE SIZE	LF
15"	--
18"	--

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DRAWING SCALE CHECK:
THIS MARK SHOULD MEASURE EXACTLY 1" WHEN PLOTTED

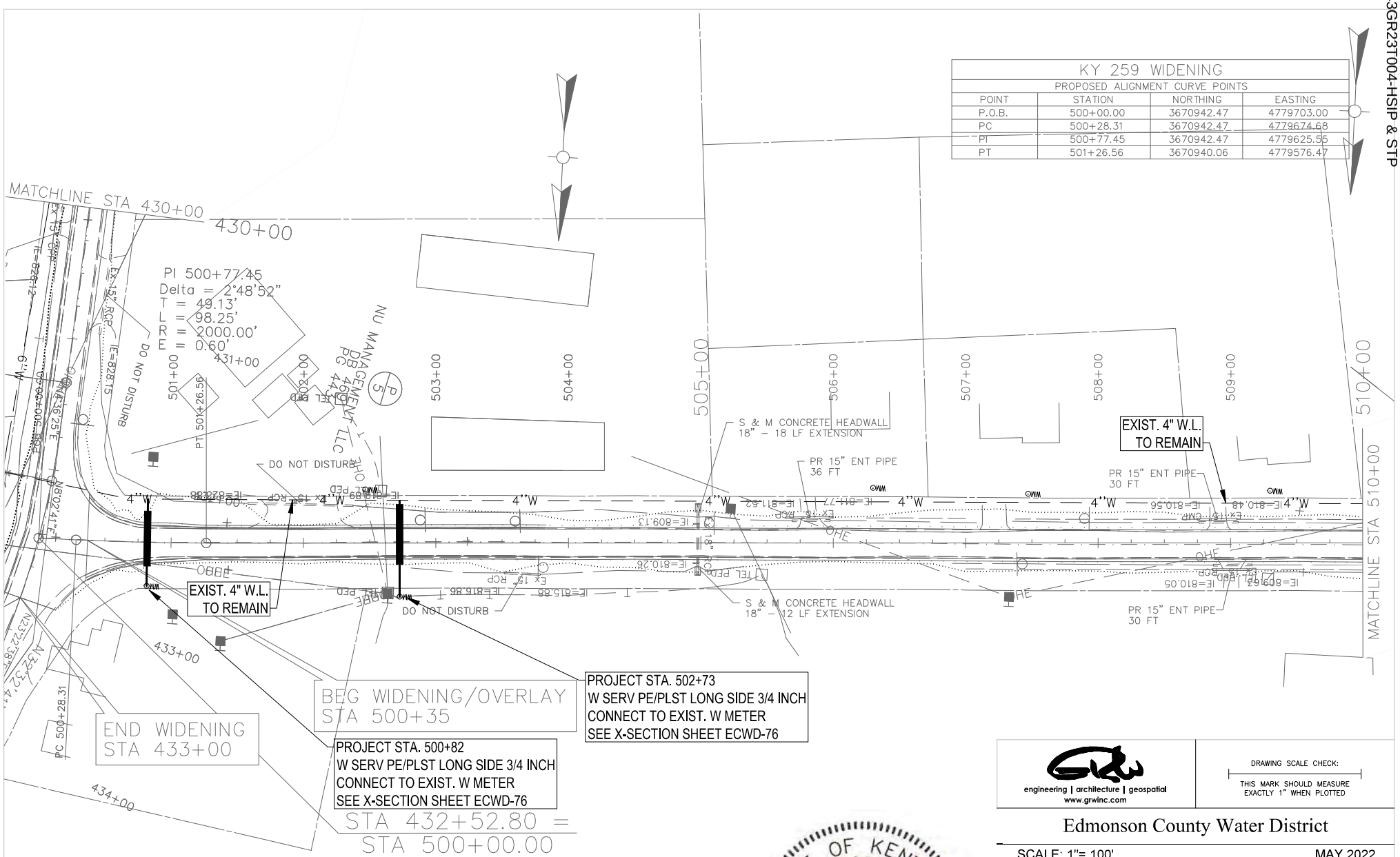
Edmonson County Water District

SCALE: 1"= 100' MAY 2022

COUNTY OF	ITEM NO.	SHEET NO.	
GRAYSON	4-9005	R35	ECWD-33

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

STA 430+00 TO STA 434+00



KY 259 WIDENING			
PROPOSED ALIGNMENT CURVE POINTS			
POINT	STATION	NORTHING	EASTING
P.O.B.	500+00.00	3670942.47	4779703.00
PC	500+28.31	3670942.47	4779674.68
PI	500+77.45	3670942.47	4779625.55
PT	501+26.56	3670940.06	4779576.47

DESIGN NOTES:
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ENTRANCE PIPE	
SHEET TOTALS	
PIPE SIZE	LF
15"	96
18"	--

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DRAWING SCALE CHECK:
THIS MARK SHOULD MEASURE EXACTLY 1" WHEN PLOTTED

Edmonson County Water District

SCALE: 1"= 100' MAY 2022

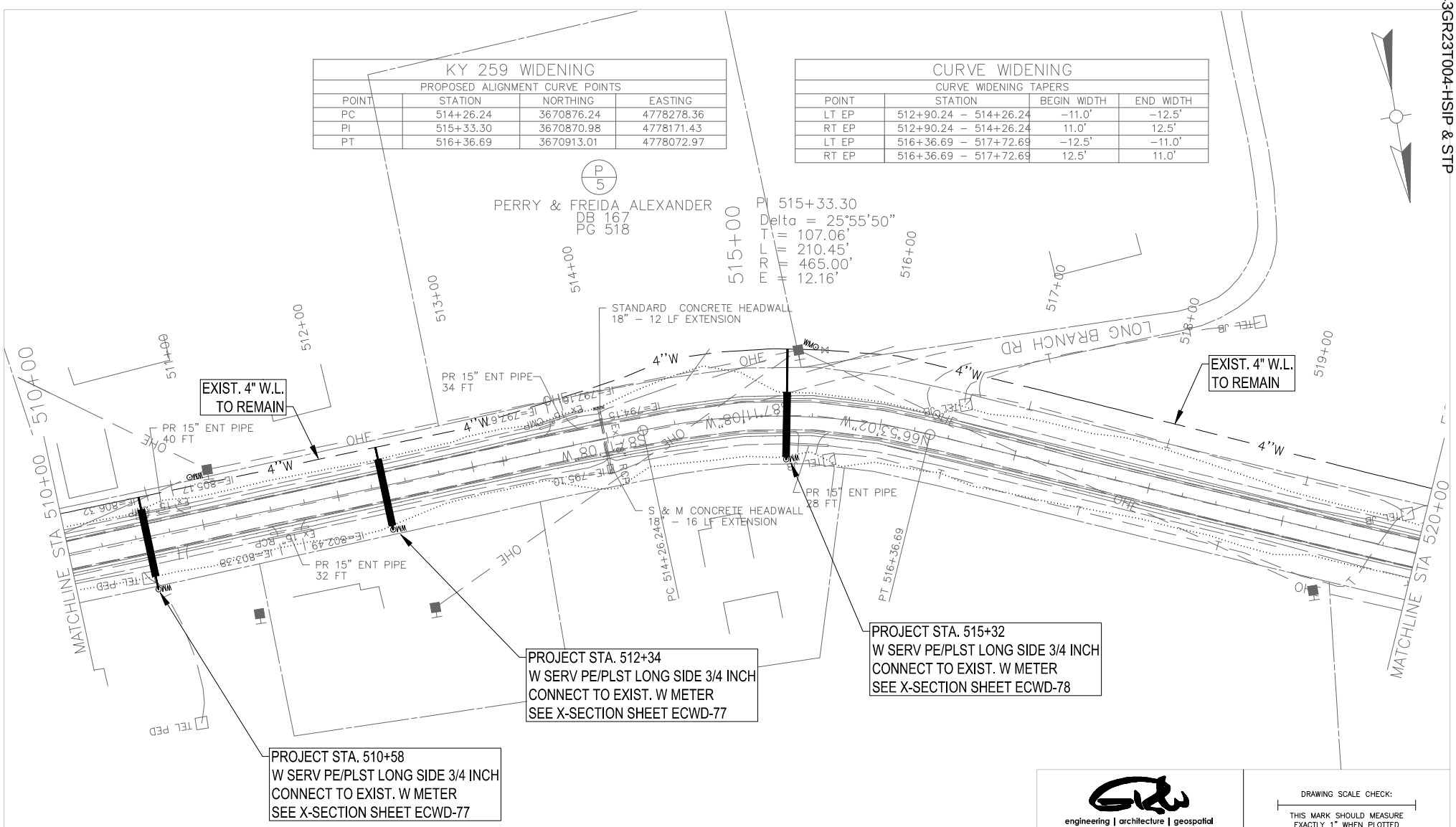
COUNTY OF	ITEM NO.	SHEET NO.	
GRAYSON	4-9005	R36	ECWD-34

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

STA 500+00 TO STA 510+00

KY 259 WIDENING			
PROPOSED ALIGNMENT CURVE POINTS			
POINT	STATION	NORTHING	EASTING
PC	514+26.24	3670876.24	4778278.36
PI	515+33.30	3670870.98	4778171.43
PT	516+36.69	3670913.01	4778072.97

CURVE WIDENING			
CURVE WIDENING TAPERS			
POINT	STATION	BEGIN WIDTH	END WIDTH
LT EP	512+90.24 – 514+26.24	–11.0'	–12.5'
RT EP	512+90.24 – 514+26.24	11.0'	12.5'
LT EP	516+36.69 – 517+72.69	–12.5'	–11.0'
RT EP	516+36.69 – 517+72.69	12.5'	11.0'



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2. WATER METER LOCATIONS AND/OR OTHER FIELD EVIDENCE INDICATE POSSIBLE WATER MAIN LOCATION DIFFERENT THAN SHOWN ON HWY. PLANS.

ENTRANCE PIPE	
SHEET TOTALS	
PIPE SIZE	LF
15"	134
18"	--

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DRAWING SCALE CHECK:
THIS MARK SHOULD MEASURE EXACTLY 1" WHEN PLOTTED

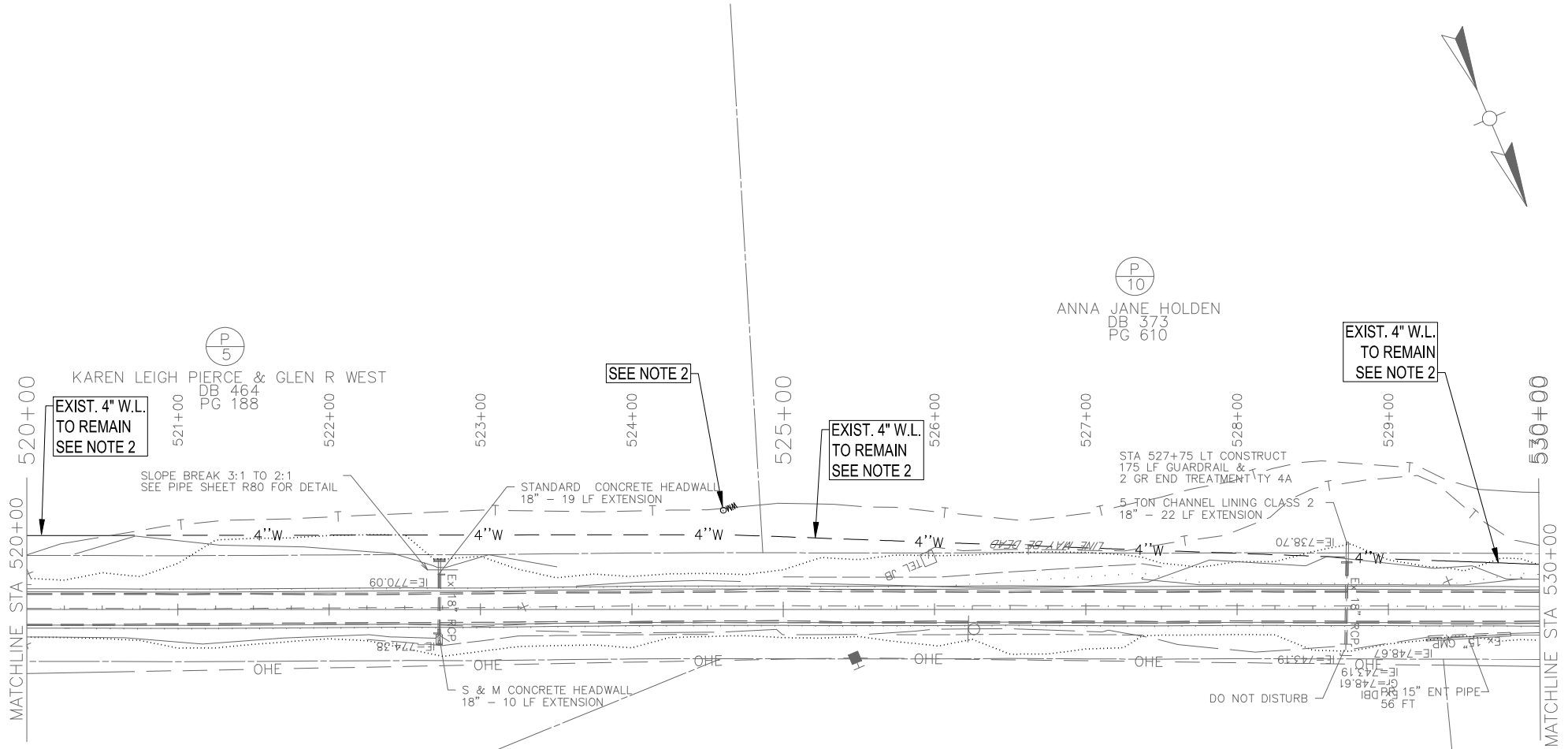
Edmonson County Water District

SCALE: 1"= 100' MAY 2022

COUNTY OF	ITEM NO.	SHEET NO.	
GRAYSON	4-9005	R37	ECWD-35

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

STA 510+00 TO STA 520+00



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2. WATER METER LOCATIONS AND/OR OTHER FIELD EVIDENCE INDICATE POSSIBLE WATER MAIN LOCATION DIFFERENT THAN SHOWN ON HWY. PLANS.

ENTRANCE PIPE	
SHEET TOTALS	
PIPE SIZE	LF
15"	56
18"	--

FOR WATER LINE ONLY

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DRAWING SCALE CHECK:
THIS MARK SHOULD MEASURE EXACTLY 1" WHEN PLOTTED

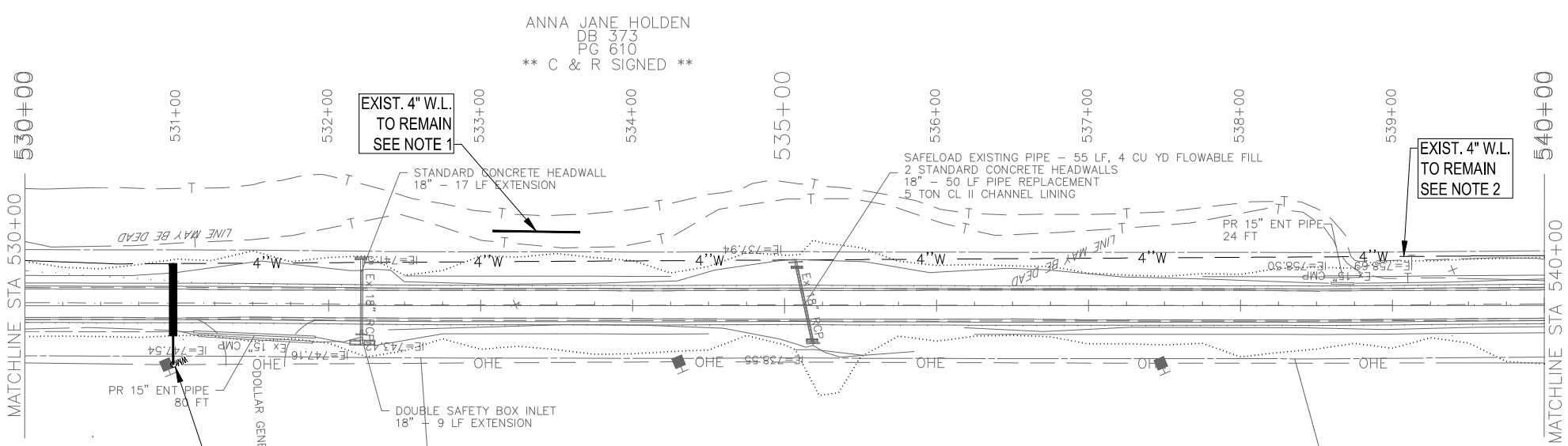
Edmonson County Water District

SCALE: 1"= 100' MAY 2022

COUNTY OF	ITEM NO.	SHEET NO.	
GRAYSON	4-9005	R38	ECWD-36

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

STA 520+00 TO STA 530+00



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ENTRANCE PIPE	
SHEET TOTALS	
PIPE SIZE	LF
15"	104
18"	--

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DRAWING SCALE CHECK:
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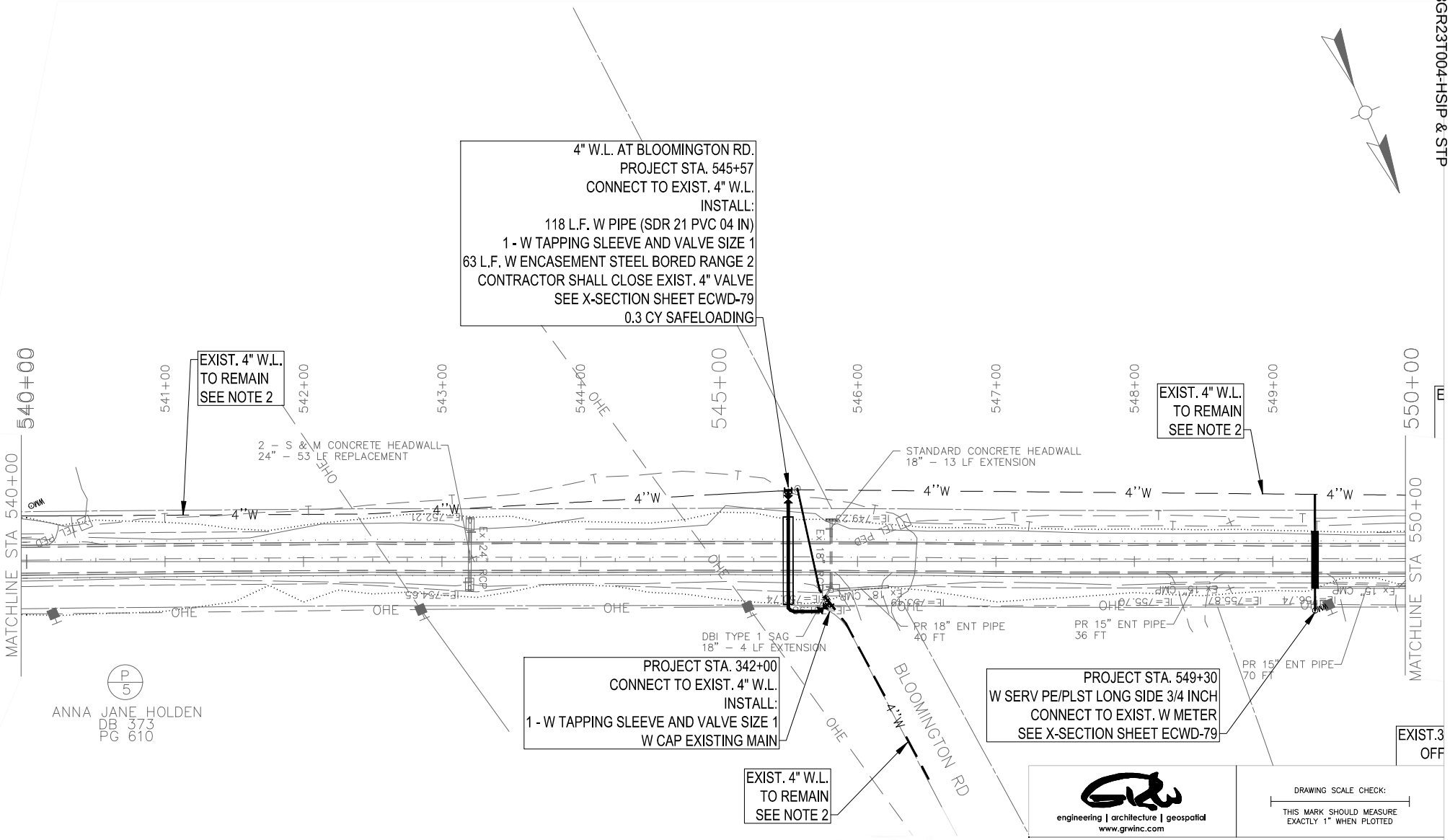
Edmonson County Water District

SCALE: 1"= 100' MAY 2022

COUNTY OF	ITEM NO.	SHEET NO.	
GRAYSON	4-9005	R39	ECWD-37

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

STA 530+00 TO STA 540+00



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ENTRANCE PIPE	
SHEET TOTALS	
PIPE SIZE	LF
15"	106
18"	40

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DRAWING SCALE CHECK:
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Edmonson County Water District

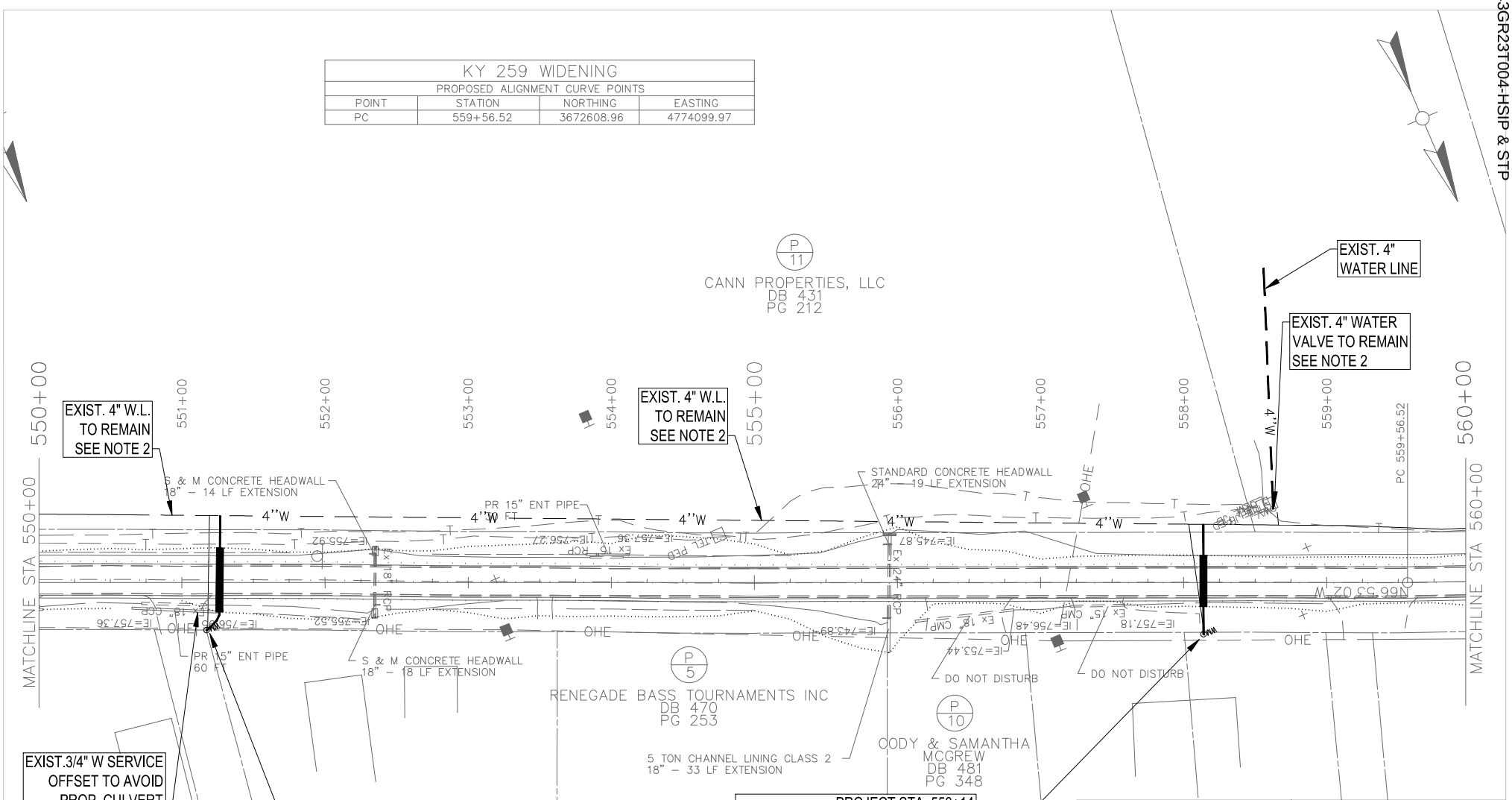
SCALE: 1"= 100' MAY 2022

COUNTY OF	ITEM NO.	SHEET NO.	
GRAYSON	4-9005	R40	ECWD-38

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

STA 540+00 TO STA 550+00

KY 259 WIDENING			
PROPOSED ALIGNMENT CURVE POINTS			
POINT	STATION	NORTHING	EASTING
PC	559+56.52	3672608.96	4774099.97



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ENTRANCE PIPE	
SHEET TOTALS	
PIPE SIZE	LF
15"	90
18"	--

COMMONWEALTH OF KENTUCKY
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DRAWING SCALE CHECK:
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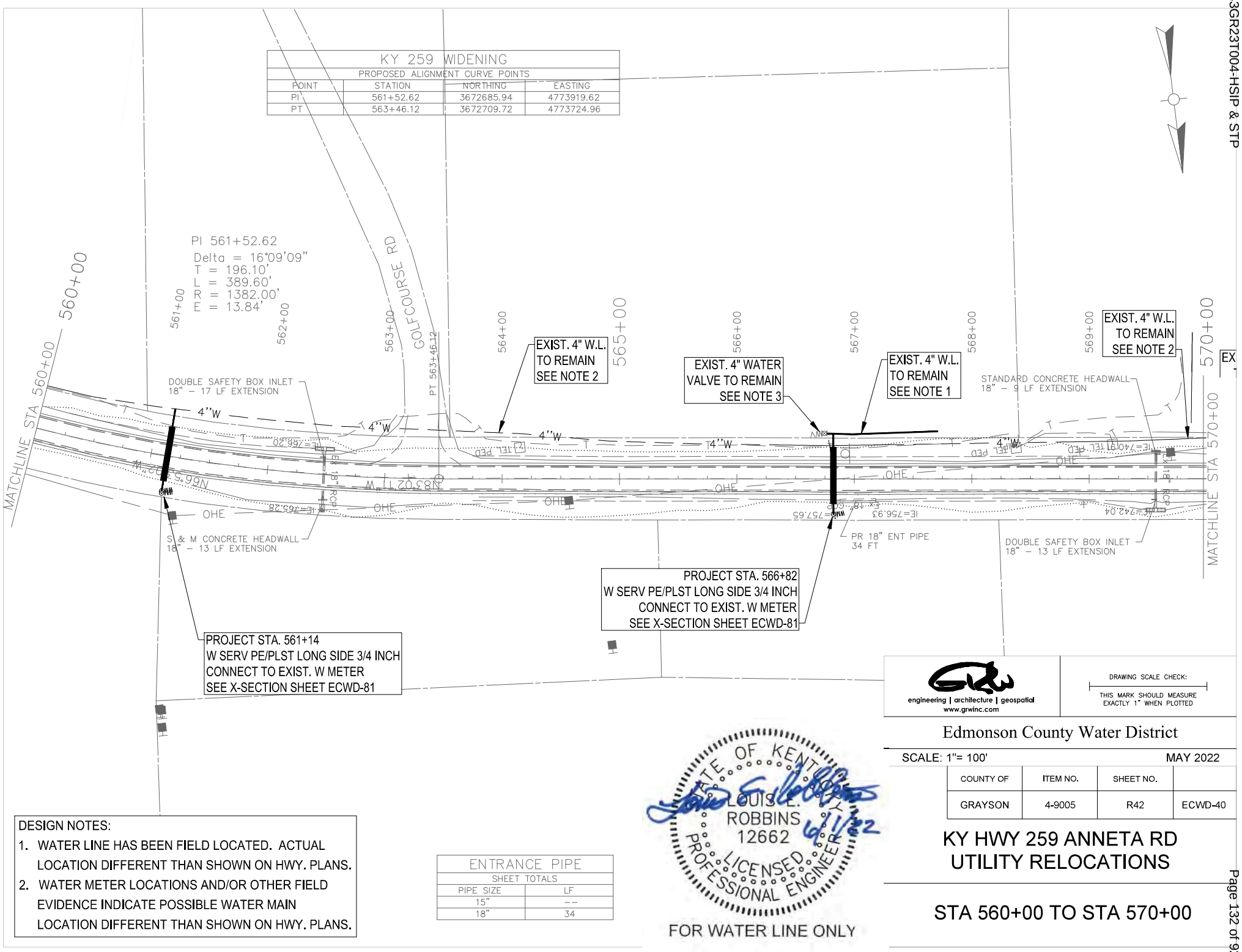
Edmonson County Water District

SCALE: 1"= 100' MAY 2022

COUNTY OF	ITEM NO.	SHEET NO.	
GRAYSON	4-9005	R41	ECWD-39

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

STA 550+00 TO STA 560+00



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ENTRANCE PIPE	
SHEET TOTALS	
PIPE SIZE	LF
15"	--
18"	34

STATE OF KENTUCKY
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DRAWING SCALE CHECK:
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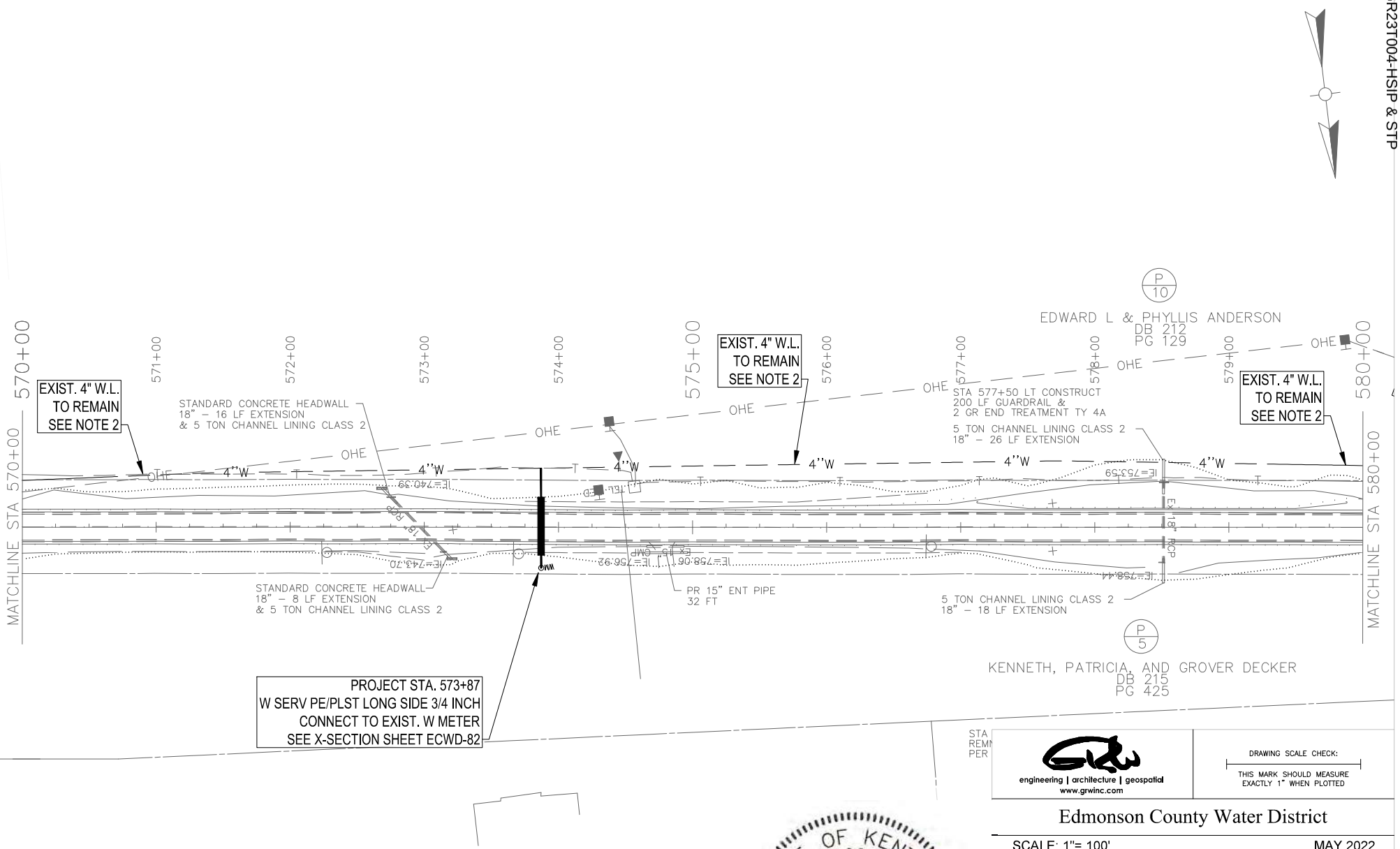
Edmonson County Water District

SCALE: 1"= 100' MAY 2022

COUNTY OF	ITEM NO.	SHEET NO.	
GRAYSON	4-9005	R42	ECWD-40

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

STA 560+00 TO STA 570+00



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ENTRANCE PIPE	
SHEET TOTALS	
PIPE SIZE	LF
15"	--
18"	--

STATE OF KENTUCKY
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Edmonson County Water District

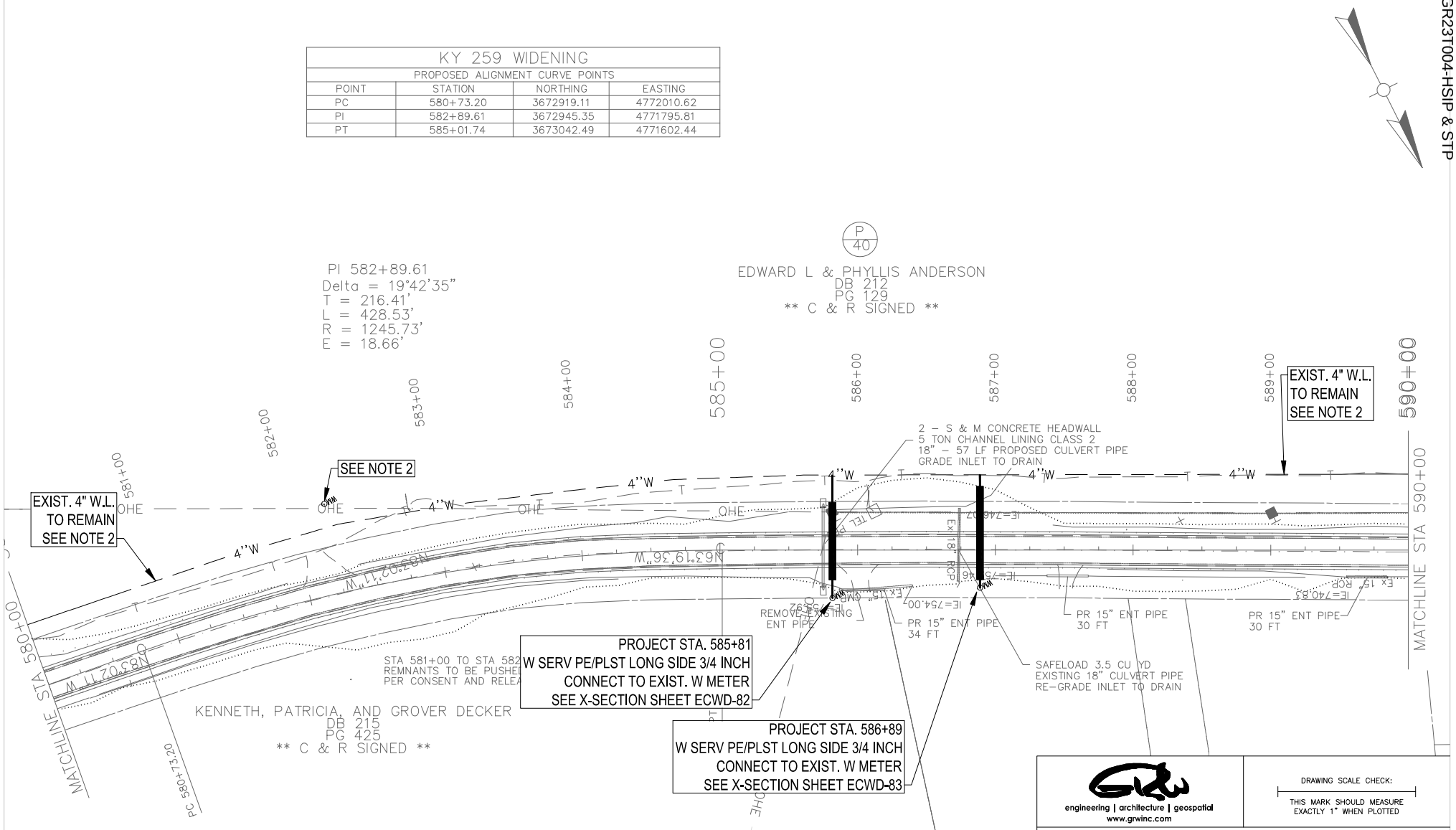
SCALE: 1"= 100' MAY 2022

COUNTY OF	ITEM NO.	SHEET NO.	
GRAYSON	4-9005	R43	ECWD-41

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

STA 570+00 TO STA 580+00

KY 259 WIDENING			
PROPOSED ALIGNMENT CURVE POINTS			
POINT	STATION	NORTHING	EASTING
PC	580+73.20	3672919.11	4772010.62
PI	582+89.61	3672945.35	4771795.81
PT	585+01.74	3673042.49	4771602.44



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ENTRANCE PIPE	
SHEET TOTALS	
PIPE SIZE	LF
15"	94
18"	--

FOR WATER LINE ONLY

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DRAWING SCALE CHECK:
THIS MARK SHOULD MEASURE EXACTLY 1" WHEN PLOTTED

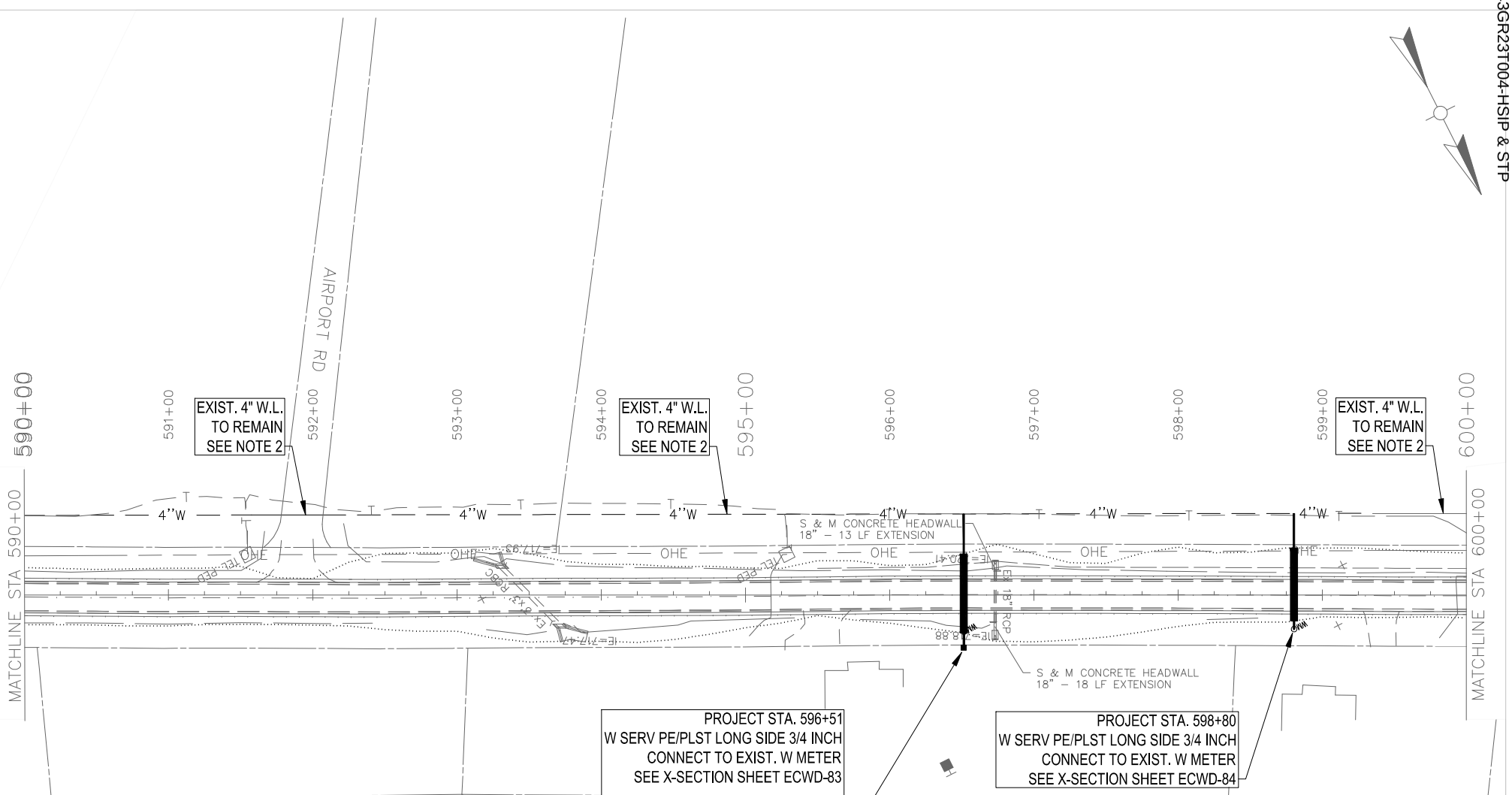
Edmonson County Water District

SCALE: 1"= 100' MAY 2022

COUNTY OF	ITEM NO.	SHEET NO.	
GRAYSON	4-9005	R44	ECWD-42

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

STA 580+00 TO STA 590+00



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ENTRANCE PIPE	
SHEET TOTALS	
PIPE SIZE	LF
15"	--
18"	--

STATE OF KENTUCKY
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6/1/22

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DRAWING SCALE CHECK:
THIS MARK SHOULD MEASURE EXACTLY 1" WHEN PLOTTED

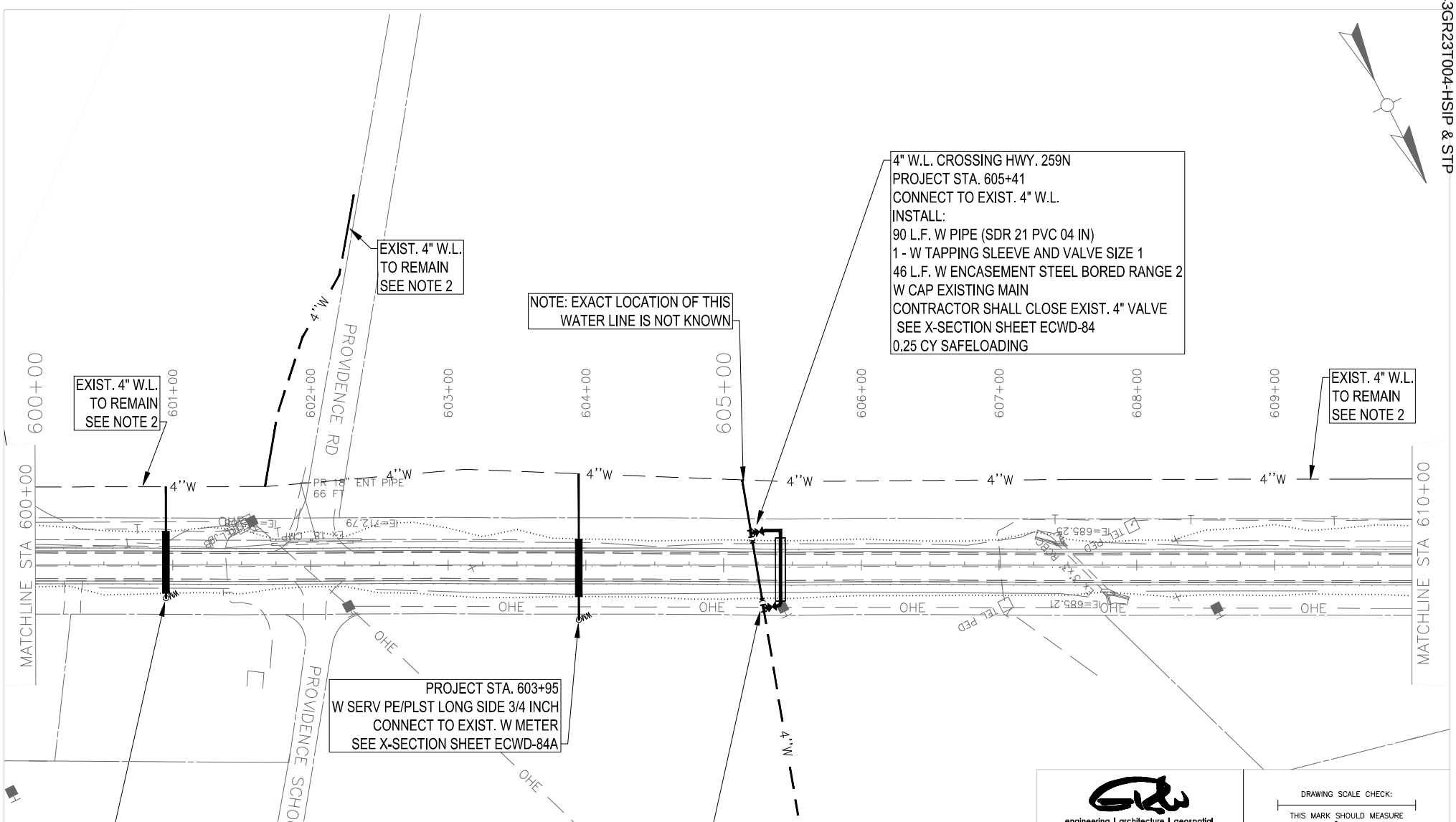
Edmonson County Water District

SCALE: 1"= 100' MAY 2022

COUNTY OF	ITEM NO.	SHEET NO.	
GRAYSON	4-9005	R45	ECWD-43

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

STA 590+00 TO STA 600+00



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2. WATER METER LOCATIONS AND/OR OTHER FIELD EVIDENCE INDICATE POSSIBLE WATER MAIN LOCATION DIFFERENT THAN SHOWN ON HWY. PLANS.

ENTRANCE PIPE	
SHEET TOTALS	
PIPE SIZE	LF
15"	--
18"	66

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Edmonson County Water District

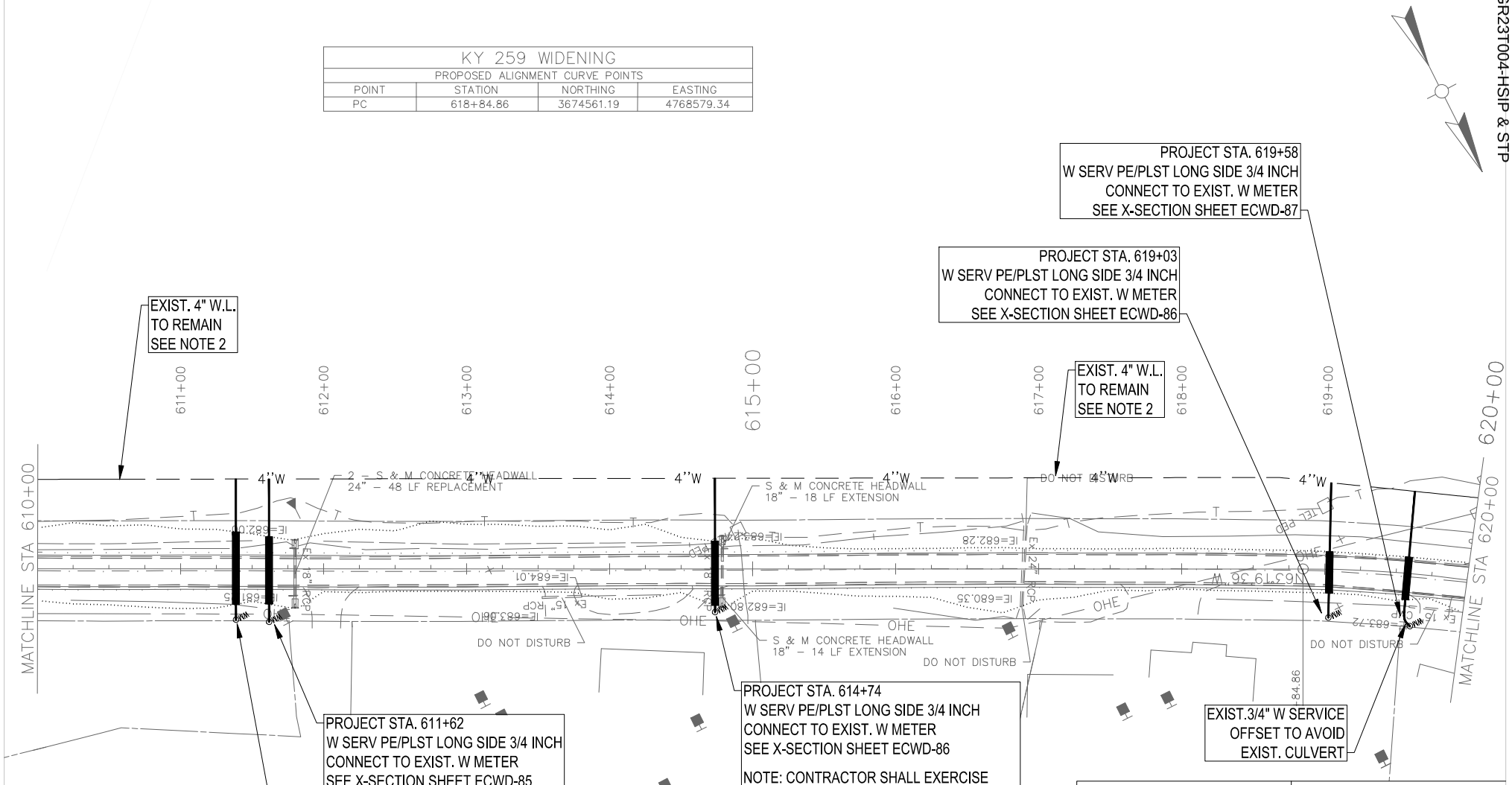
SCALE: 1"= 100' MAY 2022

COUNTY OF	ITEM NO.	SHEET NO.	
GRAYSON	4-9005	R46	ECWD-44

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

STA 600+00 TO STA 610+00

KY 259 WIDENING			
PROPOSED ALIGNMENT CURVE POINTS			
POINT	STATION	NORTHING	EASTING
PC	618+84.86	3674561.19	4768579.34



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ENTRANCE PIPE	
SHEET TOTALS	
PIPE SIZE	LF
15"	--
18"	--

STATE OF KENTUCKY
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DRAWING SCALE CHECK:
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Edmonson County Water District

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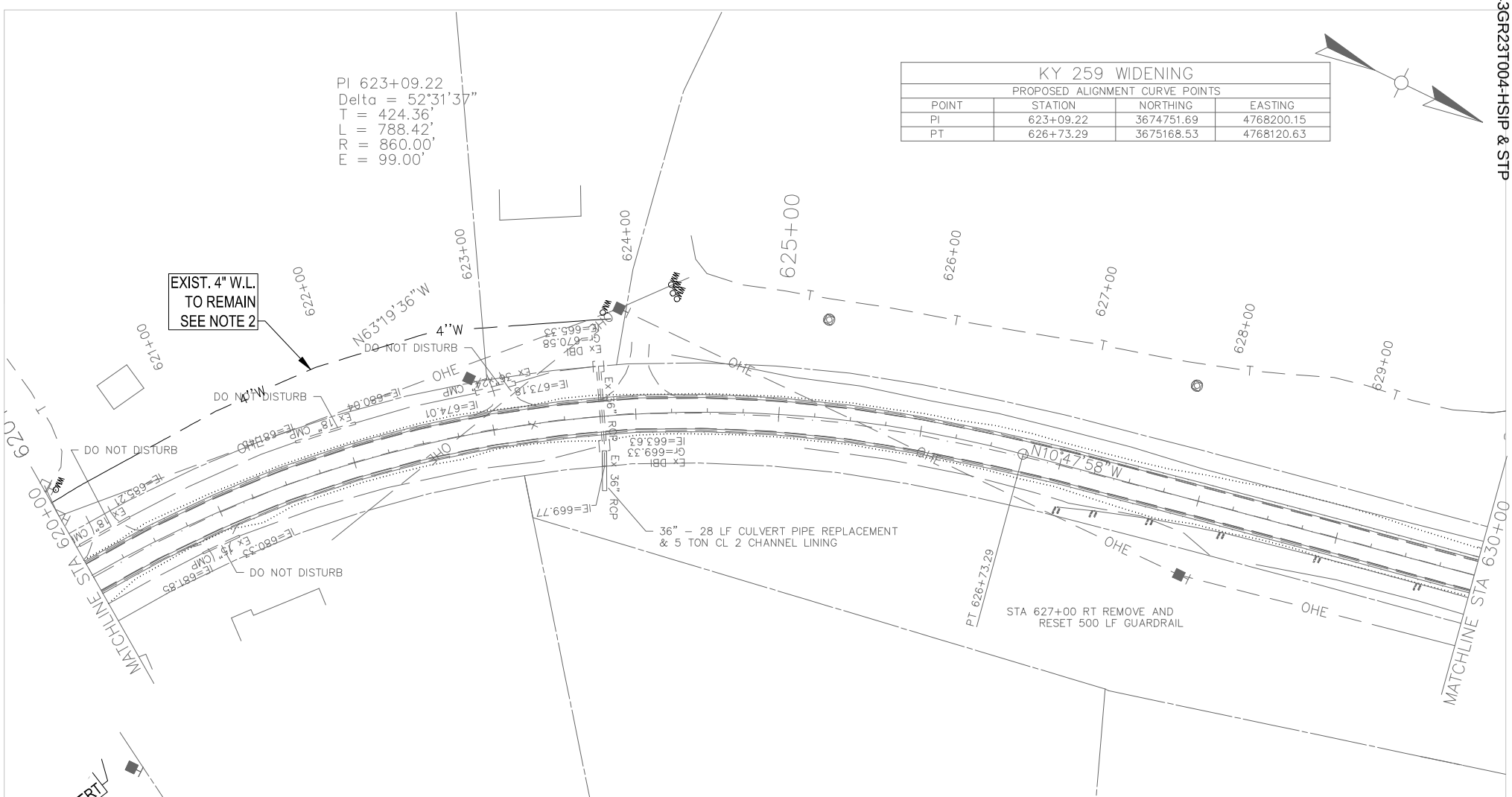
COUNTY OF	ITEM NO.	SHEET NO.	
GRAYSON	4-9005	R47	ECWD-45

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

STA 610+00 TO STA 620+00



KY 259 WIDENING			
PROPOSED ALIGNMENT CURVE POINTS			
POINT	STATION	NORTHING	EASTING
PI	623+09.22	3674751.69	4768200.15
PT	626+73.29	3675168.53	4768120.63

DESIGN NOTES:
1. WATER LINE HAS BEEN FIELD LOCATED. ACTUAL LOCATION DIFFERENT THAN SHOWN ON HWY. PLANS.
2. WATER METER LOCATIONS AND/OR OTHER FIELD EVIDENCE INDICATE POSSIBLE WATER MAIN LOCATION DIFFERENT THAN SHOWN ON HWY. PLANS.

ENTRANCE PIPE	
SHEET TOTALS	
PIPE SIZE	LF
15"	--
18"	--

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DRAWING SCALE CHECK:
THIS MARK SHOULD MEASURE EXACTLY 1" WHEN PLOTTED

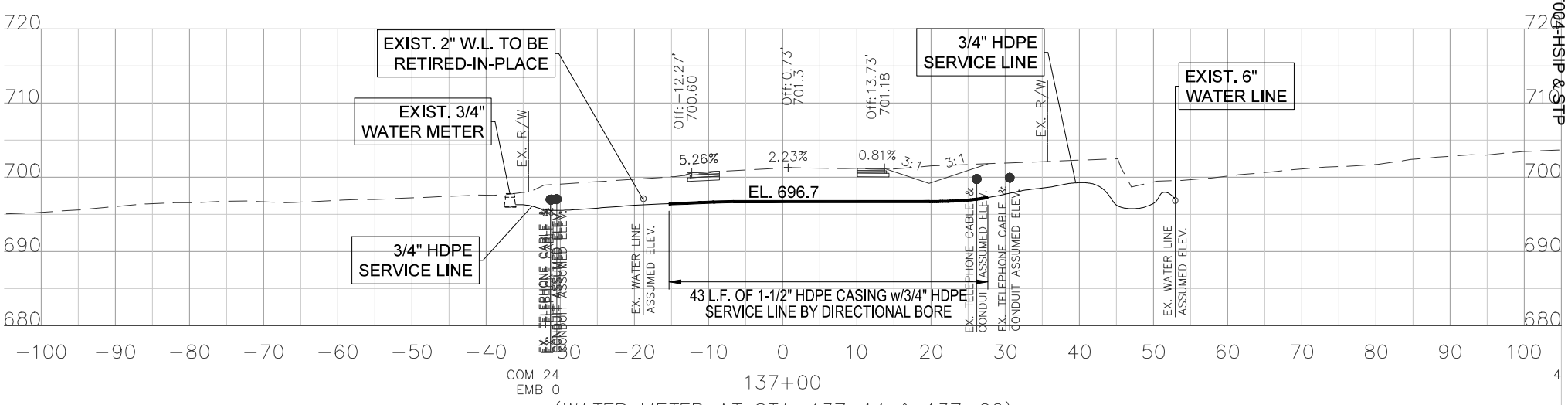
Edmonson County Water District

SCALE: 1"= 100' MAY 2022

COUNTY OF	ITEM NO.	SHEET NO.	
GRAYSON	4-9005	R48	ECWD-46

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

STA 620+00 TO STA 630+00

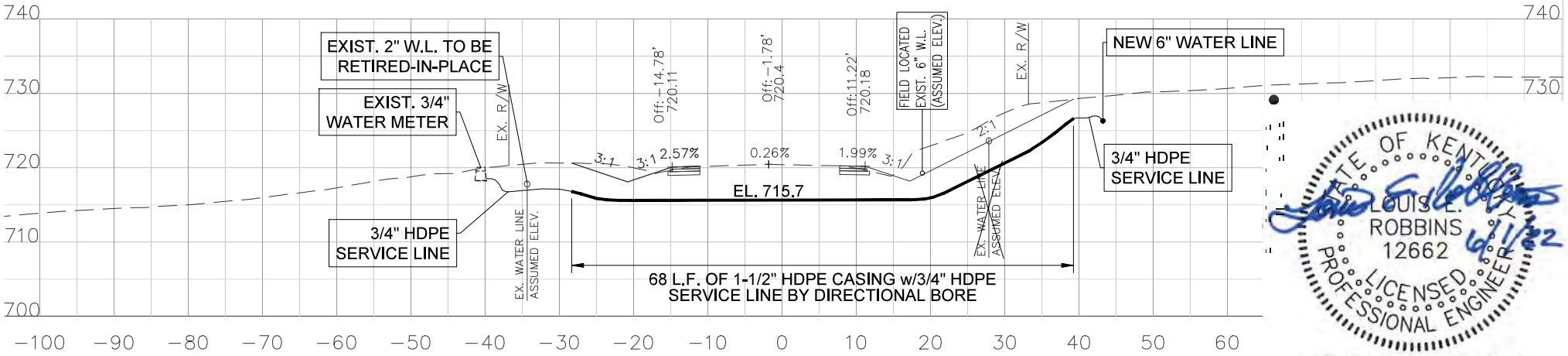


COM 24
EMB 0

137+00

(WATER METER AT STA. 137+14 & 137+22)

(REFER TO "ROADWAY CROSSING INSTALLATION" DETAIL SHEET ECWD-94 FOR CLEARANCES BENEATH ROADWAY)



COM 77
EMB 2

144+00

(WATER METER AT STA. 144+12)

(REFER TO "ROADWAY CROSSING INSTALLATION" DETAIL SHEET ECWD-94 FOR CLEARANCES BENEATH ROADWAY)

NOTE: EXISTING R/W 35' OFFSET FROM EXISTING CL

NOTE: CROSS SECTIONS DO NOT REFLECT PAVED ENTRANCES & ENTRANCE PIPE LOCATIONS. REFER TO PLANS

NOTE: ALL UNDERGROUND CABLE ASSUMED AT 24" DEPTH (UNLESS NOTED)

NOTE: ALL WATER LINES ASSUMED AT 30" DEPTH

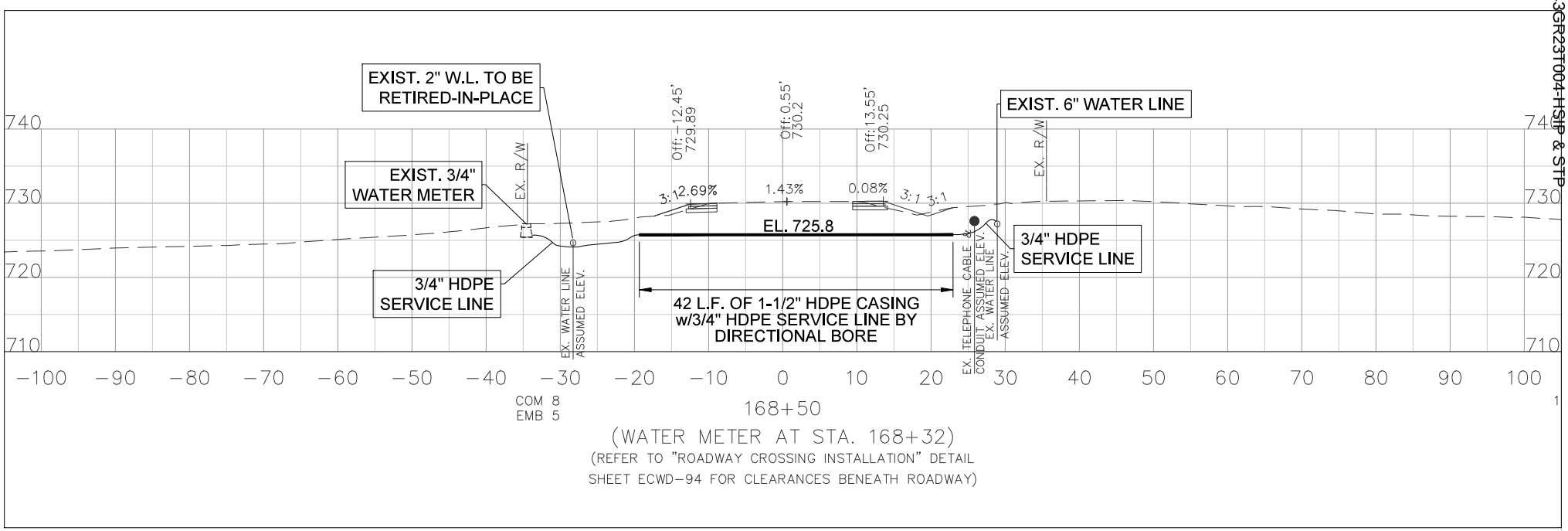
STATE OF KENTUCKY
LOUIS E. ROBBINS
12662
LICENSED PROFESSIONAL ENGINEER
6/1/22

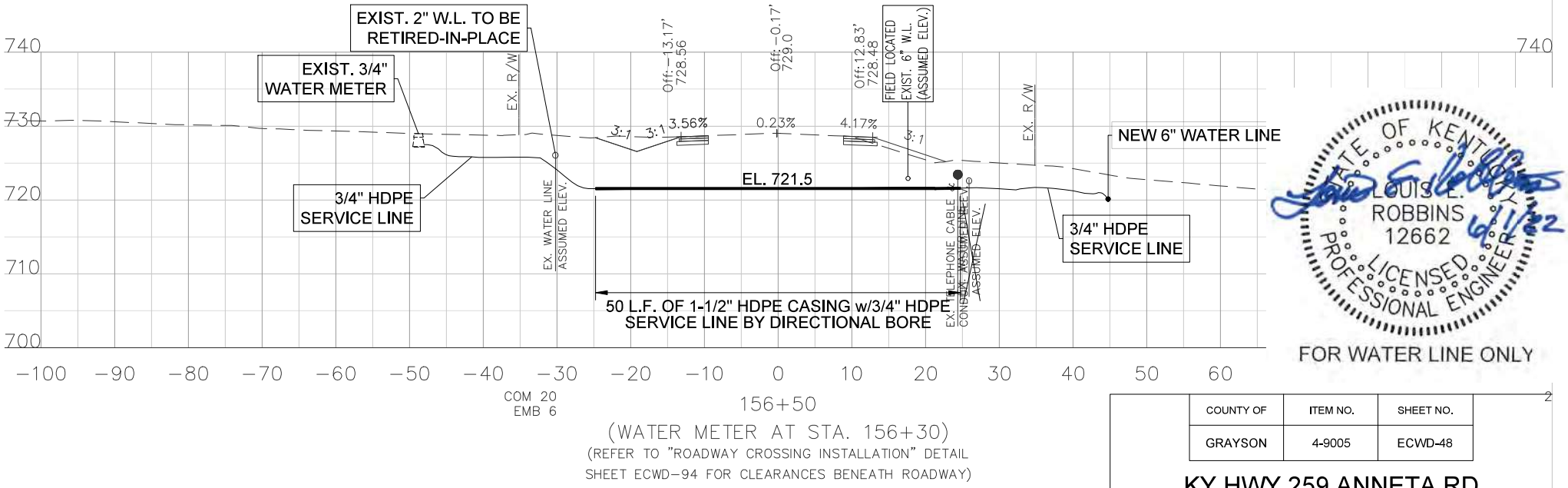
FOR WATER LINE ONLY

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9005	ECWD-47

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

CROSS SECTIONS



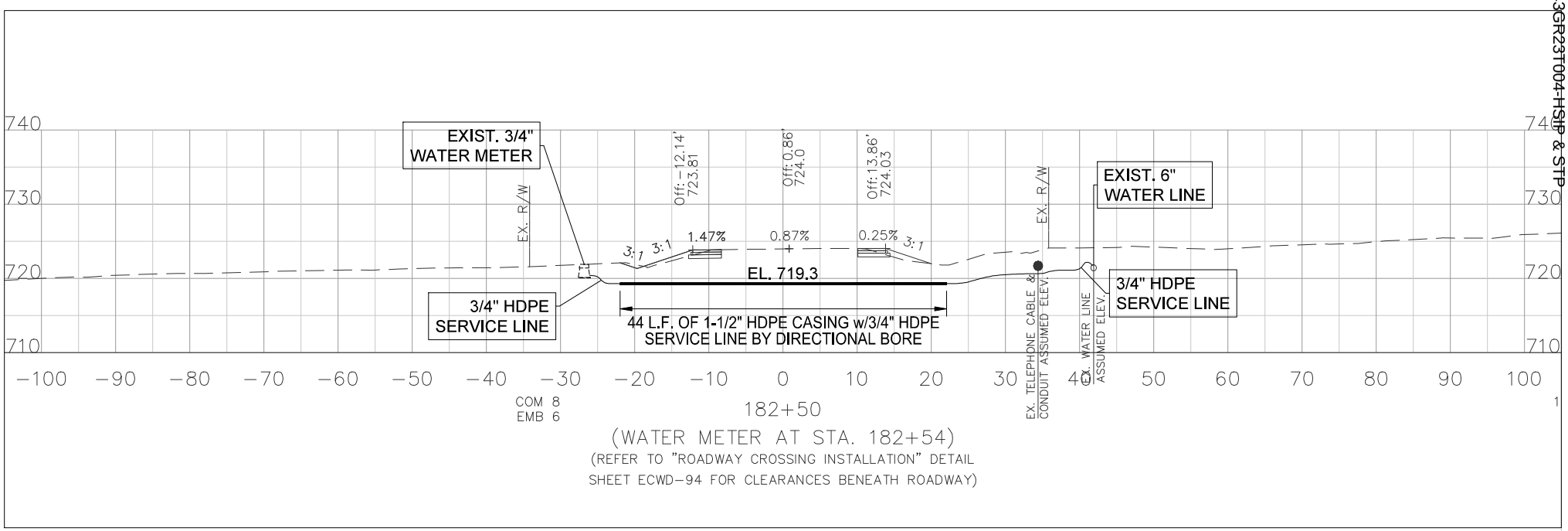


FOR WATER LINE ONLY

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9005	ECWD-48

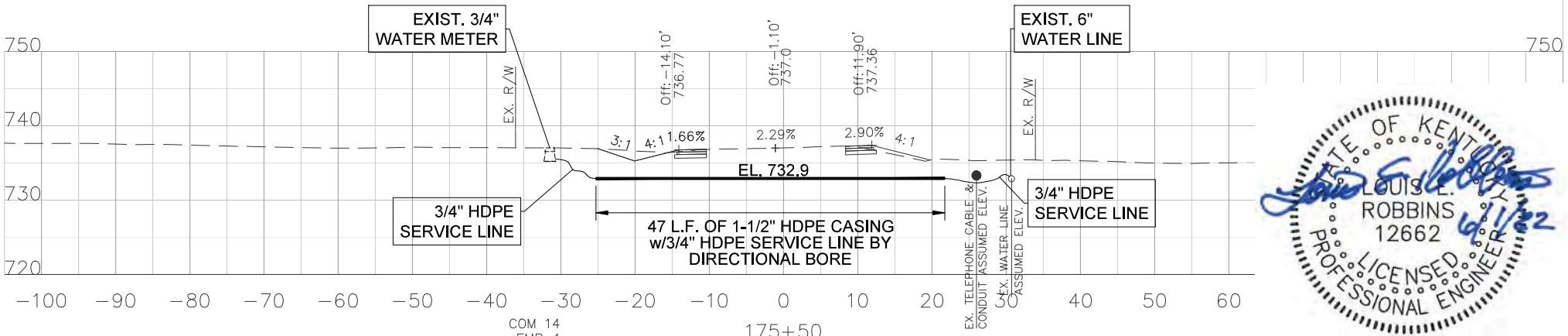
KY HWY 259 ANNETA RD UTILITY RELOCATIONS

CROSS SECTIONS



(WATER METER AT STA. 182+54)

(REFER TO "ROADWAY CROSSING INSTALLATION" DETAIL SHEET ECWD-94 FOR CLEARANCES BENEATH ROADWAY)



(WATER METER AT STA. 175+52)

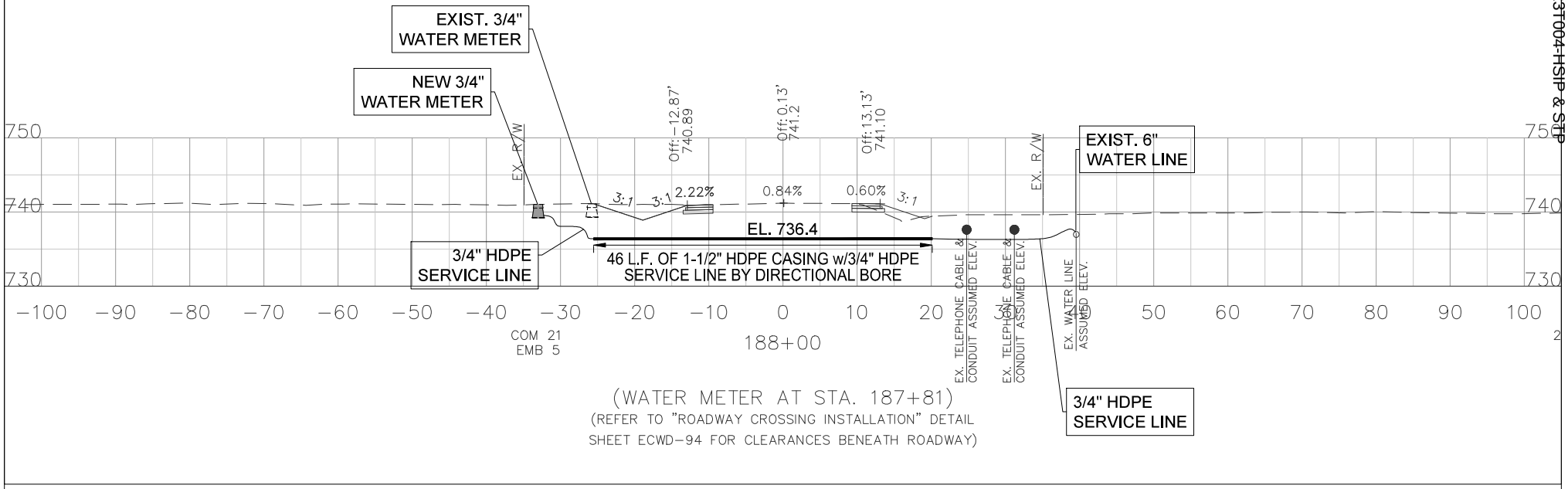
(REFER TO "ROADWAY CROSSING INSTALLATION" DETAIL SHEET ECWD-94 FOR CLEARANCES BENEATH ROADWAY)

FOR WATER LINE ONLY

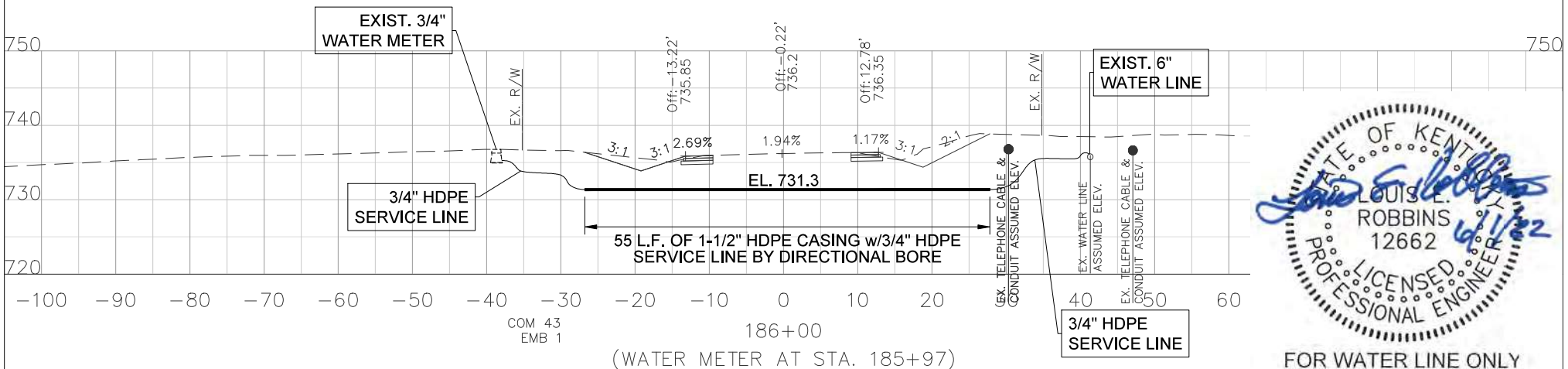
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9005	ECWD-49

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

CROSS SECTIONS



(WATER METER AT STA. 187+81)
(REFER TO "ROADWAY CROSSING INSTALLATION" DETAIL SHEET ECWD-94 FOR CLEARANCES BENEATH ROADWAY)



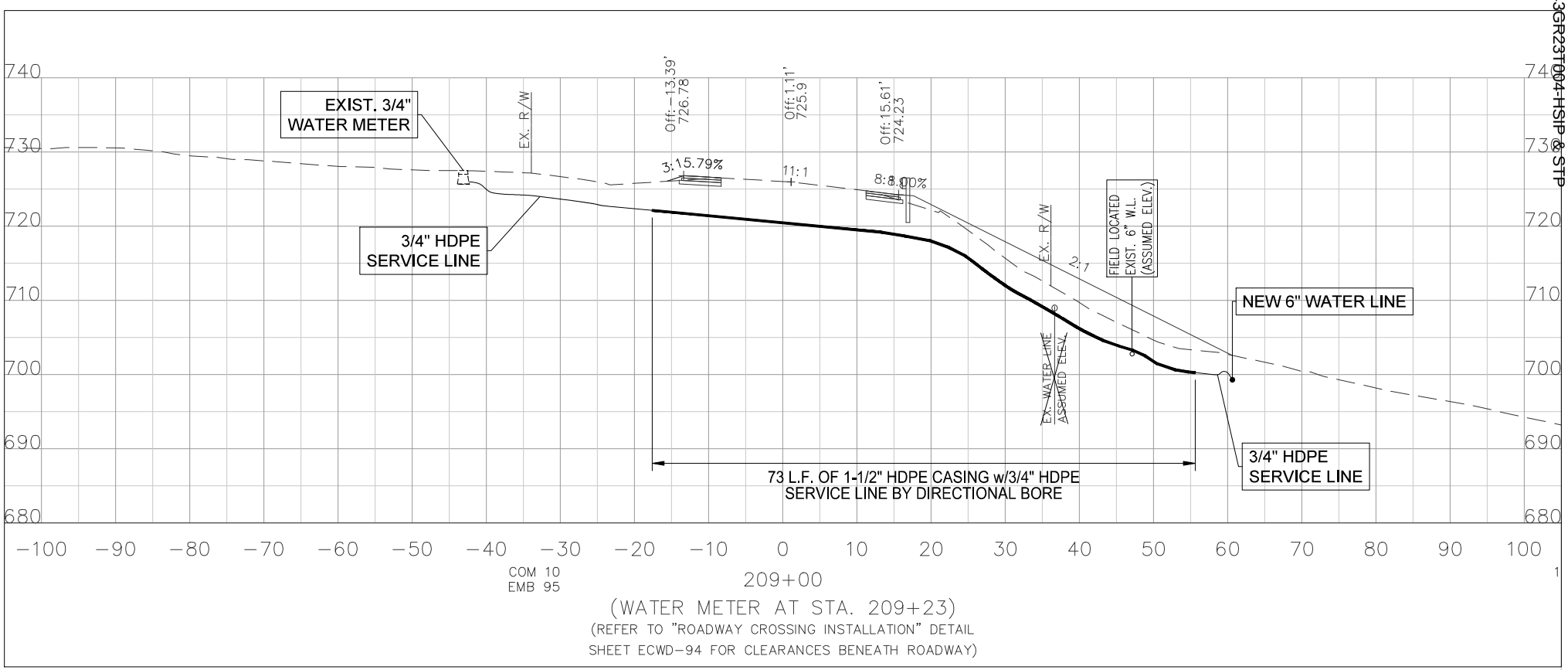
(WATER METER AT STA. 185+97)
(REFER TO "ROADWAY CROSSING INSTALLATION" DETAIL SHEET ECWD-94 FOR CLEARANCES BENEATH ROADWAY)

FOR WATER LINE ONLY

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9005	ECWD-50

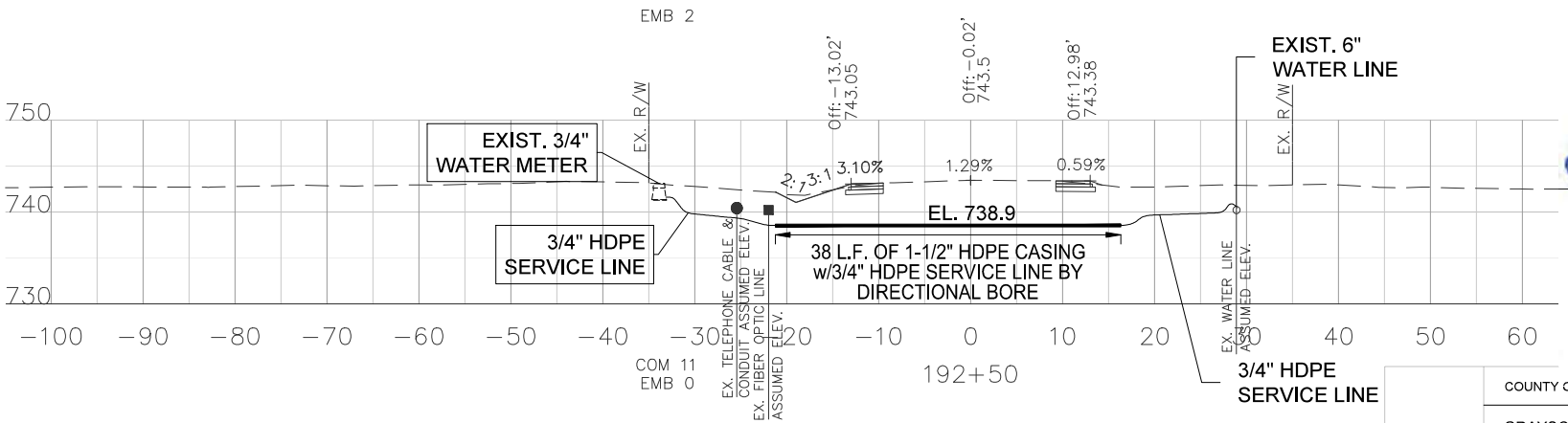
KY HWY 259 ANNETA RD UTILITY RELOCATIONS

CROSS SECTIONS



(WATER METER AT STA. 209+23)

(REFER TO "ROADWAY CROSSING INSTALLATION" DETAIL SHEET ECWD-94 FOR CLEARANCES BENEATH ROADWAY)



(WATER METER AT STA. 192+68)

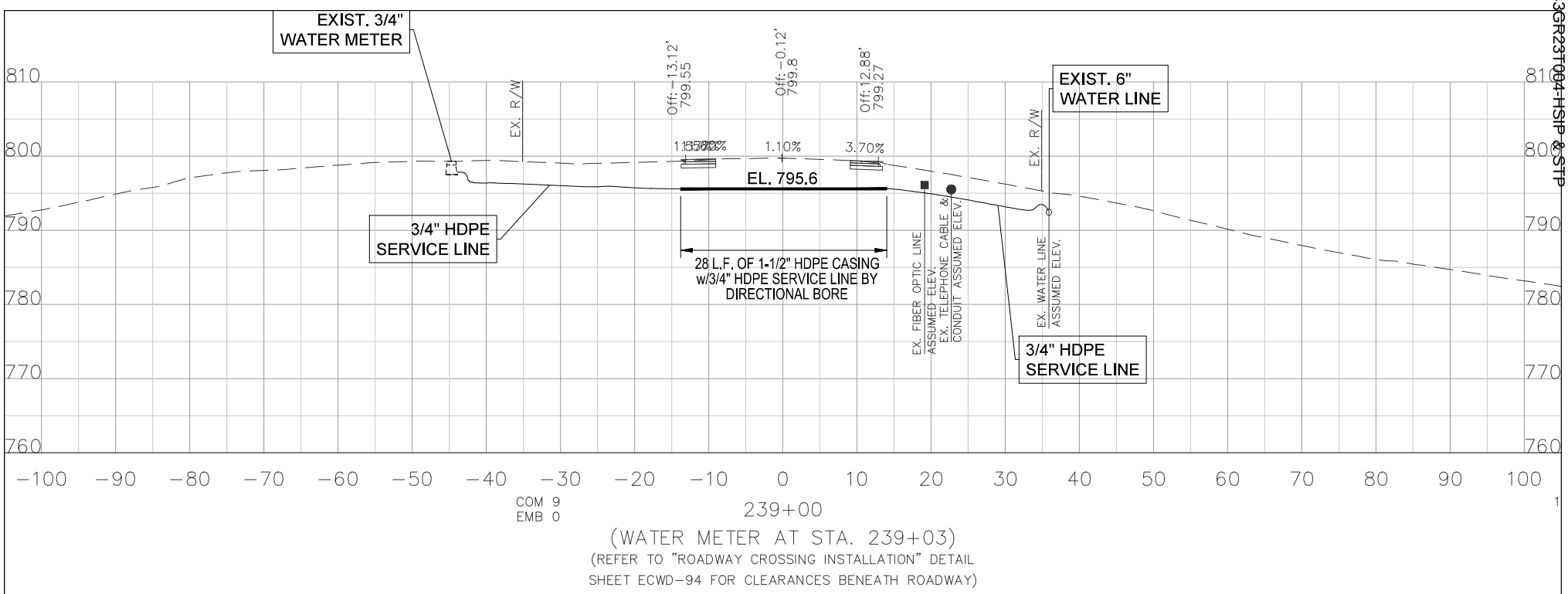
(REFER TO "ROADWAY CROSSING INSTALLATION" DETAIL SHEET ECWD-94 FOR CLEARANCES BENEATH ROADWAY)

FOR WATER LINE ONLY

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9005	ECWD-51

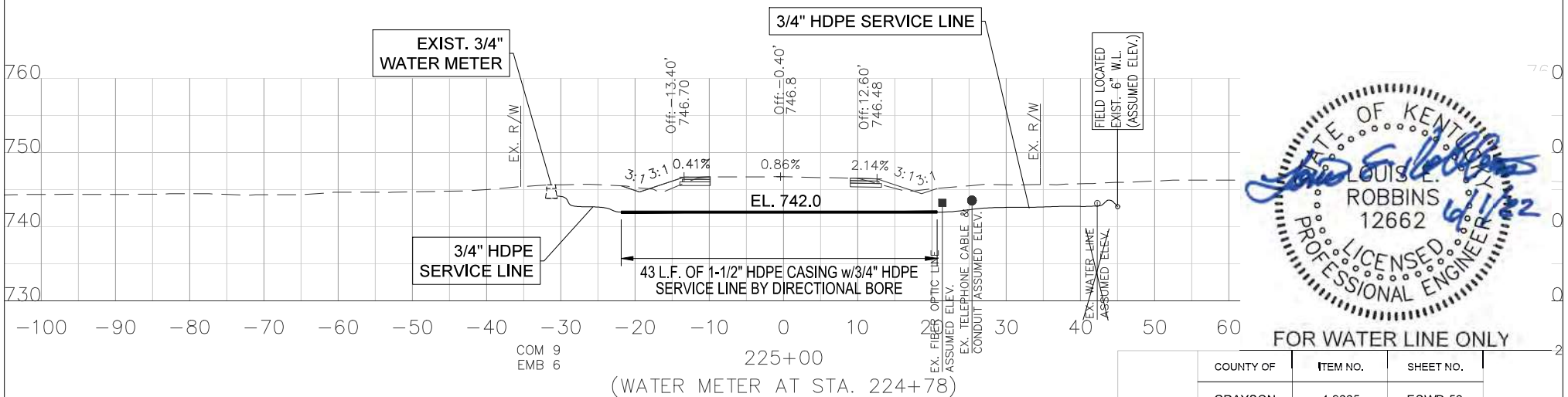
KY HWY 259 ANNETA RD UTILITY RELOCATIONS

CROSS SECTIONS



(WATER METER AT STA. 239+03)

(REFER TO "ROADWAY CROSSING INSTALLATION" DETAIL SHEET ECWD-94 FOR CLEARANCES BENEATH ROADWAY)



(WATER METER AT STA. 224+78)

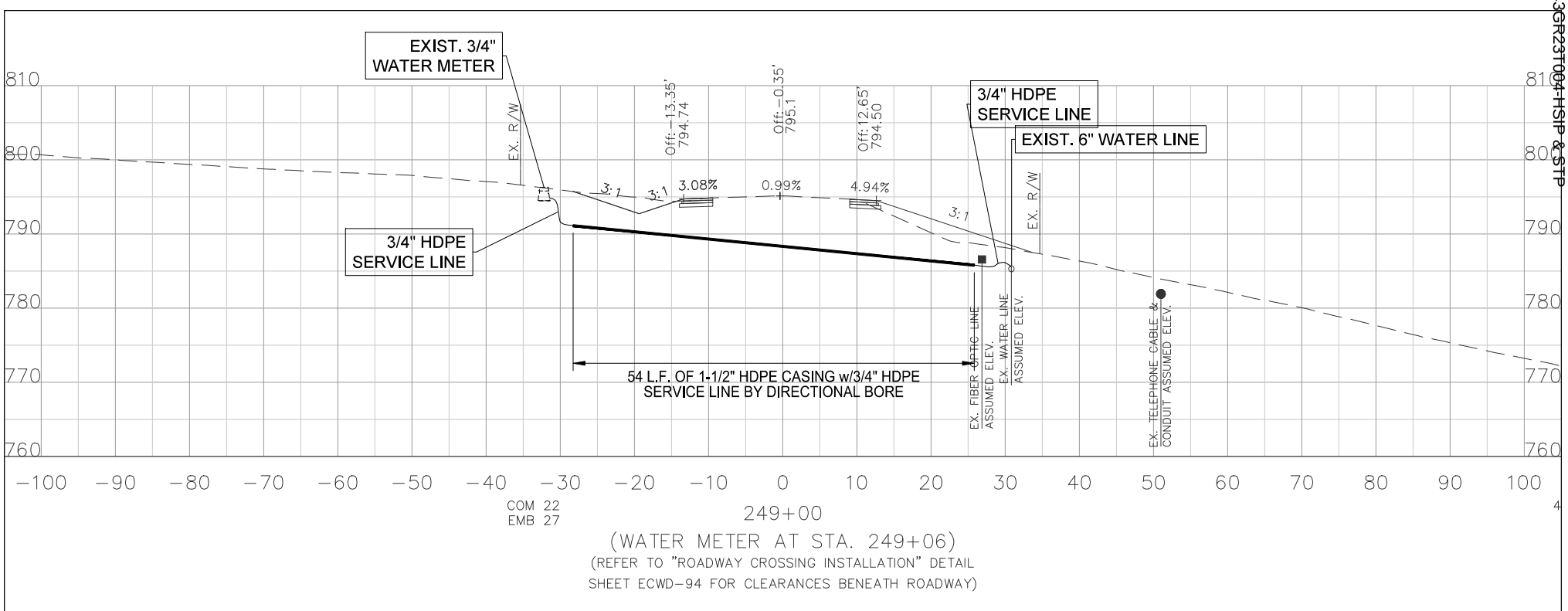
(REFER TO "ROADWAY CROSSING INSTALLATION" DETAIL SHEET ECWD-94 FOR CLEARANCES BENEATH ROADWAY)

FOR WATER LINE ONLY

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9005	ECWD-52

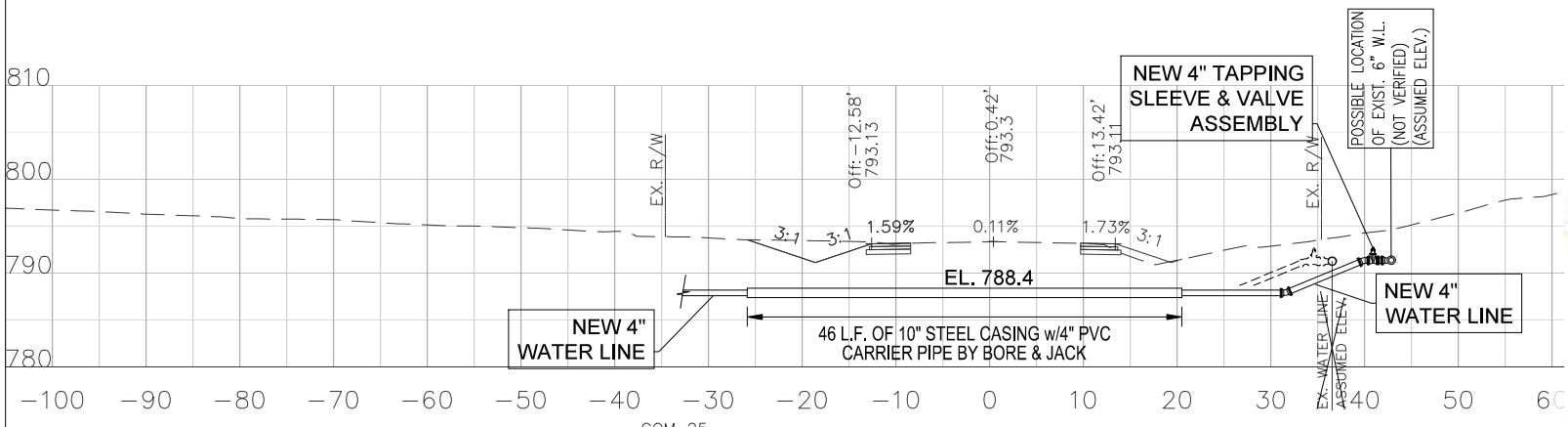
KY HWY 259 ANNETA RD UTILITY RELOCATIONS

CROSS SECTIONS



(WATER METER AT STA. 249+06)

(REFER TO "ROADWAY CROSSING INSTALLATION" DETAIL SHEET ECWD−94 FOR CLEARANCES BENEATH ROADWAY)



(4" WATER LINE AT McGREW CHURCH RD. − 245+25)

(REFER TO "ROADWAY CROSSING INSTALLATION" DETAIL SHEET ECWD−94 FOR CLEARANCES BENEATH ROADWAY)

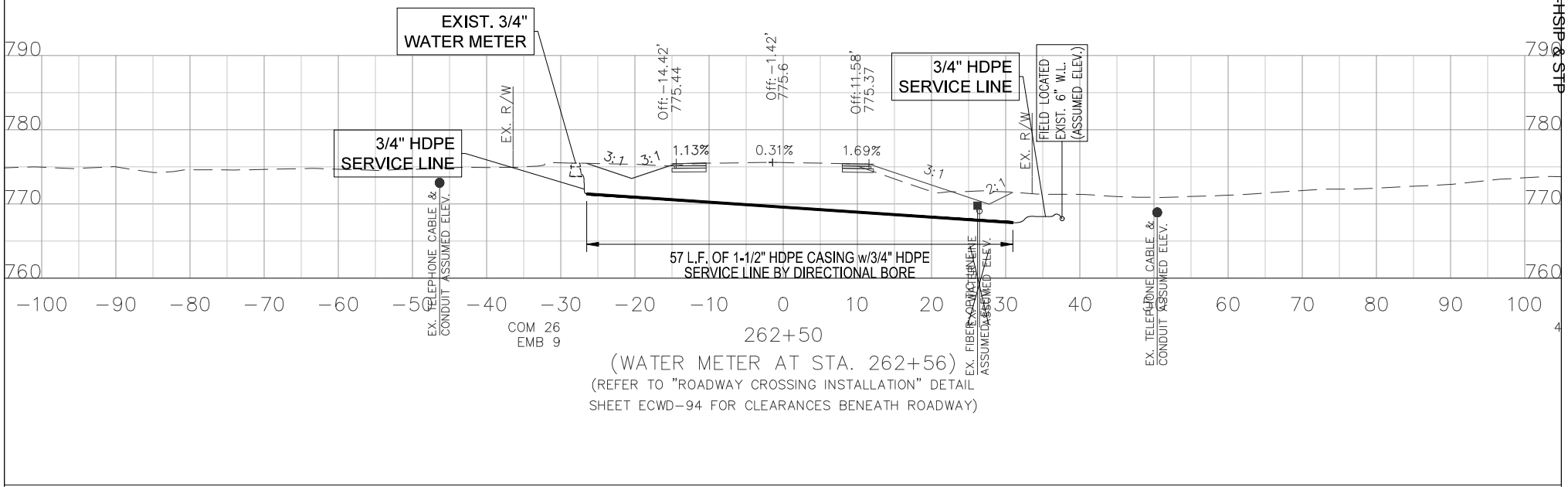
STATE OF KENTUCKY
LOUIS E. ROBBINS
12662
LICENSED PROFESSIONAL ENGINEER
6/1/22

FOR WATER LINE ONLY

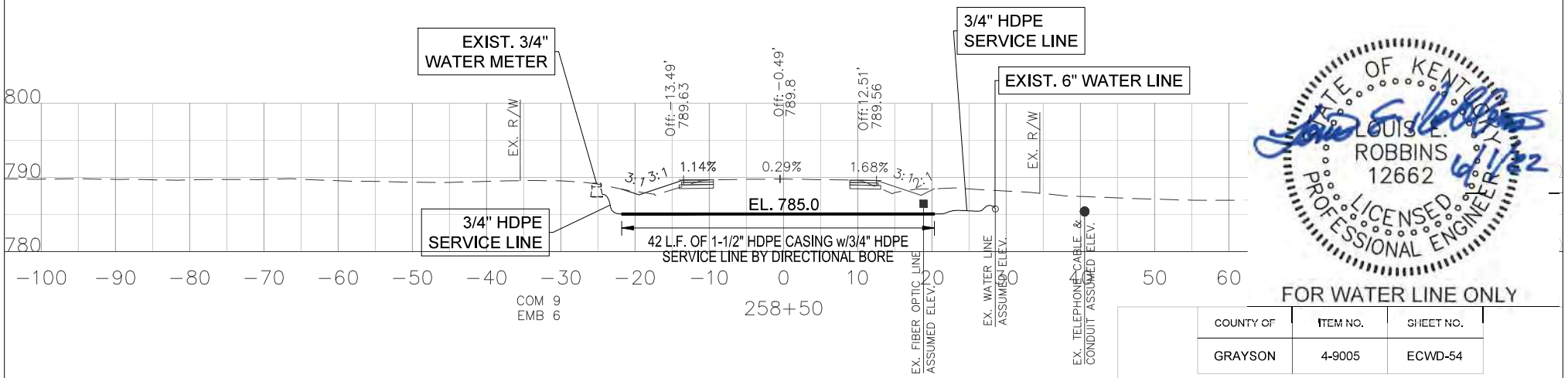
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9005	ECWD-53

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

CROSS SECTIONS



(WATER METER AT STA. 262+56)
(REFER TO "ROADWAY CROSSING INSTALLATION" DETAIL SHEET ECWD-94 FOR CLEARANCES BENEATH ROADWAY)



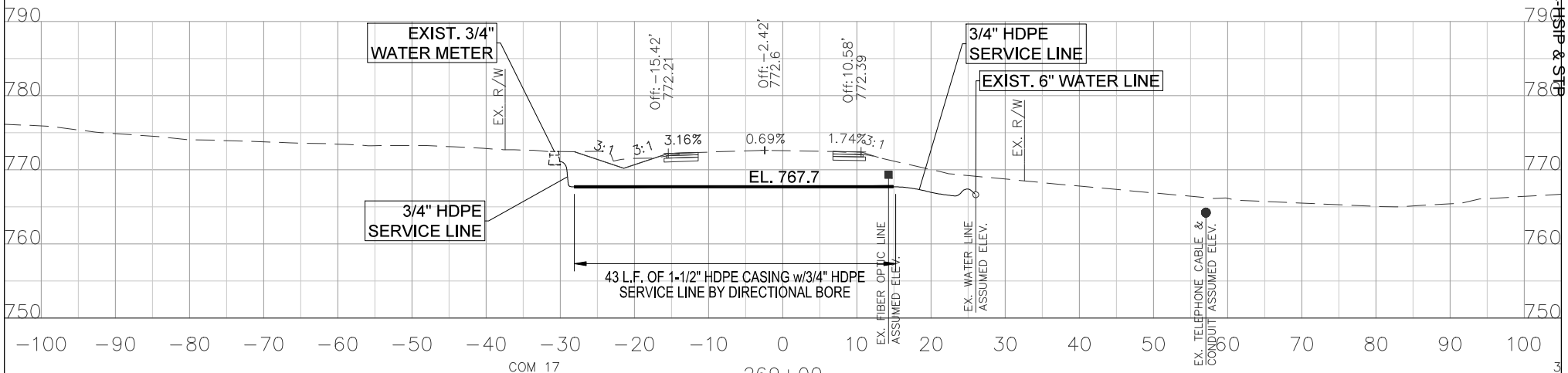
(WATER METER AT STA. 258+33)
(REFER TO "ROADWAY CROSSING INSTALLATION" DETAIL SHEET ECWD-94 FOR CLEARANCES BENEATH ROADWAY)

FOR WATER LINE ONLY

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9005	ECWD-54

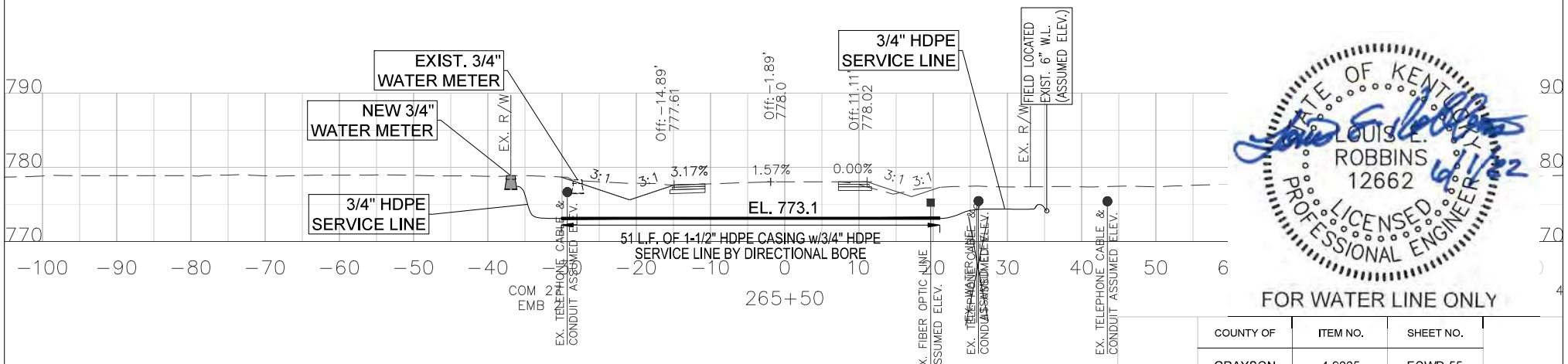
KY HWY 259 ANNETA RD UTILITY RELOCATIONS

CROSS SECTIONS



(WATER METER AT STA. 269+11)

(REFER TO "ROADWAY CROSSING INSTALLATION" DETAIL SHEET ECWD-94 FOR CLEARANCES BENEATH ROADWAY)



(WATER METER AT STA. 265+28)

(REFER TO "ROADWAY CROSSING INSTALLATION" DETAIL SHEET ECWD-94 FOR CLEARANCES BENEATH ROADWAY)

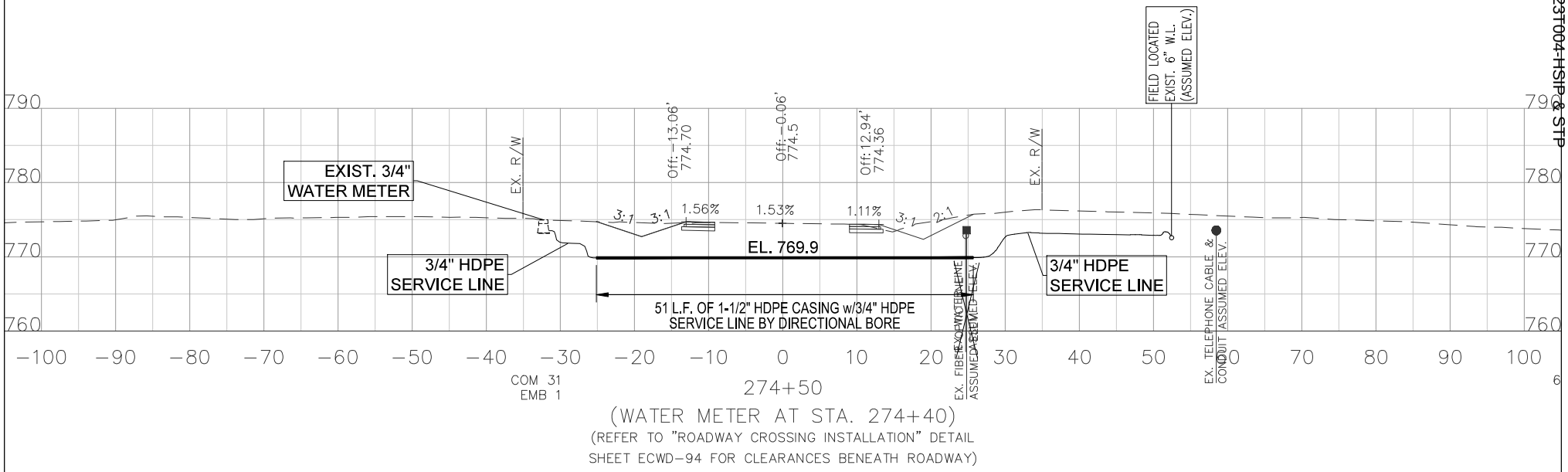
COMMONWEALTH OF KENTUCKY
LOUIS E. ROBBINS
12662
LICENSED PROFESSIONAL ENGINEER
6/1/22

FOR WATER LINE ONLY

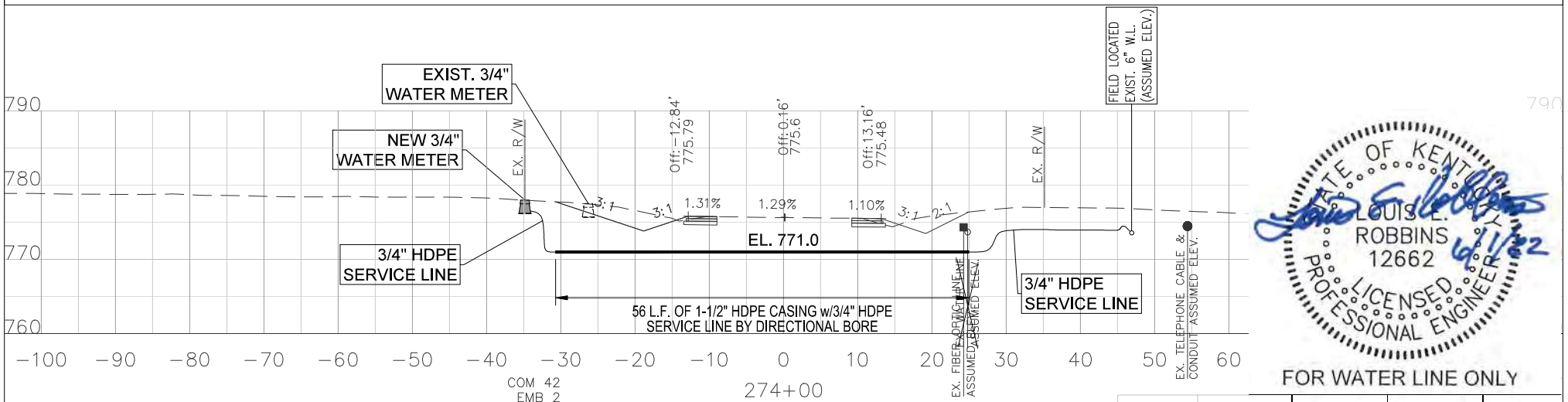
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9005	ECWD-55

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

CROSS SECTIONS



(WATER METER AT STA. 274+40)
(REFER TO "ROADWAY CROSSING INSTALLATION" DETAIL SHEET ECWD-94 FOR CLEARANCES BENEATH ROADWAY)



(WATER METER AT STA. 273+80)
(REFER TO "ROADWAY CROSSING INSTALLATION" DETAIL SHEET ECWD-94 FOR CLEARANCES BENEATH ROADWAY)

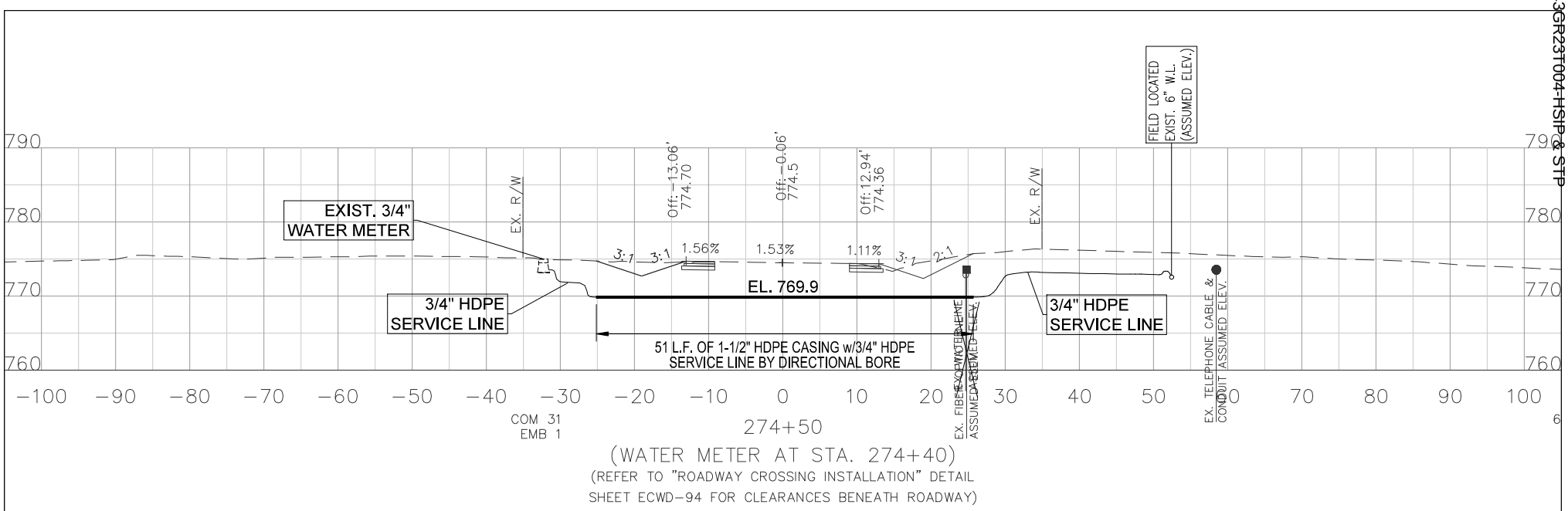
COMMONWEALTH OF KENTUCKY
LOUIS E. ROBBINS
12662
LICENSED PROFESSIONAL ENGINEER
6/11/22

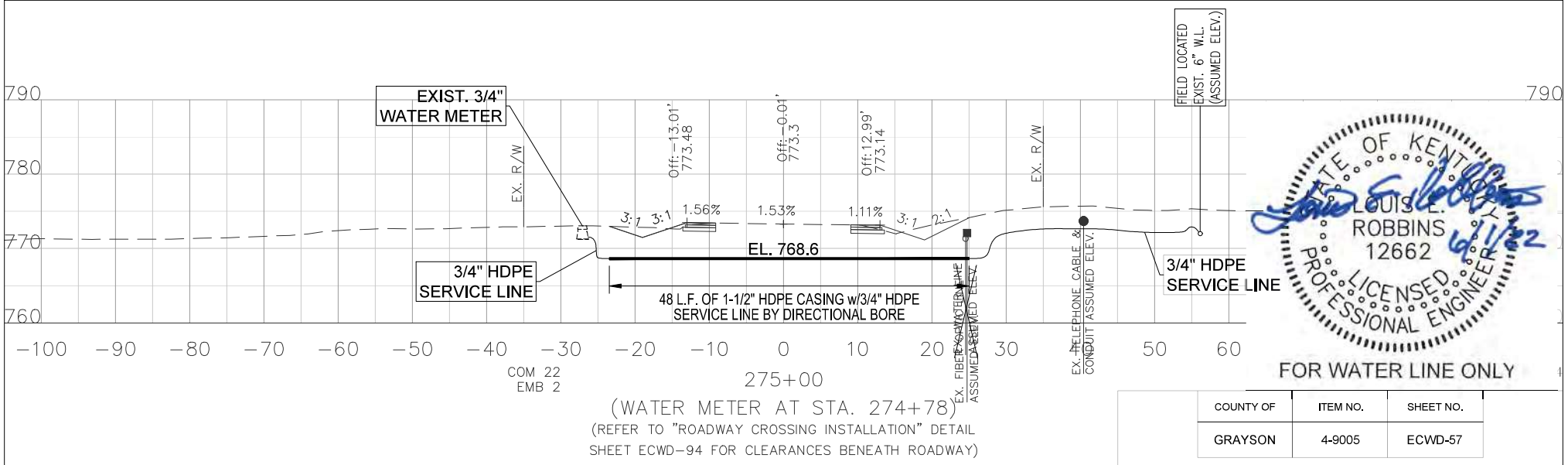
FOR WATER LINE ONLY

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9005	ECWD-56

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

CROSS SECTIONS



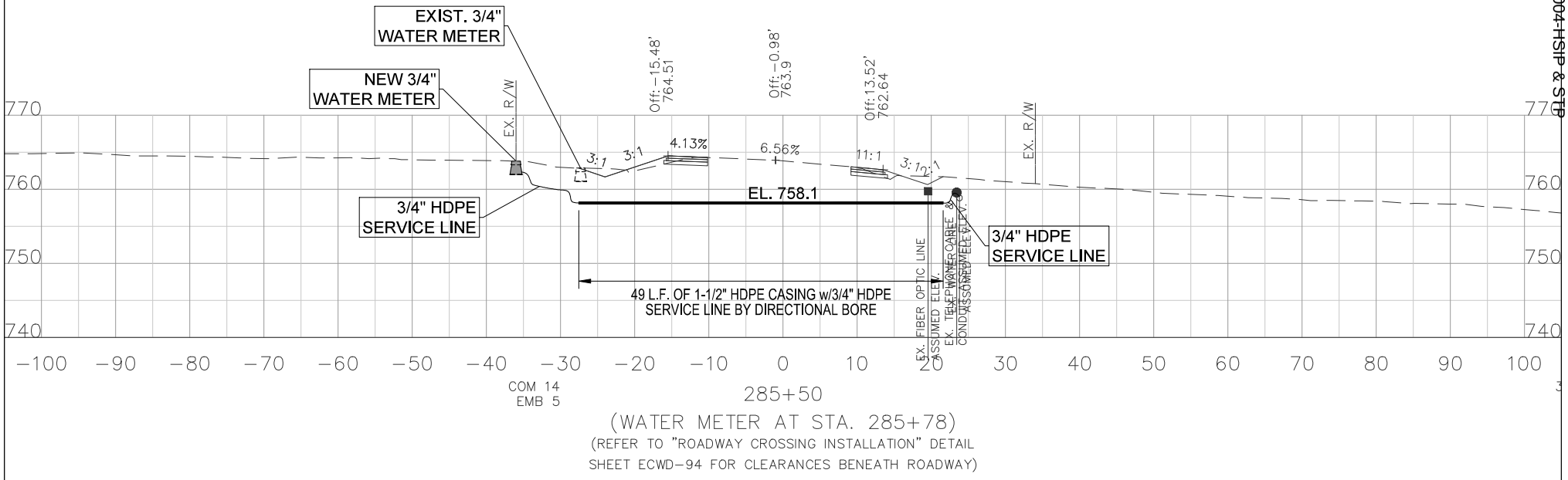


FOR WATER LINE ONLY

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9005	ECWD-57

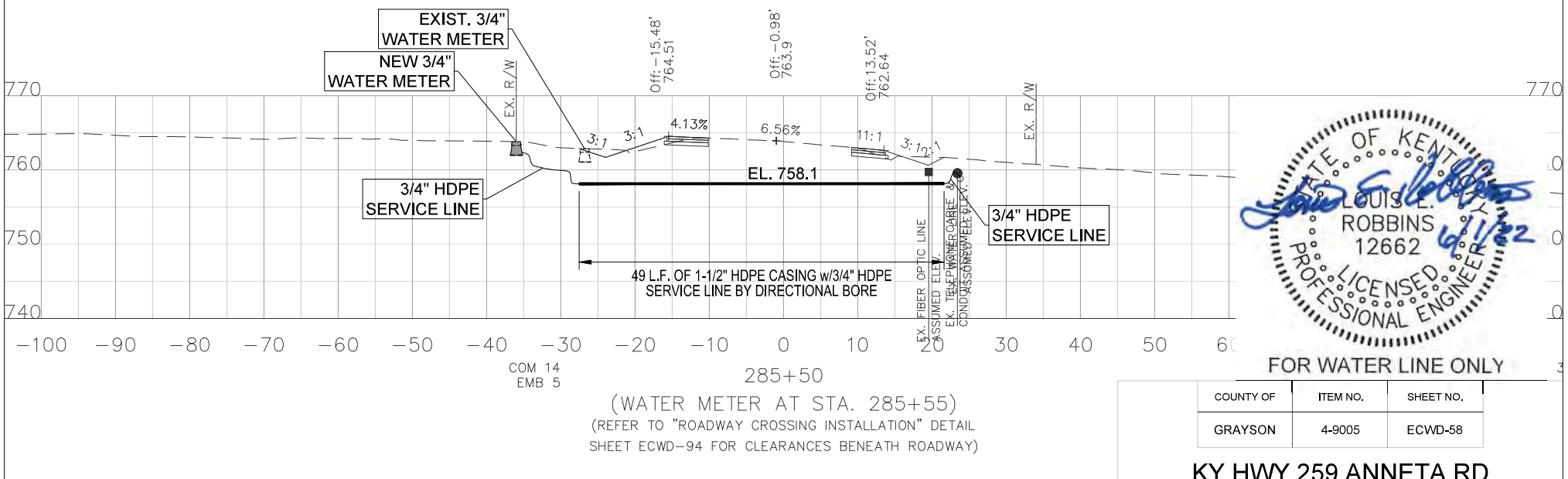
KY HWY 259 ANNETA RD UTILITY RELOCATIONS

CROSS SECTIONS



(WATER METER AT STA. 285+78)

(REFER TO "ROADWAY CROSSING INSTALLATION" DETAIL SHEET ECWD-94 FOR CLEARANCES BENEATH ROADWAY)



(WATER METER AT STA. 285+55)

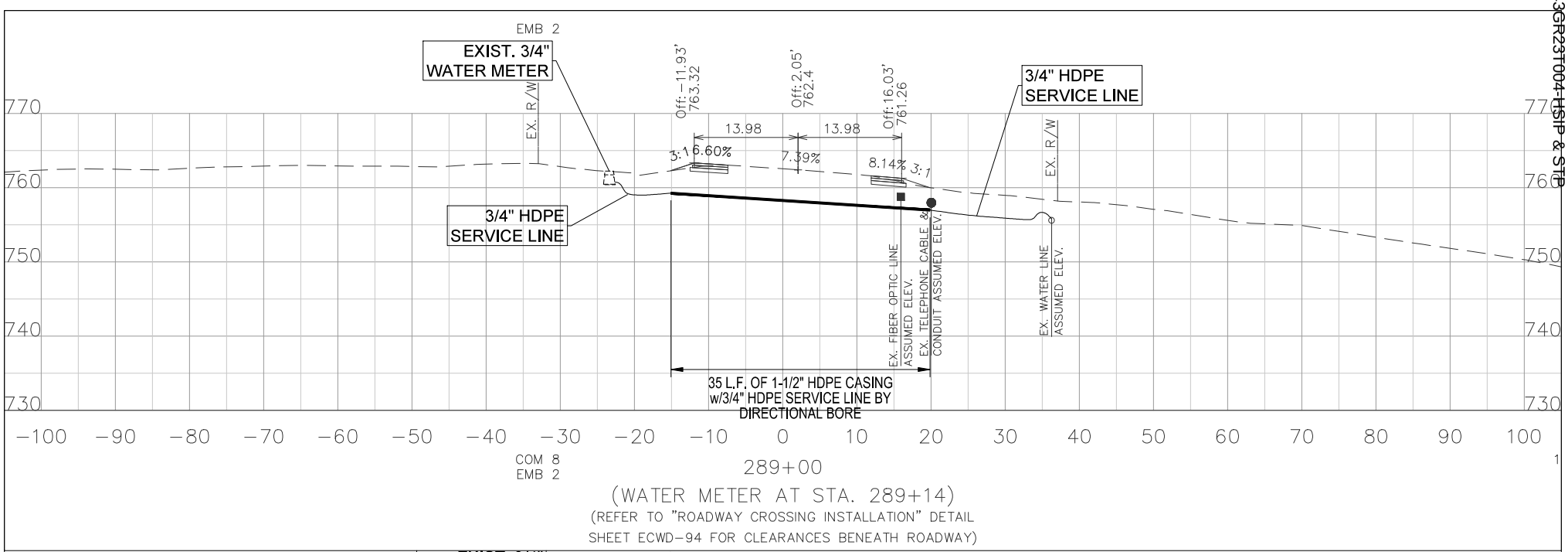
(REFER TO "ROADWAY CROSSING INSTALLATION" DETAIL SHEET ECWD-94 FOR CLEARANCES BENEATH ROADWAY)

FOR WATER LINE ONLY

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9005	ECWD-58

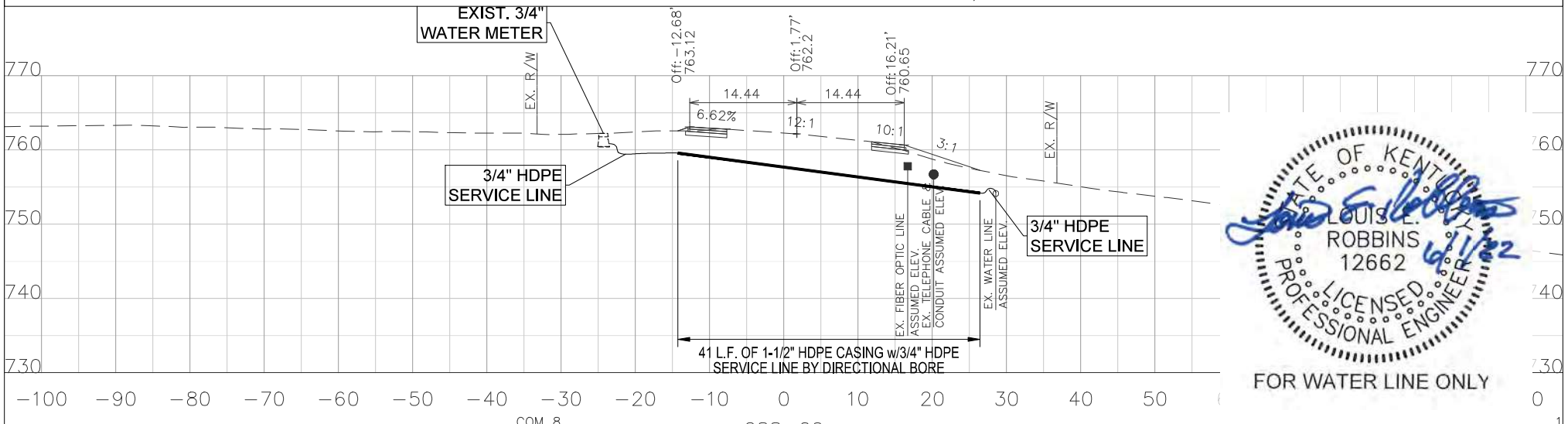
KY HWY 259 ANNETA RD UTILITY RELOCATIONS

CROSS SECTIONS



(WATER METER AT STA. 289+14)

(REFER TO "ROADWAY CROSSING INSTALLATION" DETAIL SHEET ECWD-94 FOR CLEARANCES BENEATH ROADWAY)



(WATER METER AT STA. 288+00)

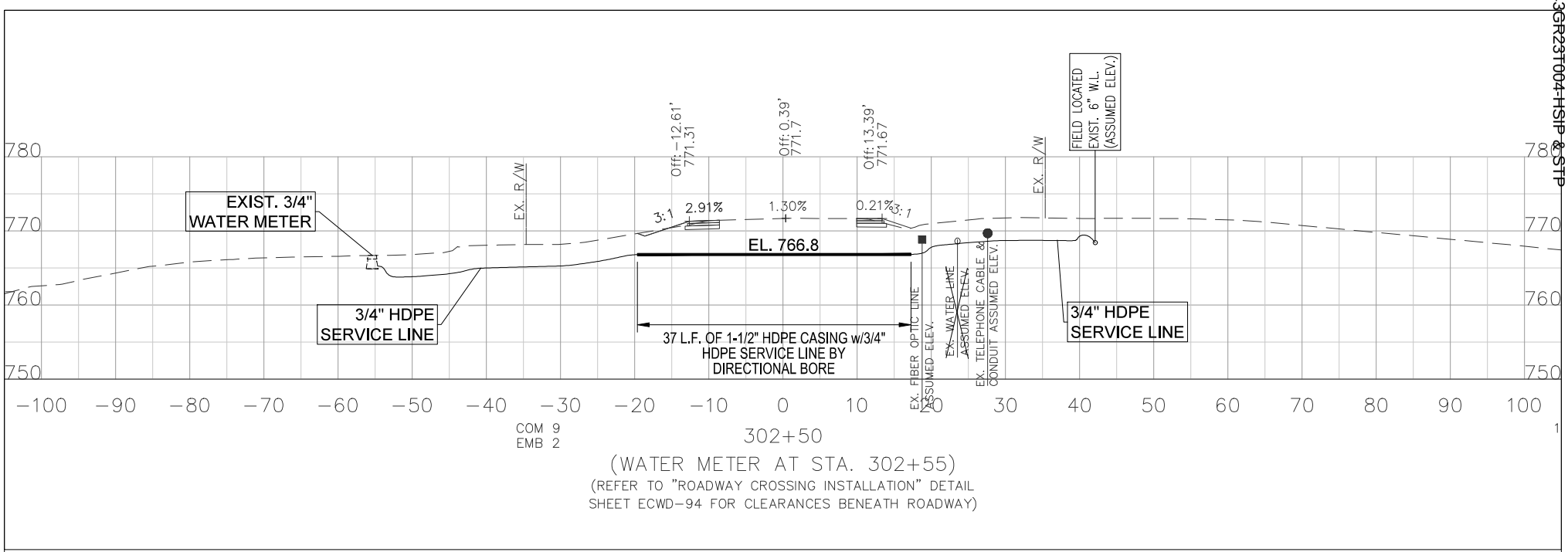
(REFER TO "ROADWAY CROSSING INSTALLATION" DETAIL SHEET ECWD-94 FOR CLEARANCES BENEATH ROADWAY)

FOR WATER LINE ONLY

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9005	ECWD-59

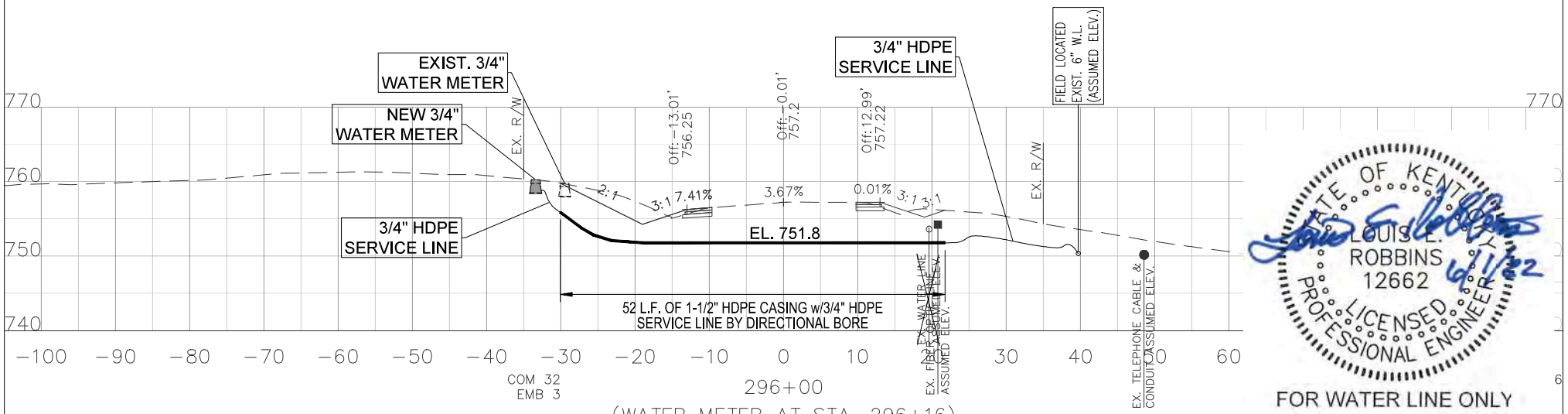
KY HWY 259 ANNETA RD UTILITY RELOCATIONS

CROSS SECTIONS



(WATER METER AT STA. 302+55)

(REFER TO "ROADWAY CROSSING INSTALLATION" DETAIL SHEET ECWD-94 FOR CLEARANCES BENEATH ROADWAY)



(WATER METER AT STA. 296+16)

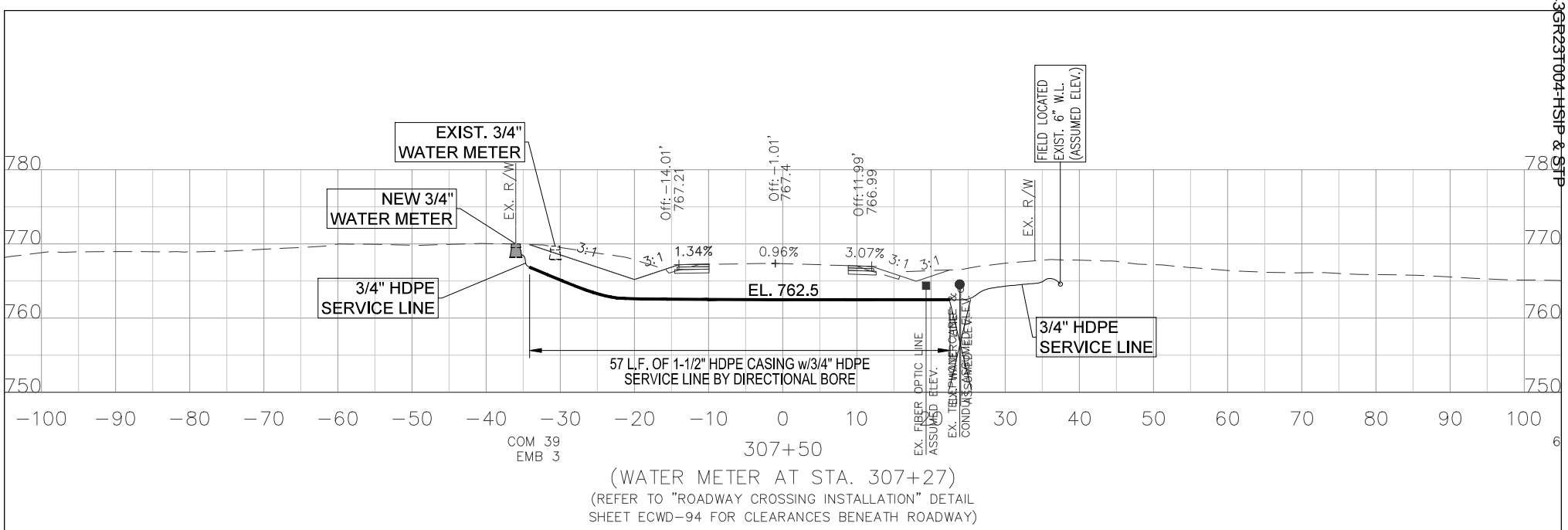
(REFER TO "ROADWAY CROSSING INSTALLATION" DETAIL SHEET ECWD-94 FOR CLEARANCES BENEATH ROADWAY)

FOR WATER LINE ONLY

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9005	ECWD-60

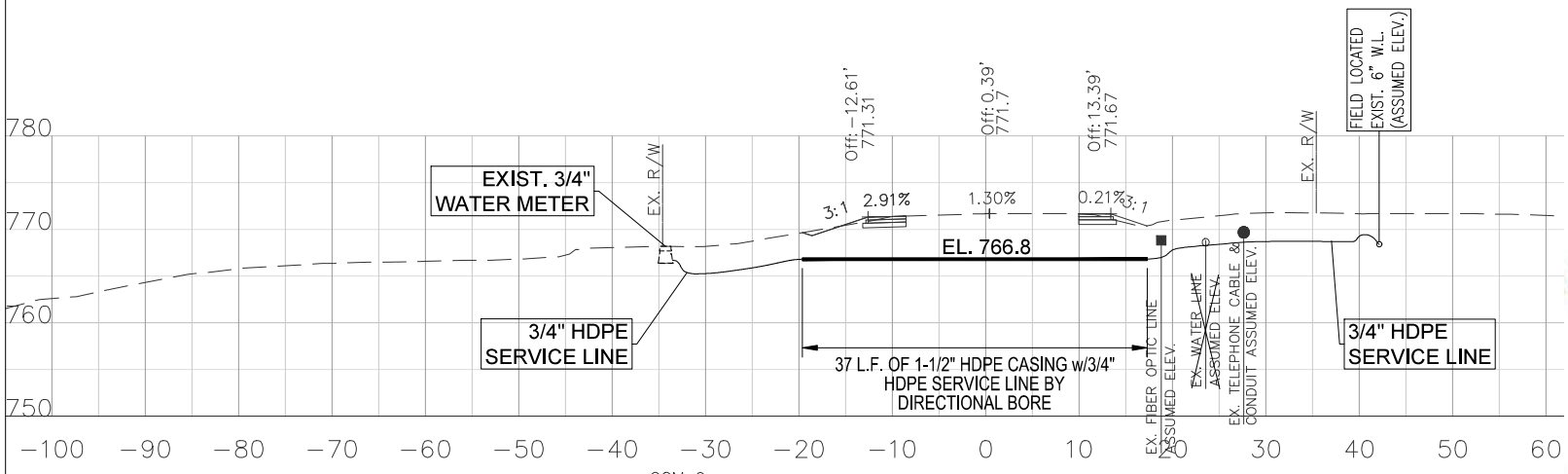
KY HWY 259 ANNETA RD UTILITY RELOCATIONS

CROSS SECTIONS



(WATER METER AT STA. 307+27)

(REFER TO "ROADWAY CROSSING INSTALLATION" DETAIL SHEET ECWD-94 FOR CLEARANCES BENEATH ROADWAY)



(WATER METER AT STA. 302+79)

(REFER TO "ROADWAY CROSSING INSTALLATION" DETAIL SHEET ECWD-94 FOR CLEARANCES BENEATH ROADWAY)

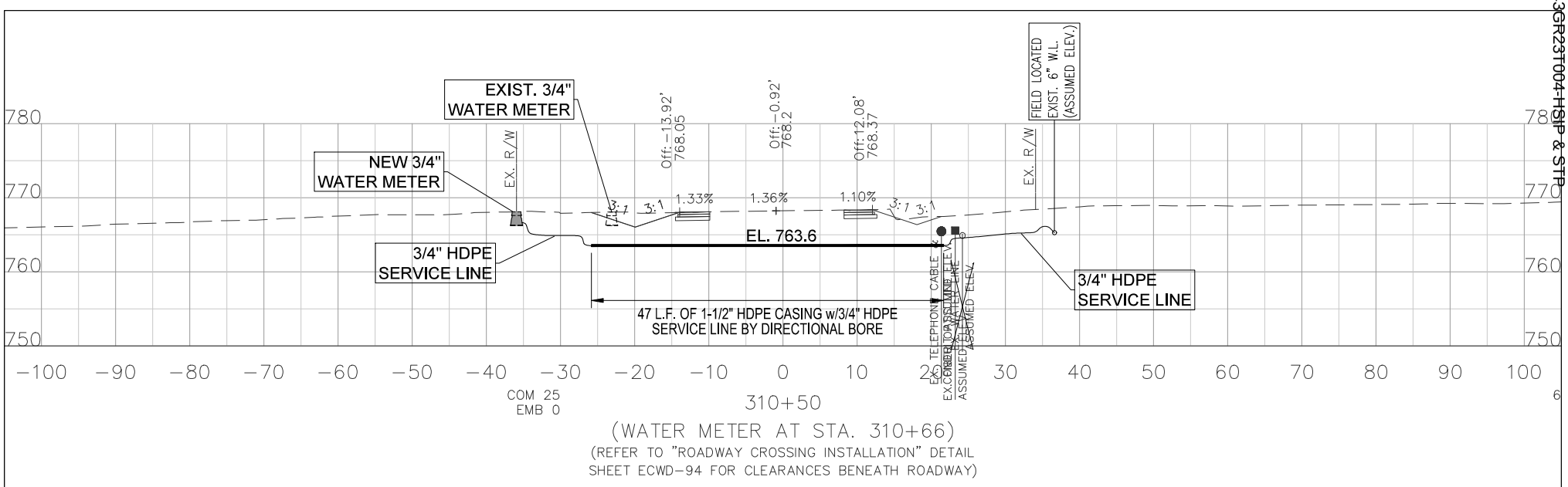
COMMONWEALTH OF KENTUCKY
LOUIS E. ROBBINS
12662
LICENSED PROFESSIONAL ENGINEER
6/1/22

FOR WATER LINE ONLY

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9005	ECWD-61

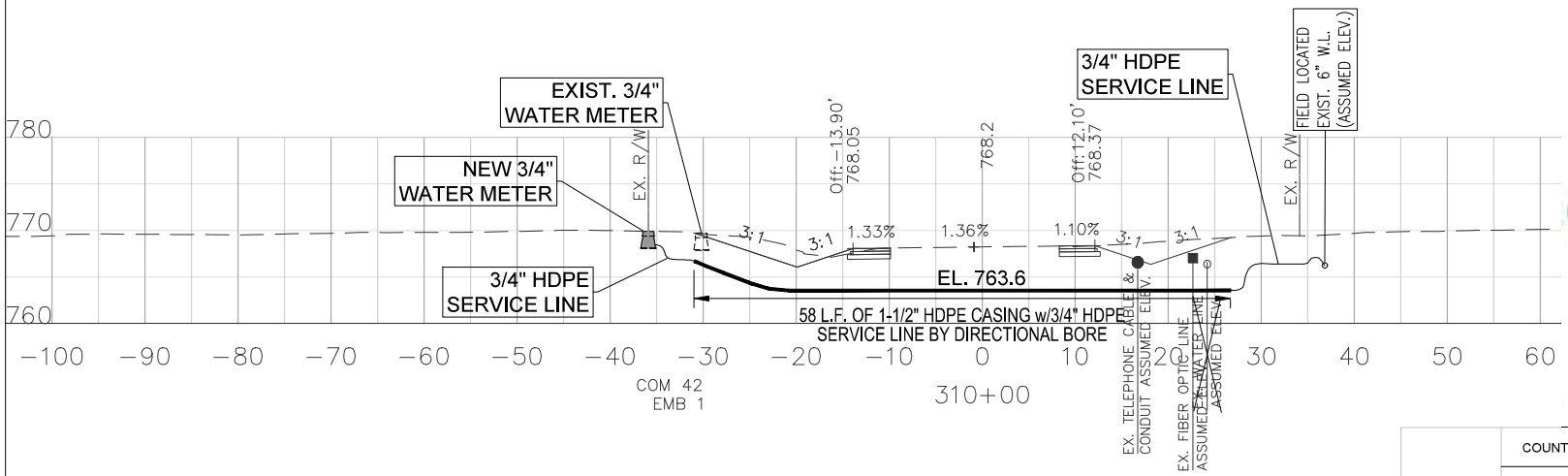
KY HWY 259 ANNETA RD UTILITY RELOCATIONS

CROSS SECTIONS



(WATER METER AT STA. 310+66)

(REFER TO "ROADWAY CROSSING INSTALLATION" DETAIL SHEET ECWD-94 FOR CLEARANCES BENEATH ROADWAY)



(WATER METER AT STA. 309+92)

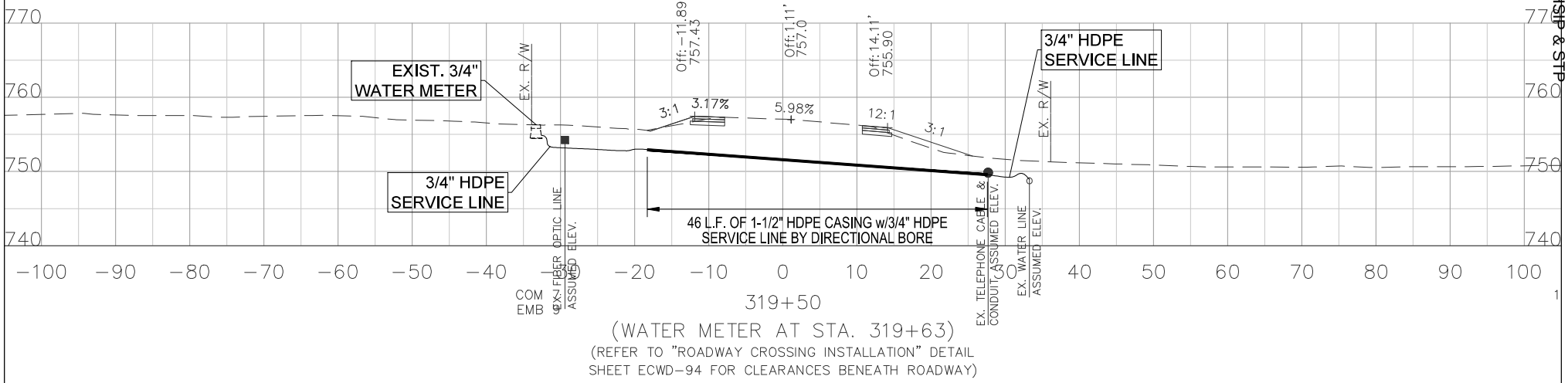
(REFER TO "ROADWAY CROSSING INSTALLATION" DETAIL SHEET ECWD-94 FOR CLEARANCES BENEATH ROADWAY)

FOR WATER LINE ONLY

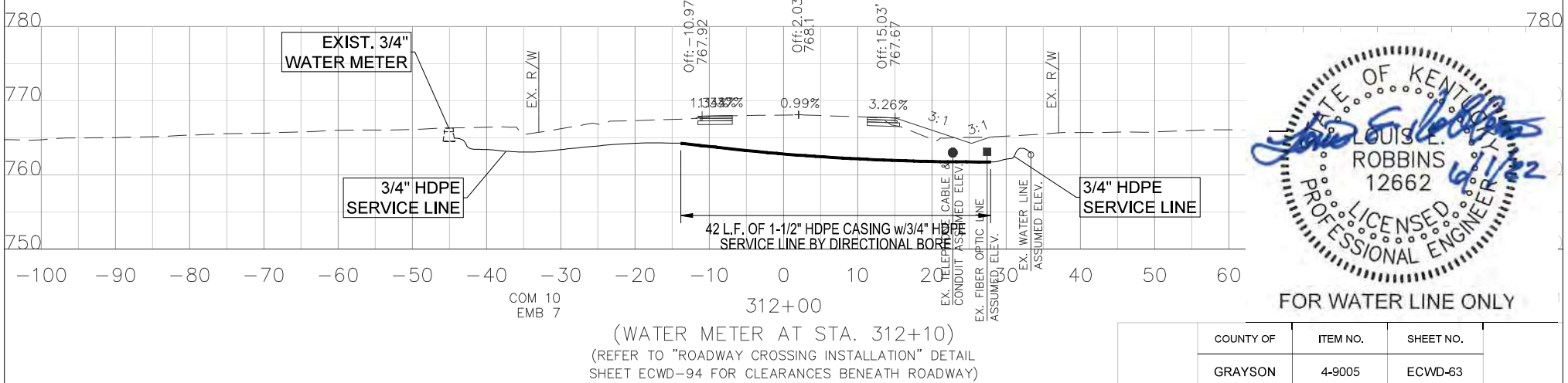
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9005	ECWD-62

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

CROSS SECTIONS



(WATER METER AT STA. 319+63)
(REFER TO "ROADWAY CROSSING INSTALLATION" DETAIL SHEET ECWD−94 FOR CLEARANCES BENEATH ROADWAY)



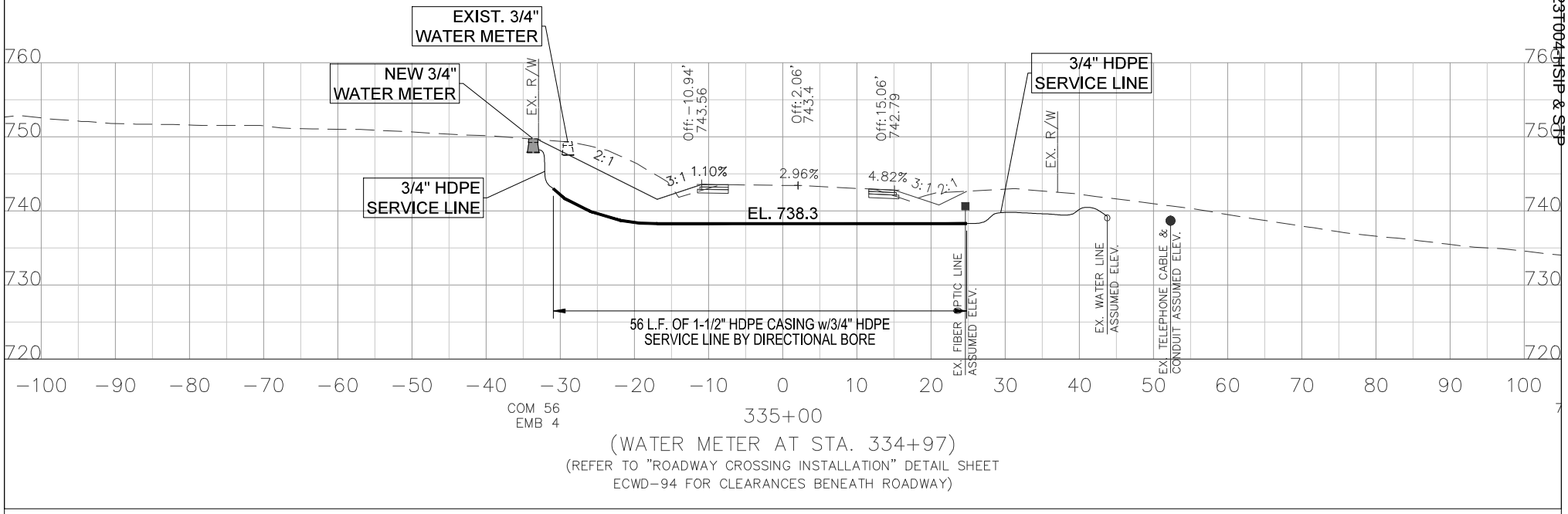
(WATER METER AT STA. 312+10)
(REFER TO "ROADWAY CROSSING INSTALLATION" DETAIL SHEET ECWD−94 FOR CLEARANCES BENEATH ROADWAY)

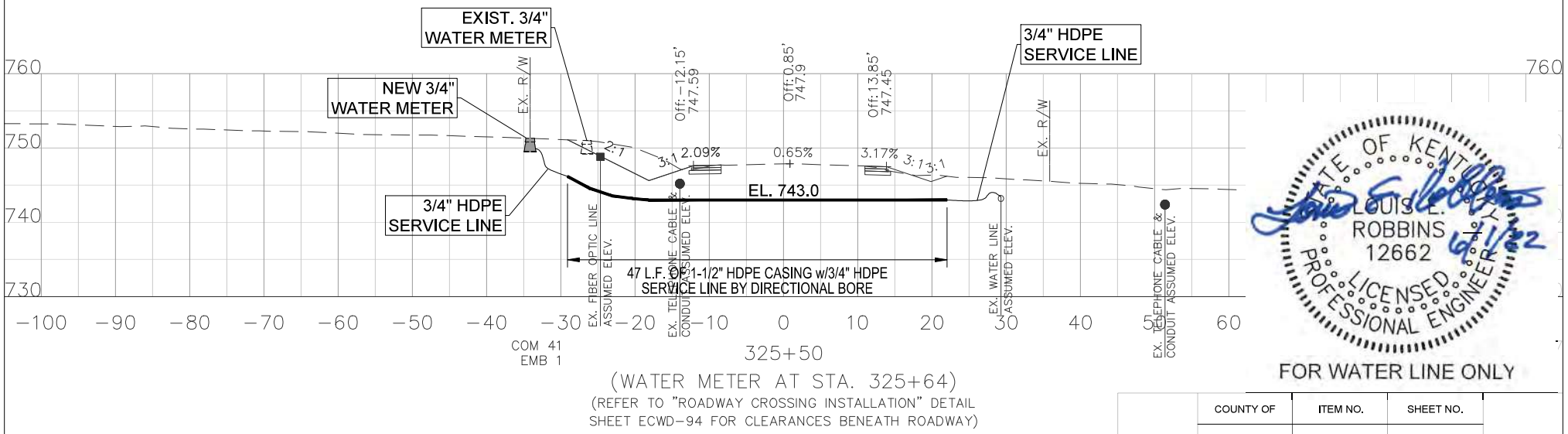
FOR WATER LINE ONLY

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9005	ECWD-63

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

CROSS SECTIONS



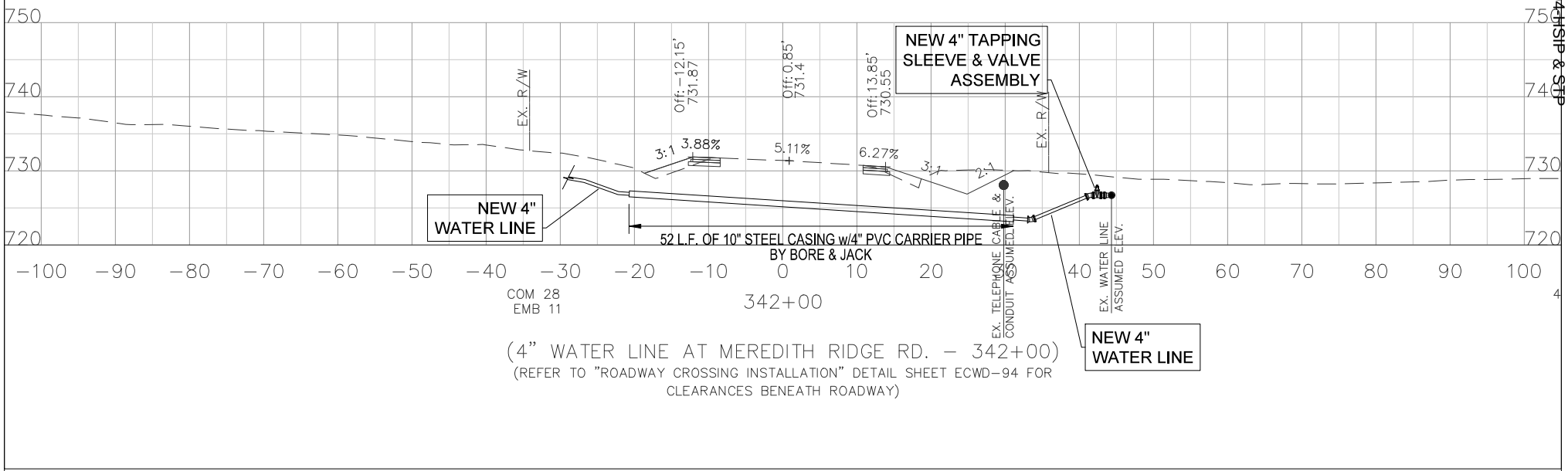


FOR WATER LINE ONLY

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9005	ECWD-64

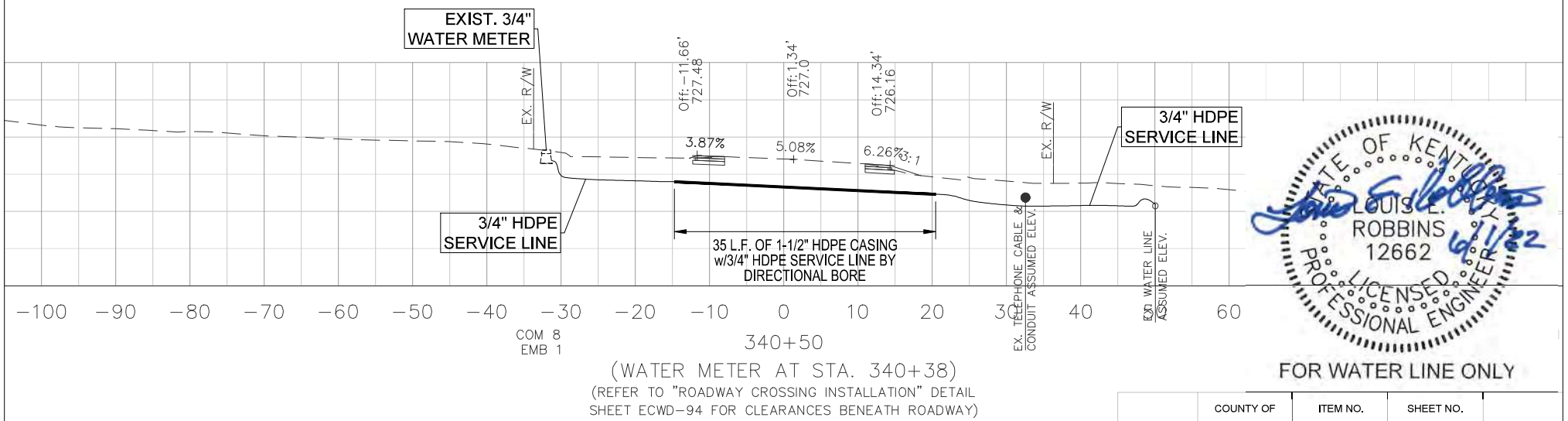
KY HWY 259 ANNETA RD UTILITY RELOCATIONS

CROSS SECTIONS



(4" WATER LINE AT MEREDITH RIDGE RD. – 342+00)

(REFER TO "ROADWAY CROSSING INSTALLATION" DETAIL SHEET ECWD-94 FOR CLEARANCES BENEATH ROADWAY)



(WATER METER AT STA. 340+38)

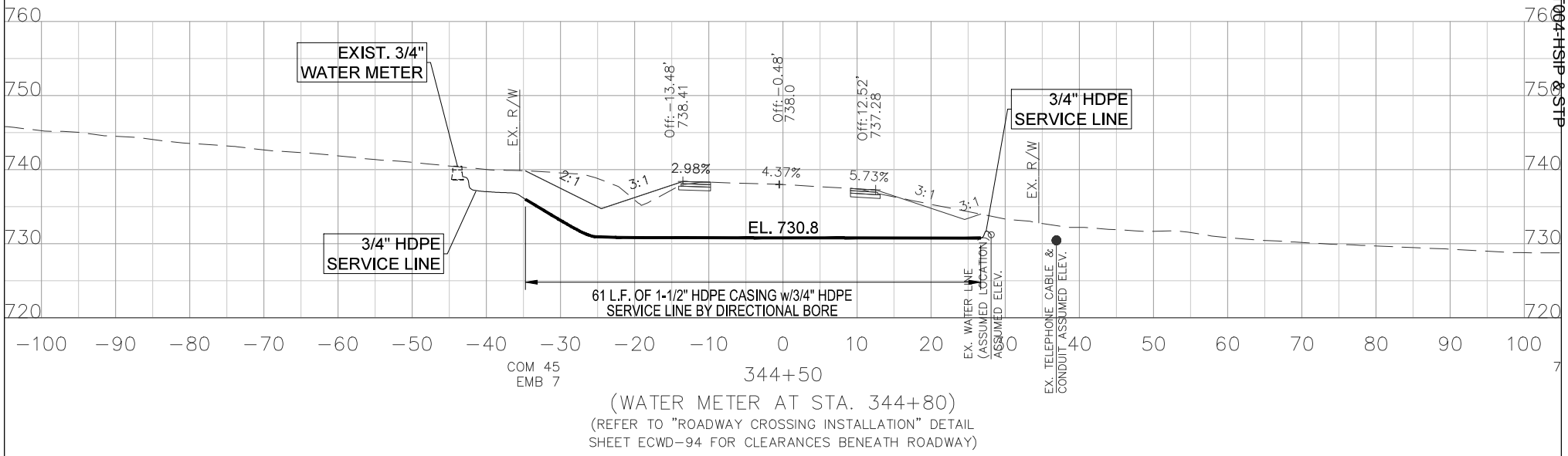
(REFER TO "ROADWAY CROSSING INSTALLATION" DETAIL SHEET ECWD-94 FOR CLEARANCES BENEATH ROADWAY)

FOR WATER LINE ONLY

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9005	ECWD-65

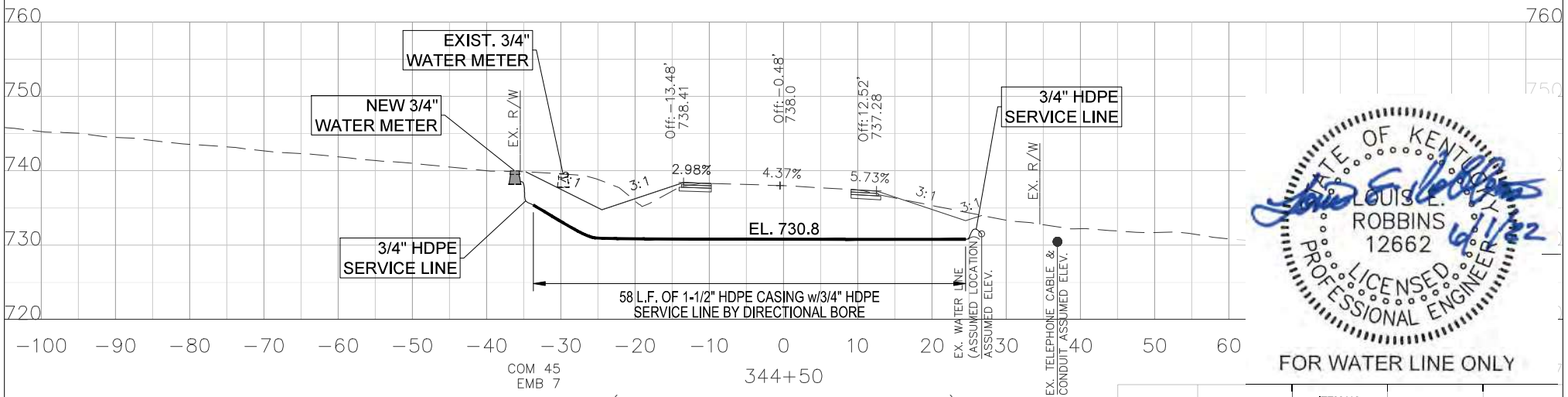
KY HWY 259 ANNETA RD UTILITY RELOCATIONS

CROSS SECTIONS



(WATER METER AT STA. 344+80)

(REFER TO "ROADWAY CROSSING INSTALLATION" DETAIL SHEET ECWD-94 FOR CLEARANCES BENEATH ROADWAY)



(WATER METER AT STA. 344+69)

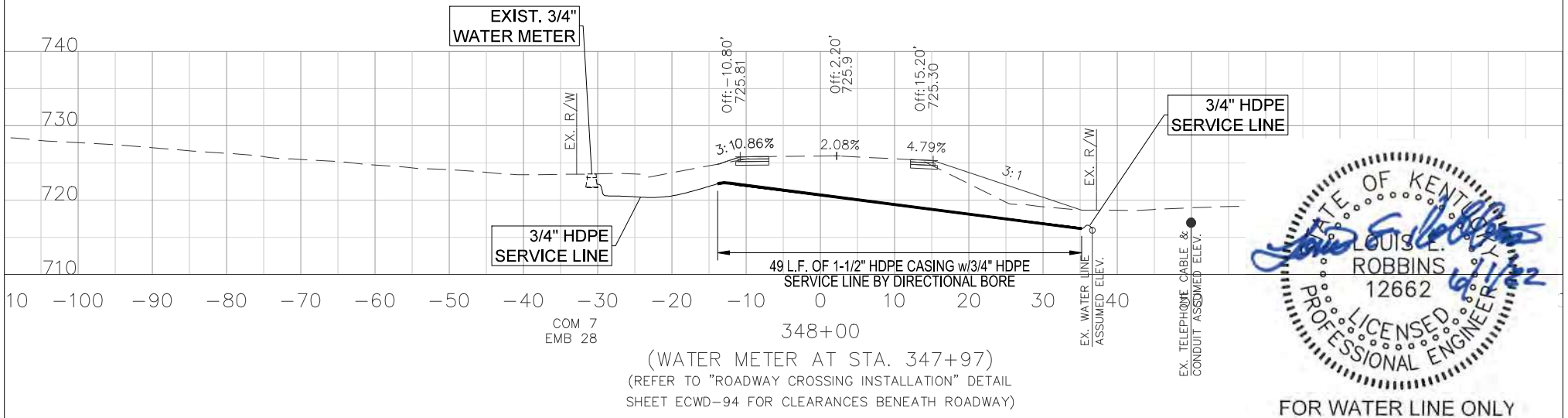
(REFER TO "ROADWAY CROSSING INSTALLATION" DETAIL SHEET ECWD-94 FOR CLEARANCES BENEATH ROADWAY)

FOR WATER LINE ONLY

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9005	ECWD-66

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

CROSS SECTIONS



(WATER METER AT STA. 347+97)

(REFER TO "ROADWAY CROSSING INSTALLATION" DETAIL SHEET ECWD−94 FOR CLEARANCES BENEATH ROADWAY)

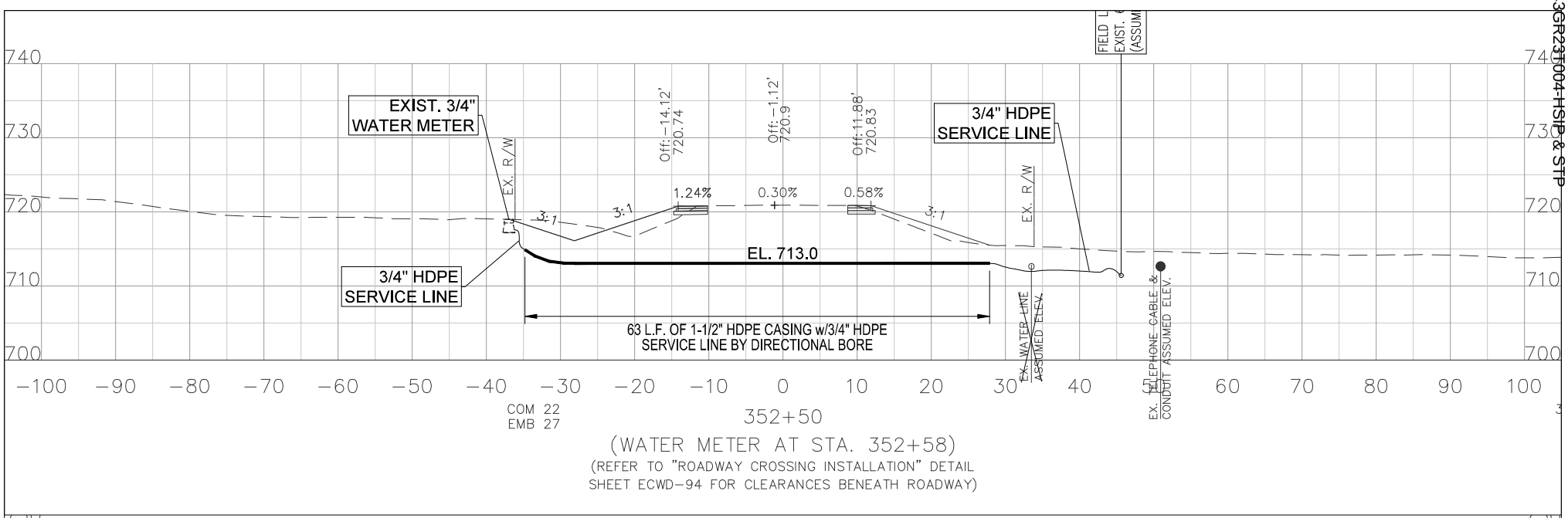
COMMONWEALTH OF KENTUCKY
LOUIS E. ROBBINS
12662
LICENSED PROFESSIONAL ENGINEER
9/1/22

FOR WATER LINE ONLY

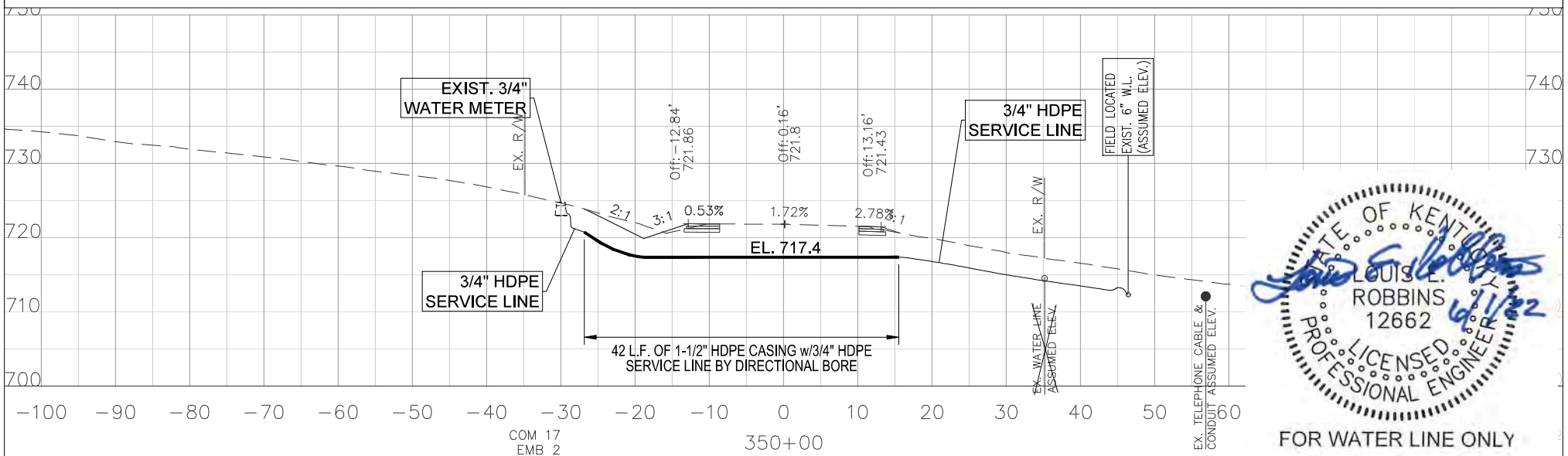
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9005	ECWD-66A

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

CROSS SECTIONS



(WATER METER AT STA. 352+58)
(REFER TO "ROADWAY CROSSING INSTALLATION" DETAIL SHEET ECWD-94 FOR CLEARANCES BENEATH ROADWAY)



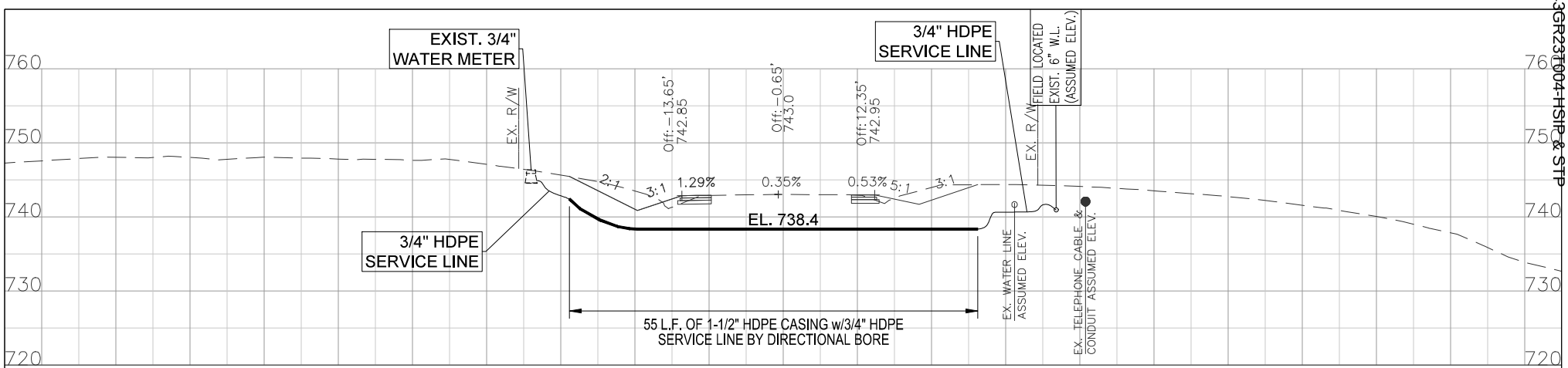
(WATER METER AT STA. 350+12)
(REFER TO "ROADWAY CROSSING INSTALLATION" DETAIL SHEET ECWD-94 FOR CLEARANCES BENEATH ROADWAY)

FOR WATER LINE ONLY

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9005	ECWD-67

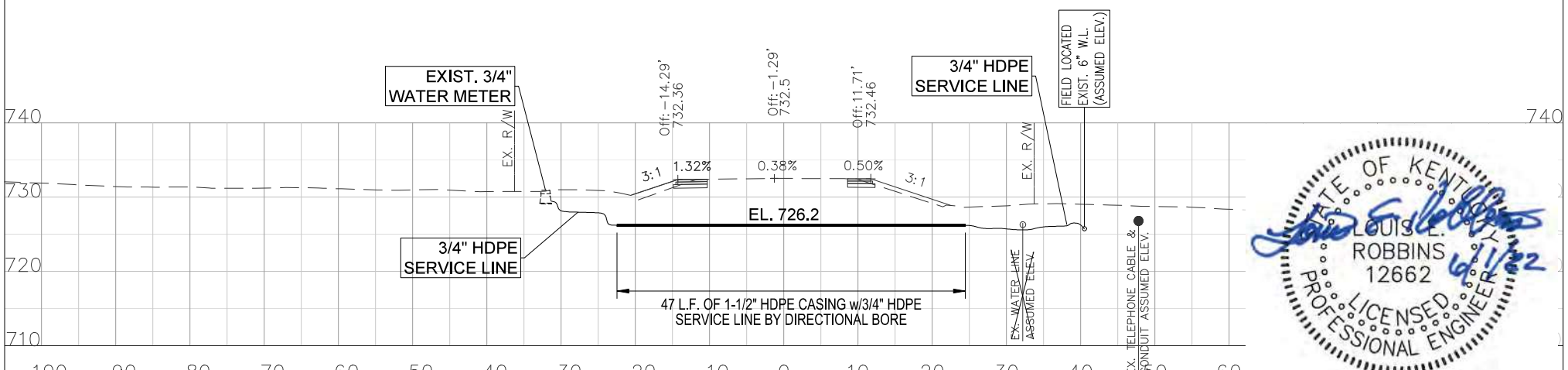
KY HWY 259 ANNETA RD UTILITY RELOCATIONS

CROSS SECTIONS



(WATER METER AT STA. 355+71)

(REFER TO "ROADWAY CROSSING INSTALLATION" DETAIL SHEET ECWD-94 FOR CLEARANCES BENEATH ROADWAY)



(WATER METER AT STA. 354+38)

(REFER TO "ROADWAY CROSSING INSTALLATION" DETAIL SHEET ECWD-94 FOR CLEARANCES BENEATH ROADWAY)

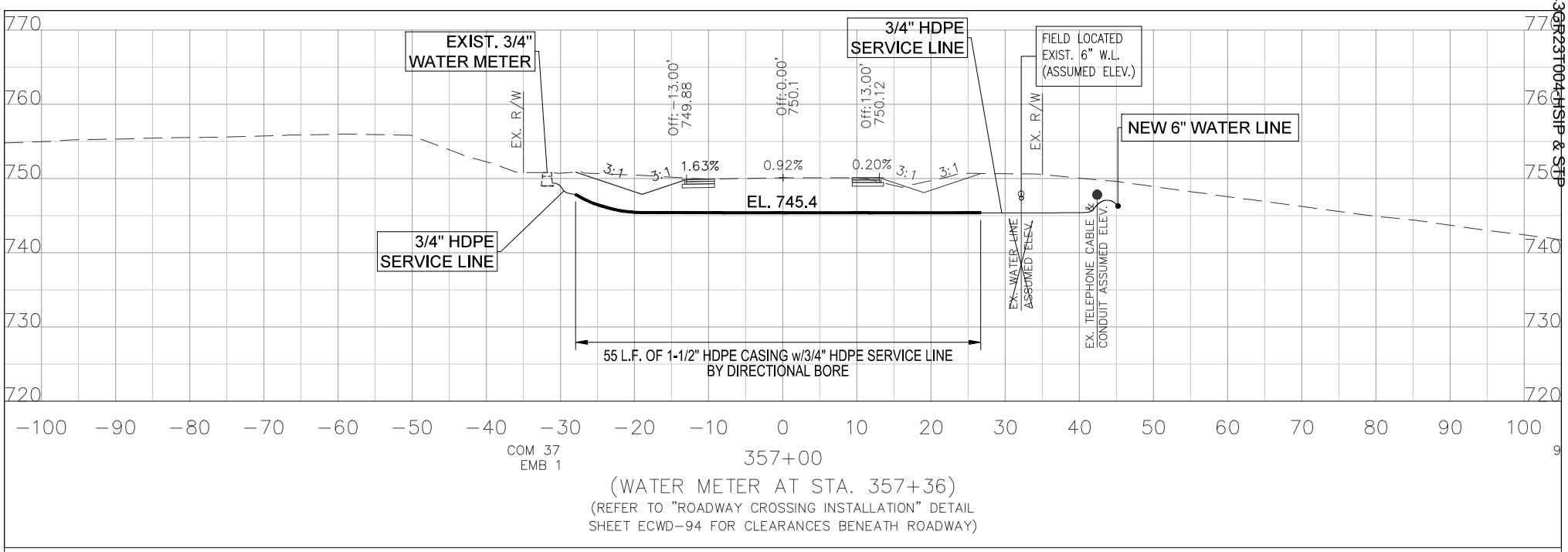
STATE OF KENTUCKY
LOUIS E. ROBBINS
12662
LICENSED PROFESSIONAL ENGINEER
6/1/22

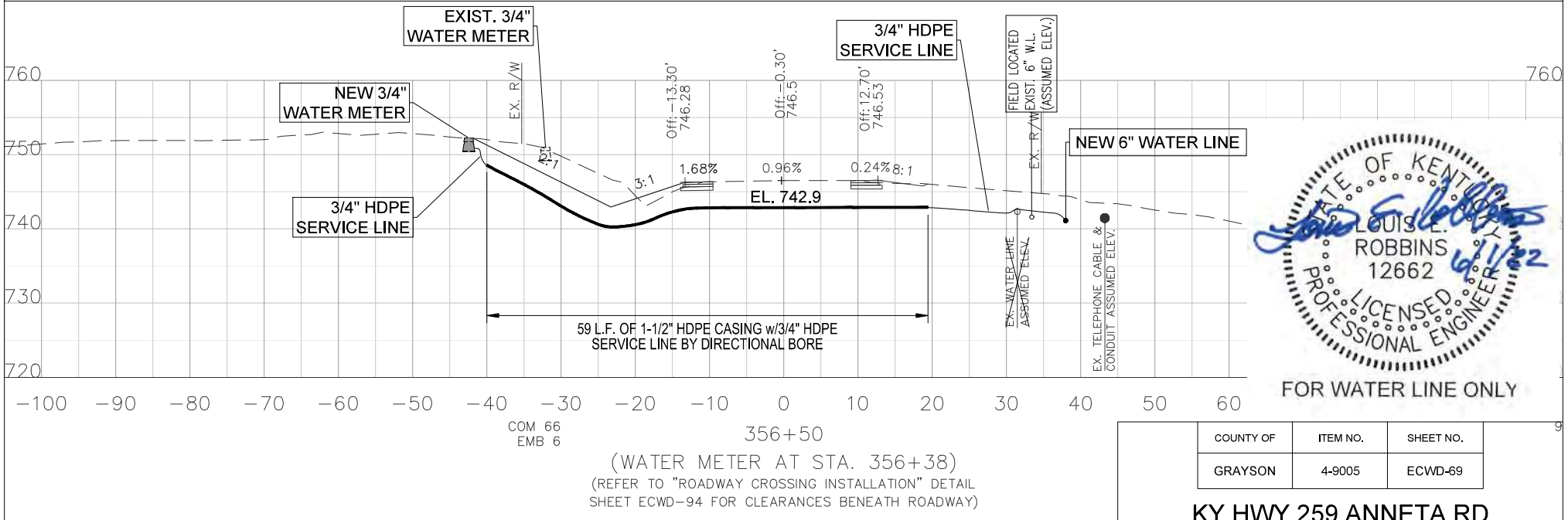
FOR WATER LINE ONLY

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9005	ECWD-68

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

CROSS SECTIONS





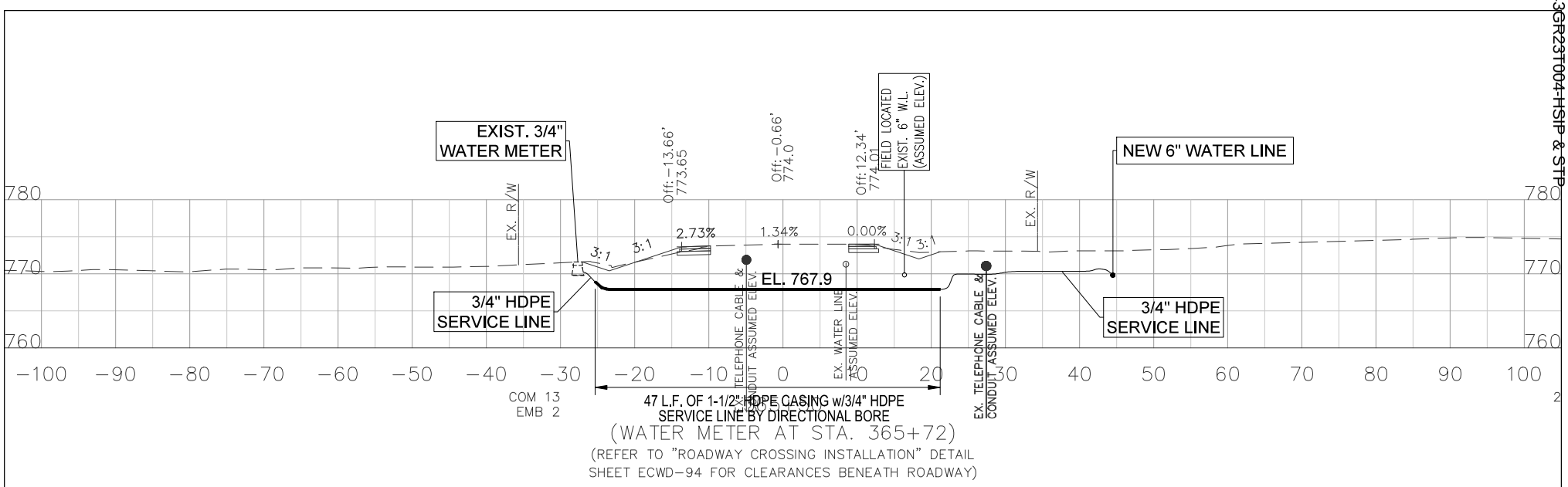
COMMONWEALTH OF KENTUCKY
LOUIS E. ROBBINS
12662
LICENSED PROFESSIONAL ENGINEER
6/1/22

FOR WATER LINE ONLY

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9005	ECWD-69

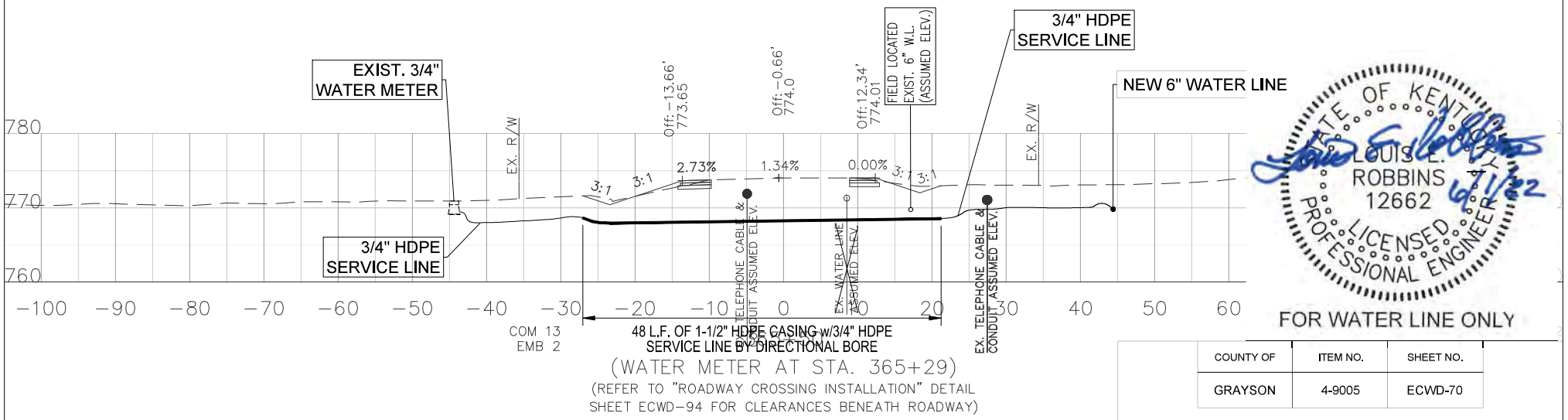
KY HWY 259 ANNETA RD UTILITY RELOCATIONS

CROSS SECTIONS



(WATER METER AT STA. 365+72)

(REFER TO "ROADWAY CROSSING INSTALLATION" DETAIL SHEET ECWD-94 FOR CLEARANCES BENEATH ROADWAY)



(WATER METER AT STA. 365+29)

(REFER TO "ROADWAY CROSSING INSTALLATION" DETAIL SHEET ECWD-94 FOR CLEARANCES BENEATH ROADWAY)

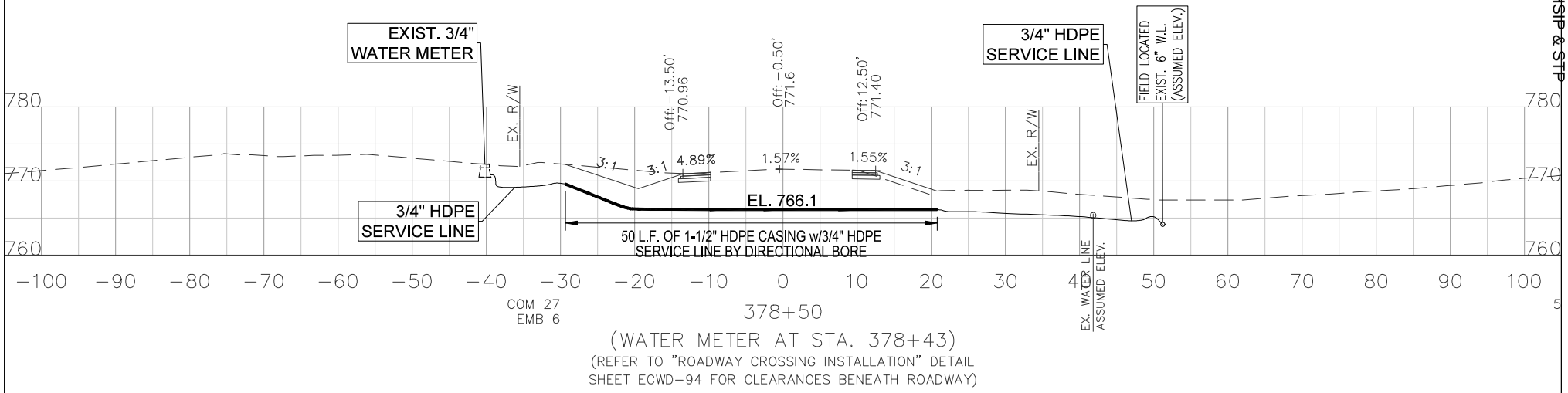
STATE OF KENTUCKY
LOUIS E. ROBBINS
12662
LICENSED PROFESSIONAL ENGINEER
6/1/22

FOR WATER LINE ONLY

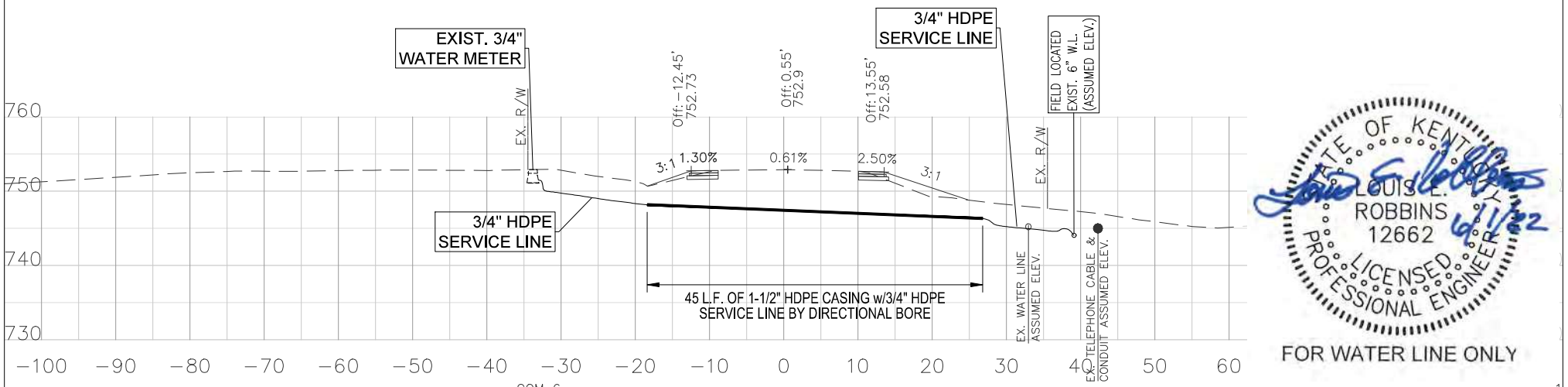
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9005	ECWD-70

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

CROSS SECTIONS



(WATER METER AT STA. 378+43)
(REFER TO "ROADWAY CROSSING INSTALLATION" DETAIL SHEET ECWD-94 FOR CLEARANCES BENEATH ROADWAY)



(WATER METER AT STA. 375+56)
(REFER TO "ROADWAY CROSSING INSTALLATION" DETAIL SHEET ECWD-94 FOR CLEARANCES BENEATH ROADWAY)

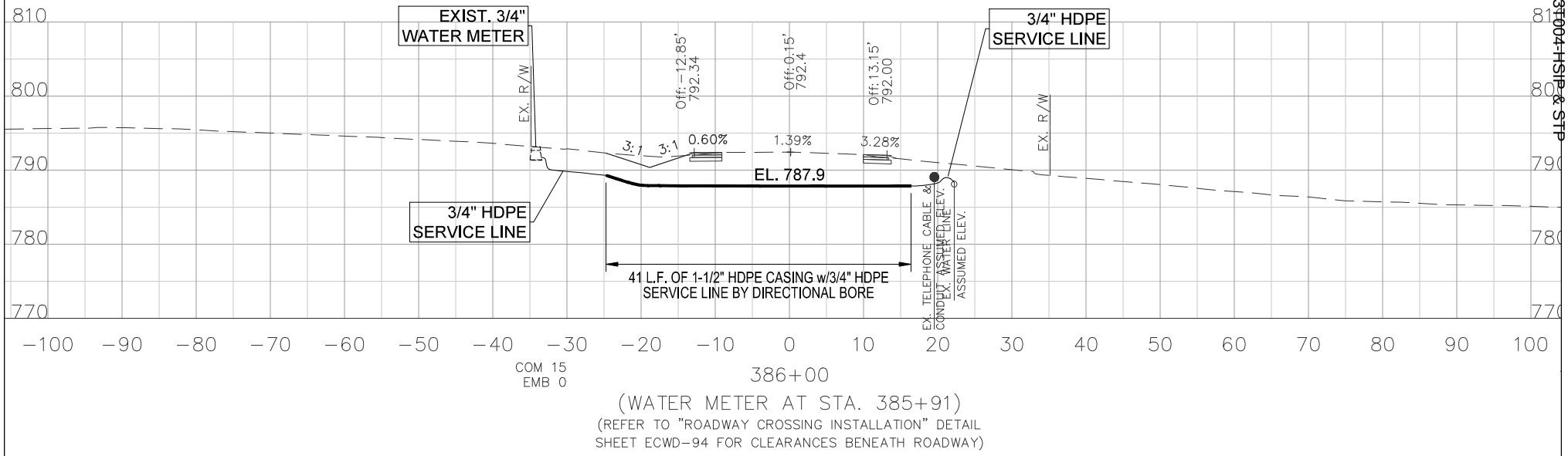
COMMONWEALTH OF KENTUCKY
LOUISE E. ROBBINS
12662
LICENSED PROFESSIONAL ENGINEER
6/11/22

FOR WATER LINE ONLY

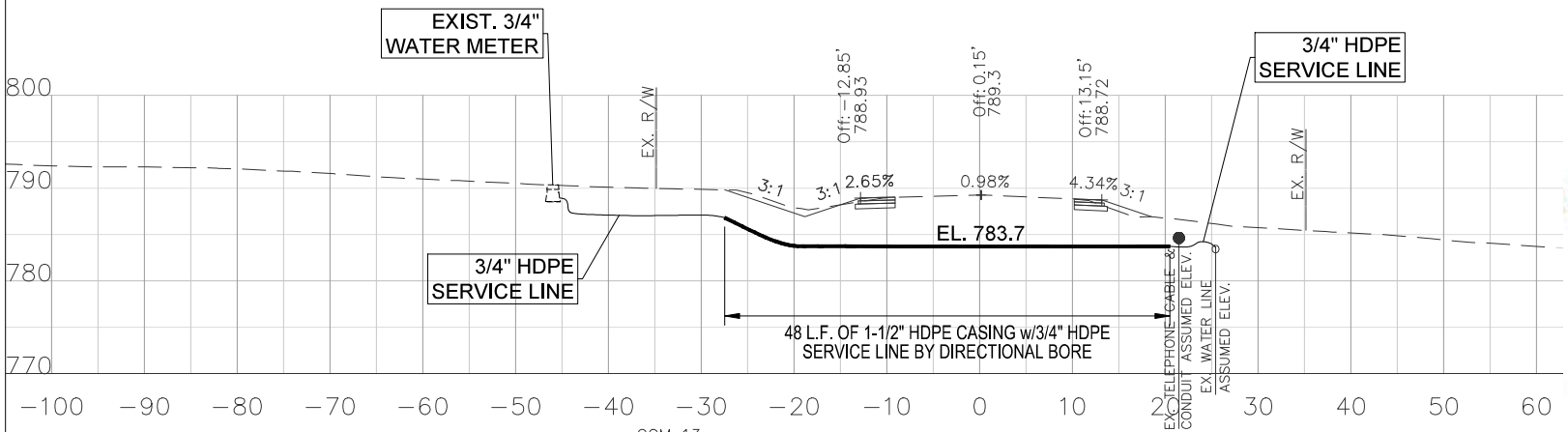
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9005	ECWD-71

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

CROSS SECTIONS



(WATER METER AT STA. 385+91)
(REFER TO "ROADWAY CROSSING INSTALLATION" DETAIL SHEET ECWD-94 FOR CLEARANCES BENEATH ROADWAY)

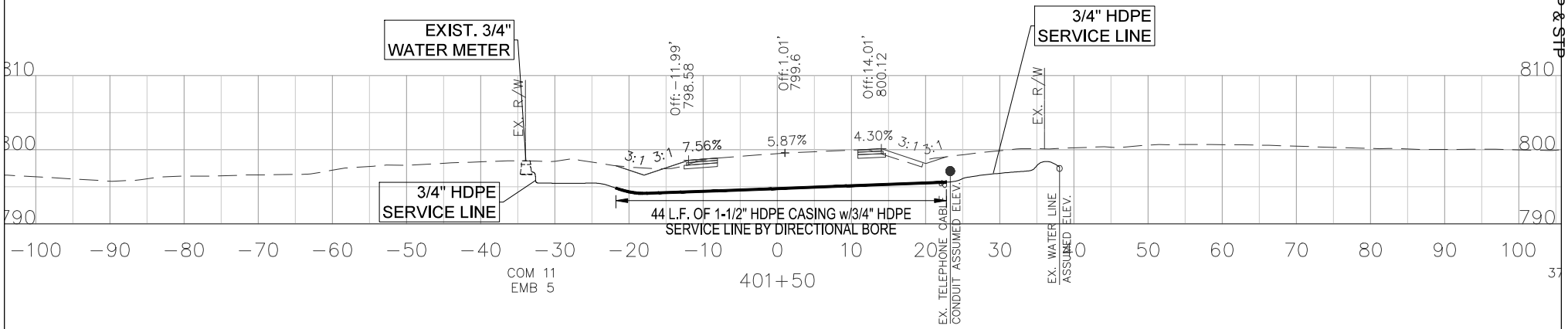


(WATER METER AT STA. 384+12)
(REFER TO "ROADWAY CROSSING INSTALLATION" DETAIL SHEET ECWD-94 FOR CLEARANCES BENEATH ROADWAY)

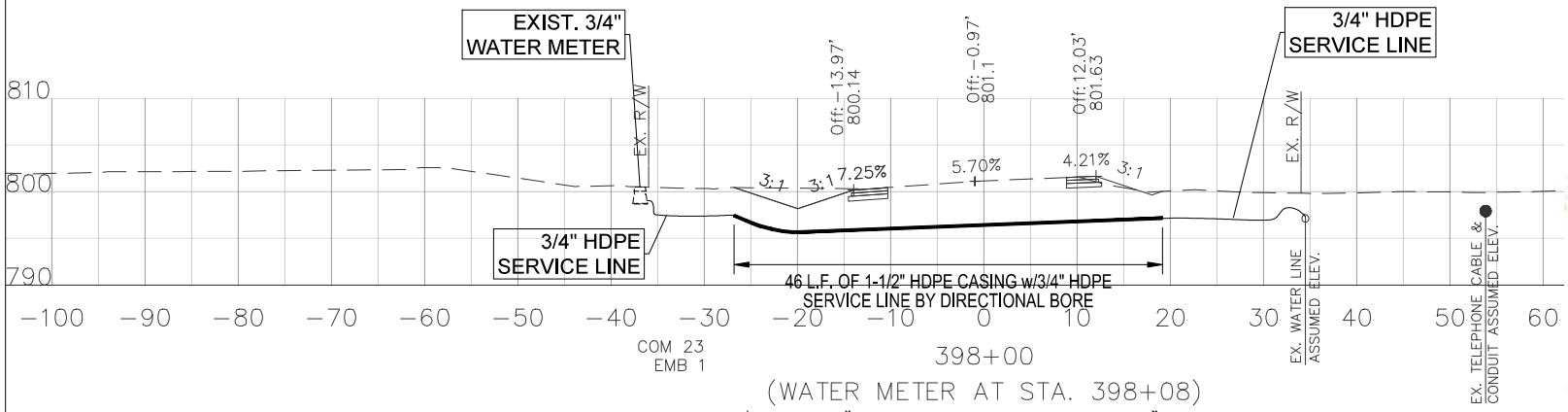
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9005	ECWD-72

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

CROSS SECTIONS



(WATER METER AT STA. 401+45)
(REFER TO "ROADWAY CROSSING INSTALLATION" DETAIL SHEET ECWD-94 FOR CLEARANCES BENEATH ROADWAY)



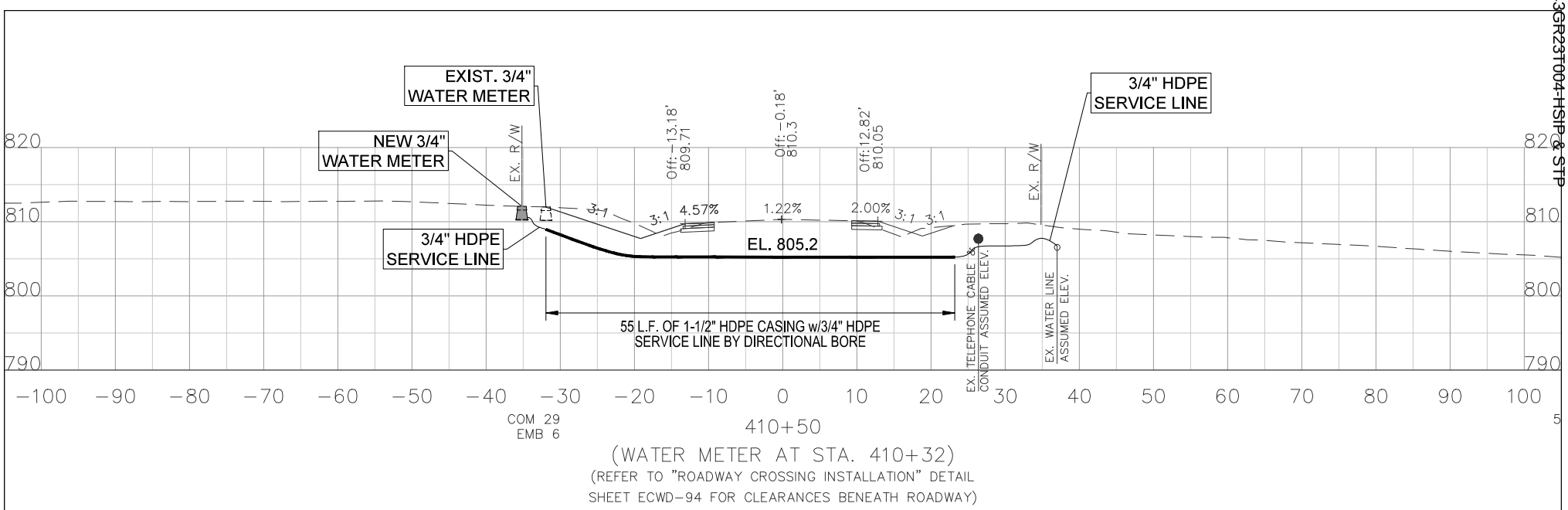
(WATER METER AT STA. 398+08)
(REFER TO "ROADWAY CROSSING INSTALLATION" DETAIL SHEET ECWD-94 FOR CLEARANCES BENEATH ROADWAY)

FOR WATER LINE ONLY

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9005	ECWD-73

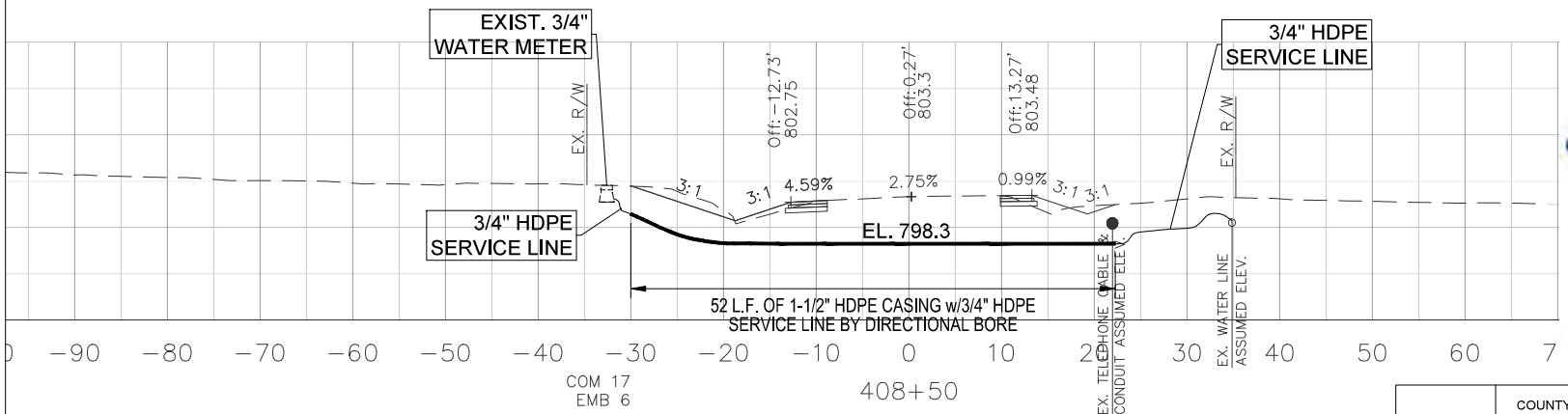
KY HWY 259 ANNETA RD UTILITY RELOCATIONS

CROSS SECTIONS



(WATER METER AT STA. 410+32)

(REFER TO "ROADWAY CROSSING INSTALLATION" DETAIL SHEET ECWD-94 FOR CLEARANCES BENEATH ROADWAY)



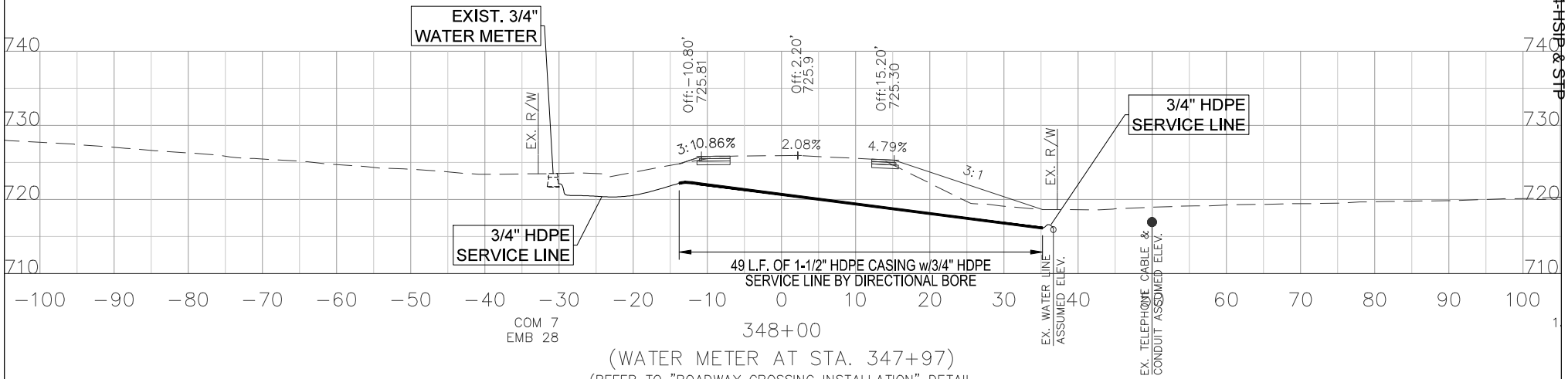
(WATER METER AT STA. 408+61)

(REFER TO "ROADWAY CROSSING INSTALLATION" DETAIL SHEET ECWD-94 FOR CLEARANCES BENEATH ROADWAY)

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9005	ECWD-74

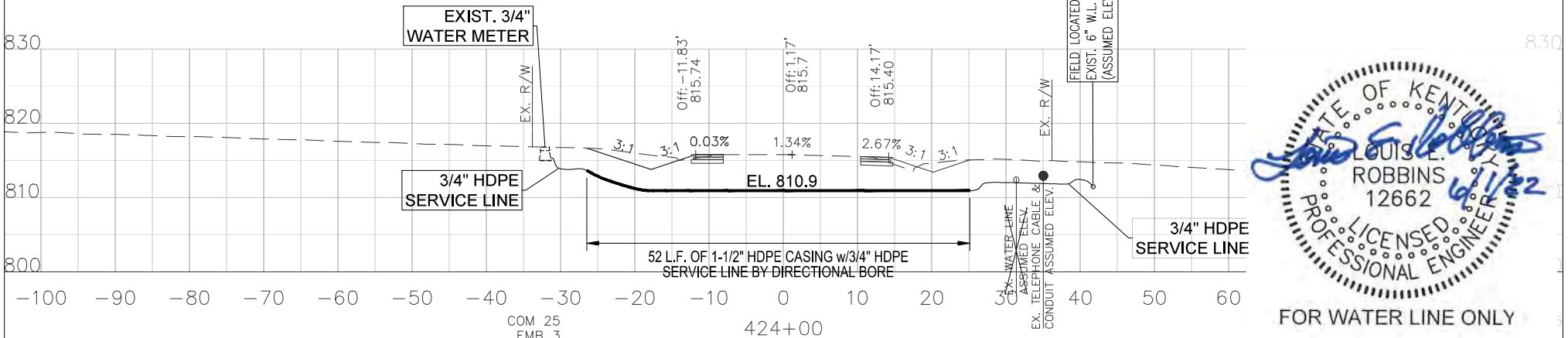
KY HWY 259 ANNETA RD UTILITY RELOCATIONS

CROSS SECTIONS



(WATER METER AT STA. 347+97)

(REFER TO "ROADWAY CROSSING INSTALLATION" DETAIL SHEET ECWD−94 FOR CLEARANCES BENEATH ROADWAY)



(WATER METER AT STA. 424+32)

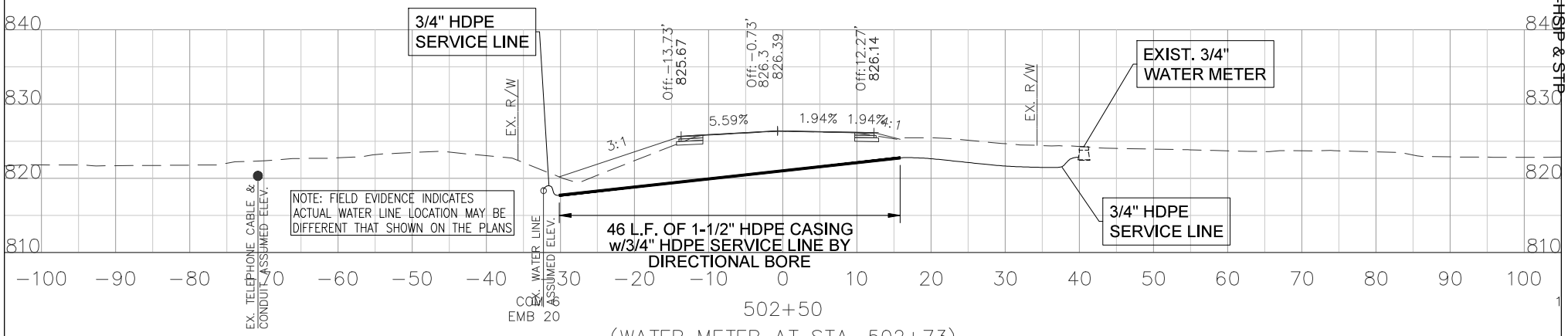
(REFER TO "ROADWAY CROSSING INSTALLATION" DETAIL SHEET ECWD−94 FOR CLEARANCES BENEATH ROADWAY)

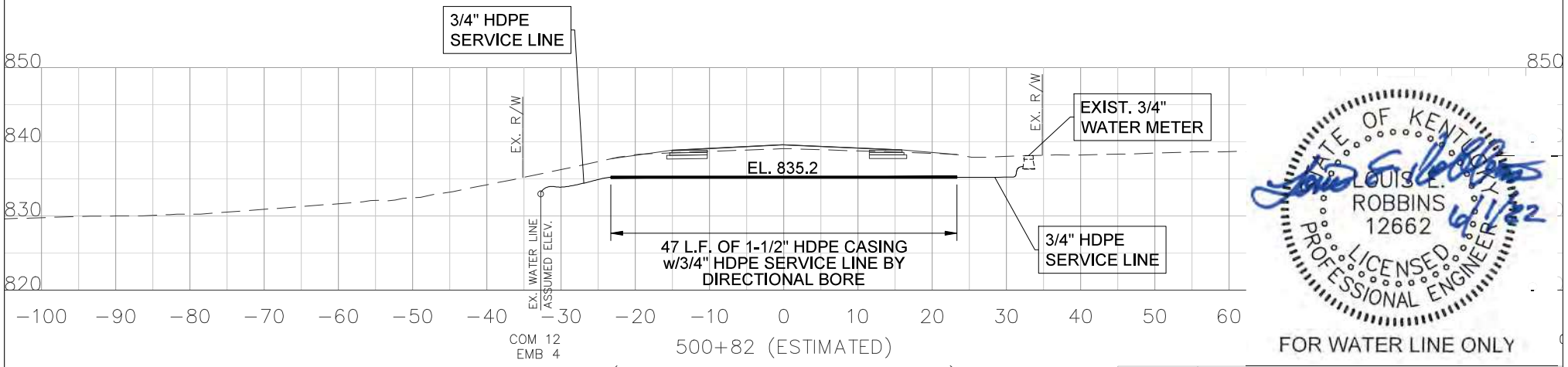
FOR WATER LINE ONLY

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9005	ECWD-75

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

CROSS SECTIONS





NOTE: EXISTING R/W 35' OFFSET FROM EXISTING CL

NOTE: CROSS SECTIONS DO NOT REFLECT PAVED ENTRANCES & ENTRANCE PIPE LOCATIONS. REFER TO PLANS

NOTE: ALL UNDERGROUND CABLE ASSUMED AT 24" DEPTH (UNLESS NOTED)

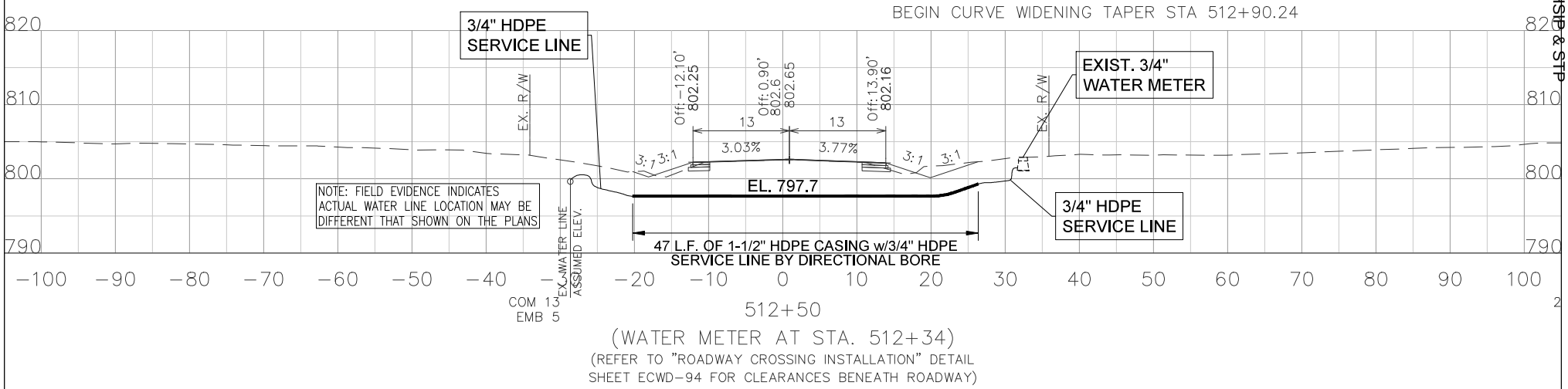
NOTE: ALL WATER LINES ASSUMED AT 30" DEPTH

FOR WATER LINE ONLY

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9005	ECWD-76

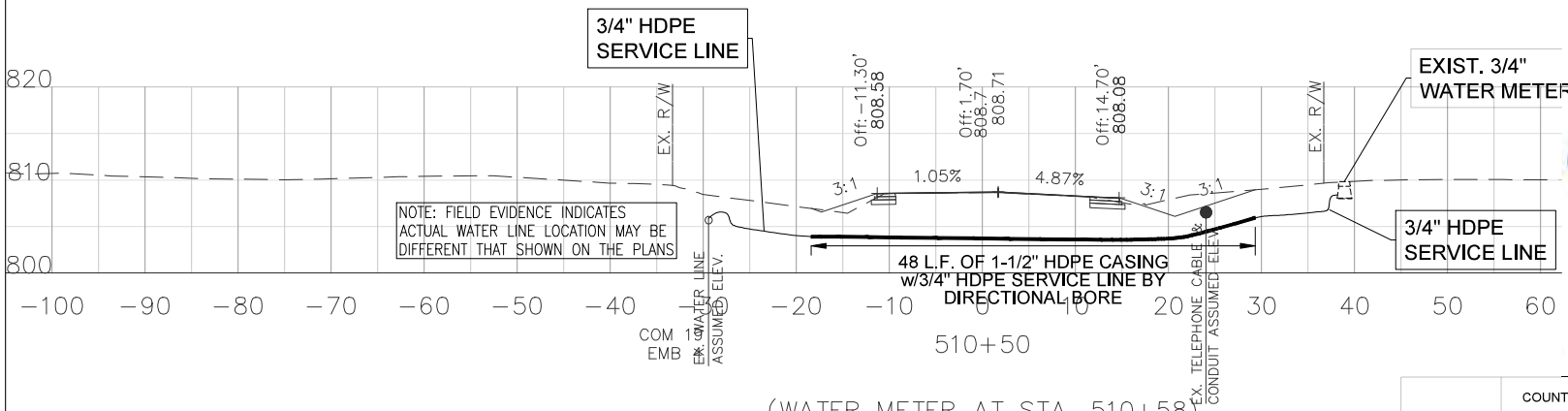
KY HWY 259 ANNETA RD UTILITY RELOCATIONS

CROSS SECTIONS



(WATER METER AT STA. 512+34)

(REFER TO "ROADWAY CROSSING INSTALLATION" DETAIL SHEET ECWD-94 FOR CLEARANCES BENEATH ROADWAY)



(WATER METER AT STA. 510+58)

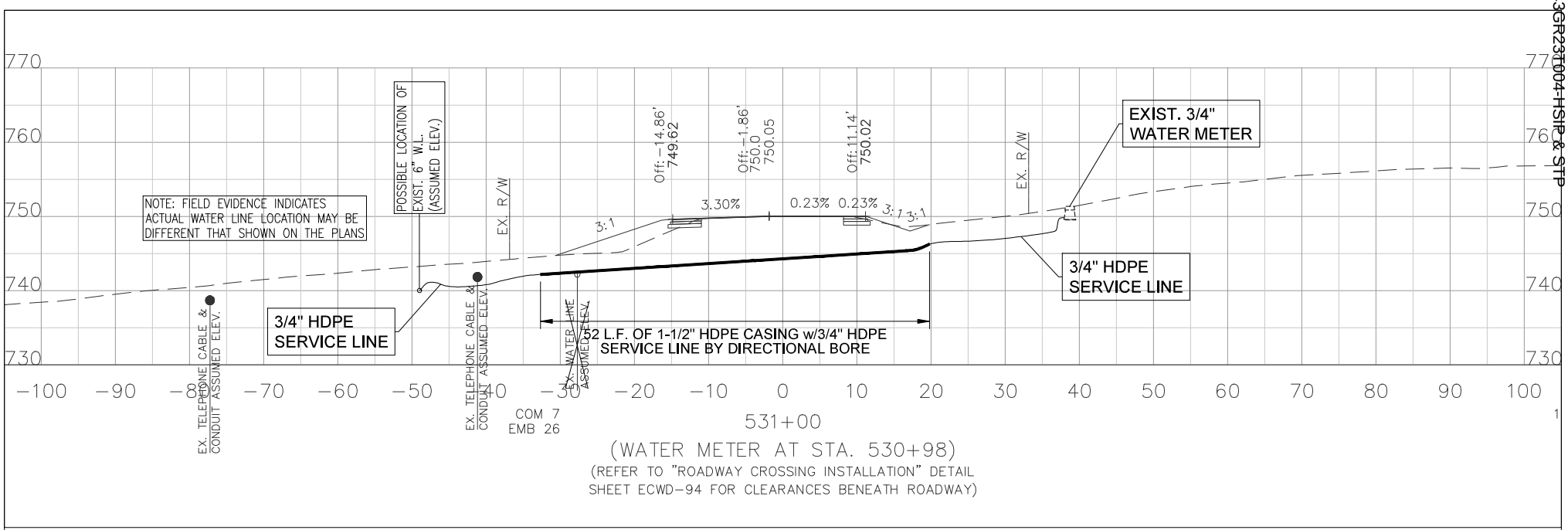
(REFER TO "ROADWAY CROSSING INSTALLATION" DETAIL SHEET ECWD-94 FOR CLEARANCES BENEATH ROADWAY)

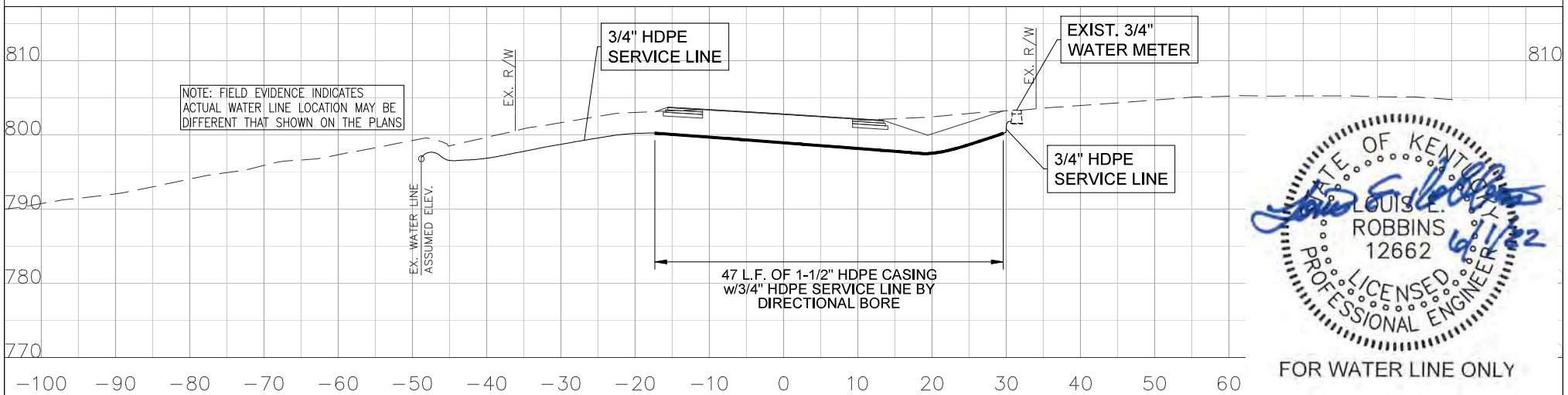
FOR WATER LINE ONLY

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9005	ECWD-77

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

CROSS SECTIONS

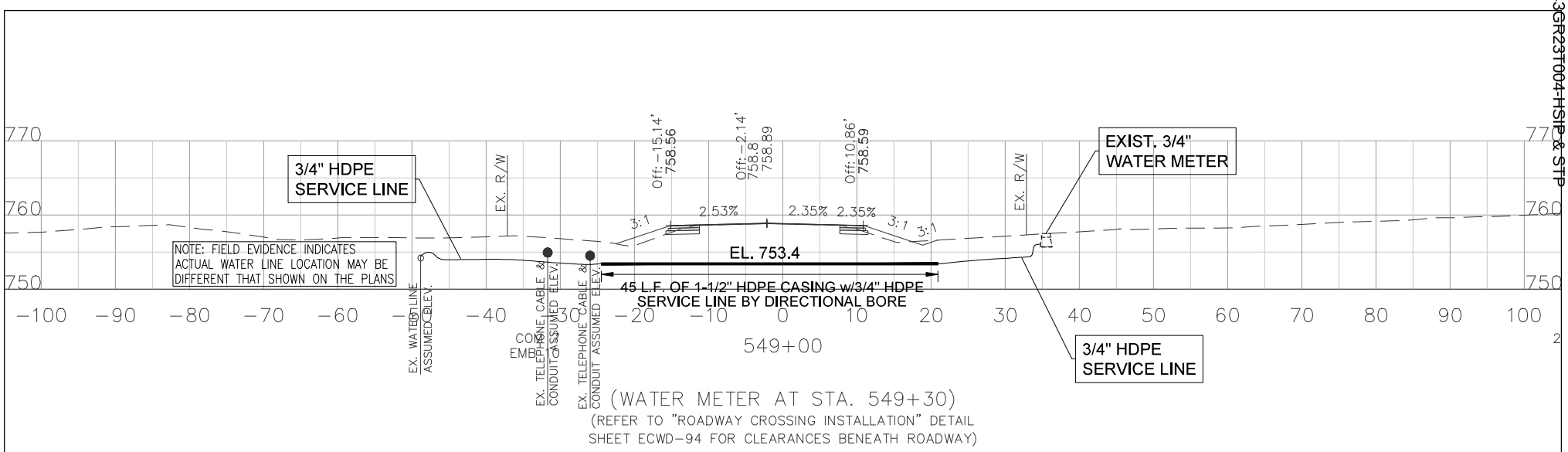




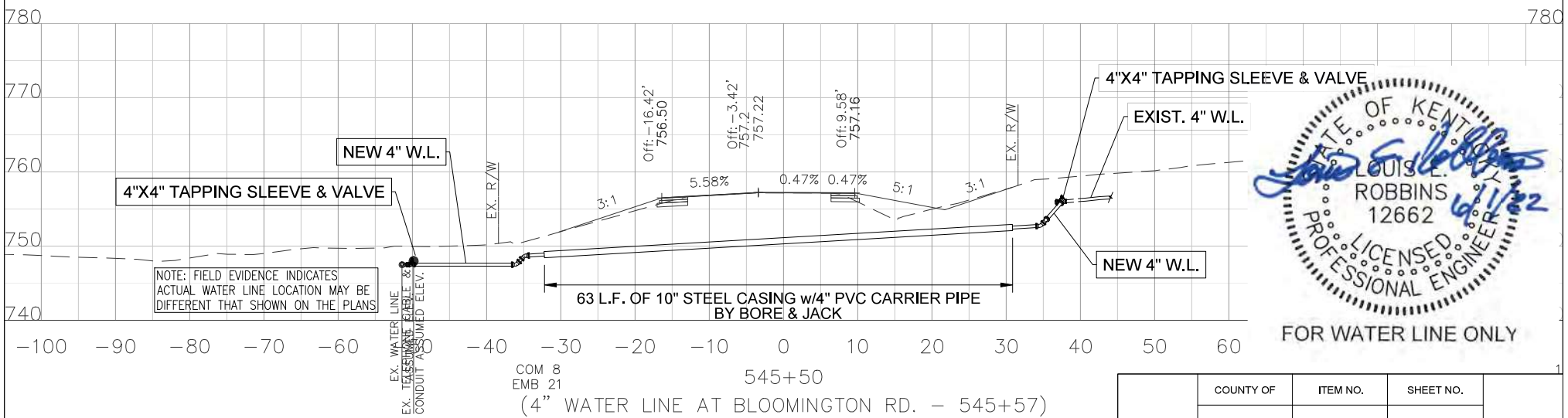
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9005	ECWD-78

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

CROSS SECTIONS



(WATER METER AT STA. 549+30)
(REFER TO "ROADWAY CROSSING INSTALLATION" DETAIL
SHEET ECWD−94 FOR CLEARANCES BENEATH ROADWAY)



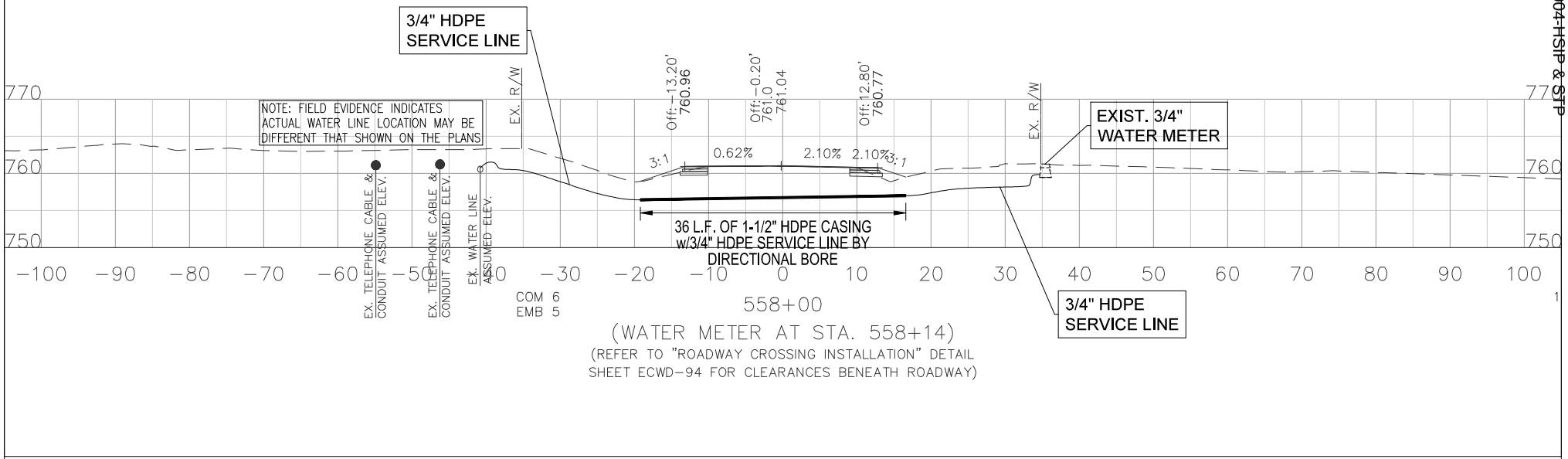
(4" WATER LINE AT BLOOMINGTON RD. − 545+57)
(REFER TO "ROADWAY CROSSING INSTALLATION" DETAIL SHEET ECWD−94
FOR CLEARANCES BENEATH ROADWAY)

FOR WATER LINE ONLY

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9005	ECWD-79

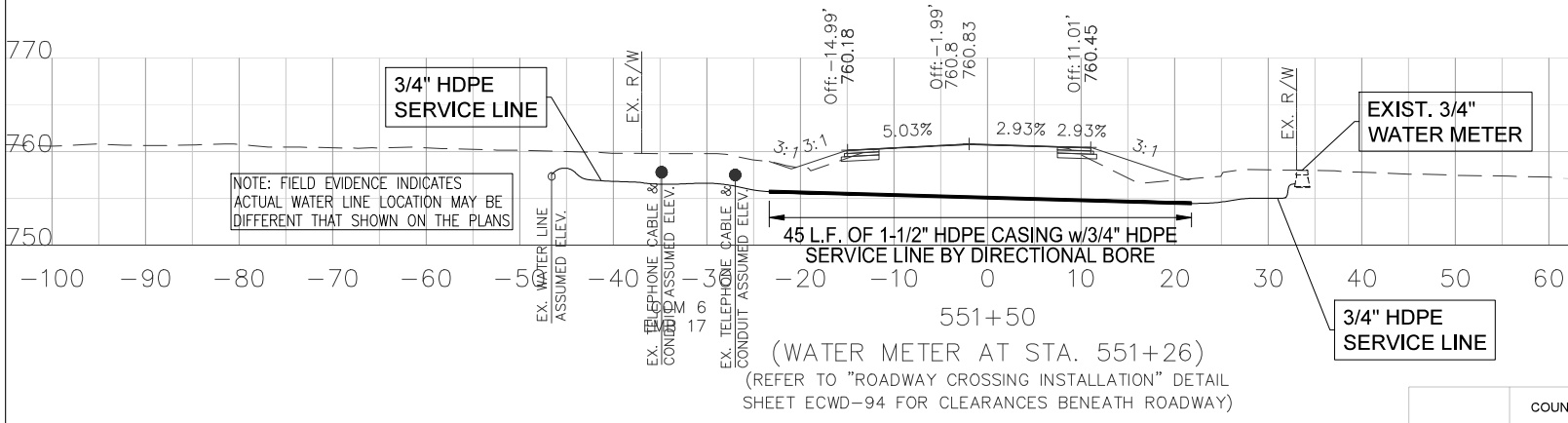
KY HWY 259 ANNETA RD UTILITY RELOCATIONS

CROSS SECTIONS



(WATER METER AT STA. 558+14)

(REFER TO "ROADWAY CROSSING INSTALLATION" DETAIL SHEET ECWD-94 FOR CLEARANCES BENEATH ROADWAY)



(WATER METER AT STA. 551+26)

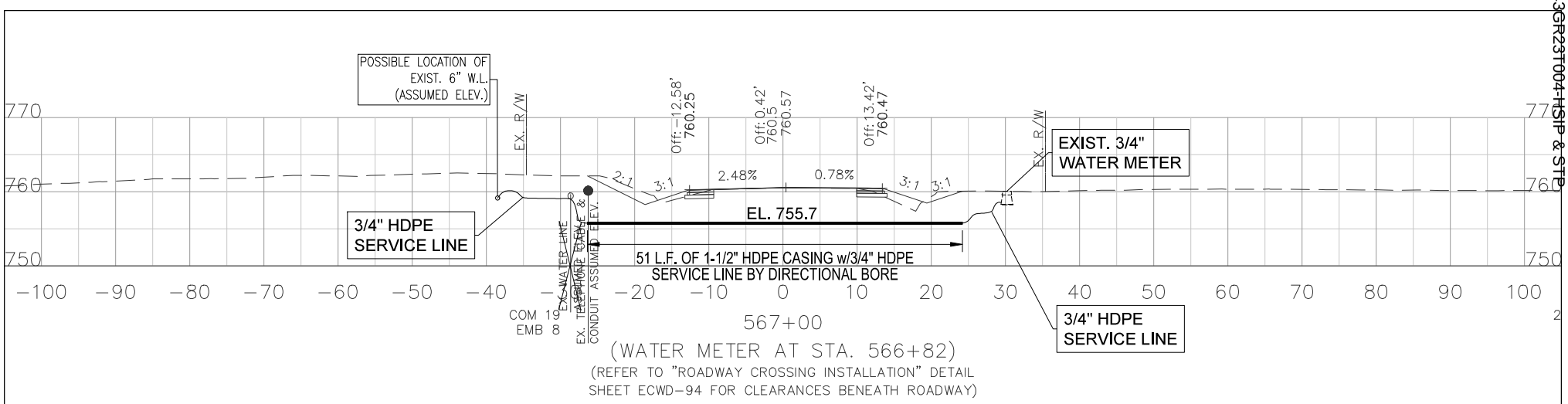
(REFER TO "ROADWAY CROSSING INSTALLATION" DETAIL SHEET ECWD-94 FOR CLEARANCES BENEATH ROADWAY)

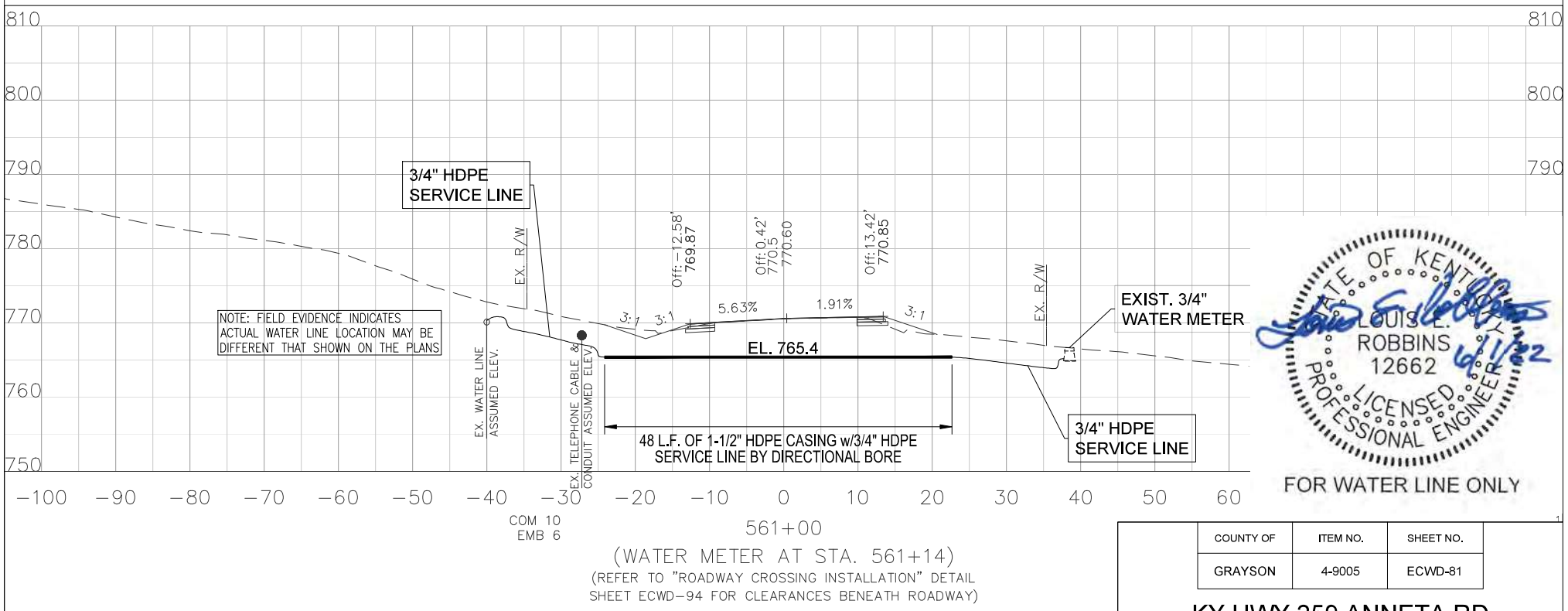
FOR WATER LINE ONLY

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9005	ECWD-80

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

CROSS SECTIONS



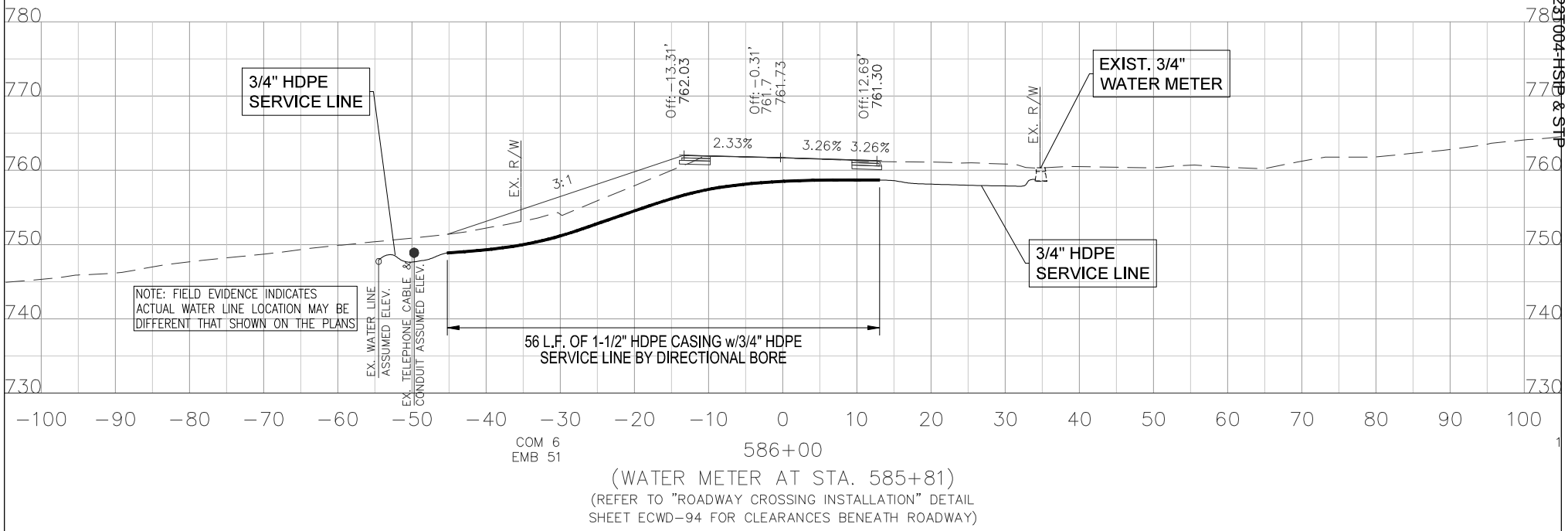


COMMONWEALTH OF KENTUCKY
LOUIS E. ROBBINS
12662
LICENSED PROFESSIONAL ENGINEER
6/1/22
FOR WATER LINE ONLY

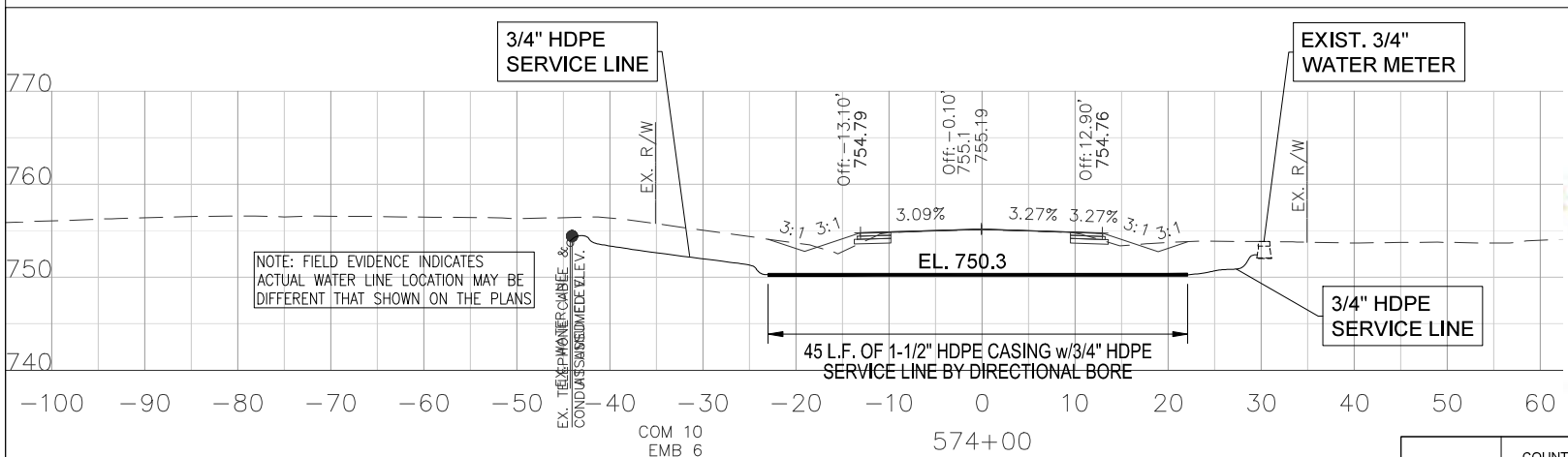
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9005	ECWD-81

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

CROSS SECTIONS



(WATER METER AT STA. 585+81)
(REFER TO "ROADWAY CROSSING INSTALLATION" DETAIL SHEET ECWD-94 FOR CLEARANCES BENEATH ROADWAY)

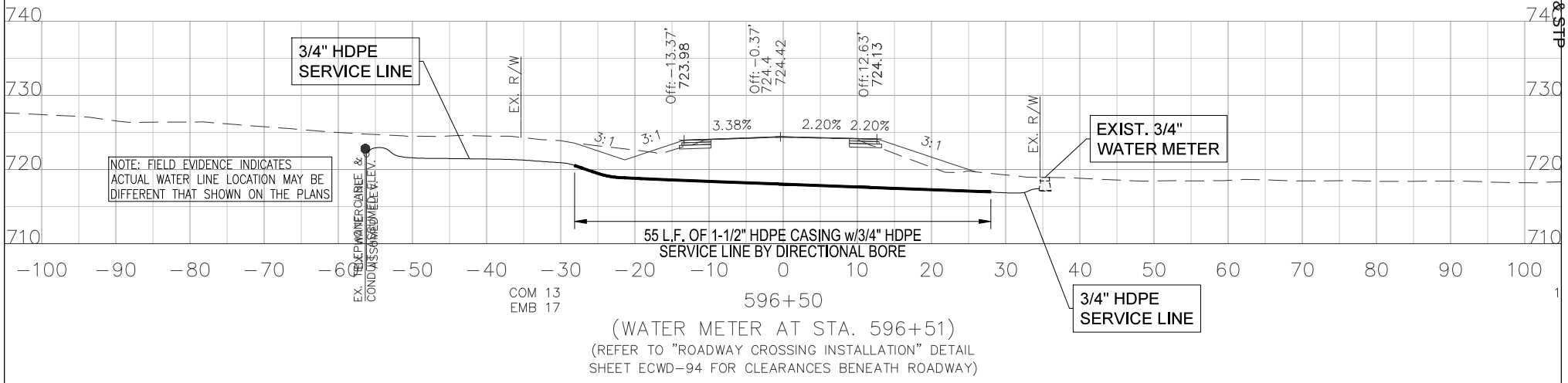


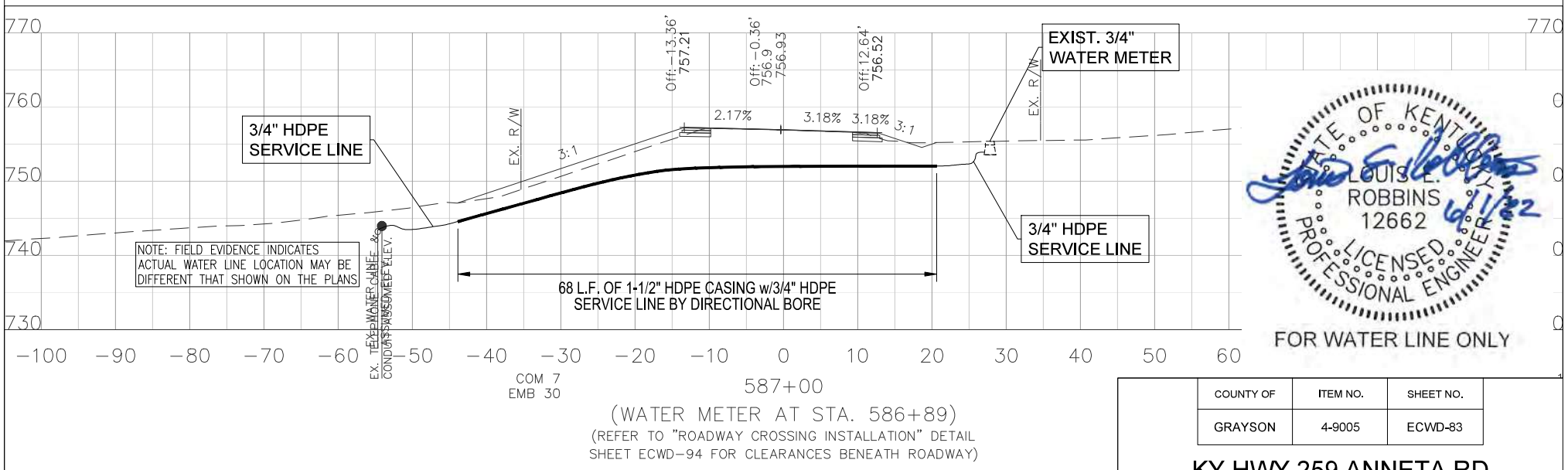
(WATER METER AT STA. 573+87)
(REFER TO "ROADWAY CROSSING INSTALLATION" DETAIL SHEET ECWD-94 FOR CLEARANCES BENEATH ROADWAY)

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9005	ECWD-82

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

CROSS SECTIONS



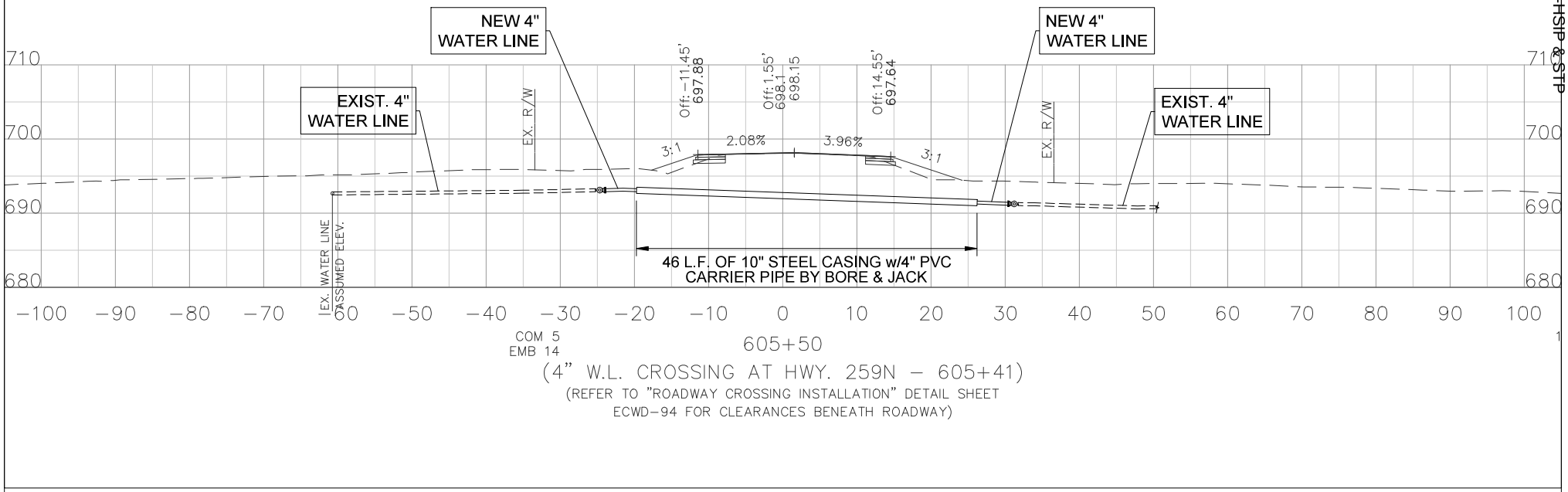


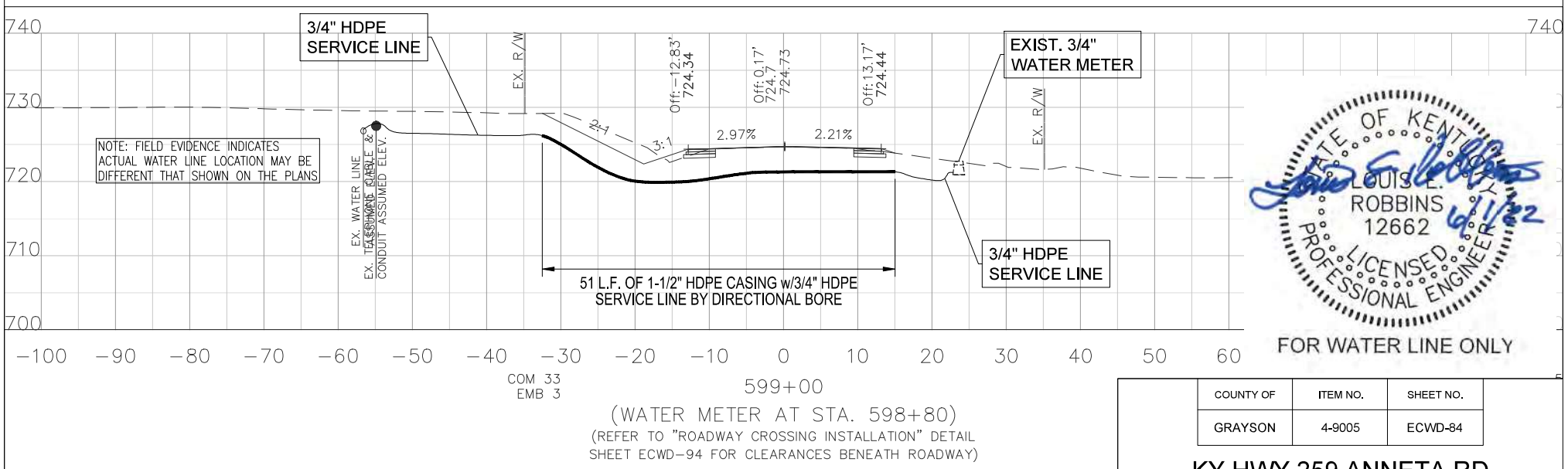
FOR WATER LINE ONLY

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9005	ECWD-83

KY HWY 259 ANNETA RD
UTILITY RELOCATIONS

CROSS SECTIONS



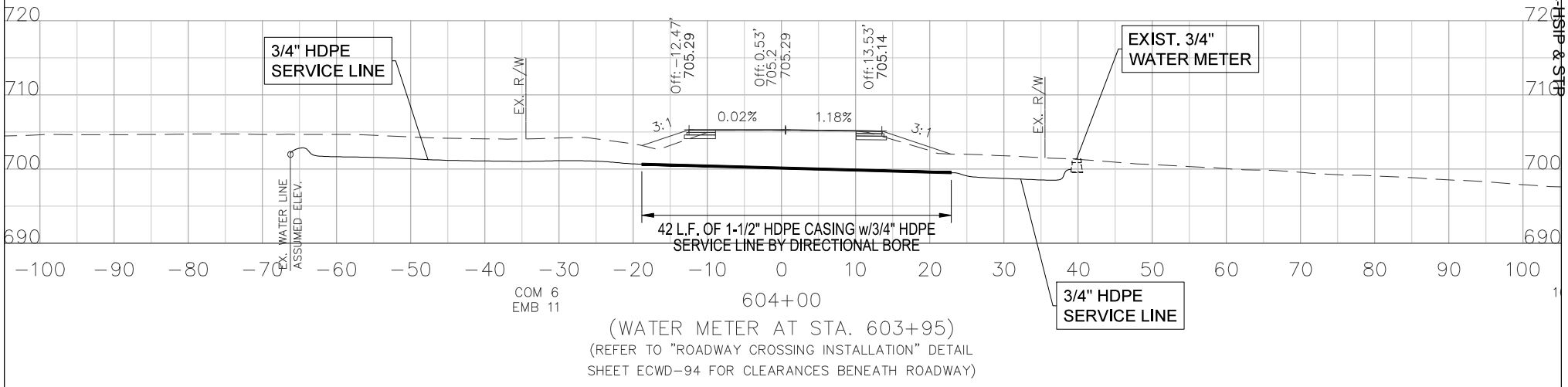


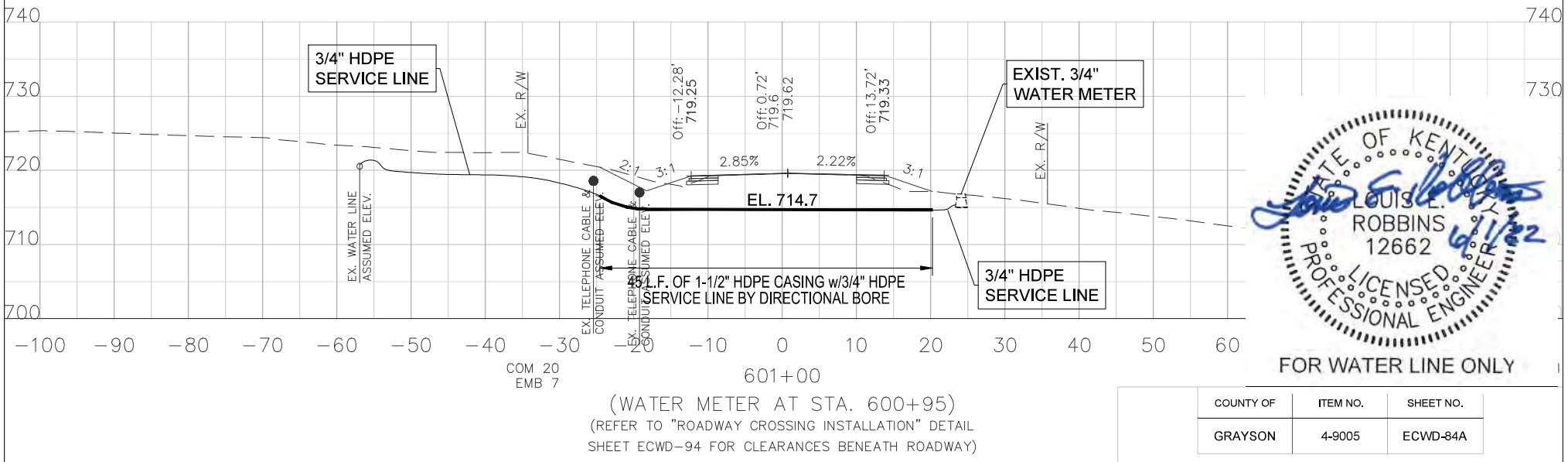
COMMONWEALTH OF KENTUCKY
LOUIS E. ROBBINS
12662
LICENSED PROFESSIONAL ENGINEER
6/1/22
FOR WATER LINE ONLY

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9005	ECWD-84

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

CROSS SECTIONS



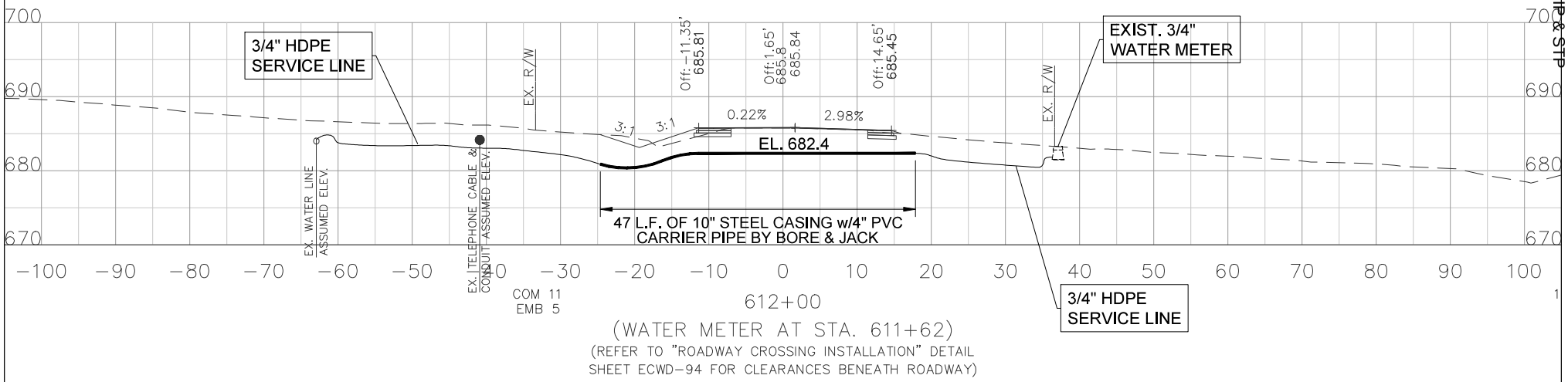


FOR WATER LINE ONLY

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9005	ECWD-84A

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

CROSS SECTIONS

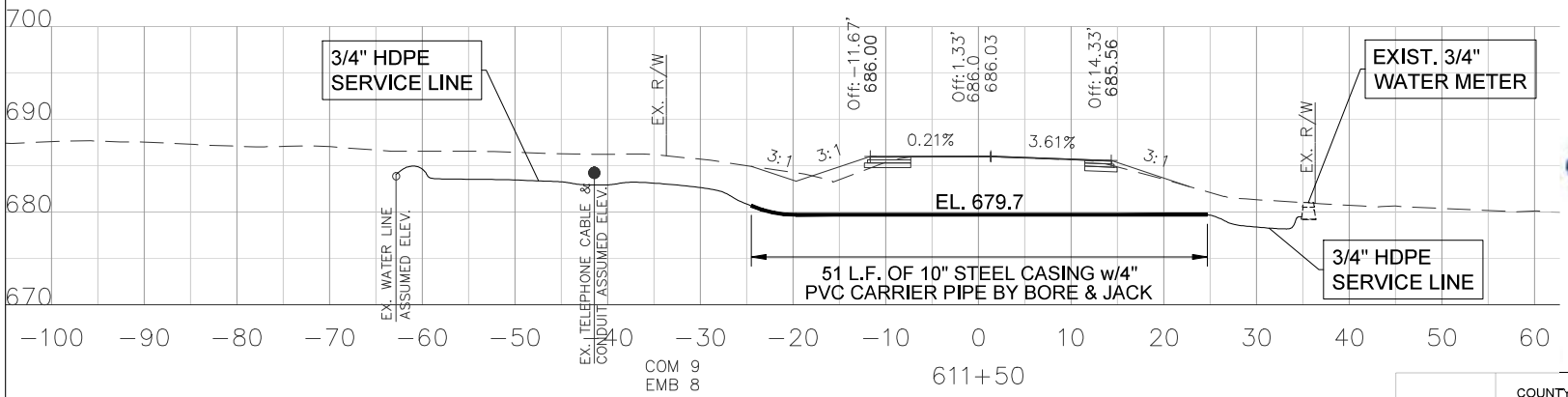


COM 11
EMB 5

612+00

(WATER METER AT STA. 611+62)

(REFER TO "ROADWAY CROSSING INSTALLATION" DETAIL SHEET ECWD-94 FOR CLEARANCES BENEATH ROADWAY)



COM 9
EMB 8

611+50

(WATER METER AT STA. 611+39)

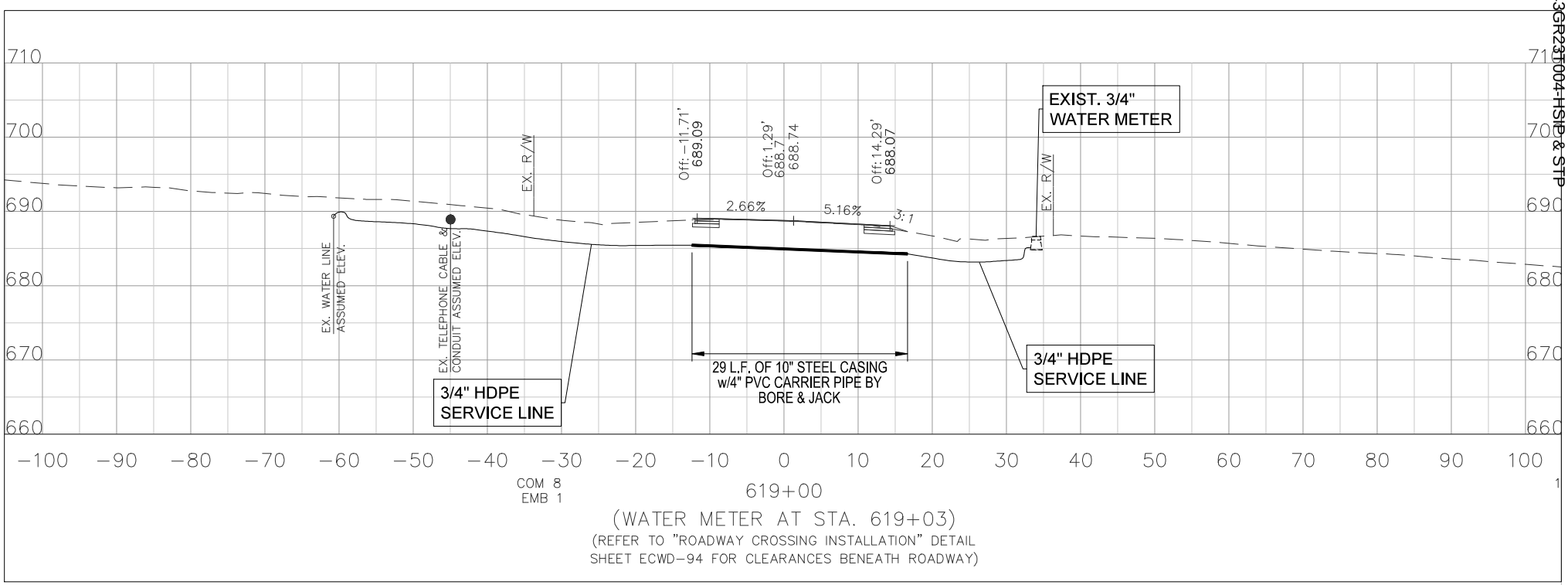
(REFER TO "ROADWAY CROSSING INSTALLATION" DETAIL SHEET ECWD-94 FOR CLEARANCES BENEATH ROADWAY)

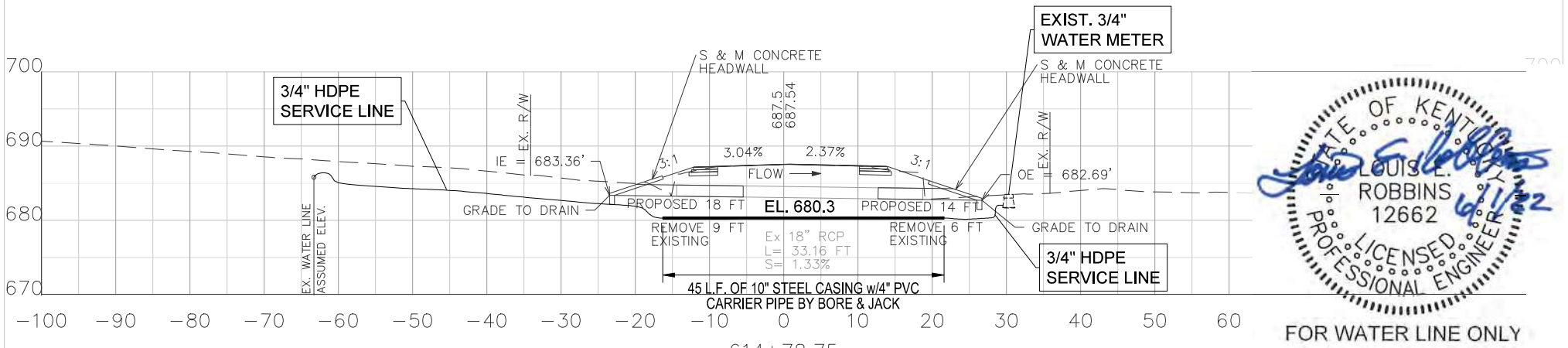
FOR WATER LINE ONLY

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9005	ECWD-85

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

CROSS SECTIONS



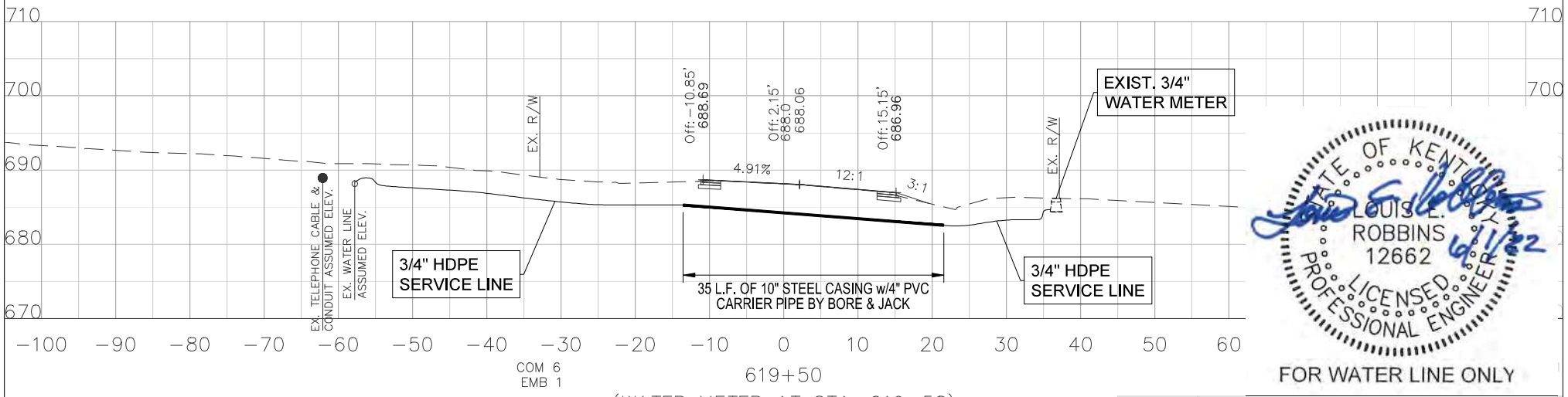


FOR WATER LINE ONLY

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9005	ECWD-86

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

CROSS SECTIONS



(WATER METER AT STA. 619+58)

(REFER TO "ROADWAY CROSSING INSTALLATION" DETAIL SHEET ECWD-94 FOR CLEARANCES BENEATH ROADWAY)

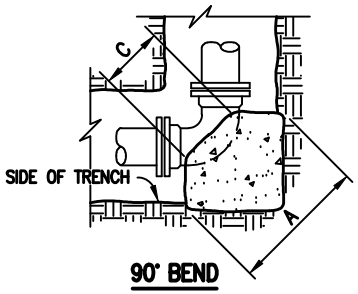
COMMONWEALTH OF KENTUCKY
LOUIS E. ROBBINS
12662
LICENSED PROFESSIONAL ENGINEER
6/1/22

FOR WATER LINE ONLY

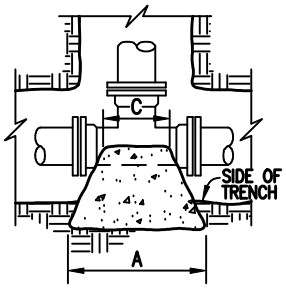
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9005	ECWD-87

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

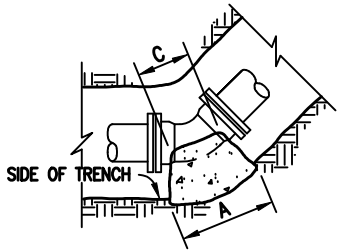
CROSS SECTIONS



90° BEND



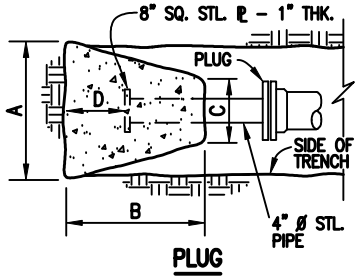
TEE



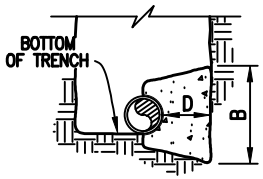
45° – 22 1/2° – 11 1/4° BEND

NOTES:

1. THRUST BLOCKS DESIGNED FOR 200 PSI PRESSURE AND 2000 PSF SOIL BEARING. FOR GREATER PRESSURE OR LESS SOIL BEARING, QUANTITIES WILL HAVE TO BE RECALCULATED.
2. THRUST BLOCKING TO BE POURED AGAINST UNDISTURBED EARTH.
3. IF EXACT SIZE PIPE BLOCKING IS NOT SHOWN, USE NEXT LARGER SIZE.
4. THRUST BLOCKING TO BE POURED IN PLACE CLASS C CONC.



PLUG



TYPICAL SECTION

90° BEND							
SIZE	16"	12"	10"	8"	6"	4"	2"
A	84	60	51	42	32	24	18
B	72	60	51	42	32	24	18
C	30	18	16	12	12	9	9
D	34	30	24	17	13	9	9

45° BEND							
SIZE	16"	12"	10"	8"	6"	4"	2"
A	58	43	38	32	24	18	12
B	58	43	38	32	24	18	12
C	24	16	14	12	12	8	8
D	24	18	15	12	9	6	6

22 1/2° BEND							
SIZE	16"	12"	10"	8"	6"	4"	2"
A	42	32	27	24	18	12	9
B	42	32	27	24	18	12	9
C	18	16	14	12	10	8	8
D	18	13	11	9	6	4	4

11 1/4° BEND							
SIZE	16"	12"	10"	8"	6"	4"	2"
A	30	24	21	17	12	9	9
B	30	24	21	17	12	9	9
C	18	16	14	12	10	8	8
D	12	9	8	6	5	4	4

PLUG							
SIZE	16"	12"	10"	8"	6"	4"	2"
A	66	52	43	34	27	20	18
B	66	52	43	34	27	20	18
C	12	12	12	12	12	12	12
D	44	32	22	15	11	11	11

TEE								
SIZE	MAIN	16"	12"	12"	12"	8"-10"	8"-12"	2"-6"
	BRANCH	16"	12"	8"-10"	2"-6"	8"-10"	2"-6"	2"-6"
A		66	52	43	34	43	26	26
B		66	52	43	34	43	26	26
C		30	12	12	12	12	12	12
D		30	26	21	14	21	13	13

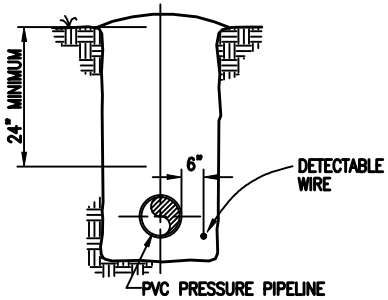
DIMENSIONS ARE IN INCHES

THRUST BLOCKING DETAIL

NOT TO SCALE

NOTES:

1. CONNECT WIRE TO METAL VALVE BOXES.
2. WIRE SHALL NOT TOUCH PRESSURE PIPE.



EDMONSON COUNTY WATER DISTRICT

DETECTABLE WIRE DETAIL

NOT TO SCALE

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9005	ECWD-88

KY HWY 259 ANNETA RD
UTILITY RELOCATIONS

STANDARD WATER LINE DETAILS

90° BEND						
SIZE	30"	24"	16"	12"	8"	6"
	179	162	108	90	72	54

45° BEND						
SIZE	30"	24"	16"	12"	8"	6"
	74	72	54	36	36	20

22 1/2° BEND						
SIZE	30"	24"	16"	12"	8"	6"
	36	36	36	18	18	18

11 1/4° BEND						
SIZE	30"	24"	16"	12"	8"	6"
	18	18	18	18	18	18

DEAD ENDS/VALVES						
SIZE	30"	24"	16"	12"	8"	6"
	319	270	198	162	108	90

TEE										
SIZE	MAIN	30"	30"	24"	24"	24"	16"	16"	12"	12"
	BRANCH	24"	16"	24"	16"	12"	16"	12"	12"	8"
		225	125	235	140	81	157	105	116	58

REDUCER									
SIZE	30" 24"	24" 16"	– –	– –	– –	– –	– –	– –	– –
	112	145	–	–	–	–	–	–	–

**

VERTICAL DOWN BEND						
45° BEND						
SIZE			30"	24"	16"	12"
			132	110	77	60
22 1/2° BEND						
SIZE			30"	24"	16"	12"
			63	54	54	36
11 1/4° BEND						
SIZE			30"	24"	16"	12"
			31	26	18	18

**

VERTICAL UP BEND						
45° BEND						
SIZE			30"	24"	16"	12"
			74	62	44	35
22 1/2° BEND						
SIZE			30"	24"	16"	12"
			36	30	21	17
11 1/4° BEND						
SIZE			30"	24"	16"	12"
			18	15	11	8

DIMENSIONS ARE IN FEET & ARE THE MINIMUM LENGTH REQUIRED ON EACH SIDE OF THE FITTING, UNLESS OTHERWISE NOTED.

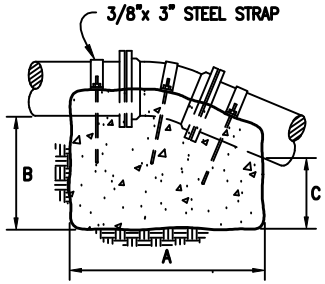
**USE ONLY WITH THE APPROVAL OF THE ENGINEER.

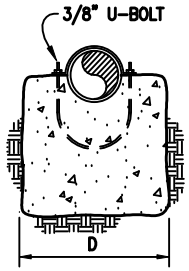
RESTRAINED JOINT PIPING REQUIREMENTS

NOT TO SCALE

NOTES:

1. RESTRAINED JOINT PIPING TO BE USED IN CONJUNCTION WITH THRUST BLOCKS FOR FITTINGS & VALVES UNLESS OTHERWISE INDICATED.
2. RESTRAINED JOINT PIPING REQUIREMENTS DESIGNED FOR 300 p.s.i. PRESSURE, TYPE 3 LAYING CONDITION, AND ML SOIL CLASSIFICATION PER ASTM STANDARD D248 UNLESS OTHERWISE NOTED. FOR GREATER PRESSURE OR DIFFERENT LAYING AND SOIL CONDITIONS, QUANTITIES WILL HAVE TO BE RECALCULATED.
3. IF EXACT FITTING SIZE IS NOT SHOWN, USE NEXT LARGER SIZE.
4. VERTICAL DOWNWARD FITTINGS WILL NOT BE ACCEPTABLE ON 12" AND LARGER LINES UNLESS APPROVED BY THE ENGINEER IN AREAS WHERE AVOIDANCE OF USE COULD NOT BE ACCOMPLISHED. WHERE VERTICAL DOWNWARD FITTINGS ARE APPROVED FOR USE, REQUIREMENTS FOR RESTRAINED JOINT PIPING SHALL BE FOLLOWED. 90° AND 45° BENDS WILL NOT BE ACCEPTABLE. THE SMALLEST ANGLE POSSIBLE SHALL BE USED.





90° BEND							
SIZE	16"	12"	10"	8"	6"	4"	2"
A	85	67	60	54	42	34	30
B	85	67	60	54	42	34	18
C	80	63	56	50	38	30	16
D	76	66	60	48	48	36	24

45° BEND							
SIZE	16"	12"	10"	8"	6"	4"	2"
A	72	60	50	46	35	30	24
B	72	60	50	46	35	28	24
C	68	56	46	42	30	24	18
D	72	60	60	48	48	36	24

22 1/2° BEND							
SIZE	16"	12"	10"	8"	6"	4"	2"
A	58	50	42	38	30	24	18
B	58	48	42	38	30	24	18
C	54	44	38	34	26	20	14
D	60	48	48	36	36	30	24

11 1/4° BEND							
SIZE	16"	12"	10"	8"	6"	4"	2"
A	42	36	30	29	24	20	18
B	42	36	30	29	24	20	18
C	38	32	26	24	20	16	14
D	60	48	48	36	30	24	24

DIMENSIONS ARE IN INCHES

NOTES:

1. THRUST BLOCKS DESIGNED FOR 150 PSI PRESSURE. FOR GREATER PRESSURE QUANITIES WILL HAVE TO BE RECALCULATED.
2. THRUST BLOCKING TO BE POURED AGAINST UNDISTURBED EARTH.
3. IF EXACT SIZE PIPE BLOCKING IS NOT SHOWN, USE NEXT LARGER SIZE.
4. THRUST BLOCKING TO BE POURED IN PLACE – CLASS "C" CONCRETE.

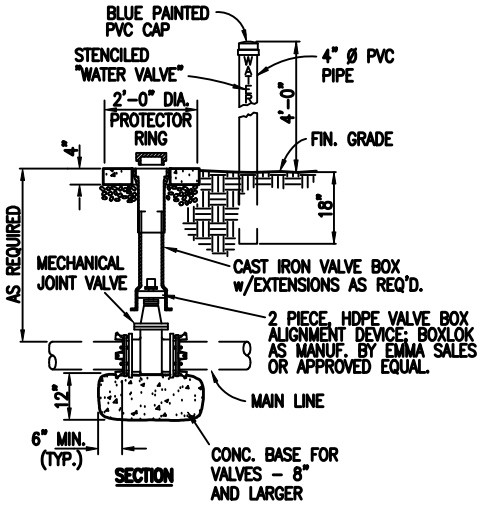
VERTICAL CONCRETE ANCHOR

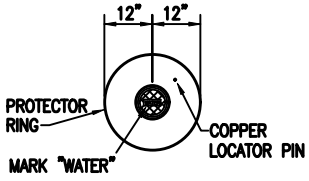
NOT TO SCALE

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9005	ECWD-89

KY HWY 259 ANNETA RD
UTILITY RELOCATIONS

STANDARD WATER LINE DETAILS





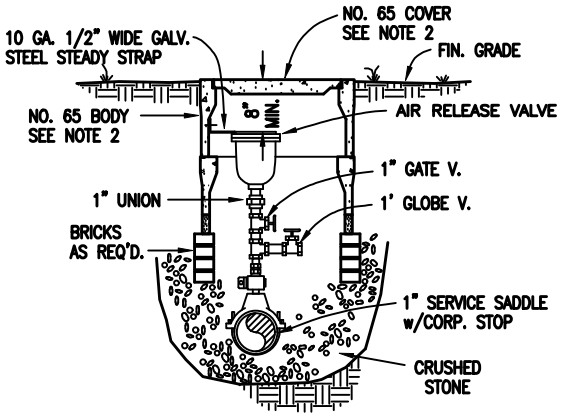
NOTES:
1. USE PRECAST CONC. PROTECTOR RING w/INTEGRAL COPPER LOCATOR PIN, AS MANUF. BY ROSS CONSTRUCTION OR APPROVED EQUAL, FOR VALVES OUTSIDE PAVED AREAS.
2. PLACE GROUT IN SPACE BETWEEN CONCRETE PAD AND VALVE BOX.
3. VALVES IN ROADWAY DO NOT REQUIRE A CONCRETE PAD OR MARKER.
4. VALVES SHALL BE RESTRAINED WITH MEGALUG TYPE RESTRAINT SYSTEM.

EDMONSON COUNTY WATER DISTRICT

VALVE SETTING DETAIL

NOT TO SCALE

NOTES:
1. THE CONTRACTOR SHALL MAKE PROVISIONS TO GIVE ADEQUATE SPACE FOR AIR RELEASE APPURTENANCES (SEE SHOP DRAWINGS).
2. 17"x28" CONC. METER BOX - AS MANUF. BY BROOKS PRODUCTS, INC. MEMPHIS, TN - OR APPROVED EQUAL.
3. SEAL SLOTS IN METER BOX W/NON-SHRINK GROUT.
4. ALL ACCESSORY VALVES AND PIPING SHALL BE BRASS.

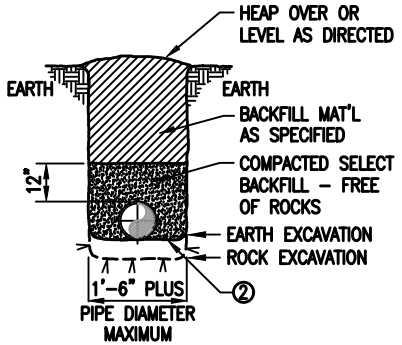


EDMONSON COUNTY WATER DISTRICT

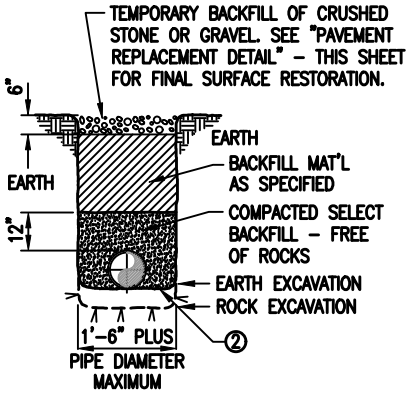
AIR RELEASE VALVE

NOT TO SCALE

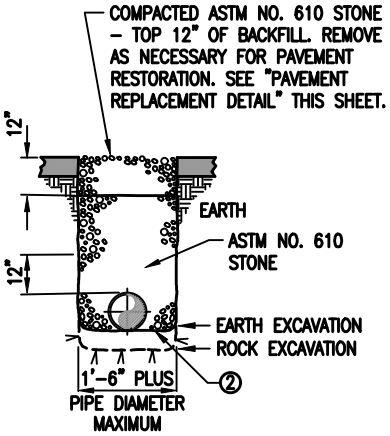
NOTE:
① SEE SPECIFICATIONS FOR DEPTH REQUIREMENT OF PIPE.
② LOCATOR WIRE, IF REQUIRED. SEE "DETECTABLE WIRE DETAIL" FOR CORRECT PLACEMENT.



METHOD "A"
(IN OPEN TERRAIN)



METHOD "B"
(UNDER DIRT ENTRANCES)



METHOD "C"
(UNDER STREETS, ROADS & DRIVEWAYS)

EDMONSON COUNTY WATER DISTRICT

PRESSURE PIPE BEDDING & BACKFILLING DETAILS

NOT TO SCALE

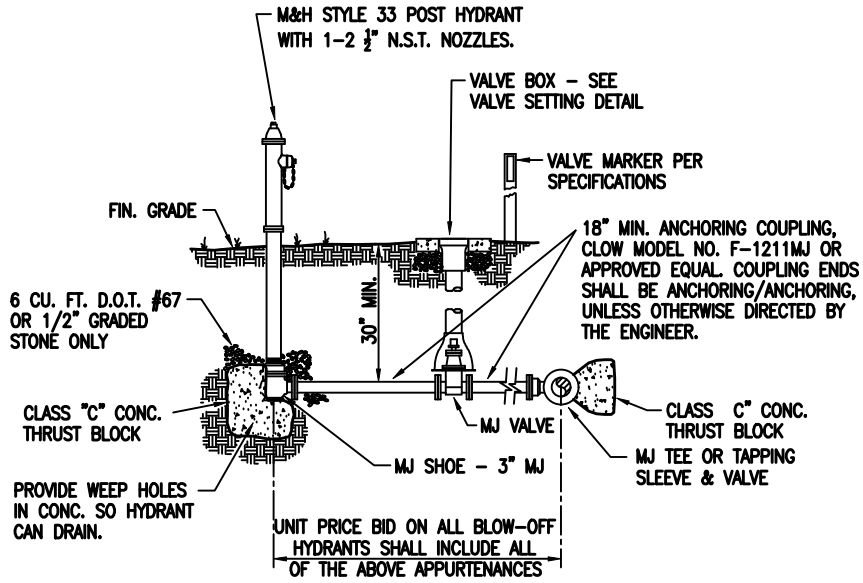
FOR WATER LINE ONLY

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9005	ECWD-90

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

STANDARD WATER LINE DETAILS

NOTES:
1. SET HYDRANT 12' TO 15' OFF EDGE OF PAVEMENT (MIN.).
2. CAP AND BLOCK TEE FOR END OF LINE APPLICATIONS.



EDMONSON COUNTY WATER DISTRICT

POST HYDRANT DETAIL

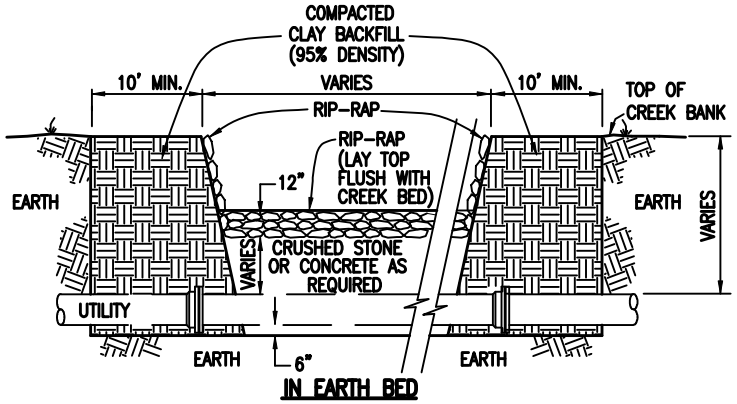
NOT TO SCALE

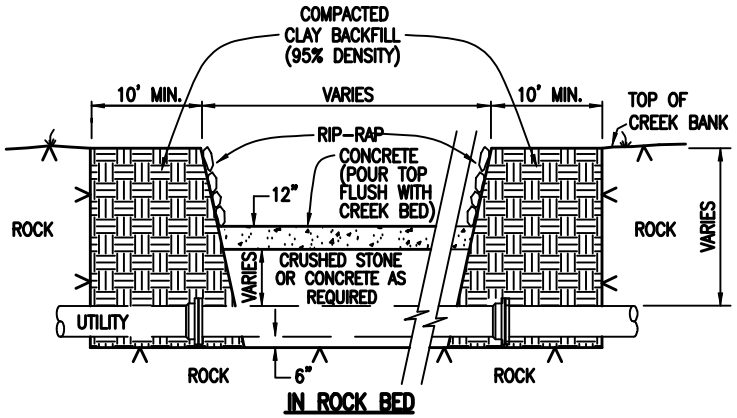
FOR WATER LINE ONLY

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9005	ECWD-91

KY HWY 259 ANNETA RD
UTILITY RELOCATIONS

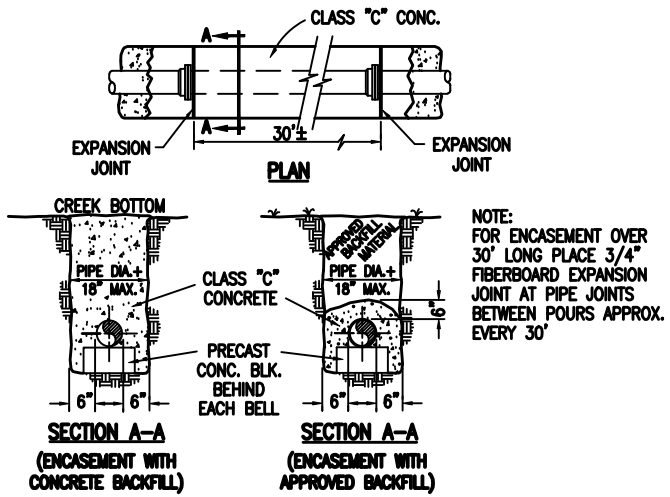
STANDARD WATER LINE DETAILS





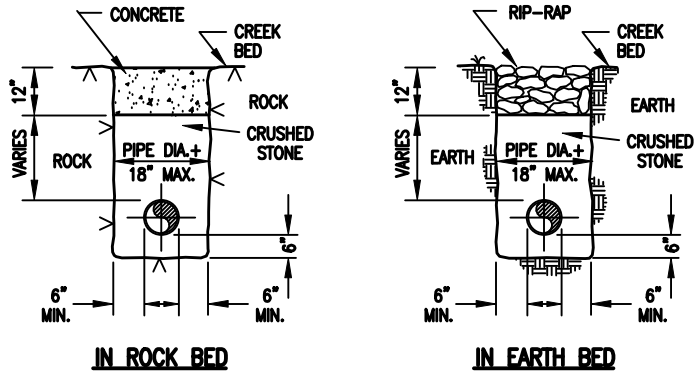
CREEK CROSSING EMBANKMENT DETAIL

NOT TO SCALE



STANDARD CONCRETE ENCASEMENT

NOT TO SCALE



DITCH CROSSING DETAIL

NOT TO SCALE

STATE OF KENTUCKY
LOUIS E. ROBBINS
12662
LICENSED PROFESSIONAL ENGINEER
6/1/22
FOR WATER LINE ONLY

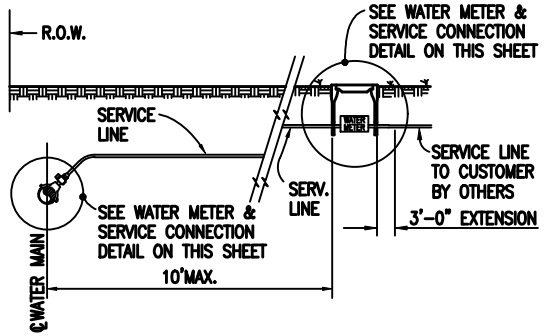
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9005	ECWD-92

KY HWY 259 ANNETA RD
UTILITY RELOCATIONS

STANDARD WATER LINE DETAILS

SERVICE CONNECTION NOT UNDER ROADWAY LUMP SUM BID ITEM INCLUDES:

1. METER BOX INSTALLATION AND APPURTENANCES
2. WATER MAIN CONNECTION AND APPURTENANCES



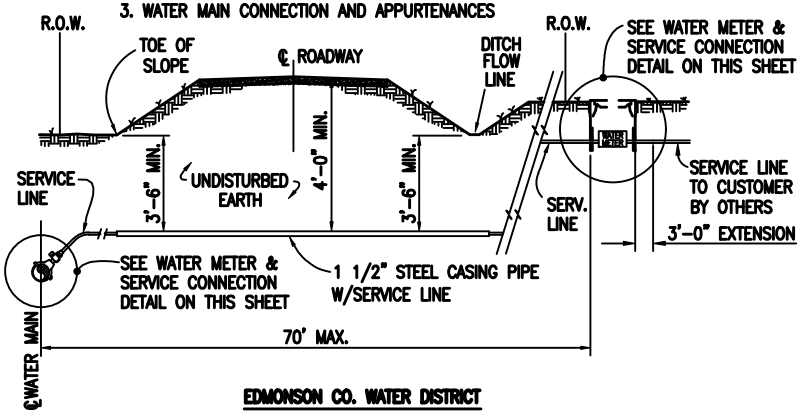
EDMONSON CO. WATER DISTRICT

TYPE "A"
SERVICE CONNECTION NOT UNDER ROADWAY

NOT TO SCALE

SERVICE CONNECTION UNDER ROADWAY LUMP SUM BID ITEM INCLUDES:

1. METER BOX INSTALLATION AND APPURTENANCES
2. BORE & JACK UNDER ROADWAY W/STEEL CASING PIPE AND SERVICE LINE
3. WATER MAIN CONNECTION AND APPURTENANCES



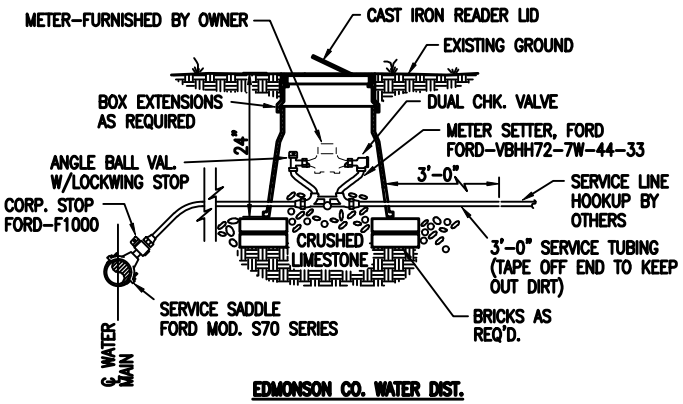
EDMONSON CO. WATER DISTRICT

TYPE "B"
SERVICE CONNECTION UNDER ROADWAY

NOT TO SCALE

NOTES:

1. STANDARD RECTANGULAR PLASTIC METER BOX – AS MANUF. BY POLY PLASTIC WATER METER BOXES – OR APPROVED EQUAL.
2. METER BOX SHALL BE 24" MINIMUM DEPTH.
3. WHERE PRESSURE REGULATOR IS REQUIRED USE FORD TANDEM SETTER WITH METER BOX SIZED TO FIT. AS MANUF. BY POLY PLASTIC WATER METER BOX CO. – OR APPROVED EQUAL.



EDMONSON CO. WATER DIST.

WATER METER INSTALLATION AND SERVICE LINE CONNECTION

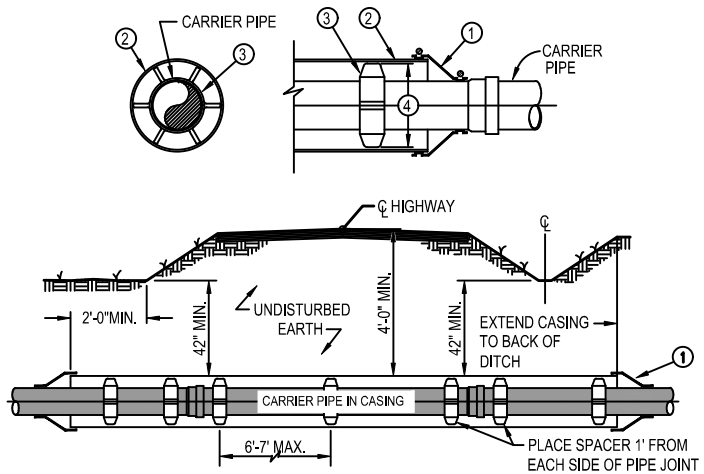
NOT TO SCALE

FOR WATER LINE ONLY

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9005	ECWD-93

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

STANDARD WATER LINE DETAILS



1. USE WATERTIGHT WRAP AROUND END SEALS WITH STAINLESS STEEL BANDS.
2. SMOOTH WALL STEEL CASING PIPE WITH BITUMINOUS COATING OUTSIDE.
3. CASING SPACERS SHALL BE INSTALLED IN A CENTERED/RESTRAINED CONFIGURATION. CASING SPACER MODELS AS PER SPECIFICATIONS.
4. SPACER RISERS/RUNNERS SHALL BE SIZED AND TRIMMED TO MAINTAIN 1/2" *MAXIMUM* CLEARANCE BETWEEN RUNNER AND CASING PIPE.

NOTE: CARRIER PIPE IN ALL CASING OVER 60 FEET IN LENGTH SHALL BE DUCTILE IRON WITH LOCKING GASKETS.

EDMONSON CO. WATER DISTRICT

ROADWAY CROSSING INSTALLATION

NOT TO SCALE

(STEEL CASING w/D.I. OR PVC CARRIER PIPE)

FOR WATER LINE ONLY

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9005	ECWD-94

KY HWY 259 ANNETA RD UTILITY RELOCATIONS

STANDARD WATER LINE DETAILS

TECHNICAL SPECIFICATIONS

WATER LINE RELOCATIONS – EDMONSON COUNTY WATER DISTRICT

EDMONSON AND GRAYSON COUNTIES, KENTUCKY

GRW Project 3621-09

KYTC ITEM # 4-9009.00, KY 259 SOUTH, GRAYSON COUNTY

FOR WATER LINE ONLY

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EDMONSON COUNTY WATER DISTRICT UTILITY QUANTITIES SPREADSHEET

PROJECT NUMBER 4-9009.00, KY 259 SOUTH, GRAYSON COUNTY

ITEM NO.	14003	14007	14022	14028	14047	14058	14059	14080	14085	14089	14124	14144	02690
DESCRIPTION	W CAP EXISTING MAIN	W ENCASEMENT STEEL BORED RANGE 2	W FLUSH HYDRANT ASSEMBLY	W METER 3/4 INCH	W PIPE DCTL IRON RSTRND JOINT 06 IN	W PIPE PVC 04 INCH	W PIPE PVC 06 INCH	W SERVICE PE/PLST LONG SIDE 3/4 IN	W SERVICE PE/PLST SHORT SIDE 3/4 IN	W TAPPING SLEEVE AND VALVE SIZE 1	W VALVE SPECIAL (INSERTA VALVE)	W LINE MARKER	W SAFELOADING
Drawing Sheet													
R5	1				90		161	2		1	1	2	1.75
R6							1000	1					7.4
R7							1000	1					7.4
R8	1		1		90		63	1		1	1	2	1
R9								1					
R10				1				3					
R11								1					
R12	1				90		69	1		1	1	2	1
R13	1		1	2	90		892		2	1	1	2	7
R14								1					
R15								1					
R16	1	46				87		1		2		2	
R17								1					
R18				1				3					
R19				1				3					
R20				2				4					
R21				1				1					
R22				2				4					
R23				1				3					
R24				1				1					
R25				1				1					
R26	1	52		1		80		4		2		2	0.25
R27	1			2	90		310	6	1	1	1	1	3
R28							1000	2					7.4
R29	1		1	1	90		410	2	1	1	1	1	3.5
R30								2					
R31								1					
R32								2					
R33								1					
R34								1					
R35													
R36								2					
R37								3					
R38													
R39								1					
R40	1	63				118		1		2		2	0.3
R41								2					
R42								2					
R43								1					
R44								2					
R45				1				2					
R46	2	46				90		2		2		2	0.25
R47								5					
R48													
TOTALS	11	207	3	18	540	375	4905	79	4	14	6	18	40.25
DESCRIPTION	W CAP EXISTING MAIN	W ENCASEMENT STEEL BORED RANGE 2	W FLUSH HYDRANT ASSEMBLY	W METER 3/4 INCH	W PIPE DCTL IRON RSTRND JOINT 06 IN	W PIPE PVC 04 INCH	W PIPE PVC 06 INCH	W SERVICE PE/PLST LONG SIDE 3/4 IN	W SERVICE PE/PLST SHORT SIDE 3/4 IN	W TAPPING SLEEVE AND VALVE SIZE 1	W VALVE SPECIAL (INSERTA VALVE)	W LINE MARKER	W SAFELOADING
ITEM NO.	14003	14007	14022	14028	14047	14058	14059	14080	14085	14089	14124	14144	02690

SECTION 01040 - PROJECT COORDINATION - WATER

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division 1 Specification sections, apply to work of this section.

1.02 DESCRIPTION OF WORK

Minimum administrative and supervisory requirements necessary for coordination of work on the project include but are not necessarily limited to the following:

Coordination and meetings.
Limitations for use of site.
Coordination of crafts, trades and subcontractors.
General installation provisions.
Cleaning and protection.
Conservation and salvage.

1.03 COORDINATION AND MEETINGS

If required, general project coordination meetings will be held at regularly scheduled times convenient for all parties involved. These meetings are in addition to specific meetings held for other purposes, such as regular project meetings and special pre-installation meetings. Request representation at each meeting by every party currently involved in coordination or planning for the work of the entire project. Conduct meetings in a manner, which will resolve coordination problems. Record results of the meeting and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting.

1.04 LIMITATIONS ON USE OF THE SITE

Limitations on site usage as well as specific requirements that impact site utilization are indicated on the drawings and by other contract documents. In addition to these limitations and requirements administer allocation of available space equitably among entities needing both access and space so as to produce the best overall efficiency in performance of the total work of the project. Schedule deliveries so as to minimize space and time requirements for storage of materials and equipment on site. The Contractor shall limit the area to be cleared to the construction site itself as far as practical. No extra clearing shall be allowed for convenience or for storage. If the Contractor requires additional space to that indicated to be available on the Drawings, the Contractor shall be responsible for making the necessary arrangements or agreements.

1.05 COORDINATION OF CRAFTS, TRADES AND SUBCONTRACTORS

A. The Contractor shall coordinate the work of all the crafts, trades and subcontractors engaged on the work, and he/she shall have final responsibility as regards the schedule, workmanship and completeness of each and all parts of the work.

B. All crafts, trades and subcontractors shall be made to cooperate with each other and with

others as they may be involved in the installation of work which adjoins, incorporates, precedes or follows the work of another. It shall be the Contractor's responsibility to point out areas of cooperation prior to the execution of subcontract agreements and the assignment of the parts of the work. Each craft, trade and subcontractor shall be made responsible to the Owner, for furnishing embedded items and giving directions, for doing all cutting and fitting and making all provisions for accommodating the work, and for protecting, patching, repairing and cleaning as required to satisfactorily perform the work.

C. The Contractor shall be responsible for all cutting, digging and other action of his/her subcontractors and workmen. Where such action impairs the safety or function of any structure or component of the project, the Contractor shall make such repairs, alterations and additions as will, in the opinion of the Engineer, bring said structure or component back to its original design condition at no additional cost to the Owner.

D. Each subcontractor is expected to be familiar with the General Requirements and all sections of the detailed Specifications for all other trades and to study all Drawings applicable to his/her work, to the end that complete coordination between trades will be effected. Consult with the Engineer if conflicts exist on the Drawings.

PART 2 - PRODUCTS (Not Applicable).

PART 3 - EXECUTION (Not Applicable).

END OF SECTION

SECTION 01090 - DEFINITIONS AND STANDARDS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division 1 Specification sections, apply to work of this section.

1.02 DESCRIPTION OF REQUIREMENTS

A. **General**: This section specifies procedural and administrative requirements for compliance with governing regulations and codes and standards imposed upon the Work. These requirements include obtaining permits, licenses, inspections, releases and similar documentation, as well as payments, statements and similar requirements associated with regulations, codes and standards.

1. The term, "Regulations", is defined to include laws, statutes, ordinances and lawful orders issued by governing authorities, as well as those rules, conventions and agreements within the construction industry which effectively control the performance of the work regardless of whether they are lawfully imposed by governing authority or not.

1.03 DEFINITIONS

A. **General Explanation**: A substantial amount of specification language consists of definitions of terms found in other contract documents, including drawings. (Drawings are recognized as being diagrammatic in nature and not completely descriptive of the requirements indicated thereon). Certain terms used in contract documents are defined in this article. Definitions and explanations contained in this section are not necessarily either complete or inclusive, but are general for the Work to the extent that they are not stated more explicitly in another element of the contract documents.

B. **General Requirements**: The provisions or requirements of other Division 1 sections apply to entire work of the Contract and, where so indicated, to other elements which are included in the project.

C. **Indicated**: The term, "indicated", is a cross-reference to graphic representations, notes or schedules on the drawings, to other paragraphs or schedules in the specifications, and to similar means of recording requirements in contract documents. Where terms such as "shown", "noted", "scheduled", and "specified" are used in lieu of "indicated", it is for the purpose of helping the reader locate the cross-reference, and no limitation of location is intended except as specifically noted.

D. **Directed, Requested, Etc.**: Where not otherwise explained, terms such as "directed", "requested", "authorized", "selected", "approved", "required", "accepted", and "permitted" mean "directed by the Architect/ Engineer", "requested by the Architect/Engineer", and similar phrases. However, no such implied meaning will be interpreted to extend the Architect's/Engineer's responsibility into the Contractor's area of construction supervision.

E. **Approve**: Where used in conjunction with the Architect's/Engineer's response to submittals,

requests, applications, inquiries, reports and claims by the Contractor, the meaning of the term "approved" will be held to limitations of the Architect's/Engineer's responsibilities and duties as specified in General and Supplementary Conditions. In no case will the Architect/Engineer's approval be interpreted as a release of the Contractor from responsibilities to fulfill requirements of contract documents.

F. **Project Site**: The term, "project site", is defined as the space available to the Contractor for performance of the Work, either exclusively or in conjunction with others performing other work as part of the project. The extent of the project site is shown on the drawings and may or may not be identical with the description of the land upon which the project is to be built.

G. **Furnish**: Except as otherwise defined in greater detail, the term "furnish" is used to mean "supply and deliver to the project site, ready for unloading, unpacking, assembly, installation, and similar operations" as applicable in each instance.

H. **Install**: Except as otherwise defined in greater detail, the term "install" is used to describe operations at project site including the actual "unloading, unpacking, assembly, erection, placing, anchoring, applying, working to dimension, finishing, curing protecting, cleaning and similar operations", as applicable in each instance.

I. **Provide**: Except as otherwise defined in greater detail, the term "provide" means "to furnish and install, complete and ready for intended use", as applicable in each instance.

J. **Installer**: The term "installer" is defined as "the entity" (person or firm) engaged by the Contractor, its subcontractor or sub- subcontractor for performance of a particular unit of work at the project site, including installation, erection, application and similar required operations. It is a requirement that installers are experienced in the operations they are engaged to perform.

K. **Testing Laboratories**: The term "testing laboratory" is defined as an independent entity engaged to perform specific inspections or tests of the work, either at the project site or elsewhere, and to report, and (if required) interpret results of those inspections or tests.

1.04 INDUSTRY STANDARDS

A. **Applicability of Standards**: Except where more explicit or more stringent requirements are written into the contract documents, applicable construction industry standards have the same force and effect as if bound into or copied directly into the contract documents. Such industry standards are made a part of the contract documents by reference. Individual specification sections indicate which codes and standards the Contractor must keep available at the project site for reference.

1. Referenced standards (standards referenced directly in the contract documents) take precedence over non-referenced standards that are recognized in the industry for applicability to the Work.

2. Non-referenced standards are defined as not being applicable to the Work, except as a general requirement of whether the Work complies with recognized construction industry standards.

B. **Publication Dates**: Except as otherwise indicated, where compliance with an industry standard is required, comply with standard in effect as of date of contract documents.

C. **Conflicting Requirements**: Where compliance with two or more standards is specified, and where these standards establish different or conflicting requirements for minimum quantities or quality levels, the most stringent requirement will be enforced, unless the contract documents specifically indicate a less stringent requirement. Refer requirements that are different, but apparently equal, and uncertainties as to which quality level is more stringent to the Architect/Engineer for a decision before proceeding.

1. **Minimum Quantities or Quality Levels**: In every instance the quantity or quality level shown or specified is intended to be the minimum for the work to be provided or performed. Unless otherwise indicated, the actual work may either comply exactly, within specified tolerances, with the minimum quantity or quality specified, or may exceed that minimum within reasonable limits. In complying with these requirements, the indicated numeric values are either minimum or maximum values, as noted, or as appropriate for the context of the requirements. Refer instances of uncertainty to the Architect/Engineer for decision before proceeding.

D. **Copies of Standards**: The contract documents require that each entity performing work be experienced in that part of the work being performed. Each entity is also required to be familiar with industry standards applicable to that part of the work. Copies of applicable standards are not bound with the contract documents.

Where copies of standards are needed for proper performance of the Work, the Contractor is required to obtain such copies directly from the publication source.

Although certain copies of standards needed for enforcement of the requirements may be required submittals, the Architect/ Engineer reserves the right to require the Contractor to submit additional copies of these standards as necessary for enforcement of the requirements.

E. **Abbreviations and Names**: Trade association names and title of general standards are frequently abbreviated. The following acronyms or abbreviations as referenced in contract documents are defined to mean the associated names. Both names and addresses are subject to change, and are believed to be, but are not assured to be, accurate and up-to-date as of date of contract documents. Any acronyms found but not defined shall be referred to the Engineer for clarification as necessary.

AASHTO	American Association of State Highway and Transportation Officials 444 North Capitol Street, Suite 225 Washington, DC 20005	(202) 624-5800
ACI	American Concrete Institute P.O. Box 19150 Detroit, MI 48219	(313) 532-2600
AIA	American Institute of Architects 1735 New York Ave., NW Washington, DC 20006	(202) 626-7300
AISC	American Institute of Steel Construction 400 N. Michigan Ave., 8th Floor Chicago, IL 60611	(312) 670-2400

AISI	American Iron and Steel Institute 1000 Sixteenth Street, NW Washington, DC 20036	(202) 452-7100
ANSI	American National Standards Institute 655 Fifteenth Street, NW, Suite 300 Washington, DC 20015	(202) 639-4090
ASTM	American Society of Testing & Materials 1916 Race Street Philadelphia, PA 19103	(215) 299-5400
AWS	American Welding Society P.O. Box 351040 550 Le Jeune Road, NW Miami, FL 33135	(305) 443-9353
AWWA	American Water Works Association 6666 W. Quincy Ave. Denver, CO 80235	(303) 794-7711
CRSI	Concrete Reinforcing Steel Institute 933 Plum Grove Road Schaumburg, IL 60195	(312) 490-1700
NCMA	National Cement Masonry Association P.O. Box 781 Herndon, VA 22070	(703) 435-4900
NEC	National Electric Code (by NFPA)	
NEMA	National Electrical Manufacturers Association 2101 L Street, NW; Suite 300 Washington, DC 20037	(202) 457-8400
NFPA	National Fire Protection Association Batterymarch Park Quincy, MA 02269	(617) 770-3000
NSF	National Sanitation Foundation P.O. Box 1468; 3475 Plymouth Road Ann Arbor, MI 48106	(313) 769-8010
PCI	Prestressed Concrete Institute 201 N. Wells Street Chicago, IL 60606	(312) 346-4071

UL	Underwriters Laboratories 333 Pfingsten Road Northbrook, IL 60062	(312) 272-8800

F. Federal Government Agencies: The names and titles of federal government standard or specification producing agencies are frequently abbreviated. The following acronyms or abbreviations as referenced in the contract documents indicate the names of standard or specification producing agencies of the federal government. Names and addresses are subject to change but are believed to be, but are not assured to be, accurate and up-to-date as of the date of the contract documents.

CE	Corps of Engineers (US Department of the Army) Chief of Engineers-Referral Washington, DC 20314	(202) 693-6456
CFR	Code of Federal Regulations Available from the Government Printing Office North Capitol Street between G and H Streets, NW Washington, DC 20402 (Material is usually first published in the Federal Register)	(202) 783-3238
CPSC	Consumer Product Safety Commission 1111 Eighteenth Street, NW Washington, DC 20207	(202) 634-7700
DOT	Department of Transportation 400 Seventh Street, SW Washington, DC 20590	(202) 426-4000
EPA	Environmental Protection Agency 401 M Street, SW Washington, DC 20460	(202) 829-3535
FCC	Federal Communications Commission 1919 M Street, NW Washington, DC 20554	(202) 632-7000
MIL	Military Standardization Documents (U.S. Department of Defense) Naval Publications and Forms Center 5801 Tabor Avenue Philadelphia, PA 19120	
OSHA	Occupational Safety and Health Administration (U.S. Department of Labor) Government Printing Office Washington, DC 20402	

1.05 SUBMITTALS

A. **Permits, Licenses, and Certificates**: For the Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, and similar documents, correspondence and records established in conjunction with compliance with standards and regulations bearing upon performance of the work.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION

SECTION 01110 - SUMMARY OF WORK

PART 1 - GENERAL

1.01 SCOPE OF WORK PERFORMED UNDER THIS CONTRACT

A. The scope of work generally consists of the construction of approximately 5,820 L.F. of 4" and 6" water lines in the Hwy 259 South area of the Edmonson County Water District in Grayson County, Kentucky to accommodate the Kentucky Department of Highways highway project. Appurtenant work includes valves, approximately 207 L.F. of steel casing pipe, directional bore for approximately 79 water service line casings under highway, residential meter reconnections, retirement of existing water lines, etc. The detailed sections of these Specifications and the Drawings should be relied upon for detailed requirements.

B. The Contractor for this contract shall furnish all labor, equipment, materials and appurtenances necessary to construct the water line utilities on the relocation portion of the project as specified and as shown on the Drawings, complete in place and fully operational.

C. It is intended that the work covered by these contracts be done so as to cause the minimum interference with the normal operation of the existing water treatment and distribution system of the Edmonson County Water District. The Contractor will be required to organize and schedule his/her work to keep the existing facilities in full operation during the construction period insofar as is consistent with the nature of the construction work to be performed.

D. The manner in which shutdowns will be made, and the Contractor's work schedule will be subject to the approval of the Edmonson County Water District and the Engineer; although every effort will be made to cause the minimum amount of interference with the Contractor's work, the interest of the Owner in regard to the existing facilities must always take precedence over the construction work. Therefore, the right is reserved by the Owner to put any water lines that may be shut down for the construction work back into service when an emergency arises.

E. The Contractor must have sufficient materials, equipment, labor, and supervision available to accomplish the work required in the time allocated for any shutdown.

1.02 ENUMERATION OF DRAWINGS & SPECIFICATIONS

Following are the Drawings and Specifications, which form the Contract Documents as set forth in Section 1.1 of the General Conditions:

Drawings	Sheet Number
See Edmonson County Water District Drawings for the Water Utility Work	ECWD 1 thru ECWD 94

Specifications

See Table of Contents for ECWD Water Utility Work along with the general requirements of KTC DOH specifications.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION

SECTION 01120 - GENERAL PROVISIONS - WATER

PART 1 - GENERAL

1.01 DESIGNATION OF PARTIES

A. All references in these Utility Specifications, Contract Documents and Drawings to "Owner" shall mean Edmonson County Water District; all references to "Engineer" shall mean GRW Engineers, Inc., 404 BNA Drive, Suite 201, Nashville, Tennessee 37217; all references to "Agency" shall mean Kentucky Department of Highways.

1.02 PRE-CONSTRUCTION CONFERENCE

A. The Contractor, Engineer, Agency and Owner, or their duly appointed representatives, shall meet in a preconstruction conference prior to the initiation of construction to organize, schedule and determine responsibilities for the work as it pertains to each party of the Contract.

1.03 CONSTRUCTION SCHEDULE CHART

A. Prior to start of any construction, the Contractor shall furnish three (3) copies of a suitable construction schedule or progress chart for construction of the water lines. The schedule or chart shall be subject to the approval of the Engineer and Agency and be of sufficient detail to show the chronological relationship of all activities of the project, the order in which the Contractor proposes to carry on the work, estimated starting and completion dates of major features, procurement of materials, and scheduling of equipment. The schedule shall be in a form suitable for appropriately indicating the percentage of work scheduled for completion at any time. The schedule shall be kept current and shall reflect completion of all work under the Contract within the specified time and in accordance with these Specifications. The schedule shall be coordinated with the KDOH General/Grading Contractor(s).

B. If the Contractor fails to submit a schedule or chart, within the time prescribed, the Agency/Owner/Engineer may withhold approval of progress payments until the Contractor submits the required schedule or chart.

1.04 CONSTRUCTION PROGRESS MEETINGS

If required, construction progress meetings shall be held at a designated location established by the Owner or Agency. The Contractor, appropriate Sub-Contractors, Agency, Engineer and the Owner shall meet to review construction progress, equipment or material submittals, construction schedules, etc.

1.05 TAXES

Proposals shall be made to include any applicable taxes on payrolls, materials, equipment, vehicles, utilities, etc., including State sales taxes (if required) and shall include compensation for such taxes on all work under this Contract.

1.06 LINES AND GRADES

A. The Contractor shall be responsible for all lines and grades required for the construction of structures and piping. The Contractor shall set line and grade stakes for all gravity pipes,

offset from the centerline of the trench or the axes of the pipelines as required to facilitate accurate construction.

B. When water lines, force main and other such buried pressure pipelines are involved, the Owner will assist the Contractor in the location of these lines; however, any detailed layout requiring surveying, or excavation including that required for establishing the grade of the pipeline, shall be accomplished by the Contractor. Contractor shall coordinate with the KDOH for required surveying to establish ROW, ditching, etc., allowing for accurate placement of the water lines in relation to proposed highway related construction activities.

C. The Contractor shall furnish all materials, stakes and grade boards that are required for layout by the Contractor's forces. In addition, the Contractor shall furnish any necessary survey personnel to mark the location of the various facilities on the ground, establishing bench levels and determining as-built conditions after work is completed. The Contractor's personnel engaged in the layout work described herein and the aides furnished to the Engineer shall be fully capable of performing the duties set out herein and shall be fully qualified as required. Contractor shall be responsible for verifying all profiles and elevations prior to construction and for coordinating with the KDOH on the proposed ROW and design features for the Hwy. 259 South improvements project.

D. Any discrepancy between elevations shown on the Drawings and elevations taken in the field shall be reported to the Engineer/Agency immediately.

1.07 BLASTING

A. All blasting operations shall be conducted in strict accordance with the Kentucky Regulations, which shall be deemed to be included in these Specifications the same as though herein written in full. The Contractor shall also comply with applicable municipal ordinances, Federal Safety Regulations and Section 9 of the Manual of Accident Prevention in Construction, published by the Associated General Contractor's of America, Inc. All explosives shall be stored in conformity with said ordinances, laws and safety regulations. No blasting shall be done within five feet of any water mains, telephone, electric or other underground utility lines or ten feet of any gas mains except with light charges of explosives. Any damage done by blasting is the responsibility of the Contractor and shall be promptly and satisfactorily repaired by him. All blast events shall be designed in accordance with state laws.

B. Shot rock, which is excavated, shall be disposed of offsite by the Contractor. No rock larger than one-eighth cubic foot will be permitted in the backfill.

C. Compliance with laws, ordinances, and regulations shall be the Contractor’s responsibility and he shall save the Owner and Engineer harmless from any and all claims of any type or nature arising from blasting or storage of explosives.

1.08 COMPLIANCE WITH SAFETY REGULATIONS

A. The equipment items furnished shall comply with all governing federal and state laws regarding safety, including all current requirements of the Occupational Safety and Health Act (OSHA). Contractor shall be solely responsible for job safety in accordance with all laws, regulations, methods, etc. of OSHA and the state.

B. All work under this Contract shall be done in strict compliance with the Occupational Safety and Health Act of 1970 (PL 91-596) and under Section 107 of the Contract Work Hours and Safety Standards Act. (PL 91-54).

C. It is not the intention of these specifications to conflict with the Act in any way, and where conflicts may arise, the Act shall govern.

1.09 OBSTRUCTIONS

A. In cases where storm sewers, sanitary sewers, gas lines, water lines, telephone lines, electric lines or other overhead and underground structures are encountered, they shall not be displaced or molested unless necessary, in which case they shall be replaced in as good a condition as found and as quickly as possible.

B. The Contractor is responsible for notifying the appropriate utility companies and coordinating for the protection of the utility. All such lines or underground structures damaged or molested in the construction shall be replaced at the Contractor's expense, unless in the opinion of the Utility, such damage was caused through no fault of the Contractor.

C. With particular respect to existing underground utilities, all available information concerning their location has been shown on the Highway Plans. While it is believed that the locations shown are reasonable correct, neither the Engineer nor the Owner can guarantee the accuracy or adequacy of this information.

E. It is suggested that the Contractor locate all unknown metallic hazards, namely buried pipe, metals, etc., by using a pipe locator. The pipe locator should immediately precede the trench ditching and all hazards located and marked with a pointed stake in such manner as to notify the ditcher operator of such hazard. The Engineer may require this procedure. Available for assistance to the Contractor is BUD, a service to aid in underground utility location. BUD telephone 1-800-752-6007.

F. It is expected that the Contractor will be diligent in his efforts and use every possible means to locate existing utilities. Any claims for unavoidable damage, based on improper or unknown locations will be thoroughly examined considering the Contractor’s efforts to locate the said utilities or obstructions prior to beginning construction.

1.10 STORAGE FACILITIES

A. The Contractor shall be responsible for proper and adequate storage of all materials and equipment used on the site. Any additional off-site space required for construction purposes shall be the Contractor’s responsibility to obtain.

B. Upon completion of the work, the Contractor shall remove all storage facilities, surplus materials and equipment and restore the site to its original condition, or to the finished condition as required by the Contract.

1.11 STANDARDS OF WORKMANSHIP

Work of all crafts and trades shall be laid out to lines and elevations as established by the Contractor from the Drawings or from instructions by the Engineer. Unless otherwise shown, all work shall be plumb and level, in straight lines and true planes, parallel or square to the established lines and levels. The work shall be accurately measured and fitted to tolerance as established by the best practices of the crafts and trades involved, and shall be as required to fit all parts of the work carefully and neatly together. All work shall be coordinated with the proposed highway construction project.

1.12 GUARANTY

A. Except as otherwise specified herein, the Contractor shall guarantee all work from latent defects in materials, equipment and workmanship for one (1) year from the date of final completion of the Work. The date of final completion shall be that date upon which the final estimate is approved by the Owner or the date of substantial completion as defined in Section 01770 of the technical Specifications. In case any date but the date of final completion is established to govern the time of the Guaranty, such date shall be duly recorded together with the terms and conditions of such agreement.

B. The Contractor agrees that he will obtain from the manufacturers of equipment and materials furnished under this Contract, guarantees against defective materials and workmanship, and if those guarantees furnished by the manufacturer do not extend for the term of one (1) year from and after the date upon which the final estimate is formally approved by the Owner or other established date as set forth hereinbefore, he shall make the necessary arrangements and assume all cost for extending this guarantee for the required period.

C. The Contractor shall promptly make such repairs or replacement as may be required under the above specified guarantee, and, when the repairs or replacements involve one or more items of installed equipment, shall provide the services of qualified factory-trained servicemen in the employ of the equipment manufacturers to perform or supervise the repairs or replacements.

D. When the Engineer or the Owner deems it necessary, and so orders, such replacements or repairs under this section shall be undertaken by the Contractor within twenty-four (24) hours after service of notice. If the Contractor unnecessarily delays or fails to make the ordered replacements or repairs within the time specified, or if any replacements or repairs are of such nature as not to admit of the delay incident to the service of a notice, then the Owner shall have the right to make such replacements or repairs, and the expense thereof shall be paid by the Contractor or deducted from any moneys due the Contractor.

E. All warranties and guarantees remaining in effect at and beyond the Guaranty expiration date shall be relinquished and transferred to the Owner. Copies of such warranty/guaranty shall be submitted to the Engineer prior to date of the start of the guaranty period.

1.13 TRAFFIC CONTROL AND MAINTENANCE

A. Traffic shall be maintained on all highways and streets at all times during construction of pipe lines across or along side said highways and streets. Access to all existing subdivisions and private residences shall also be kept open. Work shall be performed in accordance with applicable City, County, and state Department of Highways guidelines. Traffic control shall include proper signing and flagging per these guidelines.

B. Traffic shall be maintained in accordance with the Manual on Uniform Traffic Control Devices. Work shall include all labor and materials necessary for construction and maintenance of traffic control devices and markings.

C. Traffic control shall also include all flag persons and traffic control devices such as, but not limited to, flashers, signs, barricades and vertical panels, plastic drums (steel drums will not be permitted) and cones necessary for the control and protection of vehicular and pedestrian traffic as specified by the Manual on Uniform Traffic Control Devices.

D. Any temporary traffic control items, devices, materials, and incidentals shall remain the property of the Contractor when no longer needed.

E. The Contractor shall maintain a two-lane traveled way with a minimum lane width of 10 feet; however, during working hours, one-way traffic may be allowed at the discretion of the Owner, provided permission is obtained from the KDOH and adequate signing and flagpersons are at the location.

F. The Contractor shall fully cover with plywood any signs, either, existing, permanent or temporary, which do not properly apply to the current traffic phasing and shall maintain the covering until the signs are applicable or are removed.

G. In general, all traffic control devices shall be placed starting and proceeding in the direction of the flow of traffic and removed starting and proceeding in the direction opposite to the flow of traffic.

H. If traffic should be stopped due to construction operations and an emergency vehicle on an official emergency run arrives on the scene, the Contractor shall make provisions for the passage of that vehicle immediately.

1.14 CONSTRUCTION ALONG OR ACROSS A STREAM

A. All excavations along or across a stream shall be done in such a manner as to prevent degradation of the waters. Spoil material shall not be allowed to enter the flowing portion of the stream.

B. Effective erosion and sedimentation measures must be employed at all times during the project to prevent degradation of the waters.

C. Site regrading and reseeding shall be accomplished within 14 days after disturbance, regardless of the season.

D. The Contractor shall refer to Section 02371 of these Detailed Specifications for a more detailed description of requirements of the Construction Stormwater Permit and the Kentucky Water Quality Standards Water Quality Certification. Contractor shall comply with the requirements of any project permits and the project SWPPP for the project.

1.15 EXECUTION AND COORDINATION OF THE WORK

A. GENERAL

1. It is intended that the work covered by this contract be done to cause the minimum interference with the normal operation of the existing distribution system of the Edmonson County Water District. The Contractor will be required to organize and schedule his work to keep the existing facilities in full operation during the construction period insofar as is consistent with the nature of the construction work to be performed.

2. The manner in which shutdowns will be made, and the Contractor's work schedule will be subject to the approval of the Owner and the Engineer; and although every, effort will be made to cause the minimum amount of interference with the Contractor's work, the interest of the Owner in regard to the existing facilities must always take precedence

over the construction work. Therefore, the right is reserved by the Owner to put any lines or other facilities that may be shut down for the construction work back into service when an emergency arises.

3. The Contractor must have sufficient materials, equipment, labor, and supervision available to accomplish the work required in the time allocated for any shutdown.

1.16 ORDER OF WORK

A. Work on the contract shall be prosecuted in a timely manner. The nature of the work will require that portions of the work be constructed and be placed into service as soon as possible to allow other portions to be taken out of service.

1.17 RESTORATION OF DISTURBED AREAS/WORK ON PRIVATE PROPERTY

A. In connection with work performed on or adjacent to private property, the Contractor shall take all reasonable care to avoid damage to the property owner's buildings, grounds and facilities and shall be completely responsible for the repair or damage to same. Fences, hedges, shrubs, etc., within the construction limits shall be carefully removed, preserved, and replaced when the construction is completed. Grassed areas shall be graded, fertilized, and seeded when construction is completed in accordance with the requirements set out in these Detailed Specifications. It is intended that when construction is completed the Owner's facilities and grounds shall be restored to as good as or better than its original condition. Foundations adjacent to an excavation which is to be carried below the bottom of the foundation shall be supported by shoring, bracing, or underpinning and the Contractor shall be held strictly responsible for any damage to said foundation.

B. Work on the rights-of-way of the State or County Highway Departments shall be considered work on private property. It shall be the Contractor's responsibility to obtain any necessary work permits and to meet all requirements for signs, warning lights, flagmen, etc.

C. Reasonable care shall be taken during construction to avoid damage to vegetation. Ornamental shrubbery and tree branches shall be temporarily tied back, where appropriate, to minimize damage. Trees, which receive damage to branches, shall be trimmed of those branches to improve the appearance of the tree. Tree trunks receiving damage from equipment shall be treated with a tree dressing.

1.18 BASIS OF PAYMENT

A. The Contractor shall furnish all necessary labor, machinery, tools, apparatus, materials, equipment, service and other necessary supplies and perform all work at the unit or lump sum prices for the items listed in the BID.

B. Items listed in the BID constitute all of the pay items for the water utilities on this project; any other items of work listed in the Specifications shown on the Drawings or required to construct an operable facility shall be considered incidental to those items.

B. The contractor shall refer to Section 01020 for the Basis of Payment requirements.

1.19 SHOP DRAWINGS

The Contractor shall submit shop drawings for all materials to be installed. Shop drawings shall be submitted in accordance with Section 01340. Rejection of the same drawings on three separate occasions will constitute grounds for total rejection of the proposed equipment manufacturer or supplier as being unable to meet the Specifications.

Shop drawings shall be checked by the Contractor and evidence of such checking shall be indicated thereon. The Contractor shall be completely responsible for accuracy, completeness, compliance with Plans and Specifications, and compatibility, the Engineer's approval notwithstanding.

1.20 SUPERVISION OF INSTALLATION

All special equipment or materials shall be installed under the supervision of qualified personnel representing the Contractor.

1.21 CONNECTING TO EXISTING LINES

Connections of new lines to existing lines shall be as shown on the Drawings and/or directed by the Engineer. The Contractor shall verify materials of construction and size of existing lines before ordering tapping sleeves, couplings, etc.

1.22 FINAL INSPECTION

Final inspection will be held when Contractor notifies the Engineer that work is complete and ready for inspection. The Engineer shall contact concerned parties and set a date for the inspection to be held.

1.23 PERMITS CODES, AGREEMENTS AND/OR CONTRACTS WITH PRIVATE UTILITIES

The Contractor shall make application for, obtain, and pay for all licenses, permits, agreements, and/or contracts with private utility companies and shall pay all fees and charges in connection therewith. The Contractor shall be responsible for all expenses and fees associated with the above.

1.24 UTILITIES REQUIRED BY CONTRACTOR

All electric current and/or any utility service required by the Contractor shall be furnished at his own expense except as otherwise noted in these specifications

1.25 WATER AND UPLIFT

The Contractor shall by the use of well points, pumps, or other approved methods, prevent the accumulation of water in excavated areas. Should water accumulate, it shall be promptly removed. The Contractor shall also provide for dewatering areas adjacent to structures or lines to prevent uplift during construction operations. The Contractor will be held responsible for any damage due to uplift of such structures or lines and to existing structures during construction operations.

1.26 SUBSURFACE CONDITIONS

Neither the Owner nor the Engineer will be held responsible for subsurface conditions. The Contractor should make his own determination concerning the quantities of rock and ground water prior to bidding.

1.27 NOISE AND ODOR CONTROL

Some of the work hereunder is to be performed adjacent to or near private residences. The Contractor shall be responsible for noise and odor abatement procedures and shall not commence work in these areas before 7:00 a.m. local prevailing time.

1.28 CHEMICAL REQUIREMENTS

All chemicals used during project construction or furnished for project operation, whether herbicide, pesticide, disinfectant, reactant or of other classifications, must show approval of either EPA or USDA. Use of all such chemicals and disposal of residues shall be in strict conformance with instructions.

1.29 FIELD REPRESENTATIVE

The Contractor shall have available a responsible on-site representative who can officially receive instructions from the Engineer. The Contractor shall have one complete up-to-date set of plans and specifications available at all times. The Contractor's failure to comply with this requirement shall cause the Contractor to work at his own risk. The jobsite superintendent shall, as a minimum, be provided a pager and mobile telephone with voice mail capabilities.

1.30 EASEMENTS AND WORK ON OR ADJACENT TO PRIVATE PROPERTY

In connection with work performed on or adjacent to private property, the Contractor shall take all reasonable care to avoid damage to the property owner's grounds and facilities and shall be completely responsible for the repair of damage to same. It is intended that when construction is completed, the private property owner's facilities and grounds shall be restored to as good as or better than their original condition.

1.31 ENGINEER'S AUTHORITY

The Engineer does not have the authority to stop work, order work done or to direct or supervise any of the Contractor's forces.

1.32 EROSION AND SEDIMENT CONTROL

A. The Contractor shall maintain all areas where excavation and backfill operations are being performed or have been performed in order that siltation and bank erosion will be kept to a minimum during construction. This requirement includes construction of temporary or permanent erosion barriers and use of special methods to control erosion.

B. If required, the Contractor shall make application for a Storm Water Discharge permit. Coordination with the KDOH/General Highway Contractor and the project permit/SWPPP will be required.

C. A Kentucky Water Quality Certification should be obtained by the Contractor for each blue line stream crossing. The Contractor will be required to abide by all requirements of the permit. The Contractor shall not work within the streambed or tributaries thereof without the Water Quality Certification Permit.

D. The Contractor shall refer to Section 02371 of these Detailed Specifications for a more detailed description of requirements of the KPDES Construction Stormwater Permit and the Kentucky Water Quality Standards Water Quality Certification.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION

SECTION 01205 - LABOR PROVISIONS (KY) - WATER

PART 1 - GENERAL

1.01 HOURS OF WORK

A. The Contractor shall comply in every respect to all provisions of the Kentucky Revised Statutes 337.505 to 337.550.

B. Hours of work shall be as set out in KRS 337.550; that is, not more than eight (8) hours in one calendar day, nor more than forty (40) hours in one week, except in case of emergency caused by fire, flood or damage to life or property.

C. The provisions included under KRS 337.540 concerning a 10-hour workday may be allowed if Owner is in agreement.

D. Any laborer, workman, mechanic, helper, assistant or apprentice working in excess of forty (40) hours in one week shall be paid not less than 1-1/2 times the base rate.

1.02 PREVAILING WAGE REQUIREMENT

A. In accordance with Kentucky Revised Statutes 337.510 Prevailing Wage Rates shall be in effect and shall apply to all contracts of this project. The Utility Contractor shall coordinate with the KDOH for the applicable wage rates.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION

SECTION 01271 - BASIS OF MEASUREMENT AND PAYMENT – WATER UTILITIES

PART 1 - GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

A. The Contractor shall furnish all necessary labor, machinery, tools, apparatus, equipment, materials, service and other necessary supplies and perform all Water Utility Work shown on the Drawings and/or described in the Specifications and Contract Documents at the unit prices as indicated by the Bidder in the Bid.

B. The Bidder declares that he has examined the site of the Work and informed himself fully in regard to all conditions pertaining to the place where the Work is to be done; that he has examined the Drawings, Specification and Contract Documents for the Work, and has read all special provisions furnished prior to the opening of bids; and that he has further satisfied himself relative to the Work to be performed. The Bidder further declares that he understands that unit quantities for Water Utilities are approximately only, are subject to increase or decrease, and that, should the quantities of any of the items be decreased, the Bidder will make no claim for the anticipated profits. In addition, the Owner also reserves the right to adjust quantities, either by addition or deletion and as-BID unit price shall remain in effect for these quantity adjustments.

C. The Bidder declares that he understands the Utility Work must be coordinated with the overall Work shown on the KDOH Drawings on the project and that all General Conditions, etc., shall apply, including any AIS requirements.

1.02 PAY ITEMS

The items listed hereinafter (standard KYTC descriptions) refer to and are the same items listed in the BID hereinbefore and constitute all the pay items in the Water Utility portion of the Contract. Only the items shown on the Utilities General Summary Spreadsheet are pay items; any other items of Work listed in the Specifications or shown on the Utility Drawings shall be considered incidental to the listed items on the General Summary sheet.

Standard Water Bid Descriptions (KYTC Descriptions)

W CAP EXISTING MAIN This item shall include the specified cap, concrete blocking and/or mechanical anchoring, labor, equipment, excavation, backfill, and restoration required to install the cap at the location shown on the plans or as directed in accordance with the specifications. This item is not to be paid on new main installations. This pay item is only to be paid to cap existing mains. Caps on new mains are incidental to the new main. Any and all caps on existing mains shall be paid under one bid item included in the contract regardless of size. No separate bid items will be established for size variations. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W ENCASEMENT STEEL BORED This item shall include the steel encasement pipe size as specified on the plans and in the specifications, casing spacers, end seals, labor, and equipment to bore and install the encasement in accordance with the plans and specifications, complete and ready for use. The size shall be the measured internal diameter of the encasement pipe. The sizes of encasement to be paid under the size ranges specified in the bid items shall be as follows:

Range 1 = All encasement sizes greater than 2 inches to and including 6 inches
Range 2 = All encasement sizes greater than 6 inches to and including 10 inches
Range 3 = All encasement sizes greater than 10 inches to and including 14 inches
Range 4 = All encasement sizes greater than 14 inches to and including 18 inches
Range 5 = All encasement sizes greater than 18 inches to and including 24 inches
Range 6 = All encasement sizes greater than 24 inches

(Encasement sizes of 2 inches internal diameter or less shall not be paid separately; but, shall be considered incidental to the carrier pipe.) Payment under this bid item shall not include the carrier pipe. Carrier pipe shall be paid under a separate bid item. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid LINEAR FEET (LF) when complete.

W FLUSH HYDRANT ASSEMBLY This item shall include the flushing hydrant assembly, service line, tapping the main, labor, equipment, excavation, backfill, and restoration required to install the flush hydrant at the location shown on the plans and in accordance with the specifications and standard drawings, complete and ready for use. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W LINE MARKER This item is for payment for furnishing and installing a water utility line marker as specified by the utility owner specifications and plans. A line marker may consist of a post or monument of whatever materials specified and shall include markings and/or signage on same as specified by plans or specifications. This item shall include all labor, equipment, and materials needed for complete installation of the marker. This item shall be paid EACH (EA) when complete.

W METER This item is for payment for installation of all standard water meters of all sizes 2 inches ID or less as specified on the plans. This item shall include all labor, equipment, ~~meter~~, meter box, casting, yoke, and any other associated material needed for installation of a functioning water meter in accordance with the plans and specifications, complete and ready for use. This item shall include connections to the new or existing water service line. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete. ***The meter shall be moved from the existing meter setting to the new meter setting.***

W PIPE This description shall apply to all PVC, ductile iron, and polyethylene/plastic pipe bid items of every size and type to be used as water main, except those bid items defined as "Special". This item includes the pipe specified by the plans and specifications, all fittings (including, but not limited to, bends, tees, reducers, plugs, and caps), tracing wire with test boxes (if required by specification), polyethylene wrap (when specified), labor, equipment, excavation, bedding, restoration, testing, sanitizing, backfill, and etc., required to install the specified new pipe and new fittings at the locations shown on the plans, or as directed, in accordance with the specifications and standard drawings complete and ready for use. No additional payment will be made for rock excavation. This bid item includes material and placement of flowable fill under existing and proposed pavement, and wherever else specified on the plans or in the specifications. This item shall include all temporary and permanent materials and equipment required to pressure test and sanitize mains including, but not limited to, pressurization pumps, hoses, tubing, gauges, main taps, saddles, temporary main end caps or plugs and blocking, main end taps for flushing, chlorine liquids or tablets for sanitizing, water for testing/sanitizing and flushing (when not supplied by the utility), chlorine neutralization equipment and materials, and any other items needed to accomplish pressure testing and sanitizing the main installation. This item shall also include pipe anchors, at each end of polyethylene pipe runs when specified to prevent the creep or contraction of the pipe. Measurement of quantities under this item shall be through fittings, encasements, and directional bores (only when a separate carrier pipe is

specified within the directional bore pipe). Measurements shall be further defined to be to the center of tie-in where new pipe contacts existing pipe at the center of connecting fittings, to the outside face of vault or structure walls, or to the point of main termination at dead ends. No separate payment will be made under pipe items when the directional bore pipe is the carrier pipe. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid LINEAR FEET (LF) when complete.

W SERVICE LONG SIDE This bid item description shall apply to all service line installations of every size bid up to and including 2 inch inside diameter, except those service bid items defined as "Special". This item includes the specified piping material, main tap, tapping saddle (if required), and corporation stop materials, coupling for connecting the new piping to the surviving existing piping, encasement of 2 inches or less internal diameter (if required by plan or specification), labor, equipment, excavation, backfill, testing, disinfection, and restoration, at the locations shown on the plans or as directed, in accordance with the specifications and standard drawings, complete and ready for use. This bid item is to pay for service installations where the ends of the service connection are on opposite sides of the public roadway and the service line crosses the centerline of the public roadway as shown on the plans. The length of the service line is not to be specified. Payment under this item shall not be restricted by a minimum or maximum length. The contractor shall draw his own conclusions as to the length of piping that may be needed. Payment under this item shall include boring, jacking, or excavating across the public roadway for placement. Placement of a service across a private residential or commercial entrance alone shall not be reason to make payment under this item. Private or commercial entrances shall not be considered a public roadway in defining payment under this item. This pay item does not include installation or relocation of meters. Meters will be paid separately. No additional payment will be made for rock excavation or for special bedding required in rock excavation. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W SERVICE SHORT SIDE This bid item description shall apply to all service line installations of every size up to and including 2 inch internal diameter, except those service bid items defined as "Special". This item includes installation of the specified piping material of the size specified on plans, encasement of 2 inches or less internal diameter (if required by plan or specification), main tap, tapping saddle (if required), corporation stop, coupling for connecting the new piping to the surviving existing piping, labor, equipment, excavation, backfill, testing, disinfection, and restoration, at the locations shown on the plans or as directed, in accordance with the specifications and standard drawings, complete and ready for use. This bid item is to pay for service installations were both ends of the service connection are on the same side of the public roadway, or when an existing service crossing a public roadway will remain and is being extended, reconnected, or relocated with all work on one side of the public roadway centerline as shown on the plans. The length of the service line is not to be specified and shall not be restricted to any minimum or maximum length. Payment shall be made under this item even if the service crosses a private residential or commercial entrance; but, not a public roadway. Private or commercial entrances shall not be considered a public roadway in defining payment under this item. The contractor shall draw his own conclusions as to the length of piping that may be needed. This pay item does not include installation or relocation of meters. Meters will be paid separately. No additional payment will be made for rock excavation or for bedding required in rock excavation. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W TAPPING SLEEVE AND VALVE SIZE 1 OR 2 This item shall include the specified tapping sleeve, valve, valve box, concrete pad around valve box (when required in specifications or plans), labor, and equipment to install the specified tapping sleeve and valve, complete and ready for use in accordance with the plans and specifications. The size shall be the measured internal diameter of the

live pipe to be tapped. The size tapping sleeve and valve to be paid under sizes 1 or 2 shall be as follows:

Size 1 = All live tapped main sizes up to and including 8 inches
Size 2 = All live tapped main sizes greater than 8 inches

Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W VALVE This description shall apply to all valves of every size required in the plans and specifications except those bid items defined as "Special". Payment under this description is to be for gate or butterfly valves being installed with new main. This item includes the valve as specified in the plans and specifications, polyethylene wrap (if required by specification), labor, equipment, excavation, anchoring (if any), valve box and valve stem extensions, backfill, concrete pad around valve box (if required by specification), restoration, testing, disinfection, and etc., required to install the specified valve at the location shown on the plans in accordance with the specifications and standard drawings complete and ready for use. If required on plans and/or proposed adjoining DIP is restrained, valves shall be restrained. Valve restraint shall be considered incidental to the valve and adjoining pipe. This description does not apply to cut-in valves. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

Water Special Utility Items

W VALVE SPECIAL This description shall apply to all valves of every size required in the plans and specifications defined as "Special". Payment under this description is to be for ***Inserta valves*** being installed ***on the existing water*** main. This item includes the valve as specified in the plans and specifications, polyethylene wrap (if required by specification), labor, equipment, excavation, anchoring, backfill, restoration, testing, disinfection, etc., required to install the specified valve at the location shown on the plans in accordance with the specifications and standard drawings complete and ready for use. ***The purpose of the Inserta Valves are to allow for the new segments to be installed a, disinfected and testing prior to cutting and capping the existing segment for abandonment. Valves shall be restrained.*** Valve restraint shall be considered incidental to the valve and adjoining pipe. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W SAFELOADING This description shall apply to the filling of all abandoned water pipes under travelled roadway surfaces indicated to be abandoned and filled with flowable fill or grout to prevent later collapse or undermining of the roadway. This item shall be paid CUBIC YARD (CY) when complete.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION

SECTION 01340 – SUBMITTALS - WATER

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

Drawings and general provisions of Contract, including KTC DOH General and Supplementary Conditions and other Specification sections, apply to work of this section.

1.02 DESCRIPTION OF REQUIREMENTS

A. **General**

This section specifies procedural requirements for non-administrative submittals including shop drawings, product data, samples (when samples are specifically requested) and other miscellaneous work-related submittals. Shop drawings, product data, samples and other work-related submittals are required to amplify, expand and coordinate the information contained in the Contract Documents.

All submittals shall be submitted in electronic format through the Engineer's submittal process and shall be checked and reviewed by the Contractor before submission to the Engineer. The review of the submittals by the Engineer shall not be construed as a complete check but will indicate only that the general method of construction and detailing is satisfactory. Review of such submittals will not relieve the Contractor of the responsibility for any errors, which may exist, as the Contractor shall be responsible for the dimensions and design of adequate connections, details, and satisfactory construction of all work.

1.03 DEFINITIONS

A. Shop drawings are technical drawings and data that have been specially prepared for this project, including but not limited to the following items:

1. Fabrication and installation drawings.
2. Setting diagrams.
3. Shop work manufacturing instructions.
4. Coordination drawings (for use on-site).
5. Schedules.
6. Design mix formulas.
7. Contractor's engineering calculations.

Standard information prepared without specific reference to a project is not considered to be shop drawings.

B. Product data includes standard printed information on manufactured products that has not been specially prepared for this project, including but not limited to the following items:

1. Manufacturer's product specifications and installation instructions.
2. Catalog cuts.
3. Roughing-in diagram and templates.
4. Standard wiring diagrams.
5. Printed performance curves.

6. Operational range diagrams.
7. Mill reports.
8. Standard product operating and maintenance manuals.

C. Miscellaneous submittals are work related, non-administrative submittals that do not fit in the three previous categories, including, but not limited to the following:

1. Specially-prepared and standard printed warranties.
2. Maintenance agreements.
3. Workmanship bonds.
4. Survey data and reports.
5. Testing and certification reports.
6. Record drawings.
7. Field measurement data.
8. Operating and maintenance manual.
9. Certificate of Suitability

1.04 SUBMITTAL PROCEDURES

A. General

Refer to the General Conditions and Paragraph 1.02.A hereinbefore for basic procedures for submittal handling.

B. Coordination

Coordinate the preparation and processing of submittals with the performance of the work. Coordinate each separate submittal with other submittals and related activities such as testing, purchasing, fabrication, delivery and similar activities that require sequential activity.

Coordinate the submittals of different units of interrelated work so that one submittal will not be delayed by the Engineer's need to review a related submittal. The Engineer reserves the right to withhold action on any submittal requiring coordination with other submittals until related submittals are forthcoming.

C. Coordination of Submittal Times

Prepare and transmit each submittal to the Engineer sufficiently in advance of the scheduled performance of related work and other applicable activities. Transmit different kinds of submittals for the same units of work so that processing will not be delayed by the Engineer's need to review submittals concurrently for coordination.

D. Review Time

Allow sufficient time so that the installation will not be delayed as a result of the time required to properly process submittals, including time for resubmittal, if necessary. Advise the Engineer on each submittal, as to whether processing time is critical to the progress of the work and if the work would be expedited if processing time could be shortened.

1. Allow three weeks for the Engineer's initial processing of each submittal. Allow a longer time period where processing must be delayed for coordination with subsequent submittals. The Engineer will advise the Contractor promptly when it is

determined that a submittal being processed must be delayed for coordination.

2. Allow two weeks for re-processing each submittal.

3. No extension of time will be authorized because of the Contractor's failure to transmit submittals to the Engineer sufficiently in advance of the work.

E. Submittal Preparation: Mark each submittal with a permanent label for identification. Number each submittal consecutively beginning with the Numeral 1. If, for any reason, a submittal must be returned to the Contractor for resubmittal, than its submittal number would be the same as the first with the letter "A" following the number. Second resubmittals would be "B" and so on. Provide the following information on the label for proper processing and recording of action taken.

1. Submittal number.
2. Project name.
3. Date.
4. Name and address of Architect/Engineer.
5. Name and address of Contractor.
6. Name and address of subcontractor.
7. Name and address of supplier.
8. Name of manufacturer.
9. Number and title of appropriate specification section.
10. Drawing number and detail references, as appropriate.

F. **Submittal Transmittal**

All submittals shall be submitted in electronic format through the Engineer’s submittal process. Transmit each submittal from the Contractor to the Engineer, and to other destinations as indicated, by use of a transmittal form. Submittals received from sources other than the Contractor will be returned to the sender "without action".

1.05 SPECIFIC SUBMITTAL REQUIREMENTS

A. **Shop Drawings**

Shop drawings shall be prepared by a qualified detailer. Details shall be identified by reference to sheet and detail numbers shown on Contract Drawings. Where applicable, show fabrication, layout, setting and erection details.

B. **Project Data**

Project data shall include manufacturer's standard schematic drawings modified to delete information, which is not applicable to the project, and shall be supplemented to provide additional information applicable to the project. Each copy of descriptive literature shall be clearly marked to identify pertinent information as it applies to the project.

C. **Samples**

Where samples are required, they shall be adequate to illustrate materials, equipment or workmanship, and to establish standards by which completed work is judged. Provide sufficient size and quantity to clearly illustrate functional characteristics of product and

material, with integrally related parts and attachment devices, along with a full range of color samples.

D. **Review of Submittals**

The Contractor shall review and check submittals and shall indicate his review by initials and date.

E. **Deviations**

If the submittals deviate from the Contract Drawings and/or Specifications, the Contractor shall advise the Engineer, in writing of the deviation and any reasons therefore.

F. **Modifications**

In the event the Engineer does not specifically reject the use of material or equipment at variance to that which is shown on the Drawings or specified, the Contractor shall, at no additional expense to the Owner, and using methods reviewed by the Engineer, make any changes to structures, piping, controls, electrical work, mechanical work, etc., that may be necessary to accommodate this equipment or material. Should equipment other than that on which design drawings are based be accepted by the Engineer, shop drawings shall be submitted detailing all modification work and equipment changes made necessary by the substituted item.

G. **Submittals for All Electrically Operated Items**

Submittals for all electrically operated items (including instrumentation and controls) shall include complete size, color-coding, all terminations and connections, and coordination with related equipment.

H. **Equipment Shop Drawings**

Equipment shop drawings shall indicate all factory or shop paint coatings applied by suppliers, manufacturers and fabricators; the Contractor shall be responsible for insuring the compatibility of such coatings with the field-applied paint products and systems.

I. **Fasteners**

Fastener specifications of manufacturer shall be indicated on equipment shop drawings.

J. No material shall be fabricated or shipped unless the applicable drawings or submittals have been reviewed by the Engineer and returned to the Contractor.

K. All bulletins, brochures, instructions, parts lists, and warranties packaged with and accompanying materials and products delivered to and installed in the project shall be saved and transmitted to the Owner through the Engineer

1.06 CONTRACTOR RESPONSIBILITIES

A. Verify field measurements, field construction criteria, catalog numbers, and similar data.

B. Coordinate each submittal with requirements of work and of Contract Documents.

C. Notify Engineer, in writing at time of submission, of deviations in submittals from requirements of Contract Documents.

D. Begin no work, and have no material or products fabricated or shipped which requires submittals until return of submittals with Engineer's stamp and initials or signature indicating review.

PART 2 - PRODUCTS (Not Applicable).

PART 3 - EXECUTION (Not Applicable).

END OF SECTION

SECTION 01400 - QUALITY CONTROL SERVICES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division 1 Specification sections, apply to work of this section.

1.02 DESCRIPTION OF REQUIREMENTS

General: Required inspection and testing services are intended to assist in the determination of probable compliance of the work with requirements specified or indicated. These required services do not relieve the Contractor of responsibility for compliance with these requirements or for compliance with requirements of the contract documents.

Tests, inspections and certifications of materials, equipment, subcontractors or completed work, as required by the various sections of the Specifications shall be obtained by the Contractor and all costs shall be included in the contract price.

The Contractor shall submit to the Engineer the name of any testing laboratory to be used.

Contractor shall deliver written notice to the Engineer at least 24-hours in advance of any inspections or tests to be made at the project site. All inspections or tests to be conducted at the field shall be done in the presence of the Engineer or his representative.

Certifications by independent testing laboratories may be by copy of the attest and shall give scientific procedures and results of tests. Certifications by persons having interest in the matter shall be by original attest properly sworn to and notarized.

Inspections, tests and related actions specified in this section and elsewhere in the contract documents are not intended to limit the Contractor's own quality control procedures which facilitate overall compliance with requirements of the contract documents.

1.03 RESPONSIBILITIES

A. Contractor Responsibilities: Except where they are specifically indicated as being the Owner's responsibility, or where they are to be provided by another identified entity, inspections, tests and similar quality control services are the Contractor's responsibility; these services also include those specified to be performed by an independent agency and not directly by the Contractor. Costs for these services shall be included in the Contract Sum. The Contractor shall employ and pay an independent agency, testing laboratory or other qualified firm to perform quality control services specified.

B. Retest Responsibility: Where results of required inspections, tests or similar services prove unsatisfactory and do not indicate compliance of related work with the requirements of the contract documents, then retests are the responsibility of the Contractor, regardless of whether the original test was the Contractor's responsibility. Retesting of work revised or replaced by the Contractor is the Contractor's responsibility, where required tests were performed on original work.

C. Responsibility for Associated Services: The Contractor is required to cooperate with the

independent performing required inspections, tests and similar services. Provide such auxiliary services as are reasonably requested. Notify the testing agency sufficiently in advance of operations to permit assignment of personnel. These auxiliary services include but are not necessarily limited to the following:

Providing access to the work.
Taking samples or assistance with taking samples.
Delivery of Samples to test laboratories.
Delivery and protection of samples and test equipment at the project site.

D. Coordination: The Contractor and each independent agency engaged to perform inspections, tests and similar services for the project shall coordinate the sequence of their activities so as to accommodate required services with a minimum of delay in the progress of the work. In addition, the Contractor and each independent testing agency shall coordinate their work so as to avoid the necessity of removing and replacing work to accommodate inspections and tests. The Contractor is responsible for scheduling times for inspections, tests, taking of samples and similar activities.

1.04 SUBMITTALS

A. General: Refer to Division-1 section on "Submittals" for the general requirements on submittals. Submit a certified written report of each inspection, test or similar service, directly to the Architect/Engineer.

B. Report Data: Written reports of each inspection, test or similar service shall include, but not be limited to the name of testing agency or test laboratory; dates and locations of samples and tests or inspections; names of individuals making the inspection or test; designation of the work and test method; complete inspection or test data and test results; interpretations of test results; notation of significant ambient conditions at the time of sample taking and testing; comments or professional opinion as to whether inspected or tested work complies with requirements of the contract documents; recommendations on retesting, if applicable.

PART 2 - PRODUCTS (Not Applicable).

PART 3 - EXECUTION

3.01 REPAIR AND PROTECTION

Upon completion of inspection, testing, sample taking and similar services performed on the work, repair damaged work and restore substrates and finishes to eliminate deficiencies, including deficiencies in the visual qualities of exposed finishes. Comply with the contract document requirements for "Cutting and Patching". Protect work exposed by or for quality control service activities and protect repaired work. Repair and protection is the Contractor's responsibility, regardless of the assignment of responsibility for inspection, testing or similar services.

END OF SECTION

SECTION 01500 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.01 CONTROL

Maintain strict supervision of use of temporary utility services.

1. Enforce compliance with applicable standards.
2. Enforce safety practices.
3. Prevent abuse of services.

1.02 REQUIREMENTS OF REGULATORY AGENCIES

A. Obtain and pay for all permits as required by governing authorities. This shall include (but not be limited to) a building permit.

B. Obtain and pay for temporary easements required across property other than that of Owner.

C. Comply with applicable codes.

1.03 REMOVAL

A. Completely remove temporary materials, equipment, and offices upon completion of construction.

B. Repair damage caused by installation, and restore to specified or original condition.

1.04 TEMPORARY WATER

A. Contractor shall meter and pay for all potable water provided by the Owner.

B. Contractor shall pay costs of the furnishing, maintaining and removing all temporary water service equipment, fixtures, hose, piping, etc.

1.05 PROTECTION AND SECURITY

A. Provide barricades, lanterns and other such signs and signals as may be necessary to warn of the dangers in connection with open excavation and obstructions.

B. Provide an adequate and approved system to secure the project area at all times, especially during non-construction periods; General Contractor shall be solely responsible for taking proper security measures.

C. Contractor shall pay all costs for protection and security systems.

1.06 SANITARY FACILITIES

The Contractor shall furnish, install and maintain ample sanitary facilities for the workmen. As the needs arise, enclosed temporary toilets, in sufficient number, shall be placed as directed by the

Engineer. Drinking water shall be provided from a proven safe source so piped or transported as to be kept clean and fresh and served from single service containers of satisfactory types.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION

SECTION 01631 - PRODUCTS AND SUBSTITUTIONS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division 1 Specification sections, apply to work of this section.

1.02 DESCRIPTION OF REQUIREMENTS

A. **General**

Substitution of materials and/or equipment is defined more fully hereinafter.

B. **Definitions**

Definitions used in this paragraph are not intended to negate the meaning of other terms used in the contract documents including such terms as "specialties", "systems", "structure", "finishes", "accessories", "furnishings", "special construction" and similar terms. Such terms are self-explanatory and have recognized meanings in the construction industry.

1. "Products" are items purchased for incorporation in the Work, regardless of whether they were specifically purchased for the project or taken from the Contractor's previously purchased stock. The term "product" as used herein includes the terms "material", "equipment", "system" and other terms of similar intent.

2. "Named Products" are products identified by use of the manufacturer's name for a product, including such items as a make or model designation, as recorded in published product literature, of the latest issue as of the date of the contract documents.

3. "Materials" are products that must be substantially cut, shaped, worked, mixed, finished, refined or otherwise fabricated, processed, or installed to form units of work.

4. "Equipment" is defined as a product with operational parts, regardless of whether motorized or manually operated, and in particular, a product that requires service connections such as wiring or piping.

C. **Substitutions**

The Contractor's requests for changes in the products, materials, equipment and methods of construction required by the contract documents are considered requests for "substitutions" and are subject to the requirements specified herein. The following are not considered as substitutions:

1. Revisions to the contract documents, where requested by the Owner, Architect or Engineer are considered as "changes" not substitutions.

2. Substitutions requested during the bidding period, which have been accepted prior to the Contract Date, are included in the contract documents and are not subject to the requirements for substitutions as herein specified.

3. Specified Contractor options on products and construction methods included in the contract documents are choices available to the Contractor and are not subject to the requirements for substitutions as herein specified.

4. Except as otherwise provided in the contract documents, the Contractor's determination of and compliance with governing regulations and orders as issued by governing authorities do not constitute "substitutions" and do not constitute a basis for change orders.

1.03 QUALITY ASSURANCE

A. **Source Limitations**

To the fullest extent possible, provide products of the same generic kind, from a single source, for each unit of work.

B. **Compatibility of Options**

Compatibility of products is a basic requirement of product selection. When the Contractor is given the option of selecting between two or more products for use on the project, the product selected must be compatible with other products previously selected, even if the products previously selected were also Contractor options. The complete compatibility between the various choices available to the Contractor is not assured by the various requirements of the Contract documents but must be provided by the Contractor.

1.04 SUBMITTALS

The information required to be furnished for evaluation of product substitution will be as follows:

A. Performance capabilities, and materials and construction details will be evaluated based upon conformance with the Specifications. Products that do not conform with the Specifications will not be accepted.

B. Manufacturer's production and service capabilities, and evidence of proven reliability will be acceptable if the following is furnished.

1. Written evidence that the manufacturer has not less than (3) years experience in the design and manufacture of the substitute product.

2. Written evidence of at least one application of a type and size similar to the proposed substitute product, in successful operation in a water treatment plant for a period of at least one year.

3. In lieu of furnishing evidence of a manufacturer's experience and successful operation of an application of the product to be substituted, the Contractor has the option of furnishing a cash deposit or bond which will guarantee replacement if the product the furnished does not satisfy the other requirements specified in this

section. The amount of each deposit or bond will be subject to the approval of the A/E.

C. Specific reference to characteristics either superior or inferior to specified requirements will be evaluated based on their net effect on the project. Products with any characteristics inferior to those specified will not be acceptable unless offset by characteristics that, in the opinion of the Engineer, will cause the overall effect of the product on the project to be at least equal to that of those specified.

D. The detailed estimate of operating and maintenance costs will be evaluated based on comparison with similar data on the specified products. Proposed substitute products, which have an operating, and maintenance cost that, in the opinion of the Engineer, exceeds that of the specified products will not be considered equal and will not be acceptable.

1.05 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. **General**

Deliver, store, and handle products in accordance with manufacturer's recommendations, using means and methods that will prevent damage, deterioration and loss, including theft. Control delivery schedules to minimize long-term storage at the site and to prevent overcrowding of construction spaces. Coordinate delivery and installation to ensure minimum holding or storage times for items known or recognized to be flammable, hazardous, easily damaged, or sensitive to deterioration, theft and other sources of loss.

1. Deliver products to the site in the manufacturer's sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting and installing.

2. Store products at the site in a manner that will facilitate inspection and measurement of quantity or counting of units.

3. Store heavy materials away from the project structure in a manner that will not endanger the supporting construction.

4. Products not stored in strict accordance with these provisions are not eligible for partial payment for products stored on site.

PART 2 - PRODUCTS

2.01 GENERAL PRODUCT COMPLIANCE

A. **General**

Requirements for individual products are indicated in the contract documents; compliance with these requirements is a contract requirement. These requirements may be specified in any one of several different specifying methods, or in any combination of these methods. These methods include the following:

Proprietary.
Descriptive.

Performance.
Compliance with Reference Standards.

Compliance with codes, compliance with graphic details, allowances, and similar provisions of the contract documents also have a bearing on the selection process.

B. **Procedures for Selecting Products**

Contractor's options in selecting products are limited by requirements of the contract documents and governing regulations. They are not controlled by industry traditions or procedures experienced by the Contractor on previous construction projects.

2.02 SUBSTITUTIONS

A. **Conditions**

Contractor's request for substitution will be received and considered when extensive revisions to the contract documents are not required, when the proposed changes are in keeping with the general intent of the contract documents, when the requests are timely, fully documented and properly submitted, and when one or more of the following conditions is satisfied, all as judged by the Engineer; otherwise, the requests will be returned without action except to record non-compliance with these requirements.

1. The Engineer will consider a request for substitution where the request is directly related to an "or equal" clause or similar language in the contract documents.

2. The Engineer will consider a request for substitution where the specified product or method cannot be provided within the Contract Time. However, the request will not be considered if the product or method cannot be provided as a result of the Contractor's failure to pursue the work promptly or to coordinate the various activities properly.

3. The Engineer will consider a request for substitution where the specified product or method cannot receive necessary approval by a governing authority, and the requested substitution can be approved.

4. The Engineer will consider a request for a substitution where a substantial advantage is offered the Owner, in terms of cost, time, energy conservation or other considerations of merit, after deducting offsetting responsibilities the Owner may be required to bear. These additional responsibilities may include such considerations as additional compensation to the Engineer for redesign and evaluation services, the increased cost of other work by the Owner or separate contractors, and similar considerations.

5. The Engineer will consider a request for substitution when the specified product or method cannot be provided in a manner, which is compatible with other materials of the work, and where the Contractor certifies that the substitution will overcome the incompatibility.

6. The Engineer will consider a request for substitution when the specified product or method cannot be properly coordinated with other materials in the work, and where

the Contractor certifies that the proposed substitution can be properly coordinated.

7. The Engineer will consider a request for substitution when the specified product or method cannot receive a warranty as required by the contract documents and where the contractor certifies that the proposed substitution receives the required warranty.

8. The Contractor shall reimburse the Owner any costs for review by the Engineer of proposed product substitutions which require major design changes, as determined by the Owner, to related adjacent work made necessary by the proposed substitutions.

B. **Work-Related Submittals**

Contractor's submittal of and the Engineer's acceptance of shop drawings, product data or samples which relate to work not complying with requirements of the contract documents, does not constitute an acceptable or valid request for a substitution, nor approval thereof.

2.03 GENERAL PRODUCT REQUIREMENTS

A. **General**

Provide products that comply with the requirements of the contract documents and that are undamaged and, unless otherwise indicated, unused at the time of installation. Provide products that are complete with all accessories, trim, finish, safety guards and other devices and details needed for a complete installation and for the intended use and effect.

1. Standard Products

Where they are available, provide standard products of types that have been produced and used successfully in similar situations on other projects.

2. Continued Availability

Where, because of the nature of its application, the Owner is likely to need replacement parts or additional amounts of a product at a later date, either for maintenance and repair or replacement, provide standard, domestically produced products for which the manufacturer has published assurances that the products and its parts are likely to be available to the Owner at a later date.

B. **Nameplates**

Except as otherwise indicated for required labels and operating data, do not permanently attach or imprint manufacturer's or producer's nameplates or trademarks on exposed surfaces of products which will be exposed to view either in occupied spaces or on the exterior of the completed project.

1. Labels: Locate required product labels and stamps on a concealed surface or, where required for observation after installation, on an accessible surface which, in occupied spaces, is not conspicuous.

2. Equipment Nameplates: Provide permanent nameplate on each item of service-connected or power operated equipment. Locate the nameplate on an easily accessible surface, which is inconspicuous in occupied spaces. The nameplate shall contain the following information and other essential operating data.

   a. Name of manufacturer
   b. Name of product
   c. Model number
   d. Serial number
   e. Capacity
   f. Speed
   g. Ratings

PART 3 - EXECUTION

3.01 INSTALLATION OF PRODUCTS

A. **General**

Except as otherwise indicated in individual sections of these specifications, comply with the manufacturer's instructions and recommendations for installation of the products in the applications indicated. Anchor each product securely in place, accurately located and aligned with other work. Clean exposed surfaces and protect surfaces as necessary to ensure freedom from damage and deterioration at time of acceptance.

END OF SECTION

SECTION 01700 - PROJECT CLOSEOUT

PART 1 - GENERAL

1.01 RELATED REQUIREMENTS SPECIFIED ELSEWHERE

A. Liquidated Damages: See KDOH requirements and conditions.

B. Cleaning: Section 01710.

C. Project Record Documents: Section 01720.

1.02 SUBSTANTIAL COMPLETION

A. **Contractor**

1. Submit written certification to Engineer that project is substantially complete.
2. Submit list of major items to be completed or corrected.

B. Engineer will make an inspection within seven (7) days after receipt of certification, together with Owner's Representative.

C. Should Engineer consider that work is substantially complete:

1. Contractor shall prepare, and submit to Engineer, a list of items to be completed or corrected, as determined by the inspection.

2. Engineer will prepare and issue a Certificate of Substantial Completion, containing:

a. Date of Substantial Completion.
b. Contractor's list of items to be completed or corrected, verified and amended by Engineer.
c. The time within which Contractor shall complete or correct work of listed items.
d. Time and date Owner will assume possession of work or designated portion thereof.

3. Owner occupancy of Project or Designated Portion of Project:

a. Contractor shall:

(1) Obtain certificate of occupancy.
(2) Perform final cleaning in accordance with Section 01710.

b. Owner will occupy Project, under provisions stated in Certificate of Substantial Completion.

4. Contractor: Complete work listed for completion or correction, within designated time.

D. Should Engineer consider that work is not substantially complete:

1. He shall immediately notify Contractor, in writing, stating reasons.

2. Contractor: Complete work, and send second written notice to Engineer certifying that Project, or designated portion of Project, is substantially complete.
3. Engineer will reinspect work.

1.03 FINAL INSPECTION

A. Contractor shall submit written certification that:

1. Contract Documents have been reviewed.
2. Project has been inspected for compliance with Contract Documents.
3. Work has been completed in accordance with Contract Documents.
4. Equipment and systems have been tested in presence of the Owner and the Engineer or his Representative and are operational.
5. Project is completed, and ready for final inspection.

B. Engineer and Owner will make final inspection in the presence of the Contractor within seven (7) days after receipt of certification.

C. Should Engineer consider that work is finally complete in accordance with requirements of Contract Documents, he shall request Contractor to make Project Closeout submittals.

D. Should Engineer consider that work is not finally complete:

1. He shall notify Contractor, in writing, stating reasons.
2. Contractor shall take immediate steps to remedy the stated deficiencies, and send second written notice to Engineer certifying that work is complete.
3. Engineer will reinspect work.

E. Should Engineer consider that work is still not finally complete:

1. He shall notify Contractor, in writing, stating reasons.
2. Contractor shall take immediate steps to remedy the stated deficiencies, and send third written notice to the Engineer certifying that the work is complete.
3. Engineer and Owner will reinspect work at Contractor's expense.

1.04 CLOSEOUT SUBMITTALS

A. Project Record Documents: To requirements of Section 01720.

B. Operation and Maintenance Data: To requirements of particular technical specifications.

C. Guarantees, Warranties and Bonds: To requirements of particular technical specifications.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION

SECTION 01710 - CLEANING

PART 1 - GENERAL

1.01 DESCRIPTION

A. Related requirements specified elsewhere:

1. Project Closeout: Section 01700.
2. Cleaning for Specific Products or Work: Specification section for that work.

B. Maintain premises free from accumulations of waste, debris, and rubbish, caused by operations.

C. At completion of work, remove waste materials, rubbish, tools, equipment, machinery and surplus materials, and clean all sight-exposed surfaces; leave project area clean and ready for use.

1.02 SAFETY REQUIREMENTS

A. Hazards Control

1. Store volatile wastes in covered metal containers and remove from premises daily.
2. Prevent accumulation of wastes, which create hazardous conditions.
3. Provide adequate ventilation during use of volatile or noxious substances.

B. Conduct cleaning and disposal operations to comply with local ordinances and anti-pollution laws.

1. Do not burn or bury rubbish and waste materials on project site.
2. Do not dispose of volatile wastes such as mineral spirits, oil, or paint thinner in storm or sanitary drains.
3. Do not dispose of wastes into streams or waterways.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Use only cleaning materials recommended by manufacturer of surface to be cleaned.

B. Use cleaning materials only on surfaces recommended by cleaning material manufacturer.

PART 3 - EXECUTION

3.01 DURING CONSTRUCTION

A. Execute cleaning to ensure that building, grounds, and public properties are maintained free from accumulations of waste materials and rubbish.

B. Wet down dry materials and rubbish to lay dust and prevent blowing dust.

C. At reasonable intervals during progress of work, clean site and public properties, and dispose of waste materials, debris and rubbish.

D. Provide on-site containers for collection of waste materials, debris and rubbish.

E. Remove waste materials, debris and rubbish from site and legally dispose of at public or private dumping areas off Owner's property.

F. Handle materials in a controlled manner with as few handlings as possible; do not drop or throw materials from heights.

G. Schedule cleaning operations so that dust and other contaminants resulting from cleaning process will not fall on wet, newly painted surfaces.

3.02 FINAL CLEANING

A. The work will not be considered as completed and final payment made until all final cleaning has been done by the Contractor in a manner satisfactory to the Engineer.

B. Employ experienced workmen, or professional cleaners, for final cleaning.

C. In preparation for substantial completion or occupancy, conduct final inspection of sight-exposed interior and exterior surfaces, and of concealed spaces.

D. Remove grease, dust, dirt, stains, labels, fingerprints, and other foreign materials, from sight-exposed interior or exterior finished surfaces; polish surfaces so designated to shine finish.

E. Repair, patch and touch up marred surfaces to specified finish, to match adjacent surfaces.

F. Broom clean paved surfaces; rake clean other surfaces of grounds.

G. Maintain cleaning until project, or portion thereof, is occupied by Owner.

END OF SECTION

SECTION 01720 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.01 RELATED REQUIREMENTS

A. Submittals: Section 01340.

1.02 MAINTENANCE OF DOCUMENTS

A. Maintain at job site, one copy of:

1. Contract Drawings
2. Specifications
3. Addenda
4. Reviewed Shop Drawings
5. Change Orders
6. Other Modifications to Contract

B. Store documents in approved location, apart from documents used for construction.

C. Maintain documents in clean, dry, legible condition.

D. Do not use record documents for construction purposes.

E. Make documents available at all times for inspection by Engineer and Owner.

1.03 MARKING DEVICES

Provide colored pencil or felt-tip marking pen for all marking.

1.04 RECORDING

A. Label each document "PROJECT RECORD".

B. Keep record documents current.

C. Do not permanently conceal any work until required information has been recorded.

D. Contract Drawings: Legibly mark to record actual construction.

1. Horizontal and vertical location of underground utilities and appurtenances referenced to permanent surface improvements.
2. Location of internal utilities and appurtenances concealed in construction referenced to visible and accessible features of structure.
3. Field changes of dimension and detail.
4. Changes made by Change Order or Field Order.
5. Details not on original contract drawings.

E. Specifications and Addenda: Legibly mark each Section to record:

1. Manufacturer, trade name, catalog number, and Supplier of each product and item of equipment actually installed.
2. Changes made by Change Order or Field Order.
3. Other matters not originally specified.

F. Shop Drawings: Maintain as record documents; legibly annotate shop drawings to record changes made after review.

1.05 SUBMITTAL

A. At completion of project, deliver record documents to Engineer.

B. Accompany submittal with transmittal letter, in duplicate, containing:

1. Date.
2. Project Title and Number.
3. Contractor's Name and Address.
4. Title and Number of each Record Document.
5. Certification that each Document as Submitted is Complete and Accurate.
6. Signature of Contractor or his authorized Representative.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION

SECTION 02225 - EARTHWORK FOR UTILITY WORK

PART 1 GENERAL

1.01 DEFINITIONS

A. Rock: Stratified material in place which rings under the flow of a hammer; boulders having a volume of one-half (1/2) cubic yard or more. Shale, slate, soapstone, and chert will NOT be classified as rock.

B. Utility: Any buried pipe, conduit, or cable.

1.02 REFERENCES

A. ASTM C33 - Concrete Aggregates.

B. ASTM C94 - Ready-Mixed Concrete.

C. ASTM C150 - Portland Cement.

1.03 SUBMITTALS

Submit two copies of following test reports:

A. Test reports on borrow material.

1.04 QUALITY ASSURANCE

A. Codes and Standards: Perform work in compliance with requirements of governing authorities having jurisdiction.

B. Inspection and Testing: Provide inspection and testing under provisions of Section 01400.

C. Excavator: Engage an excavator with not less than 5 years of experience in excavating, rock removal, sheeting, bracing, soil stabilization, dewatering, well pointing, backfilling, and similar operations commonly encountered in major excavation projects.

1.05 JOB CONDITIONS

A. Existing Utilities: Locate existing underground utilities in areas of work. Protect utilities indicated to remain in place. If uncharted or mis-charted utilities are encountered, immediately notify Engineer and Utility Owner. Keep services and facilities in operation under direction of Utility Owner.

B. Repair damaged utilities to satisfaction of Utility Owner.

C. Owner will not be responsible for mis-charted utilities.

D. Do not interrupt existing utilities that are in use without written permission of Owner and then only after temporary services have been provided.

1.06 EXPLOSIVES

Do not bring explosives on-site or use in work without written permission from authorities having jurisdiction. Contractor is solely responsible for handling, storage and use of explosives.

1.07 PROTECTION OF PERSONS AND PROPERTY

A. Barricade open excavations occurring as part of this work and post warning lights. Operate warning lights as recommended by authorities having jurisdiction.

B. Protect structures, utilities, sidewalks, pavements, and other facilities indicated to remain in place from damage caused from possible settlement, lateral movement, undermining, washout and other hazards created by excavation.

C. Protect plant growth and trees scheduled to remain. Do not excavate or store material within drip line of trees.

D. Restore property to a condition similar or equal to that existing before construction.

1.08 COORDINATION

A. Coordinate the Work.

B. Verify work associated with lower elevation utilities are complete before placing higher elevation utilities.

C. Where excavation and backfill for utility work passes through or occurs in a landscaped area, repair or replace the landscape work to match original condition and quality of work.

D. Where excavation and backfill for utility work passes through or occurs in an area of paving, restore construction and finish of paving to match original condition and quality of work.

E. Coordinate excavations with weather conditions, to minimize the possibility of washouts, settlements and other damages and hazards.

F. Coordinate with utility owner for shutdown of service. Provide minimum 48-hour notice to Owner and receive written notice to proceed before interrupting any utility.

1.09 SCHEDULING AND SEQUENCING

A. Do not excavate for utility work until the work is ready to proceed without delay, so that the total time lapse from excavation to completion of backfilling will be minimal.

B. At street and road crossings, excavate only 1/2 of crossings before placing temporary bridges over side excavated, for convenience of traveling public.

1.10 MAINTENANCE

A. Where subsidence is measurable or observable at utility work excavations during warranty period, remove surface (pavement, lawn or other finish), add backfill material, compact, and replace surface treatment.

B. Restore appearance, quality and conditions of surface or finish to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

PART 2 - PRODUCTS

2.01 FILL

A. Earth Fill: Soil free of roots and organic material, debris and other material considered deleterious by Engineer. Soil selected shall consist of residual clay occurring within designated borrow areas, or which occurs within on-site areas which are to be excavated. Soil shall be free of rock fragments greater than 2 inches in maximum dimension.

B. Bedding and Backfill Material: Department of Transportation specification Grade E Crusher Run Gradation or as specified for specific utilities.

C. Finely-Graded Bedding Material: Well graded sand, gravel, crushed stone or crushed slag, with 100% passing a 3/8 inch sieve.

2.02 ACCESSORIES

A. Topsoil: Natural, fertile, agricultural soil capable of sustaining plant growth; free of subsoil, slag, rocks, clay, sticks, and roots.

B. Lean Concrete: Provide concrete in accordance with the following:
1. Cement: ASTM C150 normal - Type 1 Portland.
2. Fine and Coarse Aggregates: ASTM C33.
3. Water: Clean and not detrimental to concrete.
4. Mix concrete in accordance with ASTM C94 with a compressive strength (28 days) of 3,000 psi and a 4 inch slump.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine areas to be excavated, and conditions under which work is to be performed, and notify Engineer in writing of conditions detrimental to the proper completion of the Work.

B. Do not proceed with excavating until unsatisfactory conditions have been corrected in an acceptable manner.

3.02 PREPARATION

A. Identify required lines, levels, contours, and datum.

B. Strip topsoil and stockpile on site for re-spreading. Do not pile over 8 feet and protect from erosion.

C. In cases where gas, sewer, or other pipe is encountered, pipe shall not be displaced nor disturbed unless necessary, in which case replace it in good condition as soon as possible.

3.03 EXCAVATION

A. Excavate for piping with clearance on both sides of pipe as shown, except where otherwise shown or required for proper installation of pipe joints, fittings, valves and other work. Excavate for other utility work to provide minimum practical but adequate working clearances.

B. Hand trim for bell and spigot pipe joints. For sanitary sewer lines shape bedding to fit shape of bottom half pipe, for uniform continuous support.

C. Depth for Direct Support: For work to be supported directly on undisturbed soil, do not excavate beyond indicated depths, and hand-excavate the bottom cut to accurate elevations. Support the following work on undisturbed soil at the bottom of the excavations:

1. Piping of 5 inch diameter and less.
2. Cast-in-place concrete.

D. Depth for Bedding Support: For large piping (6 inch pipe size and larger), tanks and where indicated for other utility work, excavate for installation of bedding material in the depth indicated or, if not otherwise indicated, 6 inches below bottom of work to be supported.

E. Depth for Unsatisfactory Soil Conditions: Where unsatisfactory soil conditions at bottom of indicated excavation are encountered, excavate additional depth to reach satisfactory soil-bearing condition. Backfill with bedding material and compact to indicated excavation depth.

F. Depth for Exterior Piping: Excavate for exterior water-bearing piping (water, steam, condensate, and drainage) so that top of piping will not be less than 36" in open fields and 48” in roadways vertical distance below finished grade.

G. When excavating within drip line of large trees, perform the work by hand, and protect the root system from damage or dryout to the greatest extent possible. Maintain moist condition for root system and cover exposed roots with burlap. Paint root cuts of one inch diameter and larger with asphaltic tree paint.

H. Correct areas over excavated. Correct unauthorized rock removal with lean concrete fill.

I. Previous Excavations: Where piping crosses over an area more than 5'-0" wide which has been previously excavated to a greater depth than required for piping installation, provide suitable subsidence-proof support for piping.

J. Comply with the details shown. Where not otherwise shown, excavate to undisturbed soil, in a width equal to pipe diameter plus 18". Install 6 inch courses of bedding material, each compacted to 95% of maximum density, as required to fill excavation and support piping.

K. Excavation is unclassified, and includes excavation to subgrade elevations indicated, regardless of character of materials and obstructions encountered. Same price shall be considered for excavation whether it be earth or rock.

L. Unauthorized Excavation: Removal of material beyond indicated elevations or dimensions without direction of Engineer. Unauthorized excavation, as well as remedial work directed by

Engineer, shall be at Contractor's expense. Backfill and compact unauthorized excavations as specified for authorized excavations of same classification, unless otherwise directed by Engineer.

M. Stability of Excavations: Slope sides of excavations to comply with applicable codes. Shore and brace where sloping is not possible. Maintain sides and slopes in safe condition until completion of backfilling.

N. Shoring and Bracing: Comply with applicable code requirements for shoring and bracing. Provide materials that are in good serviceable condition. Carry down shoring and bracing as excavation progresses and maintain in place as long as excavations are open.

Where removal of shoring may permit lateral movement of soil under adjacent structures, provide steel or pressure treated wood sheet piling to be cut off and left in place.

O. Material Storage: Stockpile satisfactory material where directed until required for backfill or fill. Place, grade, and shape stockpiles for proper drainage. Do not stockpile material at edge of excavation. Dispose of excess soil and waste material. Do not store under trees within the drip line.

3.04 COMPACTION

A. Before compacting and filling, proof roll area. Remove soft spots, fill and compact to required density.

B. Control soil compaction during construction providing minimum percentage of density specified for each area classification indicated below.

C. Percentage of Maximum Density Requirements: Compact soil to not less than the listed percentages of dry density for soils which exhibit a well-defined moisture density relationship determined in accordance with ASTM D698 (Standard Proctor); and not less than listed percentages of relative density, determined in accordance with ASTM D4253, for soils which will not exhibit a well-defined moisture-density relationship.

1. Pavements: Compact top 12 inches of subgrade and each layer of backfill or fill material at 98% maximum dry density or 90% relative dry density for cohesive soil material.
2. Roadways: 90% for cohesive soils; 95% for cohesionless soils.
3. Lawn or Unpaved Areas: Compact top 6 inches of subgrade and each layer of backfill or fill material at 90% maximum dry density.
4. Walkways: Compact top 6 inches of subgrade and each layer of backfill or fill material at 95% maximum dry density.

D. Moisture Control: Where subgrade or layer soil material must be moisture conditioned before compaction, uniformly apply water to surface of subgrade, or layer of soil material, to prevent free water appearing on surface during or subsequent to compaction operations.

E. Remove and replace, or scarify and air dry, soil material that is too wet to permit compaction to specified density. Soil material that has been removed because it is too wet to permit compaction may be stockpiled or spread and allowed to dry. Assist drying by discing, harrowing or pulverizing until moisture content is reduced to a satisfactory value. Reuse stockpiled material only after dried to proper moisture content.

3.05 BACKFILL AND FILL

A. Backfill trenches to contours and elevations with unfrozen materials. Systematically backfill trenches to allow maximum time for natural settlement. Do not backfill over porous, wet, frozen or spongy subgrade surfaces.

Provide finely-graded-bedding material for wrapped, coated and plastic pipe and tanks. (Excavated dirt free of rock will be suitable.)

B. Place acceptable fill in layers to required subgrade elevations, for each area classification listed below.

C. Place and mechanically compact aggregate fill materials in continuous layers not exceeding 6 inches compacted depth each.

1. Place aggregate fill over top of pipe in landscaped areas to depth as shown.
2. In areas of asphaltic concrete paving, fill trench as shown on Standard Drawings.

D. Place and mechanically compact earth fill material in continuous layers not exceeding 8 inches compacted depth from top of aggregate fill to finish grade.

For site filling, in excavations, under grassed areas, under walks or pavements, use satisfactory excavated or borrow material.

E. Backfill excavations as soon as work permits, but not until acceptance by Architect/Engineer of the following:

1. Below grade construction.
2. Inspection, testing, approval and recording locations of underground utilities.
3. Removal of formwork and shoring and bracing.
4. Removal of trash and debris.

F. Employ a placement method that does not disturb or damage or create injurious side pressures on pipe in trench.

G. Topsoil Spreading: Re-spread topsoil stockpiled on site to a minimum depth of 6 inches. If amount of topsoil is inadequate, provide approved borrowed material at no additional expense to Owner.

3.06 GRADING

A. Uniformly grade areas within limits of grading under this Section, including adjacent transition areas. Smooth finished surface within specified tolerances, compact with uniform levels or slopes between points where elevations are indicated, or between such points and existing grades.

B. Grading Outside Building Lines: Slope grade away from buildings to drain away water and prevent ponding.

C. Grading Tolerances: Finish surfaces free from irregular surface changes and to following

tolerances above or below required subgrade elevations.

1. Lawns and Unpaved Areas: Finish areas to receive topsoil to within not more than 0.10 foot above or below required subgrade elevations.
2. Walks: Shape surface of areas under walks to line, grade and cross-section, with finish surface not more than 0.10 foot above or below required subgrade elevations.
3. Pavements: Shape surface of areas under pavement to line, grade and cross-section, with finish surface not more than 1/2 inch above or below required subgrade elevations when tested with a 10 foot straight edge.

D. Compaction: After grading, compact subgrade surfaces to depth and percentage of maximum density for each area classification.

3.07 TOLERANCES

A. Top Surface of Backfilling Under Paved Areas: Plus or minus 1 inch 0.08 feet from required elevations.

B. Top Surface of General Backfilling: Plus or minus 1 inch 0.08 feet from required elevations.

3.08 FIELD QUALITY CONTROL

A. Field inspection and testing will be performed under provisions of Section 01410.

B. Testing During Construction: Testing agency to inspect and approve subgrades and fill layers before continuing with construction.

1. Perform testing in accordance with ASTM D1556 (sand cone method) or D2167 (rubber balloon method).

C. If compacted subgrade or fills, which have been placed, do not meet specified densities provide additional compaction and testing at no expense to Owner.

3.09 MAINTENANCE

A. Protection of Graded Areas: Protect newly graded areas from traffic and erosion. Keep free of trash and debris.

B. Repair and re-establish grades in settled, eroded, and rutted areas to specified tolerances.

C. Reconditioning Compacted Areas: Where completed compacted areas are disturbed by subsequent construction operations or adverse weather, scarify surface, re-shape, and compact to required density prior to further construction.

3.10 DISPOSAL OF EXCESS AND WASTE MATERIALS

A. Remove excess excavated material, trash, debris and waste materials and dispose of it off Owner's property.

B. Materials excavated shall be disposed of so as to interfere as little as possible with public travel and, in all cases, the disposition of excavated material shall be satisfactory to the Engineer.

3.11 PROTECTION OF FINISHED WORK

A. Protect finished Work under provisions of Section 01500.

1. Do not walk on or work on top of finished piping until trench has been back filled.

B. Reshape and re-compact fills subjected to vehicular traffic during construction period. Add mineral aggregate base course as required to maintain trenches in asphaltic concrete areas in a safe and passable condition.

END OF SECTION

SECTION 02240 - DEWATERING

PART 1 - GENERAL

1.01 SCOPE OF WORK

A. Furnish all labor and equipment required to dewater all excavations.

B. Dewatering of all excavations shall be the responsibility of the Contractor, and no additional compensation will be allowed for same.

1.02 RELATED WORK SPECIFIED ELSEWHERE

A. Earthwork for Utility Work is included in Section 02225.

B. Erosion and sedimentation control is included in Section 02371.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.01 GENERAL

A. Dewatering equipment shall be of adequate size and quantity to assure maintaining proper conditions for installing pipe, concrete, backfill or other material or structure in the excavation.

B. Dewatering shall include proper removal of any and all liquid, regardless of its source, from the excavation and the use of all practical means available to prevent surface runoff from entering any excavation.

C. The site shall be kept free of standing surface water at all times. The Contractor shall install drainage ditches, dikes and shall perform all pumping and other work necessary to divert or remove rainfall and all other accumulations of surface water from the excavations. The diversion and removal of surface water shall be performed in a manner that will prevent flooding and/or damage to other locations within the construction area where it may be detrimental. The Contractor shall provide, install and operate sufficient trenches, sumps, pumps, hose piping, well points, deep wells, etc., necessary.

END OF SECTION

SECTION 02260 - EXCAVATION SUPPORT AND PROTECTION

PART 1 - GENERAL

1.01 SCOPE OF WORK

A. This Section includes, but is not limited to, the following:

1. Shoring and bracing necessary to protect existing buildings, streets, walkways, utilities, and other improvements and excavation against loss of ground or caving embankments.

2. Maintenance of shoring and bracing.

3. Removal of shoring and bracing, as required.

B. Types of shoring and bracing systems include, but are not limited to, the following:

1. Steel H-section (soldier) piles.

2. Timber lagging.

3. Steel sheet piles.

1.02 RELATED DOCUMENTS

Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.03 SUBMITTALS

A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Section 01340.

B. Layout drawings for excavation support system and other data prepared by, or under the supervision of, a qualified professional engineer. System design and calculations must be acceptable to local authorities having jurisdiction.

1.04 QUALITY ASSURANCE

A. Engineer Qualifications: A professional engineer legally authorized to practice in jurisdiction where Project is located and experienced in providing successful engineering services for excavation support systems similar in extent required for this Project.

B. Supervision: Engage and assign supervision of excavation support system to a qualified professional engineer foundation consultant.

1. Submit name of engaged consultant and qualifying technical experience.

C. Regulations: Comply with codes and ordinances of governing authorities having

jurisdiction.

1.05 JOB CONDITIONS

A. Before starting work, verify governing dimensions and elevations. Verify condition of adjoining properties. Take photographs to record any existing settlement or cracking of structures, pavements, and other improvements. Prepare a list of such damages, verified by dated photographs, and signed by Contractor and others conducting investigation.

B. Survey adjacent structures and improvements, employing qualified professional engineer, establishing exact elevations at fixed points to act as benchmarks. Clearly identify benchmarks and record existing elevations.

C. During excavation, resurvey benchmarks maintaining accurate log of surveyed elevations for comparison with original elevations. Promptly notify Engineer if changes in elevations occur or if cracks, sags, or other damage is evident.

1.06 EXISTING UTILITIES

A. Protect existing active sewer, water, gas, electricity and other utility services and structures.

B. Notify municipal agencies and service utility companies having jurisdiction. Comply with requirements of governing authorities and agencies for protection, relocation, removal, and discontinuing of services.

PART 2 - PRODUCTS

2.01 MATERIALS

A. General: Provide adequate shoring and bracing materials, which will support loads imposed. Materials need not be new, but should be in serviceable condition.

B. Structural Steel: ASTM A-36.

C. Steel Sheet Piles: ASTM A-328.

D. Timber:

Lagging: Any species, rough-cut, mixed hardwood, nominal 3 inches thick, unless otherwise indicated.

Sheeting, Bracing, Struts: No timber sheeting less than two inches in thickness and timber bracing, cross bracing or struts less than six inches in thickness will be acceptable.

PART 3 - EXECUTION

3.01 GENERAL

A. Where unstable materials are encountered or as required by law or Government regulations, such as OSHA, the sides of the trench or excavation shall be supported by substantial sheeting, bracing, and shoring, or the sides sloped to the angle of repose. Adequate and proper shoring of all excavations shall be the entire responsibility of the Contractor.

B. Foundations, adjacent to where the excavation is to be made below the depth of the foundation, shall be supported by shoring, bracing or underpinning of a temporary or a permanent nature as may be required to assure the integrity of the structure. The Contractor will be held strictly responsible for any damage to adjoining foundations or structures.

C. All sheeting, planking, timbering, bracing and bridging shall be placed, renewed and maintained a long as necessary. Unless directed by the Engineer, any sheeting left in place is not a separate pay item.

D. Solid sheeting will be required for wet or unstable material. It shall consist of continuous vertical sheet piling of timber two inches thick or of steel with suitable shores and braces. All sheeting to be left in place shall be two-inch thick timber.

E. Care shall be taken to avoid excessive backfill loads on the completed pipelines and the requirements that the width of the ditch at the level of the crown of the pipe exceed that specified in section 2510: “Water Distribution Piping”.

F. Trench sheeting shall not be removed until sufficient backfill has been placed to protect the pipe.

3.01 SHORING

A. Wherever shoring is required, locate the system to clear permanent construction and to permit forming and finishing of concrete surfaces. Provide shoring system adequately anchored and braced to resist earth and hydrostatic pressures.

B. Shoring systems retaining earth on which the support or stability of existing structures is dependent must be left in place at completion of work.

3.02 BRACING

A. Locate bracing to clear columns, floor framing construction, and other permanent work. If necessary to move a brace, install new bracing prior to removal of original brace.

B. Do not place bracing where it will be cast into or included in permanent concrete work, except as otherwise acceptable to Engineer.

C. Install internal bracing, if required, to prevent spreading or distortion of braced frames.

D. Maintain bracing until structural elements are supported by other bracing or until permanent construction is able to withstand lateral earth and hydrostatic pressures.

E. Remove sheeting, shoring, and bracing in stages to avoid disturbance to underlying soils and

damage to structures, pavements, facilities, and utilities.

F. Repair or replace, as acceptable to Engineer, adjacent work damaged or displaced through installation or removal of shoring and bracing work.

END OF SECTION

SECTION 02371 - EROSION AND SEDIMENTATION CONTROL-KPDES REQUIREMENTS

PART 1 - GENERAL

1.01 SCOPE OF WORK

A. Coordinate with the KYTC general/grading contractor for the furnishing of all labor, materials, and equipment required for erecting, maintaining and removing temporary erosion and sedimentation controls as required and/or recommended by state and local regulatory agencies to conform with the Erosion and Sedimentation Control provisions of the SWPPP for the project.

B. Temporary erosion controls include, but are not limited to grassing, mulching, seeding, providing erosion control and turf reinforcement mats on all disturbed surfaces including waste area surfaces and stockpile and borrow area surfaces; scheduling work to minimize erosion and providing interceptor ditches at those locations which will ensure that erosion during construction will be either eliminated or maintained within acceptable limits.

C. Temporary sedimentation controls include, but are not limited to, silt dams, traps, barriers, and appurtenances on sloped surfaces which will ensure that sedimentation pollution will be either eliminated or maintained within acceptable limits.

D. Coordinate as to the responsibility for providing and maintaining effective temporary erosion and sediment control measures prior to and during construction or until final controls become effective.

E. The Utility Contractor shall be responsible for placement of erosion and sedimentation controls required for the Utility Work. Prior to construction, the Contractor shall coordinate with the General Contractor for conformance to the project erosion control requirements, documents, etc.

F. Bare soil areas must be seeded, mulched, or covered after 14 days if no work will be done in the area within the next 7 days. If areas are to be left bare for more than 14 days, erosion controls and sediment barriers are required to be installed.

G. Erosion Control prevention measures shall be installed prior to removal of vegetation and/or stripping of topsoil.

1.02 PERMIT AND NOTIFICATION REQUIREMENTS

A. The Contractor shall comply with all requirements of the State and Local regulatory agencies.

PART 2 – PRODUCTS

2.01 SEED

A. The seed mixture to be sown shall match existing grasses in lawns or, where mixed or of unknown variety, shall be in the following proportions:

Common Name	Proportion By Weight	% Of Purity	% Of Germination
Kentucky 31 Tall Fescue	75	90	85
Italian Rye Grass	10	90	85
Red Top	10	90	85
White Clover	5	95	90

B. All seed shall be fresh and clean and shall be delivered mixed, in unopened packages, bearing a guaranteed analysis of the seed mixture.

C. Seed for temporary stabilization shall be annual rye grass, oats or wheat.

2.02 FERTILIZER

A. If required to establish ground cover, just prior to the planting of turf, evenly broadcast 15 pounds per thousand square feet of fertilizer, 10-10-10 (nitrogen, phosphorus, potassium). Disc or harrow fertilizer 1 to 4 inches into the soil.

B. Fertilizer shall be delivered to the site in the original unopened container bearing the manufacturer's guarantee analysis. Any fertilizer that becomes caked or damaged making it unsuitable for use, will not be accepted.

2.03 MULCH

A. Mulch for seeded areas shall be Conwed Hydro Mulch, Silva-Fiber, or equal. It shall be suitable for use in a water slurry or for application with hydraulic equipment. The moisture content shall be 9-15%, and mulch shall have an organic matter content of minimum 98%.

B. Clean straw is acceptable as mulch. It shall be spread at the rate of one (1) bale per 1,000 feet (approximately 1" loose depth).

C. Mulch on slopes greater than 3:1 shall be held in place with erosion control netting.

D. Mulch on areas subject to surface water run-off or in drainage ditches shall be held in place with erosion control netting.

2.04 EROSION CONTROL BLANKETS

A. Erosion Control Blanket shall be made up of biodegradable and/or photodegradable products such as jute, wood fiber, coconut fiber, straw and degradable plastic netting. They shall degrade at a rate of approximately 6 months to 24 months.

B. Erosion Control Blanket shall be installed on slopes greater than 3:1 and in all ditches and drainage channels, and where otherwise indicated on the Contract Drawings or directed by regulatory agencies.

2.05 SILT FENCE

A. Temporary Silt Fence shall consist of woven geotextile fabric attached to 2" X 2" X 48" tall hardwood stakes.

1. Fabric shall be 48” tall, with top being even with top of stakes. Bottom 12” shall be buried in trench as shown on the Detail Drawings.

2. Stakes shall be at 6’ centers unless stated otherwise on Contract Documents.

B. Temporary Reinforced Silt Fence

1. For areas of steep slopes and high flows, where indicated on the Contract Drawings, or as directed by state or local regulations, Reinforced Silt Fence shall be installed.

2. Fabric shall be woven monofilament geotextile attached to 11 gauge steel fencing of 2” X 4” grid.

3. Stakes shall be 5” tall steel and shall be installed on 4’ centers.

4. Fabric and fencing shall be buried in trench as shown on the Detail Drawings.

C. Spacing of Silt Fences on slopes shall be according to the following table, or as directed by state or local regulatory agencies:

		Soil Type	
Slope Angle	Silty	Clays	Sandy
Very Steep (1:1)	50 ft.	75 ft.	100 ft.
Steep (2:1)	75 ft.	100 ft.	125 ft.
Moderate (4:1)	100 ft.	125 ft.	150 ft.
Slight (10:1)	125 ft.	150 ft.	200 ft.

D. If runoff flows along the uphill side of the silt fence, Contractor shall install “J-hooks” every 40 to 80 feet. These are curved sections of silt fence above the continuous fence that serve as small dams to stop and hold the flow to allow sediment to settle.

2.06 FIBER ROLLS

A. On long slopes less than 10:1, and where indicated on the Contract Drawings or recommended by the regulatory agency, Fiber Rolls shall be installed.

B. Fiber Rolls shall be made of wood shavings, coconut fiber or other similar material encased in heavy duty netting.

C. Wooden stakes at 4’-0” on center shall be used to anchor the Fiber Rolls along the contours of the slope.

2.07 AGGREGATE SILT CHECKS

A. Where needed to slow flow velocity, to cause ponding or to protect storm water inlet structures, Aggregate Silt Checks shall be installed.

B. Aggregate Silt Checks shall consist of rock of various sizes ranging from 2” to 6” contained in or placed on geotextile filter fabric. Pea-stone or gravel-filled bags are acceptable for temporary silt checks in low-flow conditions.

2.08 RIP RAP

A. Rip Rap shall be installed at the outlets of storm drains and on channel banks as noted on the Contract Drawings and/or recommended by state and local regulatory agencies.

B. Rip Rap shall have no less than 80%, by volume, of individual stones that range in size from 0.0247 to 1.483 cubic feet.

PART 3 - EXECUTION

3.01 GENERAL

A. Erosion and sediment control practices shall be consistent with the requirements of the state and local regulatory agencies and in any case shall be adequate to prevent erosion of disturbed and/or regraded areas.

B. Water lines that cross steams shall be constructed by methods that maintain normal stream flow and allow for a dry excavation. Water pumped from the excavation shall be contained and allowed to settle prior to reentering the stream. Excavation equipment and vehicles shall operate outside of the flowing portion of the stream. Spoil material from the line excavation shall not be allowed to enter the flowing portion of the stream. The provisions of this condition shall apply to all types of utility line stream crossings.

Removal of riparian vegetation in the utility line right-of-way shall be limited to that necessary for equipment access. Effective erosion and sedimentation control measures must be employed at all times during the project to prevent degradation of waters of the Commonwealth. Site regrading and reseeding will be accomplished with 14 days after disturbance.

3.02 TEMPORARY AND PERMANENT STABILIZATION REQUIREMENTS

A. Temporary Stabilization is required for all disturbed areas where active work is not being performed and shall be coordinated with the General/Grading Contractor on the project. The Contractor shall follow the guidelines contained in the SWPPP for the project and/or as indicated in the table below:

Temporary Stabilization Table

Area requiring temporary stabilization	Time frame to apply erosion controls
Any disturbed areas within 50 feet of a stream and not at final grade	Within two days of the most recent disturbance if the area will remain idle for more than 21 days
For all construction activities, any disturbed areas that will be dormant for more than 21 days but less than one year, and not within 50 feet of a stream	Within seven days of the most recent disturbance within the area
Disturbed areas that will be idle over winter	Prior to the onset of winter weather

B. Permanent control measures to minimize erosion and sedimentation shall be accomplished through the stabilization of soil as soon as possible with perennial vegetation. The Contractor shall follow the guidelines for Permanent Stabilization as specified in the table below.

Permanent Stabilization Table

Area requiring permanent stabilization	Time frame to apply erosion controls
Any areas that will lie dormant for one year or more	Within seven days of the most recent disturbance
Any areas within 50 feet of a stream and at final grade	Within two days of reaching final grade
Any other areas at final grade	Within seven days of reaching final grade within that area

If permanent seeding is not practical due to the time of year, the disturbed area shall be seeded immediately with an annual rye grass at a rate of 3 lb. per 1,000 sq. feet and mulched with straw at a rate of 2.5 tons per acre. Mulch shall be anchored at 6 to 12-inch intervals across the slope by crimping into soil.

3.03 SEEDING

A. This item shall consist of seeding a cover of grass, on areas disturbed as a result of construction.

B. The seed mixture to be sown shall closely match the existing grass in lawns or shall be as previously specified.

C. All seed shall be fresh and clean and shall be delivered mixed, in unopened packages, bearing a guaranteed analysis of the seed mixture.

D. Germination must be certified to conform to the following minimums:

Purity	90%
Germination	85%

E. Pre-fertilization (if required to establish ground cover) :

1. Just prior to the planting of turf, evenly broadcast fertilizer as previously specified.

F. Method:

1. This work consists of furnishing all labor, equipment and materials and in performing all operations in connection with the fertilizing and seeding of all the finished graded areas not specified to be sodded or occupied by structures, roads, concrete slabs, sidewalks, walls, etc., and including grassed areas destroyed or damaged by the Contractor.

2. The areas to be seeded shall be thoroughly tilled by discing, harrowing, or other approved methods until the condition of the soil is acceptable for sowing. After harrowing or discing, the seedbed shall be dragged and/or hand raked to finish

grade.

3. Apply fertilizer uniformly over the seed bed, and lightly harrow, rake or otherwise incorporate them into the soil for a depth of approximately 1-inch. Fertilizer shall be as previously specified. The incorporation of the fertilizer may be a part of the tillage operation.

4. Seed shall be broadcast either by hand or approved sowing equipment at the rate of ninety (90) pounds per acre (two pounds per 1,000 square feet), uniformly distributed over the area. Broadcasting seeding during high winds will not be permitted. The seed shall be drilled or raked into a depth of approximately ½ inch and the seeded areas shall be lightly raked to cover the seed and rolled. Drilling seeding shall be done with approved equipment with drills not more than 3 inches apart. All ridges shall be smoothed out, and all furrows and wheel tracks likely to develop into washes, shall be removed.

5. Seed may be sown during the following periods:

   February 1 to April 15

   August 15 to October 15

6. After the seed has been sown, the areas so seeded shall be mulched with clean straw as previously specified.

7. Areas seeded shall be protected until a uniform stand develops, when it will be accepted and the Contractor relieved of further responsibility for maintenance. Displaced mulch shall be replaced or any damage to the seeded area shall be repaired promptly, both in a manner to cause minimum disturbance to the existing stand of grass. If necessary to obtain a uniform stand, the Contractor shall refertilize, reseed and remulch as needed.

8. The Engineer/Owner shall inspect the seeding within sixty (60) days after planting and determine if it is acceptable. An area is considered acceptable if it is represented by a minimum of 100 seedlings per square foot (uniform over the entire area) of the permanent species of grass representative of the seed mixture. If an acceptable growth is not obtained on the first planting, reseeding and remulching will be required.

9. Payment for seeding and mulching shall be included in the Contractor's bid.

3.04 INSTALLATION OF EROSION AND SEDIMENT CONTROL DEVICES

A. All erosion and sediment control products and materials shall be installed per manufacturer's recommendations and in accordance with the Kentucky Erosion Prevention and Sediment Control Field Guide.

B. Contractor shall pay special attention to the trenching-in of the bottoms of silt fence, the staking of sediment barriers, and the stapling of erosion control blankets. Coordinate with the general/grading contractor for the SWPPP requirements.

3.05 MAINTENANCE OF EROSION AND SEDIMENT CONTROL DEVICES

A. Erosion and sedimentation controls shall be inspected weekly and after rain events of 0.5 inch or greater. Replace silt fencing as needed, filter stone which is dislodged, erosion control blanket which is damaged, and make other necessary repairs.

B. Remove sediment from fences and barriers when it accumulates to half the height of the barrier, or more often as needed.

3.06 CLEAN UP

A. Upon completion of the project and/or establishment of satisfactory turf, vegetation or permanent erosion control structures, Contractor shall remove all temporary devices and properly dispose of such.

3.07 KPDES GENERAL PERMIT FOR STORM WATER DISCHARGES FROM CONSTRUCTION ACTIVITIES

All subcontractors are required to comply with the requirements of the Permit and the Stormwater Pollution Prevention Plan (SWPPP).

END OF SECTION

SECTION 02400 - BORING AND JACKING

PART 1 - GENERAL

1.01 SCOPE OF WORK

A. Provide all labor, materials, equipment and services required to furnish and install all bored and jacked carrier pipes in encasement pipes under railroad, highway, road, and other paved surfaces as shown on the Drawings and/or specified herein.

1.02 RELATED WORK SPECIFIED ELSEWHERE

A. Earthwork for Utility Work: Section 02225

B. Piping: Division 2

1.03 SUBMITTALS

A. Descriptive literature, catalog cuts, and dimensional prints clearly indicating all dimensions and materials of construction, shall be submitted on all items specified herein to the Engineer for review before ordering.

B. At the time of submission, the Contractor shall, in writing, call the Engineer's attention to any deviations that the submittals may have from the requirements of the Contract Drawings and Specifications.

C. Comply with all requirements of Section 01340.

PART 2 - PRODUCTS

2.01 CARRIER PIPE

A. Carrier pipe shall be restrained joint ductile iron pipe as specified in the applicable Division 2 section, unless otherwise noted.

2.02 CASING PIPE

A. Casing pipe shall be steel, plain end, have a minimum yield point strength of 35,000 psi and conform to ASTM A 252 Grade 2 or ASTM A 139 Grade B without hydrostatic tests. The casing pipe shall meet the latest approved "Specifications for Pipelines for Carrying Flammable and Non-flammable Substances". The steel pipe shall have welded joints and be in at least 18 foot lengths. The casing pipe exterior shall be coal tar epoxy coated. Field butt welds shall be fully welded the entire circumference of the casing with full weld penetration of the steel. Steel casing pipe shall meet the KTC DOH's Buy American requirements.

B. The diameter of the casing pipe shall be as shown on the Drawings.

C. The wall thickness of the casing pipe shall be as shown on the Drawings or a minimum of 0.365 inches if not shown.

2.03 CASING SPACERS

A. Stainless Steel Casing Spacers: Stainless steel casing spacers shall be bolt-on style with a shell made in two (2) sections of heavy T-304 stainless steel. Connecting flanges shall be ribbed for extra strength. The shell shall be lined with a PVC liner .090" thick with 85-90 durometer. All nuts and bolts are to be 18-8 stainless steel. Runners shall be made of ultra high molecular weight polymer with inherent high abrasion resistance and a low coefficient of friction. Runners shall be supported by risers made of heavy T-304 stainless steel. The supports shall be mig welded to the shell and all welds shall be fully passivated. Stainless steel casing spacers shall be made by Cascade Waterworks Mfg. Co., or approved equal.

B. Solid Polyethylene Casing Spacers: Solid polyethylene casing spacers shall be bolt-on style with a shell made in two (2) sections. Carrier pipe shall be wrapped with rubber strap inside casing space to prevent slippage. All nuts and bolts are to be 18-8 stainless steel. Solid polyethylene casing spacers shall be made by Calpico Inc., PSI, or approved equal.

2.04 CASING END SEALS

A. Wrap-around end seals: Wrap-around end seals shall be made of a waterproof flexible coal tar membrane reinforced with fiberglass. The two exposed edges of the wrap-around seal shall be adhesively bonded forming a watertight seal. The ends of the wrap shall be sealed on the casing and carrier pipe by stainless steel bands. Wrap-around end seals shall be made by Calpico Inc., or approved equal.

PART 3 - EXECUTION

3.01 CROSSINGS - GENERAL

A. Where designated on the drawings, crossings beneath roadways, driveways or other paved surfaces not to be disturbed shall be accomplished by boring and jacking a casing pipe.

B. Steel casing pipe for crossings shall be bored and/or jacked into place to the elevations shown on the drawings. All joints between lengths shall be solidly butt-welded with a smooth non-obstructing joint inside. The casing pipe shall be installed without bends. The carrier pipe shall be installed after the casing pipe is in place and shall extend a minimum of two (2) feet beyond each end of the casing to facilitate making joint connections. The carrier shall be braced and centered with casing spacers within the casing pipe to preclude possible flotation. Casing spacers shall be installed as shown on the Plans. The height of the supports and runners combined shall be sufficient to keep the carrier pipe at least 0.75" from the casing pipe wall at all times. Spacer skids shall be sized and trimmed to maintain a maximum clearance of 0.5” between the skid and casing pipe.

C. At each end of the casing pipe, the carrier pipe shall be sealed with casing end seals. The end seals shall extend a minimum of 12 inches in each direction from the end of the casing pipe.

3.02 BORING AND JACKING

A. The Contractor shall excavate his own pits, as he/she may deem necessary, and will set his/her own line and grade stakes which shall be checked by the Engineer. Permits shall be in the Contractor’s hands before any excavating is commenced.

B. The boring method shall consist of pushing the pipe into the earth with a boring auger rotating within the pipe to remove the spoil.

1. The boring operation shall be progressed on a 24-hour basis without stoppage (except for adding lengths of pipe) until the leading edge of the pipe has reached the receiving pit.

2. The front of the pipe shall be provided with mechanical arrangements or devices that will positively prevent the auger from leading the pipe so that there will be no unsupported excavation ahead of the pipe.

3. The auger and cutting head arrangement shall be removable from within the pipe in the event an obstruction is encountered. If the obstruction cannot be removed without excavation in advance of the pipe, the pipe shall be abandoned in place and immediately filled with grout.

4. The over-cut by the cutting head shall not exceed the outside diameter of the pipe by more than 2 inches. If voids should develop or if the bored hole diameter is greater than the outside diameter of the pipe by more than approximately 1 inch, grouting or other approved methods must be used to fill such voids.

5. The face of the cutting head shall be arranged to provide a reasonable obstruction to the free flow of soft or poor material.

6. Contractor's boring arrangement plans and methods must be submitted to, and approved by, the Engineer.

C. Insurance to be furnished by the Contractor to cover this type of work shall be adequate to meet the requirements of the Railroad and/or State or County Highway Departments. Insurance shall consist of comprehensive general liability and automobile liability insurance.

D. Before award of the contract, the Contractor shall furnish a statement of his/her experience of such work, or if inexperienced, shall advise the Owner as to whom he/she will sublet the work and give a statement of the experience of the subcontractor, which shall be satisfactory to the Owner.

E. Disposal of the excavated materials shall be provided by an approved manner.

3.03 CONTRACTOR'S RESPONSIBILITIES

A. Obtain a copy of the Railroad Crossing Permit and/or Highway Encroachment Permit before beginning construction.

B. Attend a preconstruction meeting at the construction site with the City Inspector, Railroad Inspector, Highway Inspector, Engineer, and Contractor being present.

END OF SECTION

SECTION 02410 – DIRECTIONAL DRILLING

PART 1 - GENERAL

1.01 SCOPE OF WORK

A. Furnish all labor, materials and equipment required to install potable water main, service lines, service line casings, or force main pipe using directional drilling method of installation, all in accordance with the requirements of the Contract Documents. The pipe size, type and length shall be as specified herein and as shown on the Drawings. Work shall include and not be limited to proper installation, testing, restoration of underground utilities and environmental protection and restoration.

B. The directional drill shall be accomplished by first drilling a pilot hole to design standards, and then enlarging the pilot hole no larger than 1.5 times larger than the outer diameter of the casing pipe, to accommodate the pull back of the pipe through the enlarged hole.

C. Soil borings, if required for certain subsurface soil conditions, shall be provided by the Directional Drilling Contractor as required for the field conditions to insure a proper installation.

1.02 RELATED WORK SPECIFIED ELSEWHERE

Piping: Division 2

1.03 SUBMITTALS

A. Descriptive literature, catalog cuts, and dimensional prints clearly indicating all dimensions and materials of construction, shall be submitted on all items specified herein to the Engineer for review before ordering.

B. At the time of submission, the Contractor shall, in writing, call the Engineer's attention to any deviations that the submittals may have from the requirements of the Contract Drawings and Specifications.

C. Comply with all requirements of Section 01340.

PART 2 - PRODUCTS

2.01 RESTRAINED JOINT PVC PIPE

A. Restrained joint PVC pipe in sizes 2" through 12" shall meet the requirements of the ASTM D2241 standard with a minimum dimension ratio of SDR17 (Class 250). The pipe shall be joined using couplings with beveled edges, built in sealing gaskets and restraining grooves or shall be integral bell pipe with built in sealing gaskets and restraining grooves. The restraining splines shall be round or square and made from Nylon 101. Couplings shall be beveled on the leading edges to minimize soil friction.

B. Contractor shall adhere to the pipe manufacturer's most current calculations regarding tensile load limitations for trenchless application. This calculation shall be part of the required submittal.

C. Contractor shall adhere to the pipe manufacturers most current calculations regarding deflection and radius of curvature for restrained joint PVC pipe used for trenchless application. This calculation of each bore shall be part of the required submittal prior to work.

Pipe Diameter	Minimum Radius of Curvature	Tightest Permissible Bend % Per 10’
2”	60’	16.8%
3”	90’	11.2%
4”	100’	10.0%
6”	150’	6.7%
8”	200’	5.0%
10”	250’	4.0%
12”	300’	3.3%
16”	450’	2.2%

D. Restrained joint PVC pipe shall be Certa-Lok Yelomine as manufactured by CertainTeed Corporation or equal.

E. The Contractor shall furnish and install any transition couplings and/or mechanical restraint system to secure the transition between the restrained joint PVC piping and the standard bell joint PVC piping.

2.02 HIGH DENSITY POLYETHYLENE PIPE

A. General: High density polyethylene pipe shall be ”Driscopipe” as manufactured by Phillips Product Company, Inc., PLEXCO as manufactured by Chevron, POLYPIPE, or Engineer approved equivalent.

B. Materials for Polyethylene Pipe:

1. The polyethylene pipe and fittings shall be made of polyethylene resins classified in ASTM D 1248 as Type III, Category 5, Grade P34 (pipe designation PE 3408 defined per ASTM D 3035), having specific base resin densities of 0.941 g/cc minimum and 0.955 g/cc maximum respectively; and having melt index less than 0.15 grams/10 min.

2. Pipe made from these resins must have a long-term strength rating of 1,600 psi or more.

3. The polyethylene resin shall contain antioxidants and shall be stabilized with carbon black against ultra-violet degradation to provide protection during processing and subsequent weather exposure.

4. The polyethylene resin compound shall have a resistance to environmental stress cracking as determined by the procedure detailed in ASTM D 1693, Condition B with sample preparation by procedure C of not less than 200 hours.

5. Polyethylene shall have cell classification of 345434C as defined by ASTM 3350-84.

C. Polyethylene Pipe and Fittings:

1. The pipe shall be designed for a normal internal working pressure and earth cover over top of the pipe to suit the conditions of proposed use.

2. Each length of pipe shall be marked, at no more than 10-foot intervals, with the following information:

   Nominal Pipe Size

   Type Plastic Material - PE3408

   Pipe Pressure Rating

   Manufacturer's Name, Trademark and Code

3. All pipe shall be made from virgin material. No rework compound.

4. Pipe shall be homogenous throughout, and be free of visible cracks, holes, foreign material, blisters, or other deleterious faults.

D. Pipe Jointing:

1. Pipe to be joined by leak proof, thermal, butt fusion joints. All fusion joints must be done by personnel trained by the pipe supplier using tools approved by the pipe supplier.

2. The fusion machine shall have hydraulic pressure control for fusing 2 pipe ends together; it shall include pressure fusion indicating gauges to correctly monitor fusion pressures. The machines correctly monitor fusion pressures. The machines shall be equipped with an electric or gasoline engine powered facing unit to trim irregularities from the pipe ends. The heating plate on the fusion machine shall be electrically heated and thermostatically controlled and shall contain a temperature gauge for monitoring temperature.

3. Joint strength must be equal to that of adjacent pipe as demonstrated by tensile test. In addition, results of tensile impact testing of joint should indicate a ductile rather than a brittle fracture. External appearance of fusion bead should be smooth without significant juncture groove.

4. Threaded or solvent cement joints and connections are not permitted.

E. Tools and Procedures:

1. Fusion jointing and other procedures necessary for correct assembly of the polyethylene pipe and fittings will be done only by personnel trained in those skills by the pipe supplier.

2. Only those tools designed for aforementioned procedures and approved by the pipe supplier shall be used for assembly of pipe and fittings to insure proper installation.

F. Standard Dimension Ratio (SDR) for Pipe:

All HDPE pipe for service casing directional drilling applications shall be ductile iron pipe size, minimum SDR 13.5.

2.03 DIRECTIONAL DRILLING OPERATIONS

A. Quality Assurance

1. All directional drilling operations shall be accomplished by a qualified directional drilling CONTRACTOR with at least two (2) years experience involving work of a similar nature to the work required for this project.

2. Notify ENGINEER and OWNER a minimum of three (3) days in advance of the start of work.

3. All work shall be performed in the presence of the OWNER or ENGINEER.

B. Directional Drilling Equipment Requirements

1. General: The directional drilling equipment shall consist of a directional drilling rig of sufficient capacity to perform the bore and pull back the pipe, a drilling fluid mixing, delivery and recovery system of sufficient capacity to successfully complete the installation, a drilling fluid recycling system to remove solids from the drilling fluid so that the fluid can be reused (if required), a magnetic guidance system or walk-over system to accurately guide boring operations, a vacuum truck of sufficient capacity to handle the drilling fluid volume, and trained and competent personnel to operate the system. All equipment shall be in good, safe condition with sufficient supplies, materials and spare parts on hand to maintain the system in good working order for the duration of this project.

2. Drilling Rig: The directional drilling machine shall consist of a hydraulically powered system to rotate and push hollow drilling pipe into the ground at a variable angle while delivering a pressurized fluid mixture to a guidable drill (bore) head. The machine shall be anchored to the ground to withstand the pulling, pushing and rotating pressure required to complete the installation. The hydraulic power system shall be self-contained with sufficient pressure and volume to power drilling operations. Hydraulic system shall be free of leaks. Rig shall have a system to monitor and record maximum pull-back pressure during pull-back operations. There shall be a system to detect electrical current from the drill string and an audible alarm, which automatically sounds when a electrical current is detected.

3. Drill Head: The drill head shall be steerable by changing its rotation, and shall provide necessary cutting surfaces and drilling fluid jets.

4. Mud Motors (if required): Mud motors shall be of adequate power to turn the required drilling tools.

5. Drill Pipe: Shall be constructed of high quality 4130 seamless tubing, grade D or better, with threaded box and pins. Tools joints should be hardened to 32-36 RC.

C. Guidance System

1. General: An electronic walkover tracking system or a Magnetic Guidance System (MGS) probe or proven gyroscopic probe and interface shall be used to provide a continuous and accurate determination of the location of the drill head during the drilling operation. The guidance shall be capable of tracking at all depths up to fifty feet and in any soil condition, including hard rock. It shall enable the driller to guide the drill head by providing immediate information on the tool face, azimuth (horizontal direction), and inclination (vertical direction). The guidance system shall be accurate and calibrated to manufacturer's specifications of the vertical depth of the borehole at sensing position at depths up to fifty feet and accurate to 2-feet horizontally.

2. Components: The CONTRACTOR shall supply all components and materials to install, operate, and maintain the guidance system.

3. The guidance system shall be of a proven type and shall be set up and operated by personnel trained and experienced with the system. The operator shall be aware of any geo-magnetic anomalies and shall consider such influences in the operation of the guidance system.

D. Drilling Fluid (Mud) System

1. Mixing System: A self-contained, closed, drilling fluid mixing system shall be of sufficient size to mix and deliver drilling fluid composed of bentonite clay, potable water, and appropriate additives. Mixing system shall be able to molecularly shear individual bentonite particles from the dry powder to avoid clumping and ensure thorough mixing. Mixing system shall continually agitate the drilling fluid during drilling operations.

2. Drilling Fluids: Drilling fluid shall be composed of clean water and bentonite clay. No additional material may be used in drilling fluid without prior approval from ENGINEER.

   The viscosities of the drilling fluids may be varied to best fit the soil conditions encountered as determined by the operator.

3. Delivery System: The mud pumping system shall have a minimum capacity of 35-500 GPM and the capability of delivering the drilling fluid at a constant minimum pressure of 1200 psi. The delivery system shall have filters in-line to prevent solids from being pumped into drill pipe. Used drilling fluid and drilling fluid spilled during operations shall be contained and conveyed to the drilling fluid recycling system or shall be removed by vacuum trucks or other methods acceptable to the ENGINEER. A berm, minimum of 12-inches high, shall be maintained around drill rigs drilling fluid mixing system, entry and exit pits and drilling fluid recycling system to prevent spills into the surrounding environment. Pumps and or vacuum truck(s) of sufficient size shall be in place to convey drilling fluid from containment areas to storage and recycling facilities for disposal. No discharge into a stream or ditch shall be allowed.

E. Other Equipment

1. Pipe Rollers: Pipe rollers shall be used for pipe assembly during final product pull back.

2. Restrictions: Other devices or utility placement systems for providing horizontal thrust other than those previously defined in the preceding sections shall not be used unless approved by the ENGINEER prior to commencement of the work. Consideration for approval will be made on an individual basis for each specified location. The proposed device or system shall maintain line and grade within the tolerances prescribed by the particular conditions of the project.

F. Personnel Requirements

1. All personnel shall be fully trained in their respective duties as part of the directional drilling crew and in safety. Each person must have at least two years directional drilling experience.

2. A competent and experienced supervisor representing the CONTRACTOR and Drilling Subcontractor shall be present at all times during the actual drilling operations. A responsible representative who is thoroughly familiar with the equipment and type of work to be performed must be in direct charge and control of the operation at all times. In all cases, the supervisor must be continually present at the job site during the actual Directional Bore operation. The CONTRACTOR and Subcontractor shall have a sufficient number of competent workers on the job at all times to insure the Directional Bore is made in a timely and satisfactory manner.

PART 3 - EXECUTION

3.01 GENERAL REQUIREMENTS

A. The ENGINEER must be notified 3 days in advance of starting work. The Directional Bore shall not begin until the ENGINEER is present at the job site and agrees that proper preparations for the operation have been made. The ENGINEER'S approval for beginning the installation shall in no way relieve the CONTRACTOR of the ultimate responsibility for the satisfactory completion of the work as authorized under the Contract.

B. All equipment used by the CONTRACTOR on Owner's property and rights-of-way may be inspected by the OWNER or the Owner's Representatives and shall not be used if considered unsatisfactory by OWNER or Owner's Representatives.

C. The Contractor shall be fully responsible for all damages arising from his failure to comply with the regulations and the requirements of these Specifications.

3.02 DIRECTIONAL DRILLING OPERATION

A. The CONTRACTOR shall provide all material, equipment, and facilities required for directional drilling. Proper alignment and elevation of the bore hole shall be consistently maintained throughout the directional drilling operation. The method used to complete the directional drill shall conform to the requirements of all applicable permits.

B. The entire drill path shall be accurately surveyed with entry and exit stakes placed in the appropriate locations within the areas indicated on drawings. If

CONTRACTOR is using a magnetic guidance system, drill path will be surveyed for any surface geo-magnetic variations or anomalies.

C. CONTRACTOR shall place silt fence between all drilling operations and any drainage, well-fields, wetland, waterway or other area appropriate for such protection. Additional environmental protection necessary to contain any hydraulic or drilling fluid spills shall be put in place, including berms, liners, turbidity curtains and other measures. CONTRACTOR shall adhere to all applicable environmental regulations. Fuel may not be stored in bulk containers within 200 feet of any water body or wetland.

D. Readings shall be recorded after advancement of each successive drill pipe (no more than 10') and the readings plotted on a scaled drawing, both vertical and horizontal. Access to all recorded readings and plan and profile information shall be made available to the ENGINEER, or his representative, at all times. At no time shall the deflection radius of the drill pipe exceed the deflection limits of the carrier pipe as specified herein.

E. A complete list of all drilling fluid additives and mixtures to be used in the directional operation shall be submitted to the ENGINEER, along with their respective Material Safety Data Sheets. All drilling fluids and loose cuttings shall be contained in pits or holding tanks for recycling or disposal, no fluids shall be allowed to enter any unapproved areas or natural waterways. Upon completion of the directional drill project, the drilling mud and cuttings shall be disposed of by the CONTRACTOR at an approved site.

F. The pilot hole shall be drilled on bore path with no deviations greater than 5% of depth over a length of 100-feet. In the event that pilot does deviate from the bore path more than 2-feet of depth in 100-feet, CONTRACTOR will notify ENGINEER and ENGINEER may require CONTRACTOR to pull-back and re-drill from the location along bore path before the deviation. In the event that a drilling fluid fracture, inadvertent returns or returns loss occurs during pilot hole drilling operations, CONTRACTOR shall cease drilling, wait at least 30 minutes, inject a quantity of drilling fluid with a viscosity exceeding 120 seconds as measured by a March funnel and wait another 30 minutes. If mud fracture or returns loss continues, CONTRACTOR shall discuss additional options with the Engineer and work shall then proceed accordingly.

G. Upon completion of pilot hole phase of the operation, a complete set of "as-built" records shall be submitted in duplicate to the Engineer. These records shall include copies of the plan and profile drawing, as well as directional survey reports as recorded during the drilling operation.

H. Upon approval of the pilot hole location, the hole opening or enlarging phase of the installation shall begin. The bore hole diameter shall be increased to accommodate the pullback operation of the required size of pipe. The type of hole opener or back reamer to be utilized in this phase shall be determined by the types of subsurface soil conditions that have been encountered during the pilot hole drilling operation. The reamer type shall be at the CONTRACTOR'S discretion with the final hole opening being a maximum of 1.5 times larger than the outside diameter of the pipe to be installed in the bore hole.

I. The open bore hole may be stabilized by means of bentonite drilling slurry pumped through the inside diameter of the drill rod and through openings in the reamer. The drilling slurry must be in a homogenous / flowable state serving as an agent to carry the loose cuttings to the surface through the annulus of the

borehole. The volume of bentonite mud required for each pullback shall be calculated based on soil conditions, largest diameter of the pipe couplings, capacity of the bentonite mud pump, and the speed of pullback as recommended by the bentonite drilling fluid manufacture. The bentonite slurry is to be contained at the exit or entry side of the directional bore in pits or holding tanks. The slurry may be recycled at this time for reuse in the hole opening operation or shall be hauled by the CONTRACTOR to an approved dump site for proper disposal.

J. The pipe shall be joined together according to manufacturer's specifications. The ends of pipe must be inspected and cleaned with a wet cloth prior to each joint assembly so they are free of any dirt or sand. The ends of pipe must be free of any chips, scratches, or scrapes before pipe is assembled. A pulling eye will be attached to pulling head on the lead stick of pipe, which in turn shall be attached to a swivel on the end of the drill pipe. The procedure shall allow for a straight, smooth pull of the product pipe as it enters and passes through the borehole toward the drill rig and original entrance hole of the directional bore. The product pipe shall be elevated to the approximate angle of entry and supported by means of a side boom with roller arm, or similar equipment, to allow for the "free stress" situation as the pipe is pulled into the exit hole toward the drill rig. The product pullback phase of the directional operation shall be carried out in a continuous manner until the pipe reaches the original entry side of the bore.

3.03 PIPE HANDLING

A. Care shall be taken during transportation of the pipe such that it will not be cut, kinked or otherwise damaged.

B. Ropes, fabrics or rubber protected slings and straps shall be used when handling pipes. Chains, cables or hooks inserted into the pipe ends shall not be used. Two slings spread apart shall be used for lifting each length of pipe. Pipe or fittings shall not be dropped into rocky or unprepared ground.

C. Pipes shall be stored on level ground, preferably turf or sand, free of sharp objects, which could damage the pipe. Where necessary due to ground conditions, the pipe shall be stored on wooden sleepers, spaced suitably and of such width as not to allow deformation of the pipe at the point of contact with the sleeper or between supports.

D. The handling of the joined pipeline shall be in such a manner that the pipe is not damaged by dragging it over sharp and cutting objects. Slings for handling the pipeline shall not be positioned at pipe joints. Sections of the pipes with deep cuts and gouges shall be removed and the ends of the pipeline rejoined.

3.04 TESTING PIPE

A. Cleaning and flushing shall be accomplished by the CONTRACTOR in accordance with the requirements of the contract.

B. Directional drilling pipe shall be tested by CONTRACTOR after pullback. The average pressure shall be maintained at 200 psi for two hours. The test pump and water supply shall be arranged to allow accurate measurements of the water required to maintain the test pressure. Any material showing seepage or the slightest leakage shall be replaced as directed by the OWNER at no additional expense to the OWNER. Note: Pressure testing will not be required for pipe used as casing for service lines.

C. The manufacturer's recommendations on bend radius and tensile strength shall be observed.

D. Pipeline shall be tested end to end.

3.05 SITE RESTORATION

A. Following drilling operations, CONTRACTOR shall de-mobilize equipment and restore the work site to the original conditions or better. All excavations shall be backfilled and compacted according to the specifications.

B. Surface restoration shall be completed in accordance with the requirements of the contract, to a condition as good as or better than existed prior to construction.

3.06 RECORD KEEPING AND AS-BUILTS

CONTRACTOR shall maintain a daily project log of drilling operations and a guidance system log with a copy given to the ENGINEER at completion of project.

END OF SECTION

SECTION 02510 - WATER DISTRIBUTION PIPING

PART 1 - GENERAL

1.01 SCOPE OF WORK

Provide all labor, materials, equipment and services required for furnishing and installing all piping and appurtenances specified herein.

1.02 RELATED WORK SPECIFIED ELSEWHERE

A. Valves - Utility Services: Section 02515

B. Hydrants: Section 02517

1.03 SUBMITTALS

A. A notarized certification shall be furnished for all pipe and fittings that verifies compliance with all applicable specifications.

B. The requirement for this certification does not eliminate the need for shop drawings submittals in compliance with Section 01340.

1.04 EXISTING CONDITIONS

A. The existing piping shown on the Contract Drawings is based on the best available information. The Engineer makes no guarantee as to the accuracy of the locations or type of piping depicted. All new piping, which ties into existing lines, must be made compatible with that piping and be rated for working pressure experienced.

B. So that piping conflicts may be avoided, Contractor shall open up his trench well ahead of the pipe laying operation to confirm exact locations of existing piping before installing any new piping.

C. Contractor shall provide all fittings and adapters necessary to complete all connections to existing piping.

1.05 UTILITY LINE ACTIVITIES COVERED UNDER NATIONWIDE PERMIT # 12

A. All activities involving utility line construction covered under the US Army Corps of Engineers NATIONWIDE PERMIT # 12 shall meet the following conditions:

1. Utility Line Activities. Activities required for the construction, maintenance, repair, and removal of utility lines and associated facilities in waters of the United States, provided the activity does not result in the loss of greater than 1⁄2-acre of waters of the United States for each single and complete project. Utility lines: This NWP authorizes the construction, maintenance, or repair of utility lines, including outfall and intake structures, and the associated excavation, backfill, or bedding for the utility lines, in all waters of the United States, provided there is no change in pre-construction contours. This NWP also authorizes temporary structures, fills, and work necessary to conduct the utility line activity.

2. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable, when temporary structures, work, and discharges, including cofferdams, are necessary for construction activities, access fills, or dewatering of construction sites. Temporary fills must

consist of materials, and be placed in a manner, that will not be eroded by expected high flows. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The areas affected by temporary fills must be revegetated, as appropriate.

3. Notification: The permittee must submit a pre-construction notification to the US Army Corps district engineer prior to commencing the activity if any of the following criteria are met: (1) The activity involves mechanized land clearing in a forested wetland for the utility line right-of-way; (2) a section 10 permit is required; (3) the utility line in waters of the United States, excluding overhead lines, exceeds 500 feet; (4) the utility line is placed within a jurisdictional area (i.e., water of the United States), and it runs parallel to or along a stream bed that is within that jurisdictional area; (5) discharges that result in the loss of greater than 1/10-acre of waters of the United States; (6) permanent access roads are constructed above grade in waters of the United States for a distance of more than 500 feet; or (7) permanent access roads are constructed in waters of the United States with impervious materials.

B. All activities involving utility line construction covered under KENTUCKY GENERAL CERTIFICATION of Nationwide Permit # 12 shall meet the following conditions:

The general Water Quality Certification applies to surface waters of the Commonwealth as defined in 401KAR10:001 Chapter 10, Section 1(80): Surface waters means those waters having well-defined banks and beds, either constantly or intermittently flowing, lakes and impounded waters; marshes and wetlands; and any subterranean waters flowing in well-defined channels and having a demonstrable hydrologic connection with the surface.

1. The activity will not occur within surface waters of the Commonwealth identified by the Kentucky Division of Water as Outstanding State or National Resource Water, Cold Water Aquatic Habitat, or Exceptional Waters.

2. The activity will not occur within surface waters of the Commonwealth identified as perpetually-protected (e.g. deed restriction, conservation easement) mitigation sites.

3. This general water quality certification does not authorize the installation of utility lines in a linear manner within the stream channel or below the top of the stream bank.

4 For a single crossing, impacts from the construction and maintenance corridor in surface waters shall not exceed 50 feet of bank disturbance.

5. This general certification shall not apply to nationwide permits issued for individual crossings which are part of a larger utility line project where the total cumulative impacts from a single and complete linear project exceed ½ acre of wetlands or 300 linear feet of surface waters. Cumulative impacts include utility line crossings, permanent or temporary access roads, headwalls, associated bank stabilization areas, substations, pole or tower foundations, maintenance corridor, and staging areas.

6. Stream impacts under Conditions 4 and 5 of this certification are defined as the length of bank disturbed. For the utility line crossing and roads, only one bank length is used in calculation of the totals.

7 Stream impacts covered under this General Water Quality Certification and undertaken by those persons defined as an agricultural operation under the Agricultural Water Quality Act must be completed in compliance with the Kentucky Agricultural Water Quality Plan (KWQP).

8. The Kentucky Division of Water may require submission of a formal application for an individual certification for any project if the project has been determined to likely have a significant adverse effect upon water quality or degrade the waters of the Commonwealth so that existing uses of the water body or downstream waters are precluded.

9. Activities that do not meet the conditions of this General Water Quality Certification require an Individual Section 401 Water Quality Certification.

10. Blasting of stream channels, even under dry conditions, is not allowed under this general water quality certification.

11. Utility lines placed parallel to the stream shall be located at least 50 feet from an intermittent or perennial stream, measured from the top of the stream bank. The cabinet may allow construction within the 50 foot buffer if avoidance and minimization efforts are shown and adequate methods are utilized to prevent soil from entering the stream.

12. Utility line stream crossings shall be constructed by methods that maintain flow and allow for a dry excavation. Water pumped from the excavation shall be contained and allowed to settle prior to re-entering the stream. Excavation equipment and vehicles shall operate outside of the flowing portion of the stream. Spoil material from the excavation shall not be allowed to enter the flowing portion of the stream.

13. The activities shall not result in any permanent changes in pre-construction elevation contours in surface waters or wetlands or stream dimension, pattern or profile.

14. Utility line activities which impact wetlands shall not result in conversion of the area to non-wetland status. Mechanized land clearing of forested wetlands for the installation or maintenance of utility lines is not authorized under this certification.

15. Activities qualifying for coverage under this General Water Quality Certification are subject to the following conditions:

    Erosion and sedimentation pollution control plans and Best Management Practices must be designed, installed, and maintained in effective operating condition at all times during construction activities so that violations of state water quality standards do not occur.

    Sediment and erosion control measures, such as check-dams constructed of any material, silt fencing, hay bales, etc., shall not be placed within surface waters of the Commonwealth, either temporarily or permanently, without prior approval by the Kentucky Division of Water's Water Quality Certification Section. If placement of sediment and erosion control measures in surface waters is unavoidable, design and placement of temporary erosion control measures shall not be conducted in such a manner that may result in instability of streams that are adjacent to, upstream, or downstream of the structures. All sediment and erosion control devices shall be removed and the natural grade restored within the completion timeline of the activities.

    Measures shall be taken to prevent or control spills of fuels, lubricants, or other toxic materials used in construction from entering the watercourse.

    Removal of riparian vegetation shall be limited to that necessary for equipment access.

To the maximum extent practicable, all in-stream work under this certification shall be performed under low-flow conditions.

Heavy equipment, e.g. bulldozers, backhoes, draglines, etc., if required for this project, should not be used or operated within the stream channel. In those instances in which such in-stream work is unavoidable, then it shall be performed in such a manner and duration as to minimize turbidity and disturbance to substrates and bank or riparian vegetation.

Any fill shall be of such composition that it will not adversely affect the biological, chemical, or physical properties of the receiving waters and/or cause violations of water quality standards. If rip-rap is utilized, it should be of such weight and size that bank stress or slump conditions will not be created because of its placement.

If there are water supply intakes located downstream that may be affected by increased turbidity and suspended solids, the permittee shall notify the operator when such work will be done.

Should evidence of stream pollution or jurisdictional wetland impairment and/or violations of water quality standards occur as a result of this activity (either from a spill or other forms of water pollution), the Kentucky Division of Water shall be notified immediately by calling (800) 928-2380.

16. Non-compliance with the conditions of this general certification or violation of Kentucky state water quality standards may result in civil penalties.

1.06 CONSTRUCTION IN A FLOODPLAIN

A. No material shall be placed in the stream or in the flood plain to form construction pads, coffer dams, access roads, etc. unless prior approval has been obtained from the Environmental and Public Protection Cabinet.

B. The trench shall be backfilled as closely as possible to the original contour. All excess material from construction of the trench shall be disposed of outside the flood plain unless the applicant has received prior approval from the Cabinet to fill within the flood plain.

PART 2 - PRODUCTS

2.01 DUCTILE IRON PIPE AND FITTINGS

A. Ductile iron pipe shall conform to ANSI/AWWA C151/A21.51, latest revision, with push-on joints incorporating a single molded gasket unless otherwise noted on Drawings. Pipe sizes 3-inch through 12-inch shall be pressure class 350 and sizes 14-inch and larger shall be pressure class 350, unless otherwise noted. Pipe shall be manufactured in the USA and be certified to meet the AIS requirements.

B. The interior of the pipe shall be cement-mortar lined with seal coat in accordance with ANSI/AWWA C104/A21.4, latest revision. Thickness of the lining shall be as set forth in the ANSI/AWWA C104/A21.4 specification unless otherwise directed by the Engineer. The exterior of all pipe, unless otherwise specified, shall receive either coal tar or asphalt base coating a minimum of 1 mil thick. Interior lining system shall be NSF approved.

C. Each piece of pipe shall bear the manufacturer's name or trademark, the year in which it was produced and the letters "DI" or the word "DUCTILE". Pipe manufacturer shall furnish notarized certificate of compliance to the above AWWA or ANSI specifications.

D. Fittings shall be ductile iron and have mechanical-joints or push-on joints in accordance with ANSI/AWWA C110/A21.10, latest revision, unless otherwise specified. Fittings shall be rated for a minimum of 250 psi working pressure. Fittings shall conform to the details and dimensions shown therein. Fittings shall have interior cement-mortar lining as specified hereinbefore for the pipe. Compact ductile iron fittings meeting the requirements of ANSI/AWWA C153/A21.53, latest revision, will also be acceptable. Each fitting shall be certified by the manufacturer to have been tested and to have met the requirements of the governing standard specifications. All fittings shall be installed with Megalug type restraining glands compatible with the pipe being furnished. Fittings and restraint glands shall be certified to meet the AIS requirements. All fittings and glands shall be certified to meet the KDOH's AIS requirements.

E. Joints for ductile iron pipe and fittings, as described hereinbefore, shall be rubber-gasket joints and be in accordance with ANSI/AWWA C111/A21.11, latest revision. Joints shall have the same pressure rating as the pipe or fitting of which they are a part. Joints shall be installed per the manufacturer's recommendations.

F. Provide ANSI/AWWA C110/A21.10 mechanical joint plugs and locked or restrained pipe joints where indicated on Drawings. Fittings under structures shall be mechanical joint with retainer glands, unless indicated otherwise.

2.02 RESTRAINED JOINT DUCTILE IRON PIPE

A. Restrained joint ductile iron pipe shall conform to ANSI/AWWA C151/A21.51, latest revision, with locking gasket type push-on joints unless otherwise noted on Drawings. Pipe size 3-inch through 12-inch shall be pressure class 350 and sizes 14-inch and larger shall be pressure class 350, unless otherwise noted.

B. The interior of the pipe shall be cement-mortar lined with seal coat in accordance with ANSI/AWWA C104/A21.4, latest revision. Thickness of the lining shall be set forth in the aforementioned specification unless otherwise directed by the Engineer. The exterior of all pipe, unless otherwise specified, shall receive either coal tar or asphalt base coating a minimum of 1 mil thick. Interior lining system shall be NSF approved.

C. Each piece of pipe shall bear the manufacturer's name or trademark, the year in which it was produced and the letters "DI" or the word "DUCTILE". Pipe manufacturer shall furnish notarized certificate of compliance to the above AWWA or ANSI specifications. Pipe shall be certified to meet the AIS requirements.

D. Fittings shall be ductile iron and have locking gasket type push-on joints in accordance with ANSI/AWWA C110/A21.10, latest revision with the exception of the manufacturer's proprietary design dimensions. Fittings shall be rated for a minimum of 250-psi working pressure. Fittings shall have interior cement-mortar lining as specified hereinbefore for the pipe. Compact ductile iron fittings meeting the requirements of ANSI/AWWA C153/A21.53, latest revision, will also be acceptable. Each fitting shall be certified by the manufacturer to have been tested and to have met the requirements of the governing standard specifications and shall be certified to meet the AIS requirements.

E. Joints for ductile iron pipe and fittings, as described hereinbefore, shall be rubber-gasket joints and be in accordance with ANSI/AWWA C111/A21.11, latest revision. Joints shall have a working pressure rating of 250 psi minimum. Joints shall be installed per the manufacturer's recommendations.

F. Fittings shown on the Plans are intended to convey the general configuration but the Contractor shall furnish all fittings required. When fittings are used, refer to the table on the Plans for associated required restrained joint lengths. Pipe at ends left for future connections shall also have restrained push-on joints.

G. Restrained joint pipe and fittings shall be Fast-Grip Restrained Joint as manufactured by American Ductile Iron Pipe or approved equal. Restrained joint pipe and fittings shall be designed for a working pressure of at least 250 psi.

H. Restrained push-on joint pipe and fittings shall be capable of being deflected after assembly.

I. Where spigot end of restrained joint pipe connect with valves or other items that have mechanical-joint ends, connection shall be made with a restrained mechanical-joint gland. Restrained mechanical-joint connection shall be as specified in this Section of the Specifications.

2.03 POLYVINYL CHLORIDE PLASTIC (PVC) PIPE

A. ASTM D2241 (Outside Diameter compatible with Iron Pipe O.D.)

1. 1-inch through 16-inch - PVC plastic pipe shall conform to ASTM Specification - D2241 (latest edition); Product Standards PS-22-70 NBS; Standard Dimension Ratio SDR 21 (200 psi) or SDR 17 (250 psi); Maximum Length - 20 feet; Pressure Rating - 200 psi at 73.4^{o} F. (SDR-21) or 250 psi (SDR 17). Elastomeric gasket shall conform with the requirements of ASTM F-477. The seal of the National Sanitation Foundation Testing Laboratory must appear on each pipe.

   a. Fittings, adaptors or specials shall be furnished, as required, to connect the plastic pipe to the cast or ductile iron mechanical joint valves, fittings, and pipe.

B. Fittings for PVC Pipe shall be mechanical joint ductile iron and be designed for a working pressure of 250 psi. The fittings shall conform to the latest revision of ANSI Specification A21.10, latest revision. Compact ductile iron fittings meeting the requirements of ANSI/AWWA C153/A21.53, latest revision, will also be acceptable. All fittings shall be installed with Megalug type restraining glands compatible with the pipe being furnished. All fittings and glands shall be certified to meet the KDOH's AIS requirements.

C. The basis of acceptance of PVC plastic water main pipe will be a written, notarized certification, accompanied by a copy of test results, that the pipe and pipe material has been sampled, tested and inspected in accordance with the designated standard specifications. These certifications shall be obtained from the manufacturer and delivered to the Engineer's or Owner's representative on the project site. A sufficient number of tests and certifications shall be made so as to be representative of the complete project. Copies of the test results shall be kept on file by the manufacturer and shall be available for review by the Engineer or Owner upon request.

D. Pipe shall be visually inspected on the project site for proper markings which shall include manufacturer's name or trademark, nominal pipe size, pressure rating for water at 73.4 degrees F., plastic pipe material designation code (e.g. PVC 1120), dimension ratio, AWWA or ASTM designation and pressure class with which the pipe complies, and the National Sanitation Foundation NSF 14 Seal of Approval for drinking water.

2.04 RESTRAINED JOINT PVC PIPE

A. Restrained joint PVC pipe in sizes 2" through 12" shall meet the requirements of the ASTM D2241 standard with a minimum dimension ratio of SDR17. The pipe shall be joined using couplings with beveled edges, built in sealing gaskets and restraining grooves or shall be integral bell pipe with built in sealing gaskets and restraining grooves. The restraining splines shall be round or square and made from Nylon 101. Couplings shall be beveled on the leading edges to minimize soil friction.

B. Contractor shall adhere to the pipe manufacturer's most current calculations regarding tensile load limitations for trenchless application. This calculation shall be part of the required submittal.

C. Contractor shall adhere to the pipe manufacturers most current calculations regarding deflection and radius of curvature for restrained joint PVC pipe used for trenchless application. This calculation of each bore shall be part of the required submittal prior to work.

Pipe Diameter	Minimum Radius of Curvature	Tightest Permissible Bend % Per 10'
2"	60'	16.8%
3"	90'	11.2%
4"	100'	10.0%
6"	150'	6.7%
8"	200'	5.0%
10"	250'	4.0%
12"	300'	3.3%
16"	450'	2.2%

D. Restrained joint PVC pipe shall be Certa-Lok Yelomine as manufactured by CertainTeed Corporation or equal.

E. The Contractor shall furnish and install any transition couplings and/or mechanical restraint system to secure the transition between the restrained joint PVC piping and the standard bell joint PVC piping.

2.05 COUPLING AND ADAPTORS

A. Flexible couplings shall be of the sleeve type with a middle ring, two wedge shaped resilient gaskets at each end, two follower rings, and a set of steel trackhead bolts. The middle ring shall be flared at each end to receive the wedge portion of the gaskets. The follower rings shall confine the outer ends of the gaskets, and tightening of the bolts shall cause the follower rings to compress the gaskets against the pipe surface, forming a leak-proof seal. Flexible couplings shall be steel with minimum wall thickness of the middle ring or sleeve installed on pipe being 5/16-inch for pipe smaller than 10 inches, 3/8-inch for pipe 10 inches or larger. The minimum length of the middle ring shall be 5-inches for pipe sizes up to 10 inches and 7 inches for pipe 10 inches to 30 inches. The pipe stop shall be removed. Gaskets shall be suitable for 250 psi working pressure rating or at rated working pressure of the connecting pipe. Couplings shall be harnessed and be designed for 250 psi working pressure.

2.06 CONCRETE PIPE ANCHORS, THRUST BLOCKS, CRADLE OR ENCASEMENT

A. Unless otherwise indicated on the Drawings or directed by the Engineer, concrete pipe anchors, thrust blocks, cradles or encasements shall be installed at all pipe fittings, valves, etc.

B. Concrete used for anchors, thrust blocks, cradle or encasement shall be Class "B" and have a minimum 28-day compressive strength of 3000 psi.

2.07 CONNECTION OF NEW WATER MAINS TO EXISTING SYSTEM

A. The Contractor shall connect the new water main to existing water main where shown on the Drawings or directed by the Engineer, and shall furnish all necessary equipment and materials required to complete the connection. Connections shall be made and restrained to accept a 200 psi working pressure.

2.08 MECHANICAL JOINT RESTRAINT

A. Mechanical joint restraint shall be furnished and installed where shown on the Plans. The restraining mechanism shall consist of individually actuated wedges that increase their resistance to pull-out as pressure or external forces increase. The device shall be capable of full mechanical joint deflection during assembly and the flexibility of the joint shall be maintained after burial. The joint restraint ring and its wedging components shall be made of grade 60-42-10 ductile iron conforming to ASTM A536 latest revision. The wedges shall be ductile iron heat-treated to a minimum hardness of 370 BHN. Dimensions of the gland shall be such that it can be used with the standardized mechanical joint bell conforming to ANSI/AWWA C111/A21.11 and ANSI/AWWA C153/A21.53 of the latest revision. Torque limiting twist-off nuts shall be used to insure proper actuation of the restraining wedges. The mechanical joint restraint shall be rated for a minimum working pressure of 250 psi.

B. The mechanical joint restraint shall be compatible with the pipe being installed. The restraint glands shall be certified to meet the AIS requirements.

2.09 LOCATOR WIRE

A. All water lines shall be laid with No. 12 coated copper wire. The wire shall have a minimum cover as specified for the bottom of the pipe and be laid approximately 6" to the right side of the pipe (as facing away from the water supply source). Wire shall be continuous with ends connected to metal valve boxes or concrete rings (with connectors), etc. Waterproof connectors shall be used where splices and connections are required/installed. The wire shall be laid in a manner to prevent allowing it to touch the water pipe.

B. After completion of the line installation, the Contractor shall test the locator wire to confirm continuity of the installation. The Owner will utilize their locator equipment and will witness the test along with the Contractor.

PART 3 - EXECUTION

3.01 EXCAVATION FOR PIPELINE TRENCHES

A. Unless otherwise indicated by the Drawings, trenches in which pipes are to be laid shall be excavated in open cut to the depths required by field conditions or as specified by the Engineer. In general this shall be interpreted to mean that machine excavation in earth shall not extend below an elevation permitting the pipe to be properly bedded. Installation shall be in accordance with ANSI/AWWA C600 for ductile iron and Cast Iron O.D. (AWWA) PVC pipe or ASTM F-645 for Iron Pipe O.D. (ASTM) PVC pipe except as modified herein.

B. If the foundation is good firm earth and the machine excavation has been accomplished as set out hereinbefore, the remainder of the material shall be excavated by hand, then the earth pared or molded to give full support to the lower quadrant of the barrel of each pipe. Where bell and spigot is involved, bell holes shall be excavated during this latter operation to prevent the bells from being supported on undisturbed earth. If for any reason the machine

excavation in earth is carried below an excavation that will permit the type of bedding specified above, then a layer of granular material shall be placed so that the lower quadrant of the pipe will be securely bedded in compact granular fill.

C. Excavation may be undercut to a depth below the required invert elevation that will permit laying the pipe in a bed of granular material to provide continuous support for the bottom quadrant of the pipe. When this method is used, the bedding shall be as set out in Paragraph 3.02 hereinafter.

D. Trenches shall be of sufficient width to provide free working space on each side of the pipe and to permit proper backfilling around the pipe, but unless specifically authorized by the Engineer, trenches shall in no case be excavated or permitted to become wider then 1'-6" plus the nominal diameter of the pipe at the level of or below the crown of the pipe. If the trench does become wider than 1'-6" at the level of or below the crown of the pipe, special precaution may be necessary, such as providing compacted, granular fill up to top of the pipe or providing pipe with additional crushing strength as determined by the Engineer after taking into account the actual trench loads that may result and the strength of the pipe being used. The Contractor shall bear the cost of such special precautions as are necessary.

E. All excavated materials shall be placed a minimum of two feet (2') back from the edge of the trench.

F. Before laying the pipe, the trench shall be opened far enough ahead to reveal obstructions that may necessitate changing the line or grade of the pipeline. Unless specifically directed otherwise by the Engineer or where required to uncover or determine the presence of underground obstructions, not more than three hundred (300) feet of trench shall be opened ahead of the pipe laying, and not more than two (200) feet of open ditch shall be left behind the pipe laying.

G. The requirements of the County and State Highway Departments regarding the length of open trench left overnight shall also apply to water line laid along the rights-of-way for all roads and streets.

H. The trench shall be straight and uniform so as to permit laying pipe to lines and grades given by the Engineer. It shall be kept free of water during the laying of the pipe and until the pipeline has been backfilled. Removal of trench water shall be at the Contractor's expense. Dry conditions shall be maintained in the excavations until the backfill has been placed. During the excavation, the grade shall be maintained so that it will freely drain and prevent surface water from entering the excavation at all times. When directed by Owner, temporary drainage ditches shall be installed to intercept or direct surface water, which may affect work. All water shall be pumped or drained from the excavation and disposed of in a suitable manner without damage to adjacent property or to other work.

I. Unless otherwise indicated on the Plans, or directed by the Engineer, all pipelines shall have at least 36” of cover. Any line within the State Highway ROW shall have a minimum depth of cover of 42” and any line, including bores, within the traveled shoulder or pavement of the State Highway or other road/parking areas (including existing and proposed traffic areas) shall have a minimum depth of cover of 48”. All depths of cover are measured to the top of pipe. No departure from this policy shall be made except at the order of the Engineer.

J. All barricades, lanterns, watchmen, and other such signs and signals as may be necessary to warn the public of the dangers in connection with open trenches, excavations and other obstructions shall be provided by and at the expense of the Contractor. All excavation shall be accomplished in accordance with applicable safety laws and regulations; the Engineer, as previously stated, does not assume responsibility of any degree or sort for acts of the Contractor.

K. Unless otherwise directed by the Engineer, lines and grades shall be set to conform to those shown on the Plans. Field setting of lines and grades shall be the responsibility of the Contractor.

3.02 PIPE BEDDING

A. The pipe shall be uniformly and continuously supported throughout the entire length on a firm, stable material. All pipe shall be supported on a bed of granular material, unless the trench has been prepared in accordance with Paragraph 3.01B. In no case shall pipe be supported directly on rock. Bedding shall not be a separate pay item unless otherwise set out in the Detailed Specifications. Bedding shall be provided in earth bottom trenches, as well as rock bottom trenches. Bedding material shall be free from large rock, foreign material, frozen earth, and shall be acceptable to the Engineer. Bedding shall be a minimum of 6" below pipe barrel when rock is encountered. When rock is encountered, backfill the space below grade for pipelines with crushed stone or other approved material, and tamp to the proper grade and make ready for construction.

B. In all cases the foundation for pipes shall be prepared so that the entire load of the backfill on top of the pipe will be carried on the barrel of the pipe so that none of the load will be carried on the bells.

C. Where flexible pipe is used, the bedding shall be placed up to at least 12 inches above the top of the pipe. The bedding material and procedures shall conform to ASTM D 2321 and any Technical Specifications set out hereinafter. Granular bedding shall be Size #9-m or ASTM C 33; Size #7 crushed stone, fine gravel, or sand, and is not a separate pay item.

D. Where undercutting and granular bedding is involved, it shall be of such depth that the bottom of the bells of the pipe will be at least three inches above the bottom of the trench as excavated. Undercutting is not a separate pay item unless approved by the Engineer.

E. In wet, yielding mucky locations where pipe is in danger of sinking below grade or floating out of line or grade, or where backfill materials are of such a fluid nature that such movements of the pipe might take place during the placing of the backfill, the pipe must be weighted or secured permanently in place by such means as will prove effective. When ordered by the Engineer, yielding and mucky materials in subgrades shall be removed below ordinary trench depth in order to prepare a proper bed for the pipe. In such cases, the trench bottom shall be brought back up to proper grade with bedding material. Crushed stone or other such granular material, if necessary, as determined by the Engineer to replace poor subgrade material, shall be a separate pay item and classified as "Special Pipe Bedding". Removal of poor material is not a separate pay item.

F. Installation shall be in accordance with ASTM D 2321 except as modified hereinafter.

3.03 SPECIAL PIPE BEDDING

Granular material for "Special Pipe Bedding" where required shall be Department of Transportation crushed limestone, Size #9.

3.04 LAYING PIPE

A. The laying of pipe in finished trenches shall be commenced at the lowest point so the spigot ends point in the direction of flow. The pipe shall be laid in a straight line and grade without kinks or sags and shall be laid in a workmanlike manner.

B. All pipes shall be laid with ends abutting and true to line and grade as given by the Engineer. Supporting of pipes shall be as set out hereinbefore under "Pipe Bedding" and in no case shall the supporting of pipes on blocks be permitted.

C. The trench shall be excavated to the required depth and width; bell holes and/or jointing holes shall be dug in advance of pipe laying. Bell holes and/or jointing holes shall be large enough so that the bell or hub will clear the ground and leave ample room for making and inspecting the joints.

D. Before each piece of pipe is lowered into the trench, it shall be thoroughly swabbed out and inspected to ensure that it is clean. Each piece of pipe shall be lowered separately unless the Engineer gives special permission otherwise.

E. Care shall be taken to prevent injury to the pipe coating both inside and out. No piece of pipe or fitting which is known to be defective shall be laid or placed in the lines. If any defective pipe or fitting shall be discovered after the pipe is laid, it shall be removed and replaced with a satisfactory pipe or fitting without additional charge. In case a length of pipe is cut to fit in a line it shall be so cut as to leave a smooth end at right angles to the longitudinal axis of the pipe as per latest revision of AWWA Specification C600.

F. Pipe shall not be laid on solid rock. A pad of granular material as specified in Paragraph 3.02 "Pipe Bedding", shall be used as a pipe bedding. Pipe bedding is not a separate pay item. Irregularities in subgrade in an earth trench shall be corrected by use of granular material.

G. When ordered by the Engineer, unsuitable materials in subgrades shall be removed below ordinary trench depth in order to prepare a proper bed for the pipe.

H. Open ends of unfinished pipelines shall be securely plugged or closed at the end of each day’s work or when the line is left temporarily at any other time, so as to exclude earth or other material, and precautions taken to prevent flotation of pipe by runoff into trench.

I. No backfilling (except for securing pipe in place) over pipe will be allowed until the Engineer has had an opportunity to examine the joints, alignment and grade, in the section laid.

J. Wherever pipe must be deflected from a straight line (in either the vertical or horizontal plane) in order to avoid obstructions, or wherever long radius curves are permitted, the amount of deflection shall not exceed that necessary for the joint to be satisfactorily made, nor that recommended by the pipe manufacturer, and shall be approved by the Engineer.

3.05 BACKFILLING PIPELINE TRENCHES

A. Backfilling shall begin after line construction is completed, inspected, and approved by the Engineer. Backfilling of pipeline trenches shall be accomplished as shown on the Drawings and with details set forth hereinafter. Before final acceptance, the Contractor will be required to level off all trenches or to bring the trench up to grade. The Contractor shall also remove from roadways, rights-of-way and/or private property all excess earth or other materials resulting from construction. If pavement is not placed immediately following trench backfilling in paved areas, the Contractor shall be responsible for maintaining the trench surface in a level condition at proper pavement grade at all times. Under pavement, roads or driveways, all trench backfill shall be in accordance with Method C. All other trench backfill shall be in accordance with Method A or B.

B. Method "A" - Backfilling in Open Terrain:

Backfilling of pipeline trenches in open terrain shall be accomplished in the following manner:

1. The lower portion of the trench, from the pipe bedding to a point 12" above the top of the pipe, shall be backfilled with materials acceptable to the Engineer such as fine loose earth, sandy soil or loam, or granular material, free from clods, vegetable matter, debris, stone and/or other objectionable materials. This material shall be placed in even layers simultaneously on each side of the pipe in a manner approved by the Engineer and shall be carefully compacted to avoid displacement of the pipe. Layers shall not exceed 6" depth (before compaction). Each layer shall be thoroughly and completely tamped into place before placing the succeeding layer. Compaction shall be accomplished by hand-tamping or by approved mechanical methods. Do not use power operated tampers to tamp that portion of the backfill around the pipe within 1' above the pipe.

2. The upper portion of the trench above the compacted portion shall be backfilled with material, which is free from large rock. Incorporation of rock having a volume exceeding one-eighth cubic foot is prohibited. Individual stones shall not exceed 3" in maximum dimension. Backfilling this portion of the trench may be accomplished by any means approved by the Engineer. Sufficient earth material shall be incorporated in such backfill to completely fill all voids. The trench backfill shall be heaped over or leveled as directed by the Engineer.

C. Method "B" - Backfilling Under Dirt Entrances:

Backfilling of pipeline trenches under dirt entrances shall be accomplished in the following manner.

1. The lower portion of the trench, from the pipe bedding to a point 12 inches above the top of the pipe, shall be backfilled with materials acceptable to the Engineer such as fine loose earth, sandy soil or loam, or granular material, free from clods, vegetable matter, debris, stone and/or other objectionable materials. This material shall be placed in even layers simultaneously on each side of the pipe in a manner approved by the Engineer and shall be carefully compacted to avoid displacement of the pipe. Layers shall not exceed 6" depth (before compaction). Each layer shall be thoroughly and completely tamped into place before placing the succeeding layer. Compaction shall be accomplished by hand-tamping or by approved mechanical methods. Do not use power operated tampers to tamp that portion of the backfill around the pipe within 1' above the pipe.

2. The middle portion of the trench, from a point 12" above the top of the pipe to a point 6" below the grade line, shall be backfilled with material free from rock and/or acceptable to the Engineer. This material shall be placed and compacted in layers of approximately 6 inches. Water (puddling) may be used as required to obtain maximum compaction.

   Upon approval of the Engineer, the Contractor may backfill the middle portion of the trench with crushed stone, fine gravel, or sand in lieu of materials, which require compaction.

D. Method "C" - Backfilling Under Streets, Roads, and Driveways:

Backfilling of pipeline trenches under streets, roads and driveways shall be accomplished in the following manner:

1. The lower portion of the trench from the pipe bedding to a point 6" below the bottom of the pavement or concrete sub-slab, shall be backfilled with No. 57 stone, firmly compacted into place.

2. The upper portion of the trench, from a point 6" below the bottom of the pavement or concrete sub-slab to grade, shall be backfilled with No. 57 stone, firmly compacted into place. At such time that pavement replacement is accomplished, the excess base course shall be removed as required.

E. Trenches outside existing sidewalks, driveways, streets, and highways shall be backfilled in accordance with Method "A". Trenches within the limits of dirt entrances shall be backfilled in accordance with Method "B". Trenches within the paving limits of existing streets, highways and driveways shall be backfilled in accordance with Method "C". When directed by the Engineer, the Contractor shall wet backfill material to assure maximum compaction.

Before final acceptance, the Contractor will be required to level off all trenches or to bring the trench up to grade. The Contractor shall also remove from roadways, rights-of-ways and/or private property all excess earth or other materials resulting from construction.

In the event that pavement is not placed immediately following trench backfilling in streets, highways, and driveways the Contractor shall be responsible for maintaining the trench surface in a level condition at proper pavement grade at all times.

Wherever excavation has been made within easements across private property, the top 6” of backfill material shall consist of fine loose earth free from large clods, vegetable matter, debris, stone, and/or other objectionable materials.

3.06 SETTLEMENT OF TRENCHES

A. Whenever lines are in, or cross, driveways and streets, the Contractor shall be responsible for any trench settlement which occurs within these rights-of-way within one (1) year from the time of final acceptance of the work. If paving shall require replacement because of trench settlement within this time, the Contractor at no extra cost to the Owner shall replace it. Repair of settlement damage shall meet the approval of the Owner.

3.07 INSPECTION OF LINES DURING CONSTRUCTION

A. The Contractor shall notify the Engineer when pipe will be received on the job so that arrangements may be made for inspecting the unloading and stringing, as well as inspecting the pipe proper and examining for the stamp of the independent laboratory. In order to avoid damage to pipe, it is recommended that the pipe be delivered in bundles and kept bundled until it is needed. No pipe (or other materials or equipment) shall be stored on private property without the permission of the property owner.

B. Before the Contractor backfills any of the lines, they shall be first inspected by the Engineer; and the Engineer shall give the Contractor permission to proceed with the backfilling. If any joints, pipes, or other workmanship or materials are found to be defective, they shall be removed and replaced by the Contractor without any extra compensation.

3.08 CONCRETE THRUST BLOCKS, CRADLE, ANCHORS OR ENCASEMENT

A. Concrete thrust blocks, cradle, anchors or encasement shall be placed where shown on the Drawings, required by the Specifications, or as directed by the Engineer. All fittings, valves, etc., require thrust blocks.

B. For cradle and encasement, concrete shall be 3000 psi and shall be mixed sufficiently wet to permit it to flow under the pipe to form a continuous bed.

C. The cost of thrust blocks shall be included in the price bid for pipe.

D. For thrust blocks and anchors, concrete shall be 3000 psi, and shall be formed or be sufficiently stiff to maintain the forms indicated on the Details.

E. In tamping concrete, care shall be taken not to disturb the grade or line of the pipe or injure the joints.

F. Water mains shall have concrete thrust or “kicker” blocks at all pipe intersections and changes of direction or at any other point as recommended by the pipe manufacturer and /or as indicated by the Engineer to resist forces acting on the pipeline. All reducers (increasers) shall be anchored.

G. Concrete placed outside the specified limits or without written authorization from the Engineer will not be subject to payment.

3.09 BITUMINOUS CONCRETE HIGHWAY, STREET AND DRIVEWAY REPLACEMENT

A. The Contractor shall replace those sections of existing roads, streets and driveways required to be removed to install the pipelines under this contract. He shall construct same to the original lines and grades and in such manner as to leave all such surfaces in fully as good or better condition than that which existed prior to the operations.

B. Prior to trenching, the pavement shall be scored or cut to straight edges at least twelve (12) inches outside each edge of the proposed trench to avoid unnecessary damage to the remainder of the paving. Edges of the existing pavement shall be re-cut and trimmed to square, straight edges after the pipeline has been installed and prior to placing the new base and pavement.

C. Backfilling of the trench shall be in accordance with Method "C" as described hereinbefore. Base course for the paving shall be dense graded crushed limestone furnished and placed in accordance with the current requirements of the Standard Specifications for Road and Bridge Construction of the Department of Transportation, to a depth of six (6) inches in roads and streets and four (4) inches in driveways.

3.10 UNPAVED DRIVEWAY (CRUSHED STONE) SURFACE REPLACEMENT

A. The Contractor shall replace those sections of existing driveways and parking areas required to be removed to install the pipelines under this contract. He shall construct same to the original lines and grades and in such manner as to leave all such surfaces in fully as good or better condition than that which existed prior to the operations.

B. Material for backfilling of the pipeline trench shall be dense-graded aggregate in accordance with Method “C” as described hereinbefore.

3.11 REMOVING AND REPLACING CONCRETE CURB AND GUTTER OR SIDEWALK

A. The Contractor shall remove the curb and gutter or sidewalk when encountered when required for laying the pipe. Only that portion of the curb and gutter or sidewalk needed to lay the pipe shall be removed.

B. Where concrete curb and gutter or sidewalk is removed or disturbed during the construction work, it shall be replaced, using 3000 psi concrete, in fully as good or better condition than that which existed prior to the Contractor's operation.

3.12 REPLACEMENT OF EXISTING MAIL BOXES, CULVERTS, CLOTHES LINE POSTS, FENCES AND OTHER SUCH FACILITIES

A. Existing mail boxes, drainage culverts, clothes line posts, fences and the like shall not be damaged or disturbed unless necessary, in which case, they shall be replaced in as good condition as found as quickly as possible. Existing materials shall be reused in replacing such facilities when materials have not been damaged by the Contractor's operations. Existing facilities damaged by Contractor's operation shall be replaced with new materials of the same type at the Contractor's expense. Work in this category is not a pay item.

B. Replacement of paved drainage ditches within highway right-of-way shall be accomplished in accordance with Department of Transportation specifications.

3.13 PORTLAND CEMENT CONCRETE DRIVEWAY REPLACEMENT

A. Wherever Portland cement concrete driveways are removed, they shall be reconstructed to the original lines and grades and in such manner as to leave all such surfaces in fully as good or better condition than existed prior to the operation.

B. The existing concrete paving shall be sawed or cut to straight edges 12-inches outside the edges of the trench or broken out to an existing joint, as directed by the Engineer. The concrete pavement shall be equal to the existing pavement thickness but not less than 6-inches in thickness for driveways.

C. Pavement shall be reinforced with 6 x 6 #10-10 wire mesh meeting the AIS requirements and shall be constructed with 3000 psi concrete.

3.14 RIP-RAP STREAM BANK SLOPE PROTECTION

A. The Contractor shall install rip-rap stream bank slope protection at locations directed by the Engineer. Rip-rap slope protection shall be 12-inches thick and shall meet State D.O.T. Standard Specifications.

3.15 TESTING

A. All pressure piping shall be given a hydrostatic test. Testing of lines shall comply with the provisions listed below, or similar approved procedures, which will insure equal or better results. Pipe lines of whatever material shall be tested at 1.5 times the anticipated working pressure but no less than the pressure as shown below as a minimum; the allowable leakage shall not exceed the requirements of the following table (which are approximately 1/4th of the AWWA formula allowance):

Pipe Size	Test Pressure	Allowable Leakage per 1000 Feet
24-inch	150 psig	0.60 gallons per hour
16-inch	150 psig	0.40 gallons per hour
12-inch	150 psig	0.30 gallons per hour
8-inch	150 psig	0.20 gallons per hour
6-inch	150 psig	0.15 gallons per hour
4-inch	150 psig	0.10 gallons per hour

B. Contractor shall furnish all recording gauges, recording pressure charts, pumps, water meters, and other equipment required for measuring water used during leakage test and maintain said equipment in condition for accurate testing as determined by the Engineer. Recording pressure charts shall be required throughout the duration of the test and shall be turned over to the Engineer at conclusion of tests. The pressure recording device shall be

suitable for outside service, of a range sufficient for the line pressure tested, 24- hour spring wound clock, designed for 9-inch or 12-inch charts, and shall be approved by the Engineer.

C. Duration of test shall be not less than four (4) hours. If the pressure drop is 5 psi or greater, the line shall be retested regardless of the leakage rate.

D. Where leaks are visible at exposed joints and/or evident on the surface where joints are covered, the pipe shall be rejoined and leakage must be minimized, regardless of total leakage as shown by test.

E. All pipe, fittings, valves, and other materials found to be defective under test shall be removed and replaced at no additional expense to the Owner.

F. Lines, which fail to meet tests, shall be repaired and retested as necessary until test requirements are complied with.

G. Where nonmetallic joint compounds are used, pipelines should be held under normal operating pressure for at least three days before testing.

H. The Owner will provide initial water for testing the pressure piping. Should the first test fail to pass, all additional water required for subsequent tests shall be furnished at the Contractor's expense.

I. The cost of testing of pressure piping is incidental and is to be included in the Contractor’s unit Contract Price.

3.16 CLEAN UP

A. Upon completion of installation of the piping and appurtenances, the Contractor shall remove all debris and surplus construction materials resulting from the Work. The Contractor shall grade the ground along each side of pipe trenches in a uniform and neat manner leaving the construction area in a shape as near as possible to the original ground line.

3.17 DISINFECTION OF POTABLE WATER LINES

A. The new potable waterlines shall not be placed in service, either temporarily or permanently, until they have been thoroughly disinfected in accordance with the following requirements and to the satisfaction of the Engineer.

B. After testing, a solution of hypochlorite using HTH or equal shall be introduced into the section of the line being disinfected sufficient to insure a chlorine dosage of at least 50 ppm in the main. While the solution is being applied, the water should be allowed to escape at the ends of the line until tests indicate that a dosage of at least 50 ppm has been obtained throughout the pipe. Open and close all valves and cocks while chlorinating agent is in the piping system. The chlorinated water shall be allowed to remain in the pipe for 24 hours, after which a residual of at least 25 ppm shall be obtained. The disinfection shall be repeated until 25 ppm is obtained after which time the main shall be thoroughly flushed until the residual chlorine content is not greater than 2.0 ppm, and then may be connected to the system. Also, no additional payment will be allowed for providing taps for chlorine injection and/or flushing, if necessary. The Contractor is responsible for the disposal of highly chlorinated water flushed from the main.

C. The Contractor shall be responsible for having a private laboratory perform all required bacteriological testing to meet State regulatory standards. A minimum of two samples shall be tested for each line up to 0.5 mile in length; for line lengths over 0.5 mile, an additional sample shall be collected and tested for each additional mile of line. The laboratory must be acceptable to the Owner and the Engineer. If negative samples are obtained the line shall be

thoroughly flushed and then may be connected to the system. If a positive sample is obtained, the disinfection procedure must be repeated until negative samples are obtained. The cost of the bacteriological testing will be borne by the Contractor. Disinfection is not a pay item. The Owner will pay for the water required for the initial filling of the lines and for the first refill after flushing, but the Contractor shall pay for any other water required.

END OF SECTION

SECTION 02515 – VALVES

PART 1 - GENERAL

1.01 SCOPE OF WORK

A. Provide all labor, materials, equipment and services required to furnish and install all valves shown on the Drawings and/or specified herein. Valves shall meet the current AIS requirements with certification being furnished with the submittal.

1.02 RELATED WORK SPECIFIED ELSEWHERE

A. Drawings and General Provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification sections, apply to work of this Section.

1.03 SUBMITTALS

A. Descriptive literature, catalog cuts, and dimensional prints clearly indicating all dimensions and materials of construction, shall be submitted on all items specified herein to the Engineer for review before ordering. Comply with provisions of Section 01340.

B. At the time of submission, the Contractor shall, in writing, call Engineer's attention to any deviations that the submittals may have from the requirements of the Engineer's Contract Drawings and Specifications. AIS certifications shall be submitted along with shop drawings.

PART 2 - PRODUCTS

2.01 GATE VALVES

A. Gate valves shall conform with AWWA C-509 or AWWA C-515 standard, and shall be of the resilient seat type, iron body, fully bronze mounted, non-rising stem and have a design working pressure of 250 psi. All assembly bolts shall be stainless steel. Valves shall be of standard manufacturer and of the highest quality both as to materials and workmanship. Valves shall meet the current AIS requirements with certification being furnished with the submittal.

B. All gate valves shall be furnished with mechanical joint connections, unless otherwise shown on the Drawings or specified hereinafter. Megalug type joint restraints shall be installed on all valves; the end-connections and restraints furnished shall be suitable for connection to the pipe being installed.

C. An epoxy coating conforming to AWWA C-550 shall be applied to the interior and exterior ferrous surfaces of the valve except for finished or seating surfaces.

D. All gate valves shall have the name or monogram of the manufacturer, the year the valve casting was made, the size of the valve, and the working water pressure cast on the body of the valve.

E. Each gate valve shall be installed in a vertical position with a roadway type valve box. Gate valves set with valve boxes shall be provided with a 2-inch square operating nut and shall be opened by turning to the left (counter-clockwise). Contractor must use extension stems, if necessary, to raise operator nut within 24" of final grade.

2.02 VALVE BOXES

A. Valve boxes shall be 5-1/4 inch cast iron, two piece, screw type with drop cover marked "WATER". Valve boxes shall meet the current AIS requirements.

Valve boxes shall be accurately centered over valve operating nut, and backfill thoroughly tamped about them. Valve box bases shall not rest on the valves but shall be supported on crushed stone fill. They shall be set vertically and properly cut and/or adjusted so that the tops of boxes will be at grade in any paving, walk or road surface, and 1 and 2 inches above ground in grass plots, fields, woods or other open terrain. For ease of location and identification, a concrete pad and marker for valves outside the roadway shall be furnished as shown on the Drawings.

Contractor shall also furnish and install at each valve a two piece HDPE valve box alignment device (BOXLOK) as manufactured by EMMA Sales or approved equal.

B. Valve boxes shall be set at valve locations shown on the drawings or designated by the Engineer.

C. Nut operator extensions for all valves buried deeper than 3 feet shall be provided with stem extensions sufficient to raise operator nut to within 2 feet of finished grade.

2.03 VALVE MARKERS

Water valve markers shall be furnished and installed for each "out of road" valve. The valve marker shall be as detailed on the Drawings.

2.04 TAPPING SLEEVES AND VALVES

A. Tapping sleeves for connections to existing water lines shall be of the mechanical joint type suitable for working pressures of 200 psi. All sleeves shall meet the current AIS requirements with certifications furnished.

B. Tapping valves shall be of the flange/mechanical joint type suitable for minimum working pressures of 200 psi. All valves shall meet the current AIS requirements with certifications furnished.

C. All existing water mains to be tapped under this contract shall be exposed in order to verify line sizes prior to ordering tapping sleeves and valves. The Contractor shall verify in the field the type of existing pipe that the tapping sleeve will be used in connection with.

2.05 TAPPING OF ASBESTOS CEMENT WATER LINE

A. During the process of tapping asbestos cement water lines, the Contractor shall be responsible for conforming to OSHA regulations governing the handling of hazardous waste.

B. Pieces of asbestos cement pipe resulting from the tap shall be double bagged, placed in a rigid container and disposed of in an approved landfill.

C. Any connections to asbestos cement lines, other than taps, may be made at a joint so that cutting or sawing of the pipe can be avoided. The Contractor shall be responsible for proper handling and disposal of any materials removed from the trench.

2.06 SERVICE CONNECTIONS

A. Service Assemblies

1. Service assemblies shall be suitable for use under the working pressure of the lines on which installed, which shall be a maximum of 250 psi.

2. The main shall be tapped in the upper half of the pipe at a 45 degree angle. Size of

pipe taps shall not exceed that recommended by the pipe manufacturer for the pipe size involved. Service clamps shall be used for all taps on polyvinyl chloride pipe. Brass tapped couplings with AWWA threads shall be used in place of a direct main tap. The tap shall be in the upper half of the coupling at a 45 degree angle.

B. Service Connection Fittings

1. Manufacturers' names and catalog numbers are used to establish the type and quality. Substitution will not be allowed. The following fittings shall be a part of the service assembly:

a. Corporation Stops shall be made of brass, shall have AWWA tapered threads, outlet be compression joint connection for copper tubing size service pipe, shall be as manufactured by Ford Meter Box Company, F1000, or approved equal.

b. Service saddles shall be made of certified brass and machined to rigid specifications. The upper and lower castings shall be permanently hinged together with silicon bronze pin, and the silicon bronze bolt shall have a retainer on it to prevent loss during shipment or during installation. The lower casting must be tapped to accept the screw so that no nuts are required, must be designed to form a hydraulic seal before the brass saddle halves bottom out, shall have AWWA tapered threads, shall be for PVC pipe, and must be as manufactured by Ford Meter Box Company (S70-203, S70-204, S70-303, S70-304, S70-403, S70-404, S70-603, S70-604, S70-803, S70-804) or approved equal.

c. Inserts shall be quality stainless steel and shall be for 3/4" copper tubing size PE pipe, and shall be as manufactured by Ford Meter Box Co. (#51) or approved equal.

d. Meter setters shall be flexible copper material having horizontal inlet and outlet compression joint connections for "copper tubing size" service tubing, shall have an angle ball valve and with lock wings, a dual check valve and be for 5/8" x 3/4" meters, as manufactured by Ford Meter Box Company (VBHH72-7W-44-33) or approved equal.

e. Meter Washers shall be made of rubber for meter size 5/8" x 3/4" and shall be 1-5/32" outside diameter, 3/4" inside diameter, and 1/8" thick, and shall be as manufactured by Ford Meter Box Company #GT-114, or approved equal.

f. Flow Control Couplings shall be constructed of PVC with compression ends for copper tubing size service pipe.

g. Couplings (Service Line) shall be constructed of brass with both ends compression joints connection for 3/4" copper tubing size service pipe, shall be as manufactured by Ford Meter Box (C44-33) or approved equal.

C. Service Pipe

Water service piping shall meet the following requirements: Polyethylene Plastic Service Piping shall conform to the requirements of Type III, Grade 3, Class C material as described in Standard Specifications for Polyethylene Plastic Tubing (200 PSI) ASTM D-2737 (Copper-Tubing Size). The PE service piping shall carry the NSF seal of approval.

D. Steel Casing Pipe (for Services)

Casing pipe shall be black steel pipe, 21 feet joints, have male iron pipe threads on each end, with coupling(s) as required and shall be 1-1/2" in diameter. Steel casing pipe shall meet the current AIS requirements with certifications furnished.

E. Water Meters

Water meters for new settings shall be furnished and installed by the Owner.

F. Water Meter Boxes

Meter boxes shall be 24" high standard rectangular Poly Plastic with fabricated notches for service piping, shall have a cast iron meter reading lid, shall be as manufactured by Poly Plastic Water Meter Boxes or approved equal. Tensile strength shall be 3100-5500 psi and shall be chemical resistant. Cast iron lids shall be certified to meet the AIS requirements.

2.07 INSERTION VALVES (WHEN REQUIRED)

A. Insertion valves for inserting into existing water lines shall be of the mechanical joint type suitable for working pressures of 250 psi and shall be TEAM Industrial Services, or approved equal.

B. The inserted valve shall meet ANSI/AWWA C515 material standards and shall be a fully functioning, resilient wedge gate valve with MJ end connections. The wedge gate shall seal/seat on the valve body, not on the host pipe. The insertion valve shall be installed under full line pressure to avoid interruption of service.

C. All existing water mains to be tapped under this contract shall be exposed in order to verify line sizes and material type prior to ordering insertion valves.

PART 3 - EXECUTION

3.01 INSTALLATION

A. All valves shall be installed in accordance with details on the Contract Drawings and with the manufacturer's recommendations.

B. All valves shall be installed with Mega-Lug type restraints suitable for the pipe being installed and anchored in accordance with the details on the Contract Drawings. The restraining lugs shall be certified to meet the AIS requirements.

END OF SECTION

SECTION 02517 - HYDRANTS

PART 1 - GENERAL

1.01 SCOPE OF WORK

A. Provide all labor, materials, equipment and services required for furnishing and installing all hydrants and appurtenances specified herein. Hydrants shall be certified to meet the AIS requirements.

1.02 RELATED WORK SPECIFIED ELSEWHERE

A. Water Distribution Piping: Section 02510

B. Valves - Utilities Services: Section 02515

1.03 SUBMITTALS

A. Submit shop drawings and product data in accordance with Section 01340 of this specification.

B. Descriptive literature, catalog cuts, and dimensional prints clearly indicating all dimensions and materials of construction, shall be submitted on all items specified herein to the Engineer for review before ordering. AIS certifications shall be included with the submittal.

C. At the time of submission, the Contractor shall, in writing, call the Engineer's attention to any deviations that the submittals may have from the requirements of the Engineer's Contract Drawings and Specifications.

PART 2 - PRODUCTS

2.01 FIRE HYDRANTS

A. The Contractor shall furnish and install fire hydrants and auxiliary gate valves where shown on the Drawings or directed by the Engineer. Hydrants shall conform in all respects to the most recent requirements of AWWA C502. Hydrant barrel shall have safety breakage feature above the ground line. All fire hydrants shall have 6-inch mechanical joint shoe connection, two (2) 2-1/2-inch discharge nozzles, and one (1) 4 1/2-inch pumper nozzle with rubber gasketed caps fitted with cap chains. Cap nuts are to be five (5) sided. Connection threads shall be National Standard Thread. Main valve shall have 5-1/4-inch full opening and be of the compression type opening against water pressure so that valve remains closed should barrel be broken off.

B. Hydrants shall be fully bronze mounted. Main valve shall have a threaded bronze seat ring assembly of such design that it is easily removable by unscrewing from a threaded bronze drain ring. Bronze drain ring shall have multiple ports providing positive automatic drainage as the main valve is opened or closed. Drainage waterways shall be completely bronze to prevent rust and corrosion.

C. The operating nut shall be five (5) sided bronze or bronze with a five (5) sided ductile iron cap and mounted so that a counterclockwise motion will open the valve. There must be cast on top an arrow and the word “Open” indicating the direction of turn to open the hydrant.

D. Operating stem shall be equipped with anti-friction thrust bearing to reduce operating torque and assure easy opening. Stop shall be provided to limit stem travel. Stem threads shall be enclosed in a permanently sealed lubricant reservoir protected from weather and the waterway with O-ring seals.

E. Hydrants shall be shop tested to 300 psi pressure with main valve both opened and closed. Under test the valve shall not leak, the automatic drain shall function and there shall be no leakage into the bonnet.

F. Type of shoe connection shall be mechanical joint and size shall be six inches (6").

G. Hydrants shall be given two (2) coats of enamel high visibility paint with color to be selected by the Owner.

H. Hydrants shall be certified to meet the AIS requirements.

2.02 POST HYDRANTS

A. The Contractor shall furnish and install post hydrants and auxiliary gate valves where shown on the Drawings or directed by the Engineer. Hydrants shall conform to the applicable requirements of AWWA C502. Hydrant barrel shall have safety breakage feature above the ground line. All post hydrants shall have 3-inch mechanical joint shoe connection, one (1) 2-1/2-inch discharge nozzle with rubber gasketed caps fitted with cap chains. Cap nuts are to be five (5) sided. Connection threads shall be National Standard Thread. Main valve shall have 2-1/4-inch full opening and be of the compression type opening against water pressure so that valve remains closed should barrel be broken off.

B. Post hydrants shall otherwise meet the previously specified requirements for fire hydrants.

C. Type of shoe connection shall be mechanical joint and size shall be three inches (3").

D. Hydrants shall be given two (2) coats of enamel high visibility paint with color to be selected by the Owner.

E. Hydrants shall be certified to meet the current AIS requirements.

PART 3 - EXECUTION

3.01 SETTING OF HYDRANTS

A. Location:

1. Hydrants shall be located as shown or as directed to provide complete accessibility and minimize the possibility of damage from vehicles or injury to pedestrians.

2. When placed behind the curb, the hydrant barrel shall be set so that the pumper or hose nozzle cap will be a minimum of five feet (5') from the back of curb.

3. When set in the lawn space between the curb and the sidewalk or between the sidewalk and the property line, no portion of the hydrant or nozzle cap shall be within six inches (6") of the sidewalk.

B. Position:

All hydrants shall be set plumb with not less than two (2) cubic feet of crushed stone and shall have their nozzles parallel with the roadway, with the pumper nozzle facing toward the roadway. Hydrants shall be set to the established grade, with nozzles at least eighteen inches (18") above the ground, as shown or as directed by the Engineer.

C. Connection to Main:

Each fire hydrant shall be connected to the main with a six-inch (6") restrained joint ductile iron branch controlled by an independent six -inch (6") gate valve, unless otherwise specified. Post hydrants shall be connected with 3" branch and valve.

D. Hydrant Drainage in Pervious Soil:

Whenever a hydrant is set in soil that is pervious, drainage shall be provided at the base of the hydrant by placing uncrushed course aggregate (AAHSTO M-43) No. 57 from the bottom of the trench to at least six inches (6") above the drain opening in the hydrant and to a distance of one foot (1') around the elbow. No drainage system shall be connected to a sewer.

E. Hydrant Drainage in Impervious Soil:

Whenever a hydrant is set in clay or impervious soil, a drainage pit two feet (2') in diameter and three feet (3') deep shall be excavated below each hydrant and filled compactly with clean coarse aggregate (AASHTO M-43) No. 57 under and around the elbow of the hydrant and to a level of six inches (6") above the drain opening. No drainage pit shall be connected to a sewer (see Standard Details).

3.02 ANCHORAGE

A. The bowl of each hydrant shall be tied to the pipe with suitable anchor couplings, as shown on the Standard Details in the Drawings or as directed by the Owner or Engineer.

END OF SECTION

SECTION 02920 - LAWNS AND GRASSES

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

Provide all labor, materials, equipment, and services required for seeding of all disturbed areas caused by construction activities and for installation of sod where indicated on the Contract Drawings or specified herein.

1.02 RELATED DOCUMENTS

A. Drawings and General Provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to Work of this Section.

B. Earthwork for Utility Work: Section 02225

C. Erosion and Sedimentation Control: Section 02371

1.03 MAINTENANCE

A. Maintenance shall begin immediately following the last operation of installation for each portion of lawn.

B. Lawns shall be maintained until a suitable stand of grass is established. At the end of this period an inspection will be made and any deficiencies, which may be attributable to the Contractor, will be noted in writing. Another inspection will be made at the beginning of the next planting season, and the Contractor shall repair any of the previously noted deficiencies still existing.

1.04 INSPECTION FOR ACCEPTANCE

A. The Inspection of the Work: The inspection of the work of lawns to determine the completion of contract work exclusive of the possible replacement of plants, will be made by the Engineer upon written notice requesting such inspection submitted by the Contractor at least ten (10) days prior to the anticipated date.

B. Acceptance: After inspection, the Contractor will be notified in writing by the Owner of acceptance of all work of this Section, exclusive of the possible replacement of plants subject to guaranty, or if there are any deficiencies of the requirements of completion of the Work.

PART 2 - PRODUCTS

Products shall be as specified in Section 02371 – Erosion and Sedimentation Control.

PART 3 – EXECUTION

Execution shall be as specified in Section 02371 – Erosion and Sedimentation Control.

END OF SECTION

SECTION 03300 - CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.01 SCOPE OF WORK

A. Provide all labor, materials, equipment and services required to furnish and install all cast-in-place concrete as indicated on the Drawings and specified herein.

B. All concrete construction shall conform to all applicable requirements of ACI 301 (latest), Specifications for Structural Concrete for Buildings, except as modified by the supplemental requirements specified herein.

1.02 RELATED WORK SPECIFIED ELSEWHERE

A. Earthwork for Utility Work: Section 02300

1.03 SUBMITTALS

The Contractor shall submit the following data for Engineer's review in accordance with Section 01340.

A. Concrete mix designs, test results and curves plotted to establish water-cement ratio if ACI 301-99 Section 4.2.3.4.G is followed.

B. Proposed mix designs and all necessary substantiating data used to establish the proposed mix designs if ACI 301-99 Section 4.2.3.1 is followed.

C. Mix designs shall be submitted for all mixes proposed or required to be used, including all mixes containing admixtures.

1.04 QUALITY ASSURANCE

The Contractor shall obtain and have available in the field office at all times, the following references:

A. Specifications for Structural Concrete for Buildings ACI 301 (latest Revision).

B. Field Reference Manual: Specifications for Structural Concrete for Buildings SP-15 (89).

Available from:

The American Concrete Institute
Publications Department
P.O. Box 19150
Detroit, Michigan 48219-0150

C. Manual of Standard Practice - CRSI. (Latest Edition).

D. Placing Reinforcing Bars - CRSI (Latest Edition).

Available from:

Concrete Reinforcing Steel Institute
933 North Plum Grove Road
Schaumburg, Illinois 60173-4758

PART 2 - PRODUCTS

2.01 CLASSES OF CONCRETE AND USAGE

A. Structural concrete of the various classes required shall be proportioned by either Method 1 or Method 2 of ACI 301 to produce the following 28-day compressive strengths:

1. Selection of Proportions for Class A Concrete:

   a. 4,000 psi compressive for strength at 28 days.

   b. Type II cement plus dispersing agent and air.

   c. Max. (water)/(cement and dispersing agent) ratio = 0.45.

   d. Min. cement content = 564 lbs. (6.0 bags)/cu. yd. concrete.

   e. Nominal max. size coarse aggregate = No. 67 (3/4" max.) or No. 57 (1" max.). Walls with architectural treatment shall use No. 67 (3/4" max.).

   f. Air content = 6% plus or minus 1% by volume.

   g. Slump = 3" - 4" in accordance with ASTM C 143.

2. Selection of Proportions for Class B Concrete:

   a. 3,000 psi compressive strength at 28 days.

   b. Type I cement plus dispersing agent and air.

   c. Max. (water)/(cement and dispersing agent) ratio = 0.56.

   d. Min. cement content = 470 lbs. (5.0 bags)/cu. yd. concrete.

   e. Nominal max. size coarse aggregate = No. 67 (3/4" max.) or No. 57 (1" max). Walls with architectural treatment shall use No. 67 (3/4" max.).

   f. Air content = 6% plus or minus 1% by volume.

   g. Slump - 3" - 4" in accordance with ASTM C 143.

B. Concrete shall be used as follows:

1. Class A concrete for all concrete work except as noted below.

2. Class B concrete for fill concrete, thrust blocks and topping over hollow-core slabs, and where indicated on the Drawings.

C. Type II cement conforming to ASTM C 150 shall be used in all structural concrete. The alkali content shall not exceed 0.6% calculated as sodium oxide. Cement for exposed to view concrete shall have a uniform color classification.

D. Coarse aggregate for concrete shall be size No. 57, as specified in ASTM C33 unless a smaller size aggregate is required to conform to provisions of Section 4.2.2.3 of ACI 301. Coarse aggregate shall conform to all requirements of ASTM C33.

E. Manufactured sand shall not be used as fine aggregate in concrete.

2.02 ADMIXTURES

A. An air-entraining admixture shall be used on all concrete and shall be synthetic air entrainment such as that manufactured by Master Builders or approved equal. Certification attesting to the percent of effective solids and compliance of the material with ASTM C 260 shall be furnished, if requested.

B. A water-reducing, set controlling admixture (nonlignin type) shall be used in all concrete. The admixture shall be a combination of polyhydroxylated polymers including catalysts and components to produce the required setting time based on job site conditions, specified early strength development, finishing characteristics required, and surface texture, as determined by the Engineer.

C. Certification shall be furnished attesting that the admixture exceeds the physical requirements of ASTM C 494, Type A, water-reducing and normal setting admixture, and when required, for ASTM C 494, Type D, water-reducing and retarding admixture when used with local materials with which the subject concrete is composed.

D. The admixture manufacturer, when requested, shall provide a qualified concrete technician employed by the manufacturer to assist in proportioning concrete for optimum use. He shall also be available, when requested, to advise on proper addition of the admixture to the concrete and on adjustment of the concrete mix proportions to meet changing job conditions.

E. The use of admixtures to retard setting of the concrete during hot weather, to accelerate setting during cold weather, and to reduce water content without impairing workability will be permitted if the following conditions are met:

> The admixture shall conform to ASTM C494, except that the durability factor for concrete containing the admixture shall be at least 100 percent of control, the water content a maximum of 90 percent of control and length change shall not be greater than control, as defined in ASTM C 494.

F. Where the Contractor finds it impractical to employ fully the recommended procedures for hot weather concreting, the Engineer may at his discretion, require the use of a set retardant admixture for mass concrete 2.5 feet or more thick for all concrete whenever the temperature at the time concrete is cast exceeds 80°F. The admixture shall be selected by the Contractor subject to the review of the Engineer. The admixture and concrete containing the admixture shall meet all the requirements of these Specifications. Preliminary tests of this concrete shall be required at the Contractor's expense.

G. Admixtures shall be used in concrete design mixes in the same manner and proportions as in the field so that the effects of the admixtures are included in preliminary tests submitted to the Engineer for review prior to the start of construction.

H. When more than one (1) admixture is used, all admixtures shall be compatible. They should preferably be by the same manufacturer.

I. Calcium chloride will not be permitted as an admixture in any concrete.

2.03 REINFORCEMENT

A. The minimum yield strength of the reinforcement shall be 60,000 pounds per square inch. Bar reinforcement shall conform to the requirements of ASTM A 615. All bar reinforcement shall be deformed. Reinforcing steel shall be certified to meet the current AIS requirements.

B. Wire-mesh reinforcement shall be continuous between expansion joints. Laps shall be at least one full mesh plus 2 inches, staggered to avoid continuous lap in either direction, and securely wired or clipped with standard clips.

C. Smooth dowels shall be plain steel bars conforming to ASTM A 615, Grade 60, or steel pipe conforming to ASTM A 120, Schedule 80. Pipe, if used, shall be closed flush at each end with mortar or metal or plastic cap. Dowels shall be installed at right angles to construction joints and expansion joints. Dowels shall be accurately aligned parallel to the finished surface, and shall be rigidly held in place and supported during placing of the concrete. One end of dowels shall be oiled or greased or dowels shall be coated with high-density polyethylene with a minimum thickness of 14 mils.

D. Reinforcement supports and other accessories in contact with the forms for members which will be exposed to view in the finished work shall be of stainless steel or shall have approved high-density polyethylene tips so that the metal portion shall be at least one-quarter of an inch from the form or surface. Supports for reinforcement, when in contact with the ground or stone fill, shall be precast stone concrete blocks.

E. Particular care shall be taken to bend tie wire ends away from exposed faces of beams, slabs and columns. In no case shall ends of tie wires project toward or touch formwork.

2.04 OTHER MATERIALS

A. Anchorage items shall be of standard manufacture and of type required to engage with the anchors to be installed therein under other sections of the Specifications and shall be subject to approval by the Engineer.

1. Slots shall be galvanized dovetail-type as specified in Section "Masonry Work".

2. Inserts shall be malleable iron or steel, and of sturdy design adequate strength for the load to be carried. All inserts shall be galvanized. Adjustable wedge inserts shall have an integral loop or strap at the back, or shall be slotted to receive a special-headed bolt not smaller than 5/8-inch in diameter and of the required length and fitted with hexagonal nut. Other inserts shall be either threaded or slotted as required by their usage. Threaded inserts shall have integral lugs to prevent running.

3. Concrete anchors shall be an approved expansion type conforming to Federal Specification FF-S-325, Groups I, II, III, or VIII and shall be installed in strict accordance with the manufacturer's recommendations. Material for anchors shall be as specified or as called for on the Drawings. Anchors shall meet the current AIS requirements. Anchors shall develop ultimate shear and pull out loads of not less than the following values in Class A concrete:

Bolt Diameter (Inches)	Min. Shear (Pounds)	Min. Pull-Out Load (Pounds)
2	4,500	4,600
5/8	6,900	7,700
3/4	10,500	9,900

B. Epoxy bonding adhesive used to bond fresh plastic concrete to sound, hardened concrete shall meet the following Specification. Contractor shall furnish a notarized certification by the manufacturer that the proposed material meets the Specification.

1. Material:

The epoxy material shall consist of a 2-component system whose components conform to the following requirements:

a. Component A - Component A shall be a modified epoxy resin of the epichlorohydrin bisphenol A condensation type, containing suitable viscosity control agents and having an epoxide equivalent of 180-200.

b. Component B - The B component shall be primarily a reaction product of one mole of an aliphatic polyamine and two moles of mono-functional epoxide containing compounds modified with 2, 4, 6 tri (dimethylaminomethyl) phenol.

c. The component ratio of B to A by volume shall be as specified by the manufacturer.

2. Properties of Mixed Components:

a.	Solids Content	100% by weight
b.	Pot Life	25-35 min. @ 73EF.
c.	Tack-Free Time (Thin Film)	4-5-1/2 hrs @ 73EF.
d.	Final Cure ASTM D 695 (75% ultimate strength)	3 days at 73EF.
e.	Initial Viscosity (A+B)	2,000 cps. min at 73EF.
f.	Color Mixed	Straw

3. Properties of Cured Material (Neat Material):

a.	Tensile Strength ASTM D 638	3,000 psi min. @ 14 days 73EF. cure
b.	Tensile Elongation ASTM D 638, modified	2 - 2% at 14 days 73EF. cure
c.	Compressive Strength	12,500 psi min. at

	ASTM D 695	73E F. cure
d.	Compressive Modules ASTM D 695	470,000 psi min. @ 28 days, 73EF cure
e.	Compressive Strength ASTM D 695	5,500 psi min. @ 24 days 73EF cure
f.	Water Pick-up ASTM D 570	1.5 max.

C. Flashing reglets shall be as specified in Section 07530. Reglets shall be correctly placed into forms prior to placing concrete in formwork.

D. Premolded expansion-joint filler strips shall conform to ASTM D 1752 and shall be 3/8-inch thick unless otherwise shown.

E. Joint sealants shall conform to ANSI A 116.1. The following joint sealants are acceptable:

1. Colma by Sika Chemical Corporation

2. Hornflex by A.C. Horn, Inc.

3. Sonolastic by Sonneborn Division of Contech, Inc.

F. Nonshrink grout shall be Embeco 636 grout by Master Builders Company, Euco Firmix grout by the Euclid Chemical Company, or equal. The approved product shall be delivered to the site of the Work in the original sealed containers, each bearing the trade name of the material and the name of the manufacturer.

G. Hardeners and dustproofers shall be colorless, aqueous solution of zinc or magnesium fluosilicate. Each gallon of solution used for the first application shall contain not less than one pound of crystals. Each gallon of solution used for subsequent application shall contain not less than two pounds of crystals. Materials shall be reviewed by the Engineer.

H. Porous fill shall be crushed rock or gravel of such size that all will pass a 1-1/2 inch screen and not more than 5 percent will pass a No. 4 screen, free from earth clay or other foreign substances.

I. Waterstops: Waterstops shall be styrene-butadiene rubber, standard (non-split) type, flat dumbbell shape (no center bulb), of size shown on Drawings, complete with fittings as required such as unions, vertical tees, vertical ells, flat crosses, flat ells, flat tees, etc. Waterstops shall be securely wired into place to maintain proper position during placement of fresh concrete, as shown on the Drawings. Care shall be taken in the installation of the waterstop and the placing of the concrete to avoid "folding" while concrete is being placed, and to prevent voids in the concrete surrounding the waterstop.

All materials, including adhesive, shall be W.R. Grave SERVICISED Construction Products; Williams Products, Inc.; Construction Gaskets, Inc.; or equal, and shall be installed in accordance with the manufacturer’s recommendations.

J. Form Liners: Form liners for construction of fluted wall treatment shall be prefabricated plastic liners as manufactured by Greenstreak Plastic Products, Interform Company, or Symons Corporation.

Liners shall be fiberglass or ABS (acrylonitrile - butadiene - styrene) of such configuration as to obtain the fluted pattern shown or indicated on the Drawings.

For purposes of designating type and quality of material required, form liners shall be pattern 361 trapezoidal liners as manufactured by Greenstreak Plastic Products.

Preparation of forming materials, sealing of joints to prevent grout leakage and form release treatment (if required) shall be in strict compliance with the manufacturer's printed instructions and recommendations.

PART 3 - EXECUTION

3.01 FINISHES

A. Exposed to Public View Concrete Surfaces:

1. All concrete exposed to view in the completed structure shall be produced using materials and workmanship to such quality that only nominal finishing will be required. The provisions of paragraphs 6.2.2.1 and 6.3.6 of ACI 301 shall apply to all exterior exposed to public view concrete surfaces, including the outside surfaces of tanks.

2. Forms for exposed concrete surfaces shall be exterior grade, high-density overlay plywood, steel, or wood forms with smooth tempered hard-board form-liners.

3. Forms shall be coated with an approved release agent before initial pour and between subsequent pours, in accordance with the manufacturer's printed instructions. Form boards shall not be wet water prior to placing concrete.

4. Recessed joints in concrete shall be formed using lacquer-coated wood battens or forms, milled to indicated profiles. Battens and corner strips shall be carefully inspected before concrete is placed and damaged pieces replaced.

5. Chamfer strips shall be 1 inch radius with leg, polyvinyl chloride strips by Gateway Building Products, Saf-T-Grip Specialties Corp., Vinylex Corp., or equal.

6. Particular attention is directed to the requirements of paragraphs 5.3.3.3G and 6.3.3 of ACI 301. Form panels shall be provided in the maximum sized practicable in order to minimize form joints. Wherever practicable, form joints shall occur at recessed joints. All form joints in exterior exposed to view surfaces shall be carefully caulked with an approved nonstaining caulking compound. Joints shall not be taped. Form oil or other material, which will impart a stain to the concrete, shall not be allowed to contact concrete surfaces.

7. Care shall be taken to prevent chipping of corners or other damage to concrete when forms are removed. Exposed corners and other surfaces, which may be damaged by ensuing operations, shall be protected from damage by boxing, corner boards or other approved means until construction is completed.

8. Form ties shall remain in the walls and shall be equipped with a water seal to prevent passage of water through the walls. Minimum set back of form ties shall be 1-1/2 inches from faces of wall. The hole left by removal of tie ends shall be sealed and grouted in accordance with the procedure described hereinafter in Par. 3.01.F.

9. All formed exposed to view concrete surfaces shall have a "smooth rubbed finish". Exterior vertical surfaces shall be rubbed to one foot below grade. Interior exposed to public view vertical surfaces of liquid containers shall be rubbed to one (1) foot below the minimum liquid level that will occur during normal operations.

B. All vertical surfaces in liquid containing structures shall have a "smooth form" finish.

All "smooth form" concrete vertical surfaces shall be a true plane within 1/4 inch in 10 feet as determined by a 10 foot straightedge place anywhere on the surface in any direction. Abrupt irregularities shall not exceed 1/8 inch.

C. Basin, flume, conduit and tank floors shall have a "troweled" finish unless shown otherwise on Drawings.

D. Weirs and overflow surfaces shall be given a "troweled" finish.

E. Exterior platforms, steps and landings, shall be given a "broom" finish. "Broom" finish shall be applied to surfaces, which have been steel-troweled to an even, smooth finish. The troweled surface shall then be broomed with a fiber-bristle brush in the direction transverse to that of the main traffic.

F. Patching of holes due to removal of tie ends and other repairable defective areas, shall be as follows: Entire contact area of hole shall be coated with two-part moisture insensitive epoxy bonding compound as specified in Par. 2.04.B. in accordance with manufacturer's specifications, and prior to placing of freshly mixed patching mortar. Parching mortar shall be mixed and placed in general accordance with ACI Par. 5.3.7.5.

G. For floors and slabs in which drains occur, special care shall be exercised to slope the floors uniformly to the drains. All floors with drains shall be sloped not less than 1/8 inch per foot unless otherwise shown. In all areas where quarry tile or other materials requiring more than 1/4 inch drop are to be overlaid, the concrete base slab shall be depressed as shown to provide a finished floor at the same elevation as surrounding areas.

3.02 TESTING (Note: Lab testing not required for water line project)

A. All testing shall be in accordance with provisions of ACI 301. Testing services listed in ACI Sections 1.6.4 shall be performed by a testing agency acceptable to the Engineer and Owner.

B. The testing services of ACI sections 1.6.4.2 and 1.6.4.3 shall be performed at the Contractor’s expense. The Contractor shall be responsible for making concrete test cylinders, storing and protecting concrete cylinders and delivering cylinders to the Owner’s testing laboratory.

C. Testing services of ACI Section 1.6.4.4 shall be paid for by the Contractor. Test shall be made for each 50 cubic yards of concrete and/or each day concrete is placed.

3.03 ADDITIONAL REQUIREMENTS

A. Unless otherwise directed by the Engineer, the vertical surfaces of footings shall be formed. Excavations and reinforcement for all footings shall have been inspected by the Engineer before any concrete is placed.

B. The installation of underground and embedded items shall be inspected before slabs are placed. Pipes and conduits shall be installed below the concrete unless otherwise indicated. Fill required to raise the subgrade shall be placed as specified in Section 02300 "Earthwork". Porous fill not less than 6 inches in compacted thickness shall be installed under all slabs, tank bottoms, and foundations. The fill shall be leveled and uniformly compacted to a reasonably true and even surface. The surfaces shall be clean, free from frost, ice, mud and water. Waterproof paper, polyethylene sheeting of nominal 4-mil minimum thickness, or polyethylene-coated burlap shall be laid over all surfaces receiving concrete.

C. Concrete shall be placed in layers not over 18 inches deep and each layer shall be compacted by mechanical internal-vibrating equipment supplemented by hand spading, rodding and tamping as directed. Vibrators shall not be inserted into lower courses that have begun to set.

D. Concrete that is truck mixed or transported in truck mixers or truck agitators shall be delivered to the site of the work and discharge completed in the forms within the time specified in Paragraph 10.7 of ASTM C 94 except that when the concrete temperature exceeds 85°F., the time shall be reduced to 45 minutes. Transit-mixed concrete that is completely mixed at the site of concrete placement or batched cement and aggregates transported to mixers shall be placed in the forms within 1-1/2 hours after cement has been added. Concrete shall be placed in the forms within 15 minutes after discharge from the mixer at the job site.

E. If concrete is placed by pumping, no aluminum shall be used in any parts of the pumping system which contact or might contaminate the concrete. Aluminum chutes and conveyors shall not be used.

F. All concrete surfaces not in contact with forms shall be moist cured by the application of absorptive mats or double thickness of fabric kept continuously wet. Forms shall be kept continuously wet. Use of other curing methods will not be permitted unless written authorization is received from the Engineer.

G. The unit of operation shall not exceed 30 feet for tank walls and walls exposed to weather, and 45 feet for other work in any horizontal direction and not less than 48 hours shall elapse between casting of adjoining units unless these requirements are waived by the Engineer. Provision shall be made for jointing successive units as indicated or required to be made at spacing of approximately 25 feet. Additional construction joints required to satisfy the 25 foot spacing shall be located by the Contractor subject to the review of the Engineer. The Contractor shall submit for review drawings separate from the steel reinforcing drawings, showing the location of all proposed construction joints. All construction joints shall be prepared for bonding by roughening the surface of the concrete in an acceptable manner which will expose the aggregate uniformly and will not leave laitance, loosened particles of aggregate or damaged concrete at the surface. Joints in walls and columns shall be maintained level. Concrete shall be placed in layers not over 18 inches deep and each layer shall be compacted by mechanical internal-vibrating equipment supplemented by hand spading, rodding and tamping as directed. Vibrators shall not be inserted into lower courses that have begun to set.

H. Formwork for beam soffits and slabs and other parts that support the weight of concrete, shall remain in place until the concrete has reached its specified 28-day strength, unless otherwise specified or permitted.

I. Concrete Walks and Curbs:

1. Subgrade shall be true and well compacted at the required grades. Spongy and otherwise unsuitable material shall have been removed and replaced with approved material. Concrete walks shall be placed upon porous fill covered with waterproof paper, polyethylene sheeting of nominal 4-mil minimum thickness or polyethylene-coated burlap.

2. Concrete walks shall be not less than 4 inches in thickness. Walks shall have contraction joints every 5 linear feet in each groove in the top surface of the slab to a depth of at least one-fourth the slab thickness with a jointing tool. Transverse expansion joints shall be installed at all returns, driveways, and opposite expansion joints in adjacent curbs. Where curbs are not adjacent, transverse expansion joints shall be installed at intervals of approximately forty (40) feet. Sidewalks shall receive a "broomed" finish. Scoring shall be in a transverse direction. Edges of the sidewalks and joints shall be edged with a tool having a radius not greater than 1/6 inch. Sidewalks adjacent to curbs shall have a slope of 1/4 inch per foot toward the curb. Sidewalks not adjacent to curbs shall have a slope of 1/4 inch per foot. The surface of the concrete shall show no variation in cross section in excess of 1/4 inch in 5 feet. Concrete walks shall be reinforced with 6/6-10/10 welded wire fabric meeting the current AIS requirements.

3. Concrete curbs shall be constructed to the section indicated on the Standard Detail, and all horizontal and vertical curves shall be incorporated as indicated or required. Forms shall be steel as approved by the Engineer. At the option of the Contractor, the curbs may be precast or cast-in-place. Cast-in-place curbs shall be divided into sections 8 to 10 feet in length using steel divider plates. The divider plates shall extend completely through the concrete and shall be removed. Precast curbs shall be cast in lengths of 4 to 5 feet. All exposed surfaces of concrete shall be finished smooth. All sharp edges and the edges of joints and divisions shall be tooled to 1/4 inch radius. Steel reinforcement shall be installed where the curb crosses pipe trenches or other insecure foundations. Such reinforcement shall consist of two (2) No. 4 deformed bars near the bottom of the curb and shall extend at least 24 inches beyond the insecure area. Transverse expansion joints shall be installed at all curb returns and at intervals of approximately 40 feet.

J. Column base plates, bearing plates for beams and similar structural members, machinery and equipment bases shall, after being plumbed and properly positioned, be provided with full bearing with nonshrink grout. Concrete surfaces shall be rough, clean, free of oil, grease, and laitance and shall be moistened thoroughly immediately before grout is placed. Metal surfaces shall be clean and free of oil, grease and rust. Mixing and placing shall be in conformance with the material manufacturer's printed instructions. After the grout has set, exposed surfaces shall be cut back 1 inch and covered with a parge coat of mortar consisting of 1 part Portland cement, 2 parts sand and sufficient water to make the mixture place able. Parge coat shall have a smooth dense finish. Exposed surfaces of grout and parge coat shall be water cured with wet burlap for 7 days.

K. Grout fill, which is formed in place by using rotating equipment as a screen, such as clarifiers and similar types of equipment, shall be mixed in proportions and consistencies as required by the manufacturer or supplier of the equipment.

L. Water tightness:

1. The structures, which are intended to contain liquids and/or will be subjected to exterior hydrostatic pressures shall be so constructed that, when completed and tested, there shall be no loss of water and no wet spots shall show.

2. As soon as practicable, after the completion of the structures, the Contractor shall fill them with water and if leakages develop or wet spots show, the Contractor shall empty such structures and correct the leakage in an approved manner. Any cracks, which appear in the concrete, shall be dug out and suitably repaired. Temporary bulkheads over pipe openings in walls shall be provided as required for the testing.

3. After repairs, if any are required, the structures shall be tested again and further repaired if necessary until satisfactory results are obtained. All work in connection with these tests and repairs shall be at the expense of the Contractor.

4. Waterstops shall be placed in other locations as indicated on the Drawings and as may be required to assure the water tightness of all containers of liquids. Special shop fabricated ells, tees and crosses shall be provided at junctions. Waterstops shall be extended at least 6 inches beyond end of placement in order to provide splice length for subsequent placement. In slabs and tank bottoms, water stops shall be turned up to be made continuous with waterstops at bottom of walls or in walls.

5. Joints between pipe (except cast iron wall pipe) and cast-in-place concrete walls shall be sealed by means of a groove cast completely around the pipe; the groove shall be filled with a quick setting hydraulic compound similar and equal to Waterplug as made by Standard Dry Wall Products, Inc., mixed and applied in accordance with the manufacturer's instructions.

M. Unless otherwise shown or directed, all pumps, other equipment, and items such as lockers, motor control centers and the like, shall be installed on concrete bases. The bases shall be constructed to the dimensions shown on the plans or as required to meet plan elevations. Where no specific plan elevations are required, the bases shall be 6 inches thick and shall extend 3 inches outside the metal equipment base. In general, the concrete bases shall be placed up to 1-inch below the metal base. The equipment shall then be properly shimmied to grade and the 1-inch void filled with nonshrink grout. Prior to the final set of the grout it shall be cut back and the edge plastered with 1:2 cement mortar.

N. Concrete which, in the opinion of the Engineer, has excessive honeycomb, aggregate pockets or depressions will be rejected and the Contractor shall, at his own expense, remove the entire section containing such defects and replace it with acceptable concrete.

O. Manhole or access steps shall be plastic, constructed of copolymer polypropylene meeting the requirements of ASTM D 2146 for Type II, Grade 16906 material. Step shall be reinforced with ASTM A 615, Grade 60, #4 deformed steel reinforcing bar, be 9" deep, 14" wide, provided with notched tread ridge, foot retainer lugs on each side of tread and penetration stops for press fit installation. Plastic steps shall be PS2-PF as manufactured by M.A. industries, Inc., Peachtree City, Georgia. Steps shall be installed by drilling 1" diameter holes, minimum 3-3/4 inches deep into the wall, and then driving steps into hole to the penetration stop, resulting in a press fit condition.

P. All existing contact surfaces with new patch shall be coated with moisture insensitive epoxy bonding adhesive, Sikadur Hi-Mod, Sonobond, or equal. Patch shall consist of base pour of 4,000 psi structural concrete, then a topping of non-shrink natural aggregate grout, Master Builders Masterflow 713, Sonogrout, or equal, mixed and placed in accordance with manufacturer's instructions, to the thicknesses shown on Drawings. Coat base pour with epoxy bonding adhesive prior to placing grout course.

END OF SECTION

EDMONSON COUNTY WATER DISTRICT UTILITY QUANTITIES SPREADSHEET

PROJECT NUMBER 4-9009.00, KY 259 SOUTH, GRAYSON COUNTY

ITEM NO.	14003	14007	14022	14028	14047	14058	14059	14080	14085	14089	14124	14144	02690
DESCRIPTION	W CAP EXISTING MAIN	W ENCASEMENT STEEL BORED RANGE 2	W FLUSH HYDRANT ASSEMBLY	W METER 3/4 INCH	W PIPE DCTL IRON RSTRND JOINT 06 IN	W PIPE PVC 04 INCH	W PIPE PVC 06 INCH	W SERVICE PE/PLST LONG SIDE 3/4 IN	W SERVICE PE/PLST SHORT SIDE 3/4 IN	W TAPPING SLEEVE AND VALVE SIZE 1	W VALVE SPECIAL (INSERTA VALVE)	W LINE MARKER	W SAFELOADING
Drawing Sheet													
R5	1				90		161	2		1	1	2	1.75
R6							1000	1					7.4
R7							1000	1					7.4
R8	1		1		90		63	1		1	1	2	1
R9								1					
R10				1				3					
R11								1					
R12	1				90		69	1		1	1	2	1
R13	1		1	2	90		892		2	1	1	2	7
R14								1					
R15								1					
R16	1	46				87		1		2		2	
R17								1					
R18				1				3					
R19				1				3					
R20				2				4					
R21				1				1					
R22				2				4					
R23				1				3					
R24				1				1					
R25				1				1					
R26	1	52		1		80		4		2		2	0.25
R27	1			2	90		310	6	1	1	1	1	3
R28							1000	2					7.4
R29	1		1	1	90		410	2	1	1	1	1	3.5
R30								2					
R31								1					
R32								2					
R33								1					
R34								1					
R35													
R36								2					
R37								3					
R38													
R39								1					
R40	1	63				118		1		2		2	0.3
R41								2					
R42								2					
R43								1					
R44								2					
R45				1				2					
R46	2	46				90		2		2		2	0.25
R47								5					
R48													
TOTALS	11	207	3	18	540	375	4905	79	4	14	6	18	40.25
DESCRIPTION	W CAP EXISTING MAIN	W ENCASEMENT STEEL BORED RANGE 2	W FLUSH HYDRANT ASSEMBLY	W METER 3/4 INCH	W PIPE DCTL IRON RSTRND JOINT 06 IN	W PIPE PVC 04 INCH	W PIPE PVC 06 INCH	W SERVICE PE/PLST LONG SIDE 3/4 IN	W SERVICE PE/PLST SHORT SIDE 3/4 IN	W TAPPING SLEEVE AND VALVE SIZE 1	W VALVE SPECIAL (INSERTA VALVE)	W LINE MARKER	W SAFELOADING
ITEM NO.	14003	14007	14022	14028	14047	14058	14059	14080	14085	14089	14124	14144	02690

Kentucky Transportation
Cabinet Project: 04-9009
KY 259, MP 000 – 012
Grayson County

N O T I C E

DEPARTMENT OF THE ARMY

CORPS OF ENGINEERS

NATIONWIDE SECTION 404 PERMIT AUTHORIZATION

DEPARTMENT FOR ENVIRONMENTAL PROTECTION

KENTUCKY DIVISION OF WATER

SECTION 401 WATER QUALITY CERTIFICATION

PROJECT DESCRIPTION: Grayson County- 04-9009- Perform Low Cost Safety Improvements on KY 259 between MP 000 – MP 012

The Sections 404 and 401 activities for this project have previously been permitted under the authority of the Department of the Army, Nationwide Section 404 Permit Number 14, *Linear Transportation Projects* (with additional *Kentucky Regional General Conditions*), and the Division of Section 401 Water General Water Quality Certification. For these authorized permits to be valid, the attached conditions must be followed. The contractor shall post a copy of this Nationwide Number 14 permit and General Water Quality Certification in a conspicuous location at the project site, with unencumbered public access, for the duration of construction and comply with the general conditions required.

Locations Impacting Water Quality

Station-Location	Description
Site 1 KY 259 STA. 374+48	Culvert extension of 18LF upstream and 24 LF downstream on existing 3’ x 3’ RCBC, including headwalls and riprap. Total additional stream impact on an UT of Long Branch of Bear Creek, an intermittant stream: 0.009 acres. The watershed for this structure is 14 acres. Latitude: 37.390 deg. Longitude: -86.244 deg.

Kentucky Transportation
Cabinet Project: 04-9009
KY 259, MP 000 – 012
Grayson County

Station-Location	Description
Site 2 KY 259 STA.403+25	Culvert extension of 10 LF upstream and 13 LF downstream on existing 24" RCP, including headwalls and riprap. Total additional stream impact on an UT of Long Branch of Bear Creek an ephemeral/intermittent stream: 0.004 acres. The watershed for this structure is 5 acres. Latitude: 37.396 deg. Longitude: -86.237 deg.
Site 3 KY 259 STA. 406+18	Culvert replacement/extension of 7 LF upstream and 17 LF downstream in addition to the replacing 36 LF of existing 24" RCP, including headwalls and riprap. Total additional stream impact on an UT of Long Branch of Bear Creek an intermittent stream: 0.010 acres. The watershed for this structure is 7 acres. Latitude: 37.397 deg. Longitude: -86.237 deg.
Site 4 KY 259 STA. 535+15	Safe load and replacement of existing 18" RCP, including headwalls and riprap. No additional permanent stream impacts on an UT of Long Branch of Bear Creek an ephemeral/intermittent stream. Included for informational purposes only. Latitude: 37.406 deg. Longitude: -86.249 deg.
Site 5 KY 259 STA. 556+00	Extension of existing 24" RCP, 19 LF on the upstream side and 33LF on the downstream side including headwalls and riprap. Total stream impacts on an UT of Miller Fork of Bear Creek an ephemeral/intermittent stream: 0.005 acres. The drainage area for this structure is 7 acres. Latitude: 37.408 deg. Longitude: -86.255 deg.
Site 6 KY 259 STA. 573+00	Extension of existing 18" RCP, 8 LF on the upstream side and 16 LF on the downstream side including headwalls and riprap. Total stream impacts on an UT of Long Fork of Bear Creek an ephemeral/intermittent stream: 0.003 acres. The drainage area for this structure is 6 acres. Latitude: 37.409 deg. Longitude: -86.261 deg.
Site 7 KY 259 STA.593+50	Culvert extension of 22 LF upstream and 22 LF downstream on existing 3' x 3' RCBC, including headwalls and riprap. Total additional stream impact on an UT of Criswell Hollow of Bear Creek an ephemeral/intermittent stream: 0.010 acres. The watershed for this structure is 17 acres. Latitude: 37.410 deg. Longitude: -86.268 deg.

Kentucky Transportation
Cabinet Project: 04-9009
KY 259, MP 000 – 012
Grayson County

Station-Location	Description
Site 8 KY 259 STA. 607+50	Culvert extension of 22 LF upstream and 19 LF downstream on existing 3' x 3' RCBC, including headwalls and riprap. Total additional stream impact on an UT of Criswell Hollow of Bear Creek an intermittent stream: 0.010 acres. The watershed for this structure is 42 acres. Latitude: 37.412 deg. Longitude: -86.272 deg.
Site 9 KY 259 STA. 611+79	Replace/Extend existing - 18" RCP, 18 LF on the upstream side and 14 LF on the downstream side including headwalls and riprap. Total additional stream impacts on an UT of Long Fork of Bear Creek an ephemeral/intermittent stream: 32 LF and 0.003 acres. The drainage area for this structure is 13 acres. Latitude: 37.413 deg. Longitude: -86.274 deg.
Site 10 KY 259 STA. 614+79	Extend existing 18" RCP, 18 LF on the upstream side and 8 LF on the downstream side totaling 48 LF including headwalls and riprap. Total additional stream impacts on an UT of Long Fork of Bear Creek an ephemeral/intermittent stream: 16 LF and 0.002 acres. The drainage area for this structure is 11 acres. Latitude: 37.413 deg. Longitude: -86.274 deg.
Site 11 KY 259 STA. 623+75	Extend existing 36" RCP, 32 LF on the on the downstream side including headwalls and riprap. Total additional stream impacts on an UT of Criswell Hollow of Bear Creek an ephemeral/intermittent stream: 32 LF and 0.004 acres. The drainage area for this structure is 23 acres. Latitude: 37.414 deg. Longitude: -86.277 deg.

Note: Some of these streams listed are likely ephemeral in nature. They have been included as ephemeral/intermittent just to be conservative.

This project involves work near and/or within Jurisdictional Waters of the United States as defined by the U. S. Army Corps of Engineers; therefore, requiring a Nationwide Number 14 General Section 404 permit. The Division of Water conditionally certified this General Permit. Importantly, one of those conditions regards the use of heavy equipment in any stream channel, or streambed. If there is need to cross the stream channel with heavy equipment, or conduct work within the stream channel, a work platform or temporary crossing, is authorized. This should be constructed with clean rock (preferably sandstone or granite east of a line stretching from the McCreary-Wayne County line to the southwest, northeasterly to Lewis-Greenup County line), and sufficient pipe to allow stream flow to continue, unimpeded (refer to the attached standard

drawing for low-water crossings at end of the document). Other conditions may be found under the heading, *General Certification—Nationwide Permit # 14 Linear Transportation Projects*.

In order for this authorization to be valid, the attached conditions must be followed. The contractor shall post a copy of this Nationwide Number 14 Approval in a conspicuous location at the project site, for the duration of the construction, and comply with the general conditions as required.

To more readily expedite construction, the contractor may elect to alter the design, or perform the work in a manner different from what was originally proposed and specified. Prior to commencing such alternative work, the contractor shall obtain written permission from the Division of Construction and the Kentucky Transportation Cabinet, Division of Environmental Analysis. If such changes necessitate further permitting, then the contractor will be responsible for applying to the U. S. Army Corps of Engineers and the Kentucky Division of Water. A copy of any request to the Corps of Engineers or Division of Water to alter this proposal and subsequent responses shall be forwarded to the Division of Environmental Analysis, DA Permit Coordinator, for office records and for informational purposes.

Public Notice

US Army Corps of Engineers

Louisville District ®

Public Notice No.
LRL-2020-00006

Please address all comments and inquiries to:
U.S. Army Corps of Engineers, Louisville District
ATTN: Meagan Knuckles, CELRL-RDS, Rm 752
P.O. Box 59
Louisville, Kentucky 40201-0059
Phone: (502) 315-6709

PUBLIC NOTICE FOR FEDERAL REGISTER NOTICE ANNOUNCING THE REISSUANCE OF THE NATIONWIDE PERMITS

On January 13, 2021, the U.S. Army Corps of Engineers (Corps) published a final rule in the *Federal Register* (86 FR 2744) announcing the reissuance of 12 existing nationwide permits (NWPs) and four new NWPs, as well as the reissuance of NWP general conditions and definitions with some modifications. The January 13, 2021, *Federal Register* notice is available for viewing at https://www.federalregister.gov/documents/2021/01/13/2021-00102/reissuance-and-modification-of-nationwide-permits. The 16 NWPs, listed below, become effective on March 15, 2021, and will expire on March 14, 2026:

- NWP 12 – Oil or Natural Gas Pipeline Activities
- NWP 21 – Surface Coal Mining Activities
- NWP 29 – Residential Developments
- NWP 39 – Commercial and Institutional Developments
- NWP 40 – Agricultural Activities
- NWP 42 – Recreational Facilities
- NWP 43 – Stormwater Management Facilities
- NWP 44 – Mining Activities
- NWP 48 – Commercial Shellfish Mariculture Activities
- NWP 50 – Underground Coal Mining Activities
- NWP 51 – Land-Based Renewable Energy Generation Facilities
- NWP 52 – Water-Based Renewable Energy Generation Pilot Projects
- NWP 55 – Seaweed Mariculture Activities
- NWP 56 – Finfish Mariculture Activities
- NWP 57 – Electric Utility Line and Telecommunications Activities
- NWP 58 – Utility Line Activities for Water and Other Substances

On February 15, 2021, the Great Lakes and Ohio River Division (LRD) approved Kentucky regional conditions for the 2021 NWPs in the Commonwealth of Kentucky. The Kentucky Regional Conditions for the 2021 NWPs for the Commonwealth of Kentucky become effective on March 15, 2021 and are attached to this public notice. Additionally, the Louisville District has posted the Regional Conditions for the Commonwealth of Kentucky for the 2021 NWPs on its

internet home page at: http://www.lrl.usace.army.mil/Missions/Regulatory/Obtain-a-Permit/Nationwide/.

KDOW denied the 401 WQC for NWP 43, NWP 44 and NWP 52, therefore an individual 401 WQC will be required for a project authorized by NWP 43, NWP 44 and NWP 52. The KDOW issued general WQCs for NWPs 12, 21, 29, 39, 42, 50, 51, 57 and 58. An individual 401 WQC will be required by the KDOW if the proposed activities do not meet the conditions of the general WQC. The KDOW certified NWPs 40, 48, 55 and 56 as written, therefore, projects authorized by these activities are certified as written and no further contact with KDOW would be required. The 401 WQC for the 2021 NWPs becomes effective on March 15, 2021 and is attached to this public notice. Additionally, the Louisville District has posted the 401 WQC on its internet homepage at the link noted above.

There are 40 existing NWPs that were not reissued or modified by the January 13, 2021 final rule. Those 40 NWPs were published in the January 6, 2017 issue of the Federal Register (82 FR 1860). The 40 2017 NWPs, accompanying regional conditions and 401 WQC will remain in effect until the Corps issues a final rule reissuing those NWPs, Regional Conditions, and 401 WQC, or until March 18, 2022, whichever comes first. Listed below are the 40 2017 NWPs that remain in effect, and the 2017 Kentucky Regional Conditions are on the Louisville Districts internet homepage at the link noted above.

- NWP 1 – Aids to Navigation
- NWP 2 – Structures in Artificial Canals
- NWP 3 – Maintenance
- NWP 4 – Fish and Wildlife Harvesting, Enhancement, and Attraction Devices and Activities
- NWP 5 – Scientific Measurement Devices
- NWP 6 – Survey Activities
- NWP 7 – Outfall Structures and Associated Intake Structures
- NWP 8 – Oil and Gas Structures on the Outer Continental Shelf
- NWP 9 – Structures in Fleeting and Anchorage Areas
- NWP 10 – Mooring Buoys
- NWP 11 – Temporary Recreational Structures
- NWP 13 – Bank Stabilization
- NWP 14 – Linear Transportation Projects
- NWP 15 – U.S. Coast Guard Approved Bridges
- NWP 16 – Return Water From Upland Contained Disposal Areas
- NWP 17 – Hydropower Projects
- NWP 18 – Minor Discharges
- NWP 19 – Minor Dredging
- NWP 20 – Response Operations for Oil or Hazardous Substances
- NWP 22 – Removal of Vessels
- NWP 23 – Approved Categorical Exclusions

- NWP 24 – Indian Tribe or State Administered Section 404 Programs
- NWP 25 – Structural Discharges
- NWP 27 – Aquatic Habitat Restoration, Establishment, and Enhancement Activities
- NWP 28 – Modifications of Existing Marinas
- NWP 30 – Moist Soil Management for Wildlife
- NWP 31 – Maintenance of Existing Flood Control Facilities
- NWP 32 – Completed Enforcement Actions
- NWP 33 – Temporary Construction, Access, and Dewatering
- NWP 34 – Cranberry Production Activities
- NWP 35 – Maintenance Dredging of Existing Basins
- NWP 36 – Boat Ramps
- NWP 37 – Emergency Watershed Protection and Rehabilitation
- NWP 38 – Cleanup of Hazardous and Toxic Waste
- NWP 41 – Reshaping Existing Drainage Ditches
- NWP 45 – Repair of Uplands Damaged by Discrete Events
- NWP 46 – Discharges in Ditches
- NWP 49 – Coal Remining Activities
- NWP 53 – Removal of Low-Head Dams
- NWP 54 – Living Shorelines

Questions concerning implementation of the NWPs and associated Regional Conditions should be sent to LRL.RegulatoryPublicComment@usace.army.mil or you can contact Ms. Meagan Knuckles at (502) 315-6709.

2021 KENTUCKY REGIONAL GENERAL CONDITIONS

These regional conditions are in addition to, but do not supersede, the requirements in the Federal Register (Volume 86, No. 8 on Date January 13, 2021, pp 2744).

Notifications for all Nationwide Permits (NWPs) shall be in accordance with General Condition No. 32.

1. For activities that would result in a loss of Outstanding State or National Resource Waters (OSNRWs), Exceptional Waters (EWs), Coldwater Aquatic Habitat Waters (CAHs) and waters with Designated Critical Habitat (DCH) under the Endangered Species Act for the NWPs listed below, a Pre-Construction Notification (PCN) will be required to the Corps. The Corps will coordinate with the appropriate resource agencies (see attached list) on these NWPs for impacts to these waters.

   NWP 12 (Oil or Natural Gas Pipeline Activities)
   NWP 51 (Land-Based Renewable Energy Generation Facilities)
   NWP 57 (Electric Utility Line and Telecommunications Activities)
   NWP 58 (Utility Line Activities for Water and Other Substances

2. All applications and requests should be submitted electronically. To submit applications or other requests electronically, all documents should be saved as a PDF document, and then submitted as an attachment in an email to the following email address:

   CELRL.Door.To.The.Corps@usace.army.mil

   Your email should include the following:
   a) Subject Line with the name of the applicant, type of request, and location (County and State). Example: RE: Doe, John, DA Permit Application, Jefferson County, KY
   b) Brief description of the request and contact information (phone number, mailing address, and email address) for the applicant and/or their agent.
   c) Project Location: Address and Latitude/Longitude in decimal degrees (e.g. 42.927883, -88.362576).

   All forms that require signature must be digitally signed or signed manually, scanned and then sent electronically.

   Electronic documents must have sufficient resolution to show project details. In order to have the highest quality documents, the original digital documents should be converted to PDF rather than providing scanned copies of original documents.

   The electronic application and attached documents must not exceed 10 megabytes (10MB).

3. For all activities, the applicant shall review the U.S. Fish and Wildlife Service's IPaC website: http://ecos.fws.gov/ipac to determine if the activity might affect threatened and/or endangered species or designated critical habitat. If federally listed species or designated critical habitat are identified, a PCN in accordance with General Condition 18 and 32 would be triggered and the official species list generated from the IPaC website must be submitted with the PCN.

Further information:

Outstanding State or National Resource Water (OSNRWs), Exceptional Waters (EWs), and Coldwater Aquatic Habitat Waters (CAHs) are waters designated by the Commonwealth of Kentucky, Natural Resources and Environmental Protection Cabinet. The list can be found at the following link: http://eppcapp.ky.gov/spwaters/

Designated Critical Habitat (DCH) under the Endangered Species Act is determined within the Commonwealth of Kentucky by the U.S. Fish and Wildlife Service. The current list of Kentucky's Threatened, Endangered, and Federal Candidate Species can be found at the following link: http://www.fws.gov/frankfort/EndangeredSpecies.html Information on Pre-Construction Notification (PCN) can be found at NWP General Condition No. 32 in the Federal Register (Volume 86, No. 8 on Date January 13, 2021, pp 2873).

COORDINATING RESOURCE AGENCIES

Chief, Wetlands Regulatory Section
U.S. Environmental Protection Agency
Region IV
Atlanta Federal Center
61 Forsyth Street, SW
Atlanta, Georgia 30303

Supervisor
U.S. Fish & Wildlife Service
JC Watts Federal Building, Room 265
330 West Broadway
Frankfort, Kentucky 40601

Supervisor
401 Water Quality Certification
Kentucky Division of Water
300 Sower Boulevard, 3rd Floor
Frankfort, KY 40601

Commissioner
Department of Fish and Wildlife Resources
#1 Sportsman's Lane
Frankfort, KY 40601

Executive Director and State Historic Preservation Officer
Kentucky Heritage Council
410 High Street
Frankfort, KY 40601

ANDY BESHEAR
GOVERNOR

REBECCA W. GOODMAN
SECRETARY

ANTHONY R. HATTON
COMMISSIONER

ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION

300 SOWER BOULEVARD
FRANKFORT, KENTUCKY 40601

December 18, 2020

Mr. David Baldridge
Chief, South Branch
Regulatory Division
U.S. Army Corps of Engineers, Louisville District
600 Dr. Martin Luther King Jr Pl
Louisville, Kentucky 40202

Re: §401 Water Quality Certification
Nationwide Permits 2020
AI No.: 35050; Activity ID: APE20200005
USACE ID No.: LRL-2020-00006

Dear Mr. Baldridge:

The Kentucky Division of Water (Division) received requests for Section 401 Water Quality Certification from the U.S. Army Corps of Engineers, Louisville District for the proposed 2020 Nationwide Permits 3, 4, 5, 6, 7, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 25, 27, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 45, 46, 48, 49, 50, 51, 52, 53, 54, C, D and E on October 19, 2020 and proposed 2020 Nationwide Permits 1, 2, 8, 9, 10, 11, 24, 28, 35, A and B on December 10, 2020. The Division has reviewed the conditions specified in each proposed permit and the general conditions that apply to all Nationwide Permits and made determinations to certify, deny or waive. Please review the enclosed package for a summary of these determinations.

It is the determination of the Division that proposed Nationwide Permits 1, 2, 4, 6, 8, 9, 10, 11, 20, 22, 24, 28, 34, 35, 40, 41, 48, 54, A and B provide reasonable assurances as written, that the applicable water quality standards under Kentucky Administrative Regulations Title 401, Chapter 10, established pursuant to Sections 301, 302, 303, 304, 306, and 307 of the CWA, will not be violated. The Division considers Nationwide Permits 1, 2, 4, 6, 8, 9, 10, 11, 20, 22, 24, 28, 34, 35, 40, 41, 48, 54, A and B certified as written.

It is the determination of the Division that proposed Nationwide Permits 3, 5, 7, 12, 13, 14, 15, 18, 19, 21, 23, 25, 27, 29, 30, 31, 33, 36, 37, 39, 42, 45, 46, 49, 50, 51, C, D, and E can provide reasonable assurances that applicable water quality standards under Kentucky Administrative Regulations Title 401, Chapter 10, established pursuant to Sections 301, 302, 303, 304, 306, and 307 of the CWA, will not be violated if these activities are performed in compliance with the conditions included for each General Certification. The Division considers Nationwide Permits 3, 5, 7, 12, 13, 14, 15, 18, 19, 21, 23, 25, 27, 29, 30, 31, 33, 36, 37, 39, 42, 45, 46, 49, 50, 51, C, D, and E certified with conditions.

Consistent with Section 401 of the Clean Water Act, the General Certification conditions are designed to ensure activities carried out under Nationwide Permits authorized by the U.S. Army Corps of Engineers will comply with applicable water quality requirements. Where applicable, these conditions are in addition to, not a replacement for, any federal requirements or conditions.

It is the determination of the Division that proposed Nationwide Permits 16, 17, 32, 38, 43, 44, 52, and 53 will require a site-specific Individual Water Quality Certification and will be denied a general certification for these activities. The activities, as permitted in these proposed Nationwide Permits, do not provide sufficient information about the activity design and methodology or the discharge that may occur to be certified as written. The denial for a general certification is based on the Division's inability to generally condition these activities to ensure that the activities will comply with Kentucky's water quality standards under Kentucky Administrative Regulations Title 401, Chapter 10, established pursuant to Sections 301, 302, 303, 304, 306, and 307 of the CWA.

The draft determinations were made available for public comment from November 17, 2020 through December 17, 2020. The final determinations will be available to the public on our website at https://eec.ky.gov. Please contact Elizabeth Harrod by phone at 502-782-6700 or email at Elizabeth.Harrod@ky.gov if you have any questions.

Sincerely,

Elizabeth M Harrod

Elizabeth Harrod, Supervisor
Water Quality Certification Section
Kentucky Division of Water

Enclosure

cc: Mike Ricketts, Louisville District [Michael.S.Ricketts@usace.army.mil]
Josh Frost, Nashville District [Joshua.W.Frost@usace.army.mil]
Timothy Wilder, Memphis District [Timothy.C.Wilder@usace.army.mil]
Ashley Monroe, U.S. EPA [Monroe.Ashley@epa.gov]
Lee Andrews, USFWS: Frankfort [kentuckyes@fws.gov]
Doug Dawson, Kentucky Department of Fish and Wildlife Resources [doug.dawson@ky.gov]

MATTHEW G. BEVIN
GOVERNOR

CHARLES G. SNAVELY
SECRETARY

ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION

R. BRUCE SCOTT
COMMISSIONER

300 SOWER BOULEVARD
FRANKFORT, KENTUCKY 40601

General Certification--Nationwide Permit # 14
Linear Transportation Projects

This General Certification is issued March 19, 2017, in conformity with the requirements of Section 401 of the Clean Water Act of 1977, as amended (33 U.S.C. §1341), as well as Kentucky Statute KRS 224.16-050.

For this and all nationwide permits, the definition of surface water is as per 401 KAR 10:001 Chapter 10, Section 1(80): Surface Waters means those waters having well-defined banks and beds, either constantly or intermittently flowing; lakes and impounded waters; marshes and wetlands; and any subterranean waters flowing in well-defined channels and having a demonstrable hydrologic connection with the surface. Lagoons used for waste treatment and effluent ditches that are situated on property owned, leased, or under valid easement by a permitted discharger are not considered to be surface waters of the commonwealth.

Agricultural operations, as defined by KRS 224.71-100(1) conducting activities pursuant to KRS 224.71-100 (3), (4), (5), (6), or 10 are deemed to have certification if they are implementing an Agriculture Water Quality Plan pursuant to KRS 224.71-145.

For all other operations, the Commonwealth of Kentucky hereby certifies under Section 401 of the Clean Water Act (CWA) that it has reasonable assurances that applicable water quality standards under Kentucky Administrative Regulations Title 401, Chapter 10, established pursuant to Sections 301, 302, 304, 306 and 307 of the CWA, will not be violated for the activity covered under NATIONWIDE PERMIT 14, namely Linear Transportation Projects, provided that the following conditions are met:

1. The activity will not occur within surface waters of the Commonwealth identified by the Kentucky Division of Water as Outstanding State or National Resource Water, Cold Water Aquatic Habitat, or Exceptional Waters.

2. The activity will not occur within surface waters of the Commonwealth identified as perpetually-protected (e.g. deed restriction, conservation easement) mitigation sites.

3. The activity will impact less than 1/2 acre of wetland/marsh.

4. The activity will impact less than 300 linear feet of surface waters of the Commonwealth. Stream realignment greater than 100 feet and in-stream stormwater detention/retention basins are not covered under this general water quality certification.

5. For complete linear transportation projects, all impacts shall not exceed a cumulative length of 500 linear feet within each Hydrologic Unit Code (HUC) 14.

6. Any crossings must be constructed in a manner that does not impede natural water flow.

7. Stream impacts covered under this General Water Quality Certification and undertaken by those persons defined as an agricultural operation under the Agricultural Water Quality Act must be completed in compliance with the Kentucky Agricultural Water Quality Plan (KWQP).

8. The Kentucky Division of Water may require submission of a formal application for an individual certification for any project if the project has been determined to likely have a significant adverse effect upon water quality or degrade the waters of the Commonwealth so that existing uses of the water body or downstream waters are precluded.

9. Activities that do not meet the conditions of this General Water Quality Certification require an Individual Section 401 Water Quality Certification.

10. Activities qualifying for coverage under this General Water Quality Certification are subject to the following conditions:

    - Projects requiring in-stream stormwater detention/retention basins shall require individual water quality certifications.
    - Erosion and sedimentation pollution control plans and Best Management Practices must be designed, installed, and maintained in effective operating condition at all times during construction activities so that violations of state water quality standards do not occur (401 KAR 10:031 Section 2 and KRS 224.70-100).
    - Sediment and erosion control measures, such as check-dams constructed of any material, silt fencing, hay bales, etc., shall not be placed within surface waters of the Commonwealth, either temporarily or permanently, without prior approval by the Kentucky Division of Water's Water Quality Certification Section. If placement of sediment and erosion control measures in surface waters is unavoidable, design and placement of temporary erosion control measures shall not be conducted in such a manner that may result in instability of streams that are adjacent to,

upstream, or downstream of the structures. All sediment and erosion control devices shall be removed and the natural grade restored within the completion timeline of the activities.

- Measures shall be taken to prevent or control spills of fuels, lubricants, or other toxic materials used in construction from entering the watercourse.
- Removal of riparian vegetation in the utility line right-of-way shall be limited to that necessary for equipment access.
- To the maximum extent practicable, all in-stream work under this certification shall be performed under low-flow conditions.
- Heavy equipment, e.g. bulldozers, backhoes, draglines, etc., if required for this project, should not be used or operated within the stream channel. In those instances in which such in-stream work is unavoidable, then it shall be performed in such a manner and duration as to minimize turbidity and disturbance to substrates and bank or riparian vegetation.
- Any fill shall be of such composition that it will not adversely affect the biological, chemical, or physical properties of the receiving waters and/or cause violations of water quality standards. If rip-rap is utilized, it should be of such weight and size that bank stress or slump conditions will not be created because of its placement.
- If there are water supply intakes located downstream that may be affected by increased turbidity and suspended solids, the permittee shall notify the operator when such work will be done.
- Should evidence of stream pollution or jurisdictional wetland impairment and/or violations of water quality standards occur as a result of this activity (either from a spill or other forms of water pollution), the KDOW shall be notified immediately by calling (800) 928-2380.

Non-compliance with the conditions of this general certification or violation of Kentucky state water quality standards may result in civil penalties.

GENERAL CONDITIONS FOR WATER QUALITY CERTIFICATION

1. The Kentucky Division of Water may require submission of a formal application for an Individual Certification for any project if the project has been determined to likely have a significant adverse effect upon water quality or degrade the waters of the Commonwealth so that existing uses of the water body or downstream waters are precluded.

2. Nationwide permits issued by the U.S. Army Corps of Engineers for projects in Outstanding State Resource Waters, Cold Water Aquatic Habitats, and Exceptional Waters as defined by 401 KAR 10:026 shall require individual water quality certifications.

3. Projects requiring in-stream stormwater detention/retention basins shall require individual water quality certifications.

4. Erosion and sedimentation pollution control plans and Best Management Practices must be designed, installed, and maintained in effective operating condition at all times during construction activities so that violations of state water quality standards do not occur.

5. Sediment and erosion control measures (e.g., check-dams, silt fencing, or hay bales) shall not be placed within surface waters of the Commonwealth, either temporarily or permanently, without prior approval by the Kentucky Division of Water's Water Quality Certification Section. If placement of sediment and erosion control measures in surface waters is unavoidable, placement shall not be conducted in such a manner that may cause instability of streams that are adjacent to, upstream, or downstream of the structures. All sediment and erosion control measures shall be removed and the natural grade restored prior to withdrawal from the site.

6. Measures shall be taken to prevent or control spills of fuels, lubricants, or other toxic materials used in construction from entering the watercourse.

7. To the maximum extent practicable, all in-stream work under this certification shall be performed during low flow.

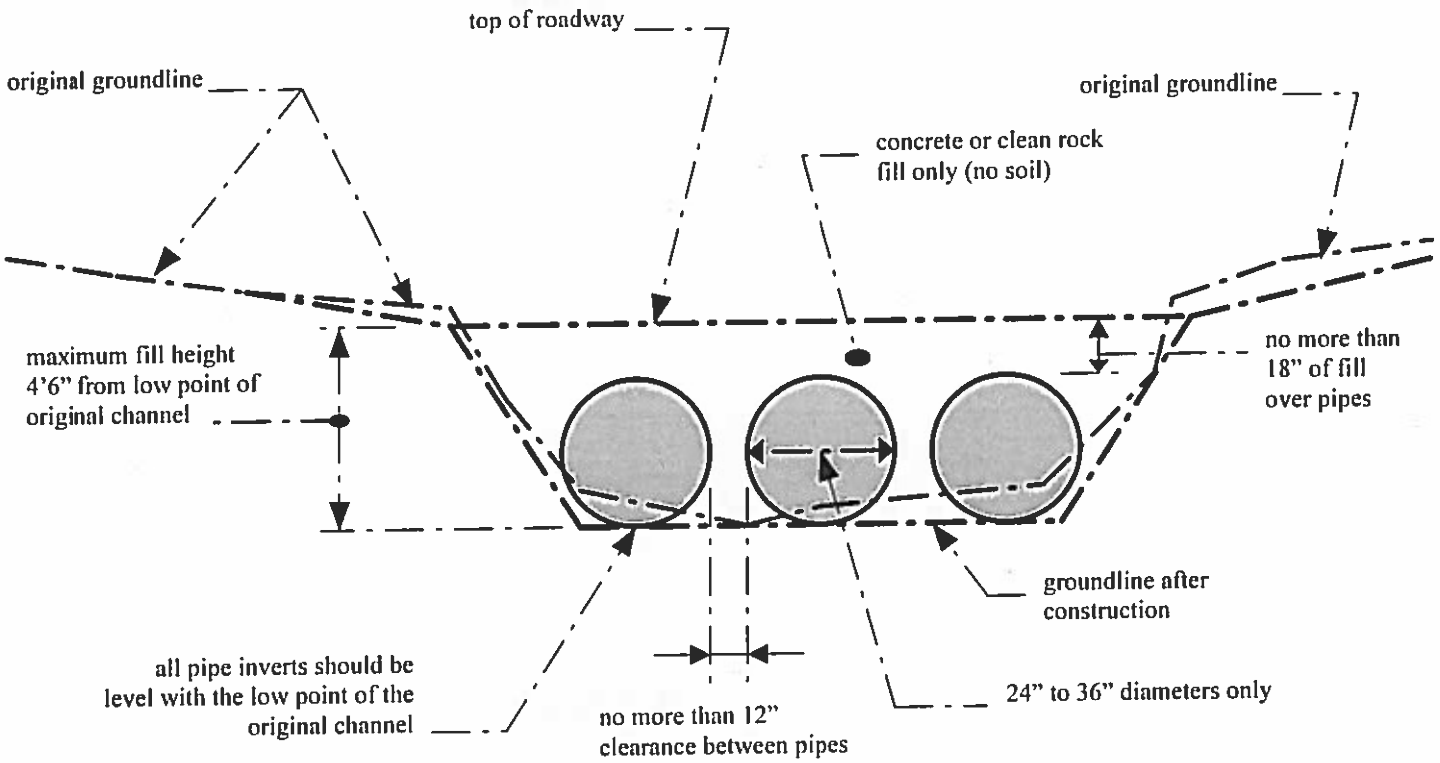
8. Heavy equipment (e.g. bulldozers, backhoes, draglines, etc.), if required for this project, should not be used or operated within the stream channel. In those instances where such in-stream work is unavoidable, then it shall be performed in such a manner and duration as to minimize re-suspension of sediments and disturbance to the channel, banks, or riparian vegetation.

9. If there are water supply intakes located downstream that may be affected by increased turbidity, the permittee shall notify the operator when work will be performed.

10. Removal of existing riparian vegetation should be restricted to the minimum necessary for project construction.

11. Should stream pollution, wetland impairment, and/or violations of water quality standards occur as a result of this activity (either from a spill or other forms of water pollution), the Kentucky Division of Water shall be notified immediately by calling 800/564-2380.

ATTACHMENT 1



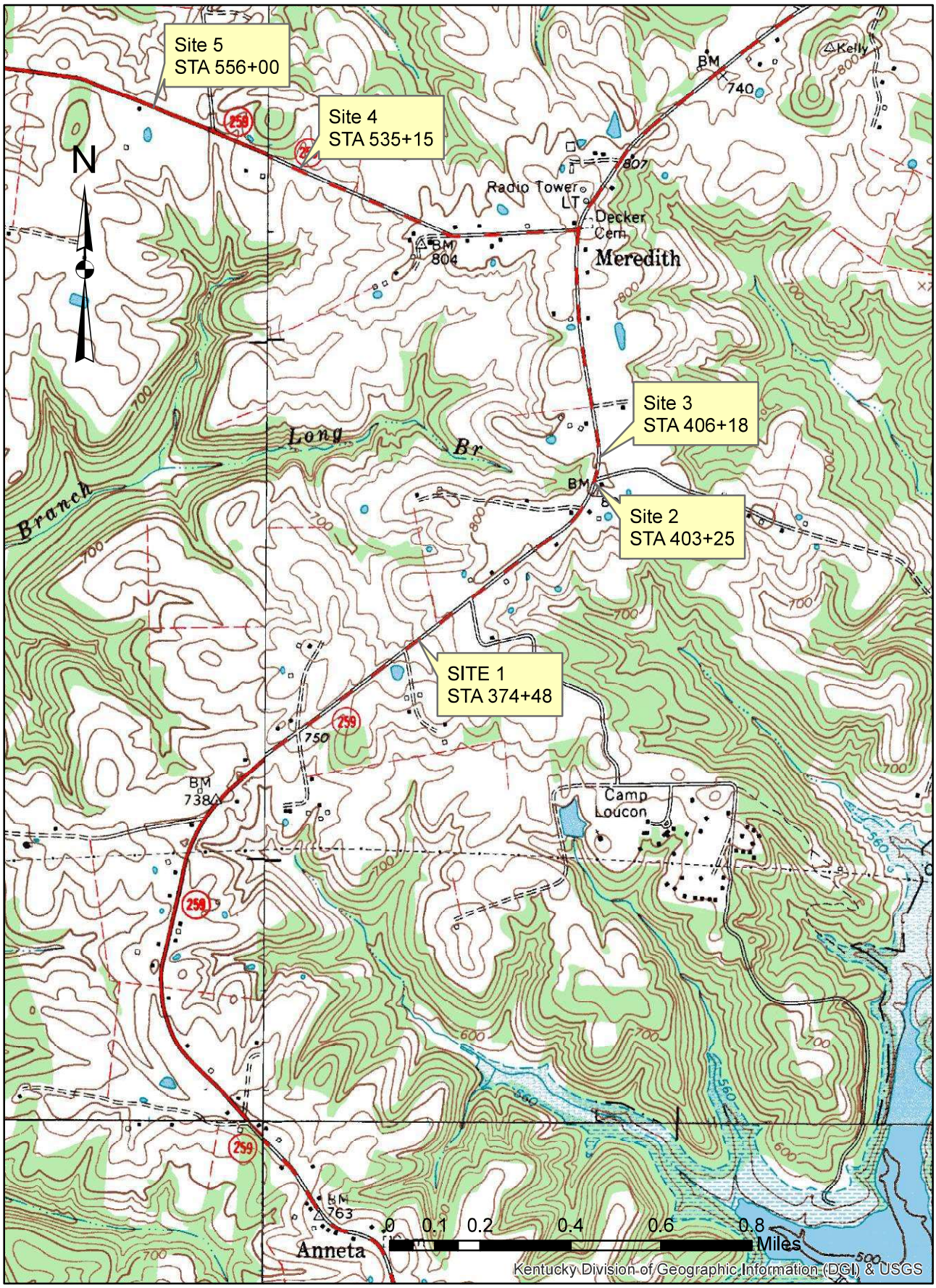
NOTES:

1. This is a conceptual drawing. The number and size of pipes and other details will vary depending on specific site conditions.
2. The pipes and backfill must be contained within the stream channel as shown above. During the construction of the approaches and access roadway across the floodplain, unstable and unconsolidated materials unsuitable for roadways may be excavated and replaced with riprap, crushed stone, or other stable road construction materials. This may only be done, however, with the following provisions: (1) the disposal of excess, unconsolidated materials thus excavated must be outside of the floodplain and (2) the finished surface of the completed road may be no more than three inches (3") above the pre-construction surface of the floodplain at any point beyond the top of banks.

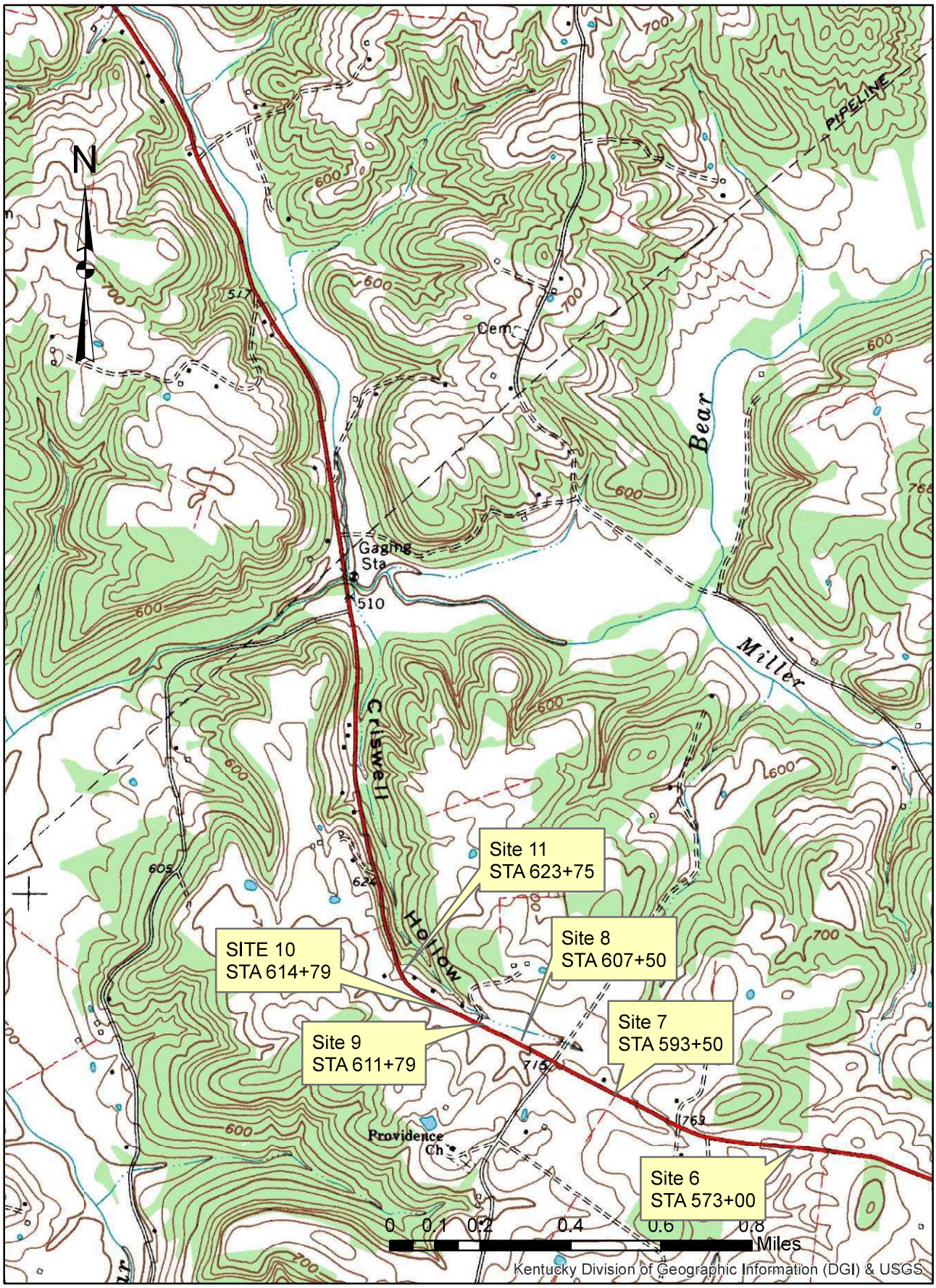
LOW-WATER CROSSING

STANDARD DRAWING
Not to Scale

04-9009, KY 259, Grayson Co., Sites 1-5



04-9009, KY259, Grayson Co., Sites 6-11



Kentucky Transportation Cabinet

Highway District 4

And

_____(2), Construction

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

Groundwater protection plan

For Highway Construction Activities

For

PERFORM LOW COST SAFETY IMPROVEMENTS ON KY 259 FROM MP 0.000 TO MP 11.761 IN GRAYSON COUNTY Project: CID 23-4206

Revised 3/4/2016

KyTC BMP Plan for Project CID 23-4206

Project information

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

1. Owner – Kentucky Transportation Cabinet, District __ (1)

2. Resident Engineer: (2)

3. Contractor name: (2)
   Address: (2)

   Phone number: (2)
   Contact: (2)
   Contractors agent responsible for compliance with the KPDES permit requirements (3):

4. Project Control Number (2)

5. Route (Address)
   KY 259

6. Latitude/Longitude (project mid-point) dd/mm/ss, dd/mm/ss
   37.403333
   -86.237222

7. County (project mid-point)
   Hardin

8. Project start date (date work will begin): (2)

9. Projected completion date: (2)

KyTC BMP Plan for Project CID 23-4206

A. Site description:

1. Nature of Construction Activity (from letting project description)

   PERFORM LOW COST SAFETY IMPROVEMENTS ON KY 259 FROM MP 0.000 TO MP 11.761 IN GRAYSON COUNTY

2. Order of major soil disturbing activities (2) and (3)

3. Projected volume of material to be moved
   33,690 CU YD

4. Estimate of total project area (acres)

   57.54

5. Estimate of area to be disturbed (acres)
   57.54

6. Post construction runoff coefficient will be included in the project drainage folder. Persons needing information pertaining to the runoff coefficient will contact the resident engineer to request this information.(1)

7. Data describing existing soil condition
   Existing soil to be excavated is roadway embankment

8. Data describing existing discharge water quality (if any) (2)
   No existing Water quality data exist

9. Receiving water name (1)
   Bear Creek, Long Branch, Hat Branch, Saltman Branch, Conoloway Creek, Davis Creek, Cane Camp Creek, Miller Fork

10. TMDLs and Pollutants of Concern in Receiving Waters:
    No TMDL Streams

11. Site map – Project layout sheet plus the erosion control sheets in the project plans that depict Disturbed Drainage Areas (DDAs) and related information. These sheets depict the existing project conditions with areas delineated by DDA (drainage area bounded by watershed breaks and right of way limits), the storm water discharge locations (either as a point discharge or as overland flow) and the areas that drain to each discharge point. These plans define the limits of areas to be disturbed and the location of control measures. Controls will be either site specific as

designated by the designer or will be annotated by the contractor and resident engineer before disturbance commences. The project layout sheet shows the surface waters and wetlands.

12. Potential sources of pollutants:

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

B. Sediment and Erosion Control Measures:

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

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

2. Following award of the contract, the contractor and resident engineer will annotate the erosion control sheets showing location and type of BMPs for each of the DDAs that will be disturbed at the outset of the project. This annotation will be accompanied by an order of work that reflects the order or sequence of major soil moving activities. The remaining DDAs are to be designated as “Do Not Disturb” until the contractor and resident engineer prepare the plan for BMPs to be employed. The initial BMP’s shall be for the first phase (generally Clearing and Grubbing) and shall be modified as needed as the project changes phases. The BMP Plan will be modified to reflect disturbance in additional DDA’s as the work progresses. <u>All DDA’s will have adequate BMP’s in place before being disturbed.</u>

3. As DDAs are prepared for construction, the following will be addressed for the project as a whole or for each DDA as appropriate:

- Construction Access – This is the first land-disturbing activity. As soon as construction begins, bare areas will be stabilized with gravel and temporary mulch and/or vegetation.
- At the beginning of the project, all DDAs for the project will be inspected for areas that are a source of storm water pollutants. Areas that are a source of pollutants will receive appropriate cover or BMPs to arrest the introduction of pollutants into storm water. Areas that have not been opened by the contractor will be inspected periodically (once per month) to determine if there is a need to employ BMPs to keep pollutants from entering storm water.
- Clearing and Grubbing – The following BMP's will be considered and used where appropriate.
    - Leaving areas undisturbed when possible.
    - Silt basins to provide silt volume for large areas.
    - Silt Traps Type A for small areas.
    - Silt Traps Type C in front of existing and drop inlets which are to be saved
    - Diversion ditches to catch sheet runoff and carry it to basins or traps or to divert it around areas to be disturbed.
    - Brush and/or other barriers to slow and/or divert runoff.
    - Silt fences to catch sheet runoff on short slopes. For longer slopes, multiple rows of silt fence may be considered.
    - Temporary Mulch for areas which are not feasible for the fore mentioned types of protections.
    - Non-standard or innovative methods.
- Cut & Fill and placement of drainage structures - The BMP Plan will be modified to show additional BMP's such as:
    - Silt Traps Type B in ditches and/or drainways as they are completed
    - Silt Traps Type C in front of pipes after they are placed
    - Channel Lining
    - Erosion Control Blanket
    - Temporary mulch and/or seeding for areas where construction activities will be ceased for 21 days or more.
    - Non-standard or innovative methods
- Profile and X-Section in place – The BMP Plan will be modified to show elimination of BMP's which had to be removed and the addition of new BMP's as the roadway was shaped. Probably changes include:
    - Silt Trap Type A, Brush and/or other barriers, Temporary Mulch, and any other BMP which had to be removed for final grading to take place.
    - Additional Silt Traps Type B and Type C to be placed as final drainage patterns are put in place.
    - Additional Channel Lining and/or Erosion Control Blanket.

- Temporary Mulch for areas where Permanent Seeding and Protection cannot be done within 21 days.
- Special BMP's such as Karst Policy

➢ Finish Work (Paving, Seeding, Protect, etc.) – A final BMP Plan will result from modifications during this phase of construction. Probably changes include:
- Removal of Silt Traps Type B from ditches and drainways if they are protected with other BMP's which are sufficient to control erosion, i.e. Erosion Control Blanket or Permanent Seeding and Protection on moderate grades.
- Permanent Seeding and Protection
- Placing Sod
- Planting trees and/or shrubs where they are included in the project

➢ BMP's including Storm Water Management Devices such as velocity dissipation devices and Karst policy BMP's to be installed during construction to control the pollutants in storm water discharges that will occur after construction has been completed are : No permanent BMPs are being proposed.

C. Other Control Measures

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

2. Waste Materials

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

3. Hazardous Waste

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

appropriate, with the Division of Waste Management and advise the contractor regarding waste management requirements.

4. Spill Prevention

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

- **Good Housekeeping:**

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

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

- **Hazardous Products:**

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

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

The following product-specific practices will be followed onsite:

- **Petroleum Products:**

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

The contractor shall prepare an Oil Pollution Spill Prevention Control and Countermeasure plan when the project that involves the storage of petroleum products in 55 gallon or larger containers with a total combined storage capacity of 1,320 gallons. This is a requirement of 40 CFR 112.

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

- **Fertilizers:**

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

- **Paints:**

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

- **Concrete Truck Washout:**

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

- **Spill Control Practices**

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

- Manufacturers' recommended methods for spill cleanup will be clearly posted. All personnel will be made aware of procedures and the location of the information and cleanup supplies.
- Materials and equipment necessary for spill cleanup will be kept in the material storage area. Equipment and materials will include as appropriate, brooms, dust pans, mops, rags, gloves, oil absorbents, sand, sawdust, and plastic and metal trash containers.
- All spills will be cleaned up immediately after discovery.
- The spill area will be kept well ventilated and personnel will wear appropriate protective clothing to prevent injury from contract with a hazardous substance.
- Spills of toxic or hazardous material will be reported to the appropriate state/local agency as required by KRS 224 and applicable federal law.
- The spill prevention plan will be adjusted as needed to prevent spills from reoccurring and improve spill response and cleanup.
- Spills of products will be cleaned up promptly. Wastes from spill clean up will be disposed in accordance with appropriate regulations.

D. Other State and Local Plans

This BMP plan shall include any requirements specified in sediment and erosion control plans, storm water management plans or permits that have been approved by other state or local officials. Upon submittal of the NOI, other requirements for surface water protection are incorporated by reference into and are enforceable under this permit (even if they are not specifically included in this BMP plan). This provision does not apply to master or comprehensive plans, non-enforceable guidelines or technical guidance documents that are not identified in a specific plan or permit issued for the construction site by state or local officials. (1)

E. Maintenance

1. The BMP plan shall include a clear description of the maintenance procedures necessary to keep the control measures in good and effective operating condition.

- Maintenance of BMPs during construction shall be a result of weekly and post rain event inspections with action being taken by the contractor to correct deficiencies.

- Post Construction maintenance will be a function of normal highway maintenance operations. Following final project acceptance by the cabinet, district highway crews will be responsible for identification and correction of deficiencies regarding ground cover and cleaning of storm water BMPs. The project manager shall identify any BMPs that will be for the purpose of post

construction storm water management with specific guidance for any non-routine maintenance. (1)

F. Inspections

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

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

G. Non – Storm Water discharges

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

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

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

H. Groundwater Protection Plan (3)

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

- Contractors statement: (3)

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

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

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

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

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

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

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

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

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

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

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

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

KyTC BMP Plan for Project CID 23-4206

Contractor and Resident Engineer Plan certification

The contractor that is responsible for implementing this BMP plan is identified in the Project Information section of this plan.

The following certification applies to all parties that are signatory to this BMP plan:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. Further, this plan complies with the requirements of 401 KAR 5:037. By this certification, the undersigned state that the individuals signing the plan have reviewed the terms of the plan and will implement its provisions as they pertain to ground water protection.

Resident Engineer and Contractor Certification:

(2) Resident Engineer signature

Signed _____title_____, _____
Typed or printed name[2] signature

(3) Signed _____title_____, _____
Typed or printed name[1] signature

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

2. KyTC note: to be signed by the Chief District Engineer or a person designated to have the authority to sign reports by such a person (usually the resident engineer) in accordance with 401 KAR 5:060 Section 9. This delegation shall be in writing to: Manager, KPDES Branch, Division of Water, 14 Reilly Road, Frankfort Kentucky 40601 Reference the Project Control Number (PCN) and KPDES number when one has been issued.

Sub-Contractor Certification

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

Subcontractor

Name:
Address:
Address:

Phone:

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

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

Signed _____title_____, _____
Typed or printed name[1] signature

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

SPECIAL NOTE

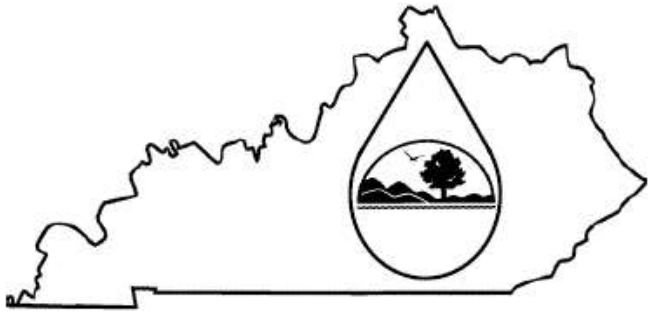
Filing of eNOI for KPDES Construction Stormwater Permit

County: GRAYSON **Route: KY 259**
Item No.: 4-9009 **KDOW Submittal ID:**
802800fd-b38c-49e0-
8af8-2be920819f66

Project Description: PERFORM LOW COST SAFETY IMPROVEMENTS ON KY 259 FROM MP 0.000 TO MP 11.761 IN GRAYSON COUNTY

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

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



KENTUCKY POLLUTION DISCHARGE ELIMINATION SYSTEM (KPDES)

Notice of Intent (NOI) for coverage of Storm Water Discharge Associated with Construction Activities Under the KPDES Storm Water General Permit KYR100000

Click here for Instructions
(Controls/KPDES_FormKYR10_Instructions.htm)

Click here to obtain information and a copy of the KPDES General Permit.
(http://dep.ky.gov/formslibrary/Documents/KYR10PermitPage.pdf)

(*) indicates a required field; (✓) indicates a field may be required based on user input or is an optionally required field

Reason for Submittal:(*)	Agency Interest ID:	Permit Number:(✓)
Application for New Permit Coverage	0	KPDES Permit Number

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

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

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

SECTION I -- FACILITY OPERATOR INFORMATION (PERMITTEE)

Company Name:(✓)	First Name:(✓)	M.I.:	Last Name:(✓)
KYTC DISTRICT 4	BRADLEY	MI	BOTTOMS

Mailing Address:(*)	City:(*)	State:(*)	Zip:(*)
634 EAST DIXIE AVE	ELIZABETHTOWN	Kentucky	42701

eMail Address:(*)	Business Phone:(*)	Alternate Phone:
BRADLEY.BOTTOMS@KY.GOV	2707665066	Phone

SECTION II -- GENERAL SITE LOCATION INFORMATION

Project Name:(*)	Status of Owner/Operator(*)	SIC Code(*)
CID ##-#### - KY 259 IMPROVEMENTS	State Government	1611 Highway and Street Constr

Company Name:(✓)	First Name:(✓)	M.I.:	Last Name:(✓)
KYTC DISTRICT 4	BRADLEY	MI	BOTTOMS

Site Physical Address:(*)

KY 259

City:(*)	State:(*)	Zip:(*)
LEITCHFIELD	Kentucky	42754

County:(*)	Latitude(decimal degrees)(*)DMS to DD Converter (https://www.fcc.gov/media/radio/dms-decimal)	Longitude(decimal degrees)(*)
Grayson	37.403333	-86.237222

SECTION III -- SPECIFIC SITE ACTIVITY INFORMATION

Project Description:(*)

PERFORM LOW COST SAFETY IMPROVEMENTS ON KY 259 FROM MP 0.000 TO MP 11.761 IN GRAYSON COUNTY

a. For single projects provide the following information

Total Number of Acres in Project:(✓)	Total Number of Acres Disturbed:(✓)
57.54	57.54
Anticipated Start Date:(✓)	**Anticipated Completion Date:(✓)**

b. For common plans of development provide the following information

Total Number of Acres in Project:(✓)	Total Number of Acres Disturbed:(✓)
# Acre(s)	# Acre(s)

Number of individual lots in development, if applicable:(✓)	Number of lots in development:(✓)
# lot(s)	# lot(s)
Total acreage of lots intended to be developed:(✓)	**Number of acres intended to be disturbed at any one time:(✓)**
Project Acres	Disturbed Acres
Anticipated Start Date:(✓)	**Anticipated Completion Date:(✓)**

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

	Company Name	
+		

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

Discharge Point(s):

	Unnamed Tributary?	Latitude	Longitude	Receiving Water Name	
1	Yes	37.393131	-86.239395	LONG BRANCH	Delete
2	Yes	37.344592	-86.240336	SALTSMAN BRANCH	Delete
3	Yes	37.355901	-86.240884	CONOLOWAY CREEK	Delete
4	Yes	37.3553	-86.24098	CONOLOWAY CREEK	Delete
5	Yes	37.342533	-86.241307	CANE CAMP CREEK	Delete
6	Yes	37.350601	-86.241349	CONOLOWAY CREEK	Delete
7	Yes	37.353407	-86.241468	CONOLOWAY CREEK	Delete
8	Yes	37.361022	-86.241658	SALTSMAN BRANCH	Delete
9	Yes	37.362466	-86.241731	CONOLOWAY CREEK	Delete
10	Yes	37.351966	-86.241832	CONOLOWAY CREEK	Delete

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

Name of MS4:

Date of application/notification to the MS4 for construction site permit coverage:	Discharge Point(s):(*)

Date	

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

Will the project require construction activities in a water body or the riparian zone?:(*)	No
If Yes, describe scope of activity: (✓)	describe scope of activity
Is a Clean Water Act 404 permit required?:(*)	Yes
Is a Clean Water Act 401 Water Quality Certification required?:(*)	No

SECTION VII -- NOI PREPARER INFORMATION

First Name:(*)	M.I.:	Last Name:(*)	Company Name:(*)
JOSEPH	MI	FERGUSON	KYTC DISTRICT 4

Mailing Address:(*)	City:(*)	State:(*)	Zip:(*)
634 EAST DIXIE AVE	ELIZABETHTOWN	Kentucky	42701

eMail Address:(*)	Business Phone:(*)	Alternate Phone:
JOSEPH.FERGUSON@KY.GOV	2707665066	Phone

SECTION VIII -- ATTACHMENTS

Facility Location Map:(*)	Upload file
Supplemental Information:	Upload file

SECTION IX -- CERTIFICATION

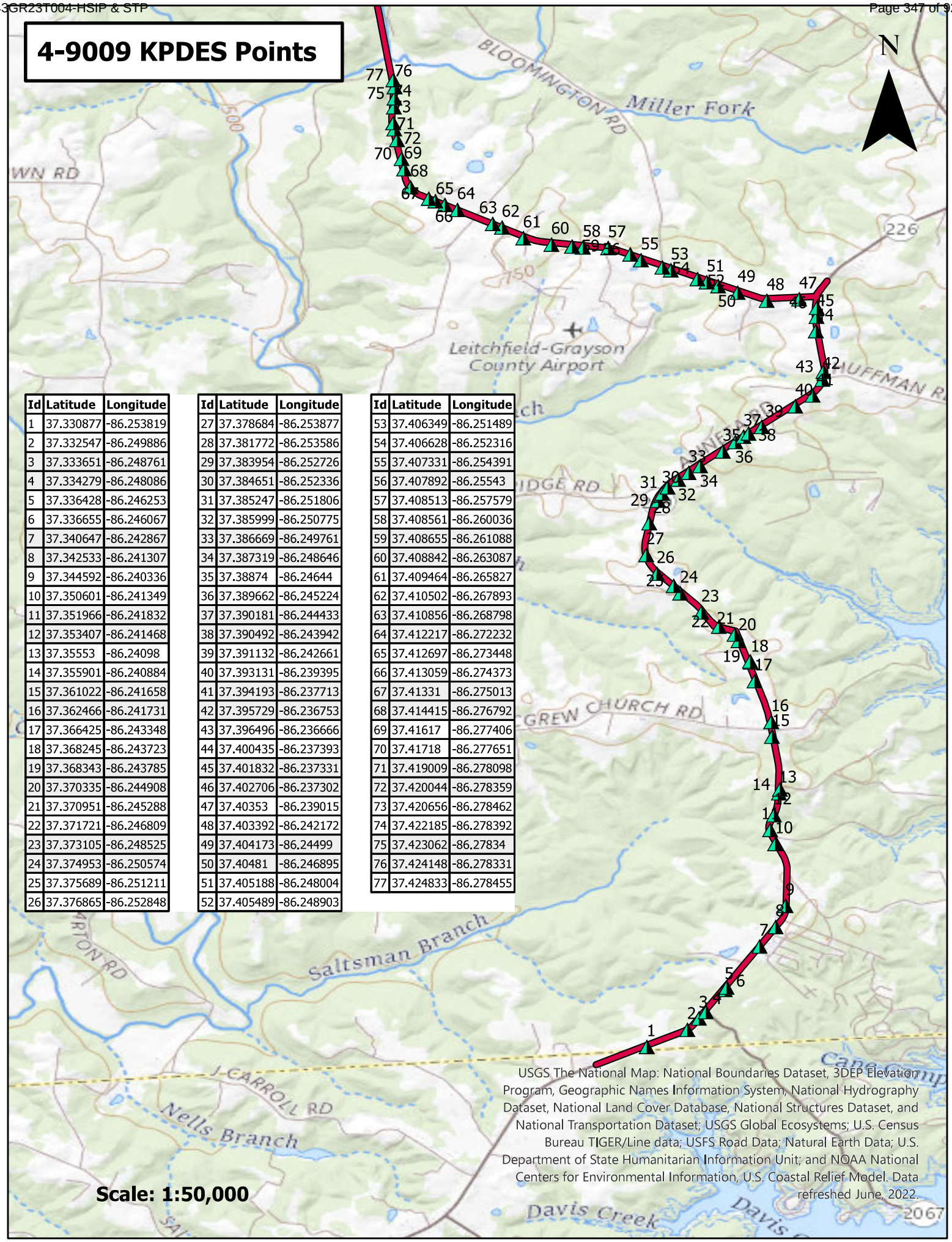
I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that

qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature:(*)		Title:(*)	
Signature		Title	
First Name:(*)	M.I.:	Last Name:(*)	
First Name	MI	Last Name	
eMail Address:(*)	Business Phone:(*)	Alternate Phone:	Signature Date:(*)
eMail Address	Phone	Phone	Date

Click to Save Values for Future Retrieval | Click to Submit to EEC

4-9009 KPDES Points



Id	Latitude	Longitude
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3	37.333651	-86.248761
4	37.334279	-86.248086
5	37.336428	-86.246253
6	37.336655	-86.246067
7	37.340647	-86.242867
8	37.342533	-86.241307
9	37.344592	-86.240336
10	37.350601	-86.241349
11	37.351966	-86.241832
12	37.353407	-86.241468
13	37.35553	-86.24098
14	37.355901	-86.240884
15	37.361022	-86.241658
16	37.362466	-86.241731
17	37.366425	-86.243348
18	37.368245	-86.243723
19	37.368343	-86.243785
20	37.370335	-86.244908
21	37.370951	-86.245288
22	37.371721	-86.246809
23	37.373105	-86.248525
24	37.374953	-86.250574
25	37.375689	-86.251211
26	37.376865	-86.252848

Id	Latitude	Longitude
27	37.378684	-86.253877
28	37.381772	-86.253586
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31	37.385247	-86.251806
32	37.385999	-86.250775
33	37.386669	-86.249761
34	37.387319	-86.248646
35	37.38874	-86.24644
36	37.389662	-86.245224
37	37.390181	-86.244433
38	37.390492	-86.243942
39	37.391132	-86.242661
40	37.393131	-86.239395
41	37.394193	-86.237713
42	37.395729	-86.236753
43	37.396496	-86.236666
44	37.400435	-86.237393
45	37.401832	-86.237331
46	37.402706	-86.237302
47	37.40353	-86.239015
48	37.403392	-86.242172
49	37.404173	-86.24499
50	37.40481	-86.246895
51	37.405188	-86.248004
52	37.405489	-86.248903

Id	Latitude	Longitude
53	37.406349	-86.251489
54	37.406628	-86.252316
55	37.407331	-86.254391
56	37.407892	-86.25543
57	37.408513	-86.257579
58	37.408561	-86.260036
59	37.408655	-86.261088
60	37.408842	-86.263087
61	37.409464	-86.265827
62	37.410502	-86.267893
63	37.410856	-86.268798
64	37.412217	-86.272232
65	37.412697	-86.273448
66	37.413059	-86.274373
67	37.41331	-86.275013
68	37.414415	-86.276792
69	37.41617	-86.277406
70	37.41718	-86.277651
71	37.419009	-86.278098
72	37.420044	-86.278359
73	37.420656	-86.278462
74	37.422185	-86.278392
75	37.423062	-86.27834
76	37.424148	-86.278331
77	37.424833	-86.278455

Scale: 1:50,000

USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS Road Data; Natural Earth Data; U.S. Department of State Humanitarian Information Unit; and NOAA National Centers for Environmental Information, U.S. Coastal Relief Model. Data refreshed June, 2022.

2067

MATERIAL SUMMARY

CONTRACT ID: 234206 **043GR23T004-HSIP & STP** **0404302592101**

ANNETA ROAD (KY 259) FROM THE GRAYSON/EDMONSON COUNTY LINE EXTENDING NORTHWEST TO THE INTERSECTION WITH BLOOMINGTON ROAD ASPHALT PAVEMENT & ROADWAY REHAB, A DISTANCE OF 11.76 MILES.

Project Line No	Bid Code	DESCRIPTION	Quantity	Unit
0005	00001	DGA BASE	1,311.00	TON
0010	00003	CRUSHED STONE BASE	16,697.00	TON
0015	00190	LEVELING & WEDGING PG64-22	250.00	TON
0020	00212	CL2 ASPH BASE 1.00D PG64-22	18,608.00	TON
0025	02101	CEM CONC ENT PAVEMENT-8 IN	700.00	SQYD
0030	02676	MOBILIZATION FOR MILL & TEXT	1.00	LS
0035	10020NS	FUEL ADJUSTMENT	47,688.00	DOLL
0040	10030NS	ASPHALT ADJUSTMENT	80,894.00	DOLL
0045	21653ES403	CL2 ASPH SURF NO.4D PG64-22	1,833.00	TON
0050	24970EC	ASPHALT MATERIAL FOR TACK NON-TRACKING	46.00	TON
0055	00078	CRUSHED AGGREGATE SIZE NO 2	750.00	TON
0060	01987	DELINEATOR FOR GUARDRAIL BI DIRECTIONAL WHITE	51.00	EACH
0065	02159	TEMP DITCH	24,485.00	LF
0070	02160	CLEAN TEMP DITCH	12,243.00	LF
0075	02200	ROADWAY EXCAVATION	33,690.00	CUYD
0080	02223	GRANULAR EMBANKMENT	502.00	CUYD
0085	02237	DITCHING	9,794.00	LF
0090	02259	FENCE-TEMP	2,575.00	LF
0095	02268	REMOVE & REPLACE FENCE - BARBED WIRE	1,350.00	LF
0100	02268	REMOVE & REPLACE FENCE - CHAIN LINK	150.00	LF
0105	02268	REMOVE & REPLACE FENCE - WOOD PLANK	200.00	LF
0110	02268	REMOVE & REPLACE FENCE - WOVEN WIRE	3,075.00	LF
0115	02360	GUARDRAIL TERMINAL SECTION NO 1	1.00	EACH
0120	02383	REMOVE & RESET GUARDRAIL	500.00	LF
0125	02391	GUARDRAIL END TREATMENT TYPE 4A	15.00	EACH
0130	02483	CHANNEL LINING CLASS II	1,483.00	TON
0135	02545	CLEARING AND GRUBBING - 57.54 ACRES	1.00	LS
0140	02562	TEMPORARY SIGNS	800.00	SQFT
0145	02585	EDGE KEY	134.00	LF
0150	02650	MAINTAIN & CONTROL TRAFFIC - (GRAYSON KY 259 HSIP)	1.00	LS
0155	02671	PORTABLE CHANGEABLE MESSAGE SIGN	2.00	EACH
0160	02697	EDGELINE RUMBLE STRIPS	97,940.00	LF
0165	02701	TEMP SILT FENCE	24,485.00	LF
0170	02704	SILT TRAP TYPE B	57.00	EACH
0175	02705	SILT TRAP TYPE C	57.00	EACH
0180	02707	CLEAN SILT TRAP TYPE B	57.00	EACH
0185	02708	CLEAN SILT TRAP TYPE C	57.00	EACH
0190	03269	TRIM & REMOVE TREES & BRUSH	875.00	LF
0195	04933	TEMP SIGNAL 2 PHASE	1.00	EACH
0200	05950	EROSION CONTROL BLANKET	38,849.00	SQYD
0205	05952	TEMP MULCH	185,674.00	SQYD
0210	05953	TEMP SEEDING AND PROTECTION	139,255.00	SQYD

MATERIAL SUMMARY

Project Line No	Bid Code	DESCRIPTION	Quantity	Unit
0215	05963	INITIAL FERTILIZER	15.00	TON
0220	05964	MAINTENANCE FERTILIZER	9.00	TON
0225	05985	SEEDING AND PROTECTION	191,731.00	SQYD
0230	05989	SPECIAL SEEDING CROWN VETCH	47,933.00	SQYD
0235	05992	AGRICULTURAL LIMESTONE	172.00	TON
0240	06510	PAVE STRIPING-TEMP PAINT-4 IN	195,880.00	LF
0245	06542	PAVE STRIPING-THERMO-6 IN W	97,940.00	LF
0250	06543	PAVE STRIPING-THERMO-6 IN Y	73,455.00	LF
0255	20191ED	OBJECT MARKER TY 3	13.00	EACH
0260	20458ES403	CENTERLINE RUMBLE STRIPS	48,970.00	LF
0265	21289ED	LONGITUDINAL EDGE KEY	32,930.00	LF
0270	21802EN	G/R STEEL W BEAM-S FACE (7 FT POST)	1,993.75	LF
0275	00440	ENTRANCE PIPE-15 IN	3,283.00	LF
0280	00441	ENTRANCE PIPE-18 IN	436.00	LF
0285	00462	CULVERT PIPE-18 IN	1,595.00	LF
0290	00464	CULVERT PIPE-24 IN	383.00	LF
0295	00466	CULVERT PIPE-30 IN	58.00	LF
0300	00468	CULVERT PIPE-36 IN	32.00	LF
0305	01204	PIPE CULVERT HEADWALL-18 IN	21.00	EACH
0310	01208	PIPE CULVERT HEADWALL-24 IN	4.00	EACH
0315	01310	REMOVE PIPE	1,025.00	LF
0320	01490	DROP BOX INLET TYPE 1	1.00	EACH
0325	01544	DROP BOX INLET TYPE 11	1.00	EACH
0330	01726	SAFETY BOX INLET-18 IN SDB-1	6.00	EACH
0335	01728	SAFETY BOX INLET-18 IN DBL SDB-5	5.00	EACH
0340	01729	SAFETY BOX INLET-24 IN DBL SDB-5	3.00	EACH
0345	02403	REMOVE CONCRETE MASONRY - FOR STA 374+47.11	1.00	CUYD
0350	02403	REMOVE CONCRETE MASONRY - FOR STA 593+50.27	1.00	CUYD
0355	02403	REMOVE CONCRETE MASONRY - FOR STA 607+59.30	1.00	CUYD
0360	02625	REMOVE HEADWALL	99.00	EACH
0365	02690	SAFELOADING	11.50	CUYD
0370	08002	STRUCTURE EXCAV-SOLID ROCK - FOR STA 374+47.11	13.00	CUYD
0375	08002	STRUCTURE EXCAV-SOLID ROCK - FOR STA 593+50.27	13.00	CUYD
0380	08002	STRUCTURE EXCAV-SOLID ROCK - FOR STA 607+59.30	13.00	CUYD
0385	08003	FOUNDATION PREPARATION - FOR STA 374+47.11	1.00	LS
0390	08003	FOUNDATION PREPARATION - FOR STA 593+50.27	1.00	LS
0395	08003	FOUNDATION PREPARATION - FOR STA 607+59.30	1.00	LS
0400	08100	CONCRETE-CLASS A - FOR STA 374+47.11	25.60	CUYD
0405	08100	CONCRETE-CLASS A - FOR STA 593+50.27	27.90	CUYD
0410	08100	CONCRETE-CLASS A - FOR STA 607+59.30	21.70	CUYD
0415	08150	STEEL REINFORCEMENT - FOR STA 374+47.11	2,796.00	LB
0420	08150	STEEL REINFORCEMENT - FOR STA 593+50.27	2,933.00	LB
0425	08150	STEEL REINFORCEMENT - FOR STA 607+59.30	2,009.00	LB
0430	24575ES610	HEADWALL - SLOPED AND MITERED CONC HEADWALL 18"	60.00	EACH
0435	24575ES610	HEADWALL - SLOPED AND MITERED CONC HEADWALL 24"	12.00	EACH
0440	24575ES610	HEADWALL - SLOPED AND MITERED CONC HEADWALL 30"	2.00	EACH
0445	24583EC	HDPE PIPE LINER - HDPE Pipe Liner	300.00	LF
0450	24814EC	PIPELINE INSPECTION	3,014.00	LF

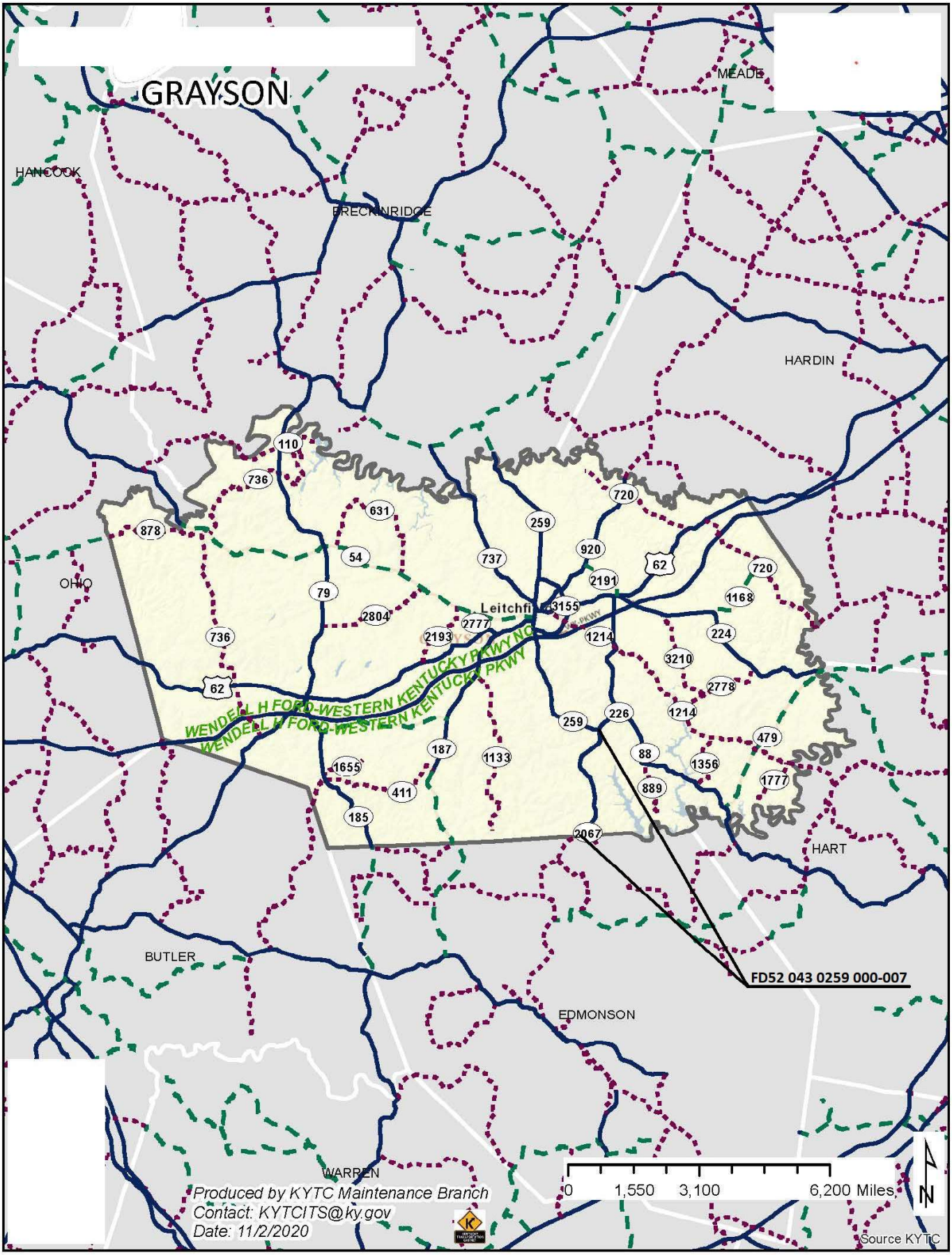
MATERIAL SUMMARY

Project Line No	Bid Code	DESCRIPTION	Quantity	Unit
0455	40023	KYTC S&F HEADWALL-18 IN	2.00	EACH
0460	02690	SAFELOADING	40.25	CUYD
0465	14003	W CAP EXISTING MAIN	11.00	EACH
0470	14007	W ENCASEMENT STEEL BORED RANGE 2	207.00	LF
0475	14022	W FLUSH HYDRANT ASSEMBLY	3.00	EACH
0480	14028	W METER 3/4 INCH	18.00	EACH
0485	14047	W PIPE DCTL IRON RSTRND JOINT 06 IN	540.00	LF
0490	14058	W PIPE PVC 04 INCH	375.00	LF
0495	14059	W PIPE PVC 06 INCH	4,905.00	LF
0500	14080	W SERV PE/PLST LONG SIDE 3/4 IN	79.00	EACH
0505	14085	W SERV PE/PLST SHORT SIDE 3/4 IN	4.00	EACH
0510	14089	W TAPPING SLEEVE AND VALVE SIZE 1	14.00	EACH
0515	14124	W VALVE SPECIAL	6.00	EACH
0520	14144	W LINE MARKER	18.00	EACH
0525	02726	STAKING - (GRAYSON KY 259 HSIP)	1.00	LS
0530	02568	MOBILIZATION	1.00	LS
0535	02569	DEMOBILIZATION	1.00	LS

CONTRACT ID: 234206 **043GR23T004-HSIP & STP** **MP04302592101**

ANNETA ROAD (KY 259) BEGIN AT THE EDMONSON/GRAYSON COUNTY LINE EXTENDING NORTH TO KY 226 ASPHALT RESURFACING, A DISTANCE OF 6.07 MILES.

Project Line No	Bid Code	DESCRIPTION	Quantity	Unit
0540	00190	LEVELING & WEDGING PG64-22	1,138.00	TON
0545	00212	CL2 ASPH BASE 1.00D PG64-22	325.00	TON
0550	00301	CL2 ASPH SURF 0.38D PG64-22	5,530.00	TON
0555	02562	TEMPORARY SIGNS	430.00	SQFT
0560	02650	MAINTAIN & CONTROL TRAFFIC	1.00	LS
0565	02676	MOBILIZATION FOR MILL & TEXT	1.00	LS
0570	02677	ASPHALT PAVE MILLING & TEXTURING	385.00	TON
0575	06510	PAVE STRIPING-TEMP PAINT-4 IN	90,000.00	LF
0580	06568	PAVE MARKING-THERMO STOP BAR-24IN	40.00	LF
0585	10020NS	FUEL ADJUSTMENT	10,434.00	DOLL
0590	10030NS	ASPHALT ADJUSTMENT	26,206.00	DOLL
0595	23625EC	PAVE MARK THERMO-6 IN W CAT TRAXX	225.00	LF
0600	24970EC	ASPHALT MATERIAL FOR TACK NON-TRACKING	35.00	TON
0605	02569	DEMOBILIZATION	1.00	LS


GRAYSON
MEADE
HANCOCK
BRECKINRIDGE
HARDIN
OHIO
Leitchfield
WENDELL H FORD-WESTERN KENTUCKY PKWY
WENDELL H FORD-WESTERN KENTUCKY PKWY
HART
BUTLER
EDMONSON
WARREN
FD52 043 0259 000-007
110
736
878
631
54
79
2804
736
62
187
1655
411
185
1133
2193
2777
737
259
720
920
2191
3155
62
720
1168
224
1214
3210
2778
1214
259
226
479
88
1356
889
1777
2067
0
1,550
3,100
6,200 Miles
N
Produced by KYTC Maintenance Branch
Contact: KYTCITS@ky.gov
Date: 11/2/2020
Source KYTC

Grayson County
THERMOPLASTIC INTERSECTION PAVEMENT MARKINGS SUMMARY
FD52 043 0259 000-007

MPT.	INTERSECTION	X-WALKS 6 INCH LF	STP BARS 24 INCH LF	ARROWS CURVE EA	ARROWS STR EA	ARROWS COMB EA	"ONLY" EA	"STOP" EA	CATRAXX 6 INCH LF	NOTES
6.073	KY 259/KY 226		40						225	
TOTAL			40						225	

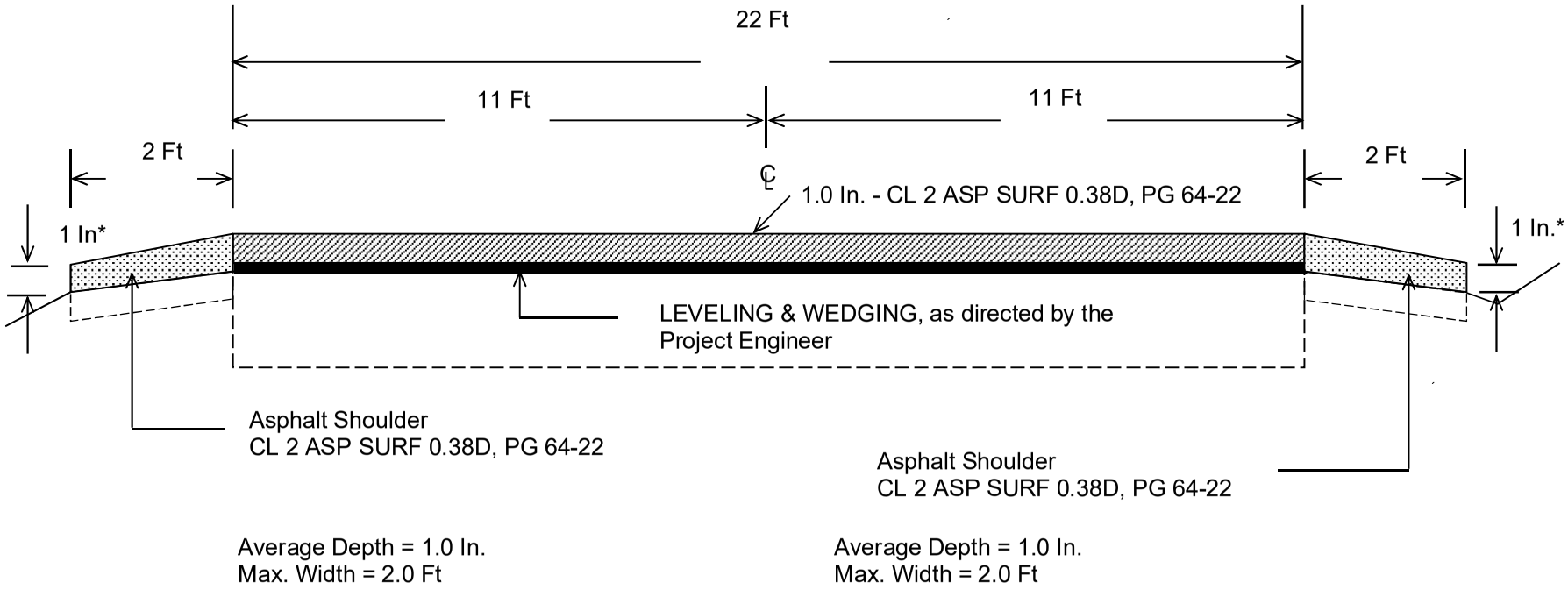
Milling
Summary
FD52 043 0259 000-007

				Total	385
Milepoint	**Comment**	**Length**	**Width**	**Avg Depth**	**Tons**
0.000	**Edge Key**	**100**	**26**	**0.5**	**7.9**
5.240	**Taper for Slide Area**	**100**	**26**	**0.5**	**7.9**
5.24-5.28	**Slide Area**	**215**	**26**	**1**	**34.2**
5.280	**Taper for Slide Area**	**100**	**26**	**0.5**	**7.9**
Varies	**Milling for Base Failures**				**325**
					0
					0
					0
					0
					0
					0
					0
					0
					0
					0
					0
					0
					0
					0
					0
					0
					0
					0
					0
					0
					0

Base Failure
Repair Summary
FD52 043 0259 000-007

			Total	325
Milepoint	Direction	Length	Width	Tons
0.000	Northbound	25	6	5.5
0.100	Southbound	175	6	38.5
0.290	Northbound	20	6	4.4
0.77	Northbound	150	6	33.0
1.27	Northbound	75	6	16.5
1.39	Northbound	25	6	5.5
1.66	Southbound	75	6	16.5
1.69	Southbound	75	6	16.5
1.88	Southbound	100	6	22.0
3.25	Southbound	50	6	11.0
3.31	Southbound	100	6	22.0
4.37	Northbound	50	6	11.0
4.52	Southbound	75	6	16.5
4.59	Southbound	50	6	11.0
4.77	Southbound	100	6	22.0
4.8	Southbound	50	6	11.0
4.88	Southbound	50	6	11.0
4.99	Southbound	75	6	16.5
5.22	Southbound	100	6	22.0
5.74	Southbound	50	6	11.0
				0
				0
				0
				0
				0

Grayson County
TYPICAL SECTION
FD52 043 0259 000-007
MP's 0.000 to 6.073



***Where Existing Site Conditions Permit**

GRAYSON COUNTY
043GR23T004-HSIP & STP

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
R1	LAYOUT SHEET
R2 - R2E	TYPICAL SECTIONS-SUMMARY OF QUANTITIES
R3 - R52	PLAN SHEETS
R53	TRAFFIC CONTROL SHEETS
R54 - R93	PIPE DRAINAGE SHEETS
X1 - X373	CROSS SECTION SHEETS
S	STRUCTURE PLANS
U	UTILITY RELOCATION PLANS

SHEETS NOT INCLUDED IN TOTAL SHEETS

STANDARD DRAWINGS

NUMBER 29

RBI-001-12	RBI-001-12	RGS-001-07
RBI-002-07	RBI-002-07	TPR-100
RBI-001-13	RBI-001-13	TPR-110
RBI-005-11	RBI-005-11	TPR-115
RBR-010-06	RBR-010-06	TPR-120
RBR-015-06	RBR-015-06	TTC-135-03
RBR-035-12	RBR-035-12	TTS-105-02
RBR-055-01	RBR-055-01	RDH-005-02
	RDI-041-01	RDH-020-03
	RDX-210-03	
	RDX-225-01	
	RDX-230-01	

DESIGN CRITERIA

CLASS OF HIGHWAY	MINOR ARTERIAL
TYPE OF TERRAIN	ROLLING
DESIGN SPEED	55 MPH
REQUIRED NPSD	495 FT
REQUIRED PSD	1985 FT
LEVEL OF SERVICE	
ADT PRESENT (2017)	3517
ADT FUTURE ( )	
DHV	
D %	
T %	8.708

GEOGRAPHIC COORDINATES

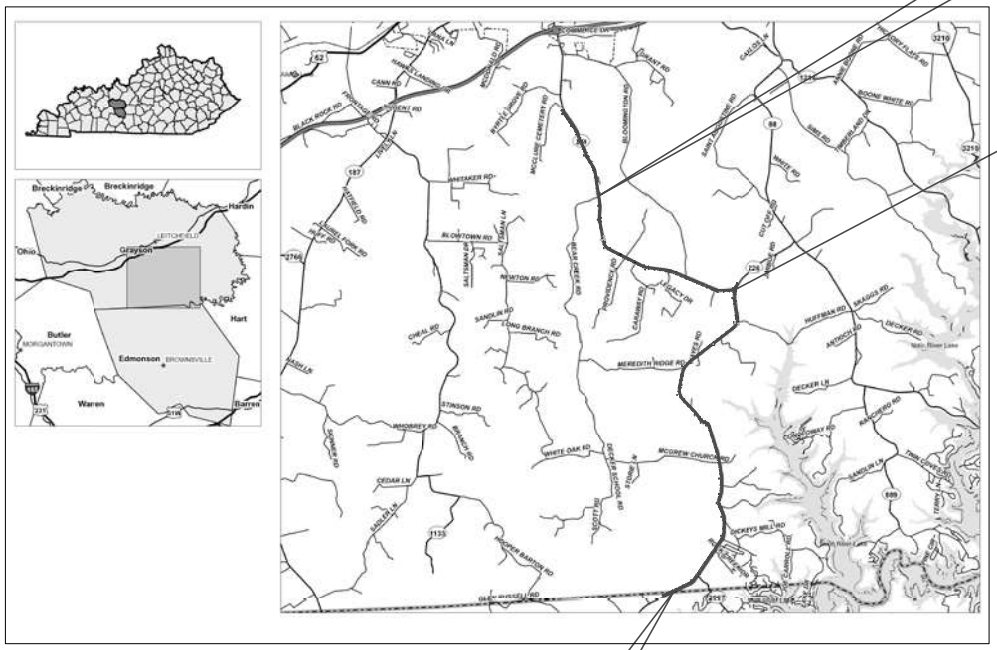
LATITUDE 37 DEGREES 24 MINUTES 12 SECONDS NORTH
LONGITUDE 86 DEGREES 14 MINUTES 14 SECONDS WEST

DESIGNED

% RESTRICTED SD
LEVEL OF SERVICE
MAX. DISTANCE W/O PASSING

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

PLANS OF
PROPOSED PROJECT
GRAYSON COUNTY
KY 259 ANNETA RD WIDENING



THIS PROJECT IS OFF THE NH SYSTEM

THESE PLANS ARE FOR GRADE, DRAIN, & SURFACING

LAYOUT MAP

0' 17000' 34000' 68000'

SCALE: 1"=

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R1

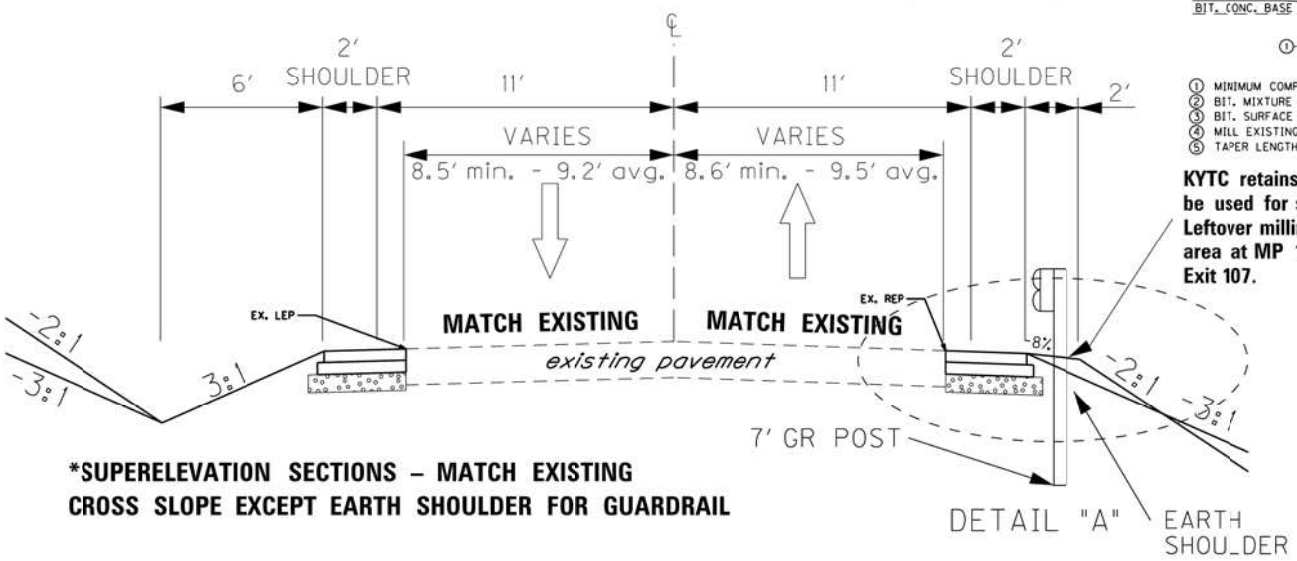
ITEM NO. 4-9009
PROJECT NUMBER:

HIGHWAY SAFETY IMPROVEMENT PROJECT
PROPOSED WIDENING
KY 259 ANNETA ROAD

LENGTH 32.210 LIN. FT. 6.1 MILES	LENGTH 16.760 LIN. FT. 3.174 MILES
ADDED / DEDUCTED — FOR EQUALITIES NOT INCLUDED	ADDED / DEDUCTED — FOR EQUALITIES NOT INCLUDED
RAILROAD CROSSINGS NO. LIN. FT.	RAILROAD CROSSINGS NO. LIN. FT.
BRIDGES LIN. FT.	BRIDGES LIN. FT.
ANNETA RD	ANNETA RD
COUNTY LINE TO SMITTY CITY	SMITTY CITY TO BEAR CREEK RD

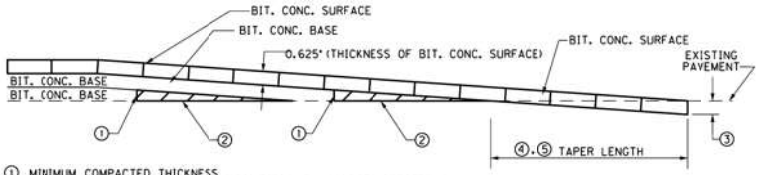
Contract ID: 234206
Page 356 of 928

KY 259
NORMAL WIDEN ONLY SECTION
STA 110+90 – STA 433+00 (SOUTH)



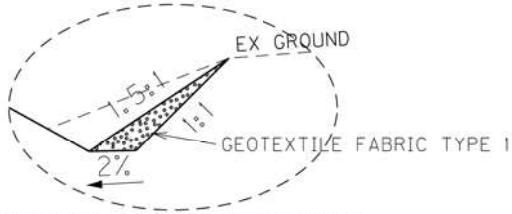
***SUPERELEVATION SECTIONS – MATCH EXISTING CROSS SLOPE EXCEPT EARTH SHOULDER FOR GUARDRAIL**

TAPERING OF OVERLAYS ON MEDIUM SPEED FACILITIES (45mph to 65mph)
RECOMMENDED TAPER RATE 1:600 (1" : 50')



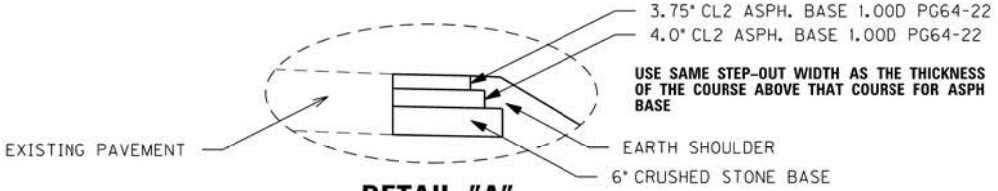
① MINIMUM COMPACTED THICKNESS
② BIT. MIXTURE FOR LEVELING & WEDGING OR NEXT COURSE OF BIT. MIX.
③ BIT. SURFACE THICKNESS (FULL DEPTH)
④ MILL EXISTING PAVEMENT TO RECEIVE BIT. SURFACE FULL DEPTH (EDGE KEY).
⑤ TAPER LENGTH (ft) = $\frac{0.625\ (\text{in}) \times 600}{12}$ = 31.25 FEET

KYTC retains ownership of asphalt millings which will be used for shouldering or as directed by the engineer. Leftover millings will be delivered to WK Parkway Median area at MP 108, east of Ky 259/WK Parkway Interchange Exit 107.

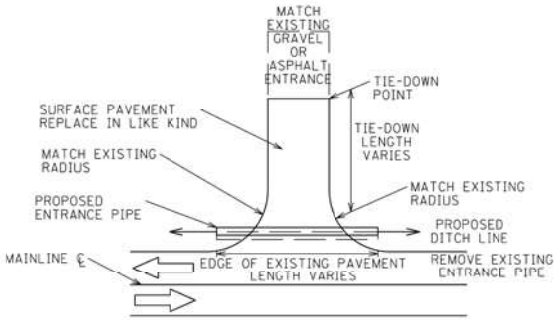


GRANULAR EMBANKMENT DETAIL
SEE CROSS SECTIONS FOR LOCATIONS

GEOTEXTILE FABRIC CLASS I SHALL BE USED BETWEEN THE INTERFACE OF SOIL AND GRANULAR EMBANKMENT IN ALL CUT AND FILL AREAS WHERE GRANULAR EMBANKMENT IS INDICATED ON CROSS SECTIONS OR PLAN SHEETS. FABRIC SHALL BE INCIDENTAL TO GRANULAR EMBANKMENT BID ITEM.



DETAIL "A"
NOT TO SCALE



ENTRANCE DETAIL

KY 259 TRAVELED WAY

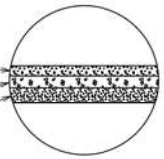
6" COMPACTED CRUSHED STONE BASE
7.75" (4.0" + 3.75") COMPACTED DEPTH CL2 ASPH BASE 1.00D PG64–22
1" COMPACTED DEPTH CL2 ASPH SURF 0.38D PG64–22

STRIPING
STRIPE ROADWAY FOR 11 FT LANES

**** CONSTRUCT ALL ENTRANCE /APPROACH TIE–INS WITH MATERIAL IN LIKE KIND**
**** CONTRARY TO STD DWG RPM–110–07, ASPH / CONCRETE / GRAVEL LIMITS TO EITHER THE ENTRANCE PIPE OR PIPE OR 30' FROM CENTERLINE, WHICHEVER IS CLOSEST TO THE TRAVELWAY**

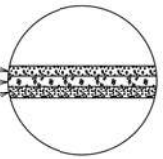
COMMERCIAL ENTRANCES

1.5" CL2 ASPH SURF 0.38B PG 64–22
3.00" CL2 ASPH BASE 1.00D PG 64–22
6.0" CRUSHED STONE BASE



RESIDENTIAL ENTRANCES

1.5" CL2 ASPH SURF 0.38B PG 64–22
3.00" CL2 ASPH BASE 1.00D PG 64–22
4.0" CRUSHED STONE BASE



SCALE: 1"= NA

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R2

KY 259 TYPICAL SECTIONS
SHEET 1 OF 4

GRAYSON COUNTY
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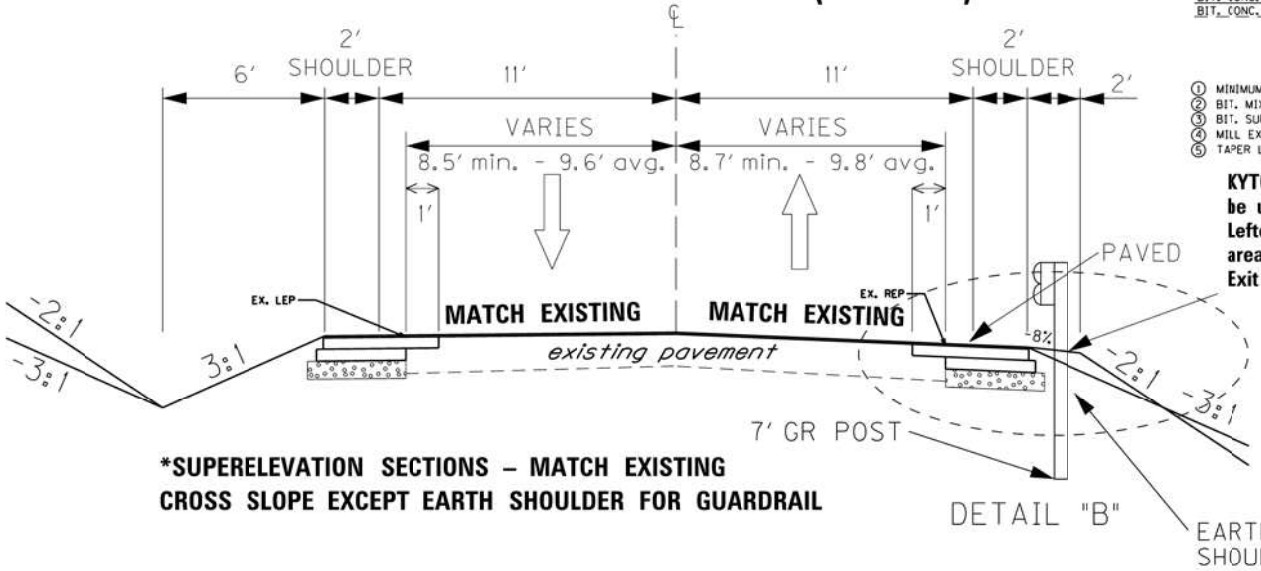
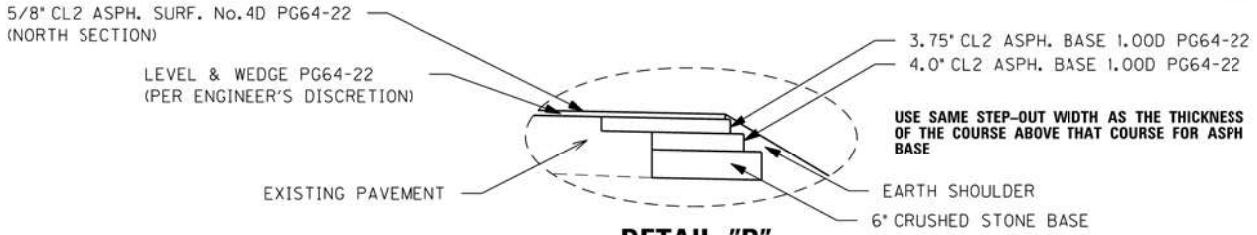
KY 259
NORMAL WIDEN AND THIN OVERLAY SECTION
STA 500+00 – END (NORTH)

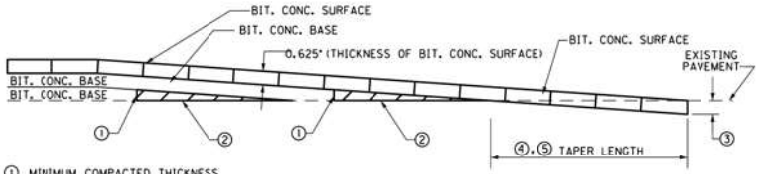


***SUPERELEVATION SECTIONS – MATCH EXISTING CROSS SLOPE EXCEPT EARTH SHOULDER FOR GUARDRAIL**



DETAIL "B"
NOT TO SCALE

TAPERING OF OVERLAYS ON MEDIUM SPEED FACILITIES (45mph to 65mph)
RECOMMENDED TAPER RATE 1:600 (1" : 50')



① MINIMUM COMPACTED THICKNESS
② BIT. MIXTURE FOR LEVELING & WEDGING OR NEXT COURSE OF BIT. MIX.
③ BIT. SURFACE THICKNESS (FULL DEPTH)
④ MILL EXISTING PAVEMENT TO RECEIVE BIT. SURFACE FULL DEPTH (EDGE KEY).
⑤ TAPER LENGTH (ft) = $\frac{0.625\ (in) \times 600}{12}$ = 31.25 FEET

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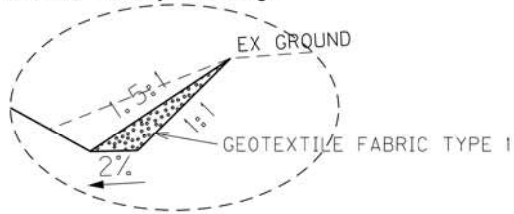
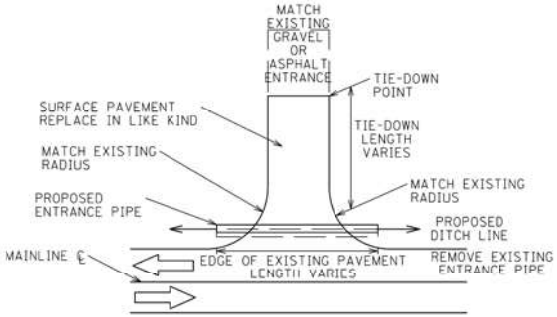


GRANULAR EMBANKMENT DETAIL
SEE CROSS SECTIONS FOR LOCATIONS

GEOTEXTILE FABRIC CLASS I SHALL BE USED BETWEEN THE INTERFACE OF SOIL AND GRANULAR EMBANKMENT IN ALL CUT AND FILL AREAS WHERE GRANULAR EMBANKMENT IS INDICATED ON CROSS SECTIONS OR PLAN SHEETS. FABRIC SHALL BE INCIDENTAL TO GRANULAR EMBANKMENT BID ITEM.



ENTRANCE DETAIL

KY 259 TRAVELED WAY

6" COMPACTED CRUSHED STONE BASE
7.75" (4.0"+3.75") COMPACTED DEPTH CL2 ASPH BASE 1.00D PG64–22
0.625" COMPACTED DEPTH CL2 ASPH SURF No.4D PG64–22

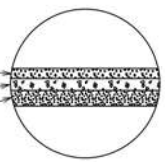
STRIPING

STRIPE ROADWAY FOR 11 FT LANES

**** CONSTRUCT ALL ENTRANCE /APPROACH TIE–INS WITH MATERIAL IN LIKE KIND**
**** CONTRARY TO STD DWG RPM–110–07, ASPH / CONCRETE / GRAVEL LIMITS TO EITHER THE ENTRANCE PIPE OR PIPE OR 30' FROM CENTERLINE, WHICHEVER IS CLOSEST TO THE TRAVELWAY**

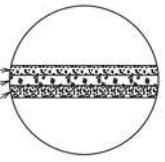
COMMERCIAL ENTRANCES

1.5" CL2 ASPH SURF 0.38B PG 64–22
3.00" CL2 ASPH BASE 1.00D PG 64–22
6.0" CRUSHED STONE BASE



RESIDENTIAL ENTRANCES

1.5" CL2 ASPH SURF 0.38B PG 64–22
3.00" CL2 ASPH BASE 1.00D PG 64–22
4.0" CRUSHED STONE BASE



SCALE: 1"= NA

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R2A

KY 259 TYPICAL SECTIONS
SHEET 2 OF 4

GRAYSON COUNTY
043GR23T004-HSIP & STP
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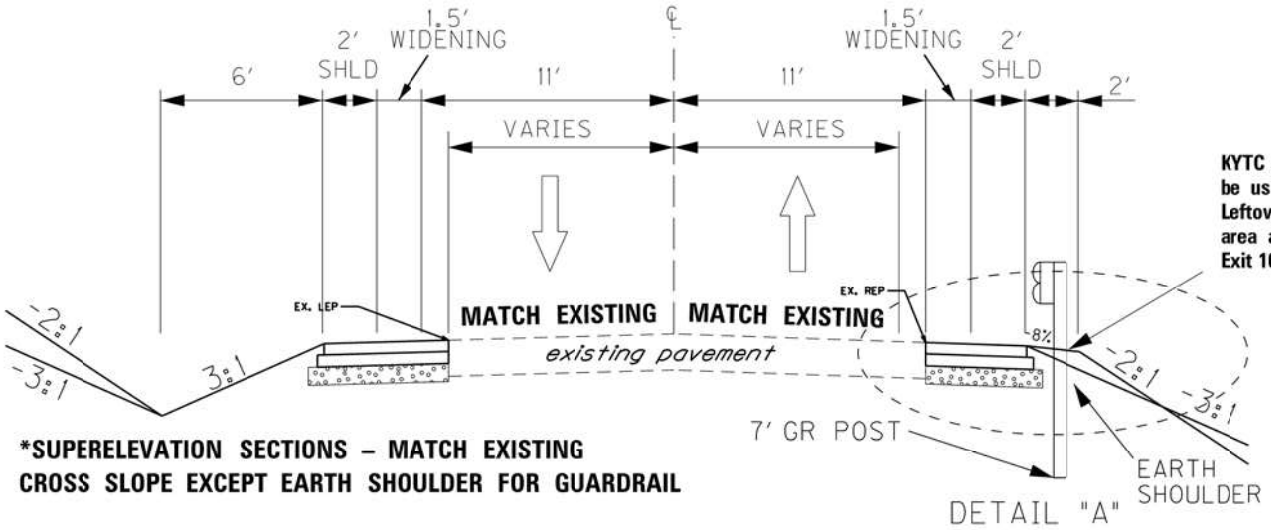
KY 259
CURVE WIDENING – SOUTH



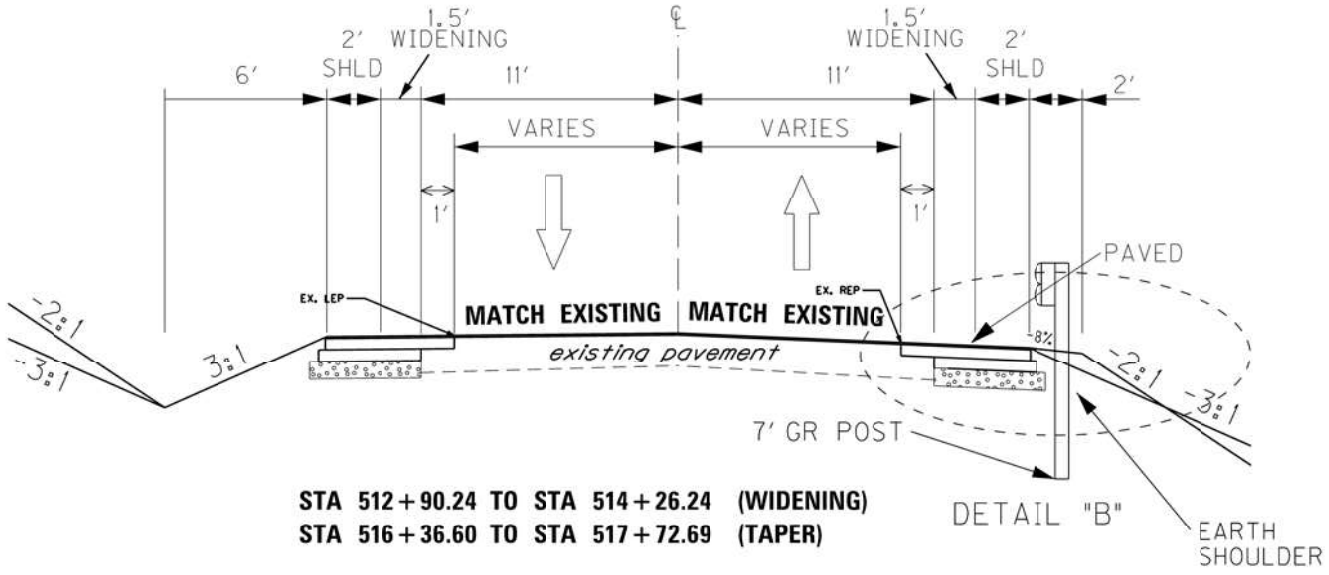
KYTC retains ownership of asphalt millings which will be used for shouldering or as directed by the engineer. Leftover millings will be delivered to WK Parkway Median area at MP 108, east of Ky 259/WK Parkway Interchange Exit 107.

***SUPERELEVATION SECTIONS – MATCH EXISTING CROSS SLOPE EXCEPT EARTH SHOULDER FOR GUARDRAIL**

STA 206+20.57 TO STA 207+56.57 (WIDENING)
STA 211+58.07 TO STA 212+94.07 (TAPER)

STA 277+21.66 TO STA 280+21.66 (WIDENING)
STA 287+88.07 TO STA 291+13.07 (TAPER)

CURVE WIDENING – NORTH



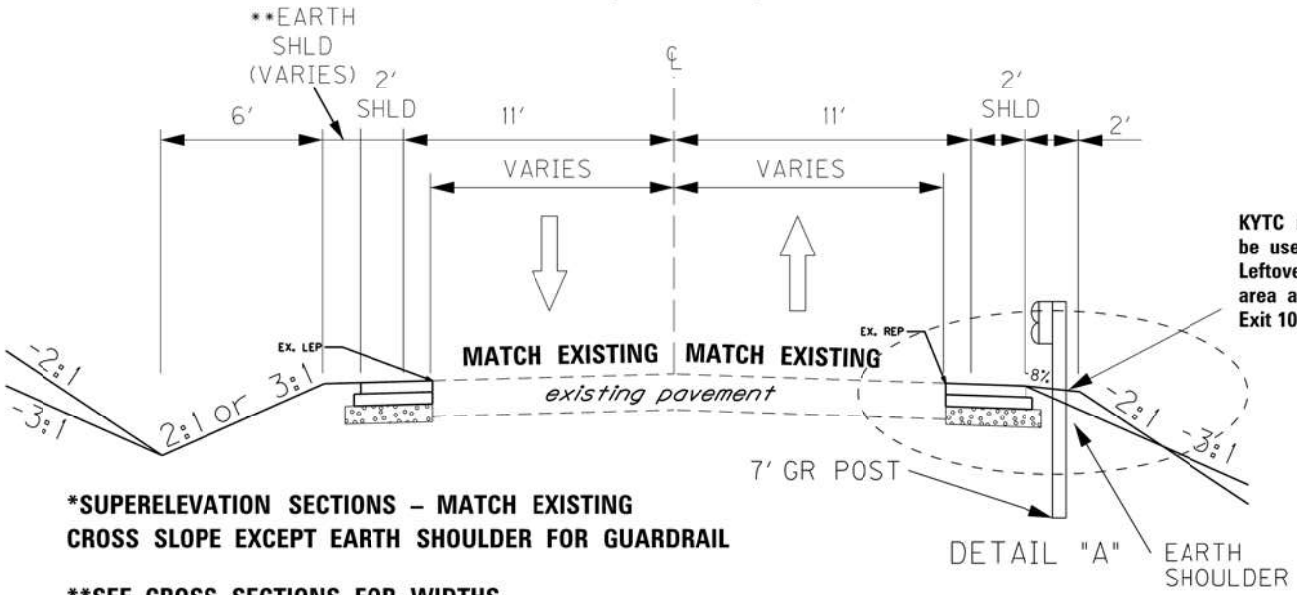
STA 512+90.24 TO STA 514+26.24 (WIDENING)
STA 516+36.60 TO STA 517+72.69 (TAPER)

SCALE: 1"= NA

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R2B

KY 259 TYPICAL SECTIONS
SHEET 3 OF 4

KY 259
UNPAVED SHOULDER SECTIONS
(SOUTH)



LT STA 199+00 – STA 205+75
LT STA 216+50 – STA 220+00
LT STA 290+00 – STA 295+50
RT STA 336+75 – STA 341+50
LT STA 417+75 – STA 423+50
RT STA 417+75 – STA 423+50

KYTC retains ownership of asphalt millings which will be used for shouldering or as directed by the engineer. Leftover millings will be delivered to WK Parkway Median area at MP 108, east of Ky 259/WK Parkway Interchange Exit 107.

***SUPERELEVATION SECTIONS – MATCH EXISTING CROSS SLOPE EXCEPT EARTH SHOULDER FOR GUARDRAIL**

****SEE CROSS SECTIONS FOR WIDTHS**

SCALE: 1"= NA

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R2C

KY 259 TYPICAL SECTIONS
SHEET 4 OF 4

GRAYSON COUNTY
043GR23T004-HSIP & STP
Contract ID: 234206
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GENERAL SUMMARY

ITEM CODE	DESCRIPTION	UNIT	SOUTH	NORTH	TOTAL
02200	ROADWAY EXCAVATION ⑨②	CUYD	24,819	8,871	33,690
02223	GRANULAR EMBANKMENT ④⑧⑦	CUYD	360	142	502
02585	EDGE KEY	LF	110	24	134
21802EN	GUARDRAIL - STEEL W BEAM - S FACE (7 FT POST)	LF	643.75	1,350	1993.75
02360	GUARDRAIL TERMINAL SECTION NO 1	EA	1		1
02383	REMOVE AND RESET GUARDRAIL	LF		500	500
02390	GUARDRAIL END TREATMENT TYPE 4A	EA	5	10	15
01987	DELINEATOR FOR GRDRL BI DIRECTIONAL WHITE	EA	14	37	51
20191ED	OBJECT MARKER TY 3	EA	5	8	13
02562	TEMPORARY SIGNS	SF			800
02650	MAINTAIN & CONTROL TRAFFIC ③	LS			1
02671	PORTABLE CHANGEABLE MESSAGE SIGN	EA			2
04933	TEMP SIGNAL 2 PHASE ⑩	EA			1
02237	DITCHING ④	LF	6,442	3,352	9,794
05985	SEEDING AND PROTECTION	SQYD	124,016	67,715	191,731
05989	SPECIAL SEEDING CROWN VETCH	SQYD	31,004	16,929	47,933
02545	CLEARING AND GRUBBING ⑯①	LS			1
02159	TEMP DITCH	LF	16,105	8,380	24,485
02160	CLEAN TEMP DITCH	LF	8,053	4,190	12,243
02701	TEMP SILT FENCE	LF	16,105	8,380	24,485
05952	TEMP MULCH	SQYD	123,319	62,355	185,674
05950	EROSION CONTROL BLANKET	SQYD	29,959	8,890	38,849
05953	TEMP SEEDING AND PROTECTION	SQYD	92,489	46,766	139,255
02704	SILT TRAP TYPE B	EA	38	19	57
02707	CLEAN SILT TRAP TYPE B	EA	38	19	57
02705	SILT TRAP TYPE C	EA	38	19	57
02708	CLEAN SILT TRAP TYPE C	EA	38	19	57
02483	CHANNEL LINING CLASS II ④⑤	TON	1041	309	1,483
02726	STAKING	LS			1
06510	PAVE STRIPING - TEMP PAINT - 4 IN	LF	128,840	67,040	195,880
06542	PAVE STRIPING - THERMO - 6 IN W	LF	64,420	33,520	97,940
06543	PAVE STRIPING - THERMO - 6 IN Y	LF	48,315	25,140	73,455
02697	EDGELINE RUMBLE STRIPS	LF	64,420	33,520	97,940
20458ES403	CENTERLINE RUMBLE STRIPS	LF	32,210	16,760	48,970
00078	CRUSHED AGGREGATE SIZE NO. 2 ④⑥	TON			750
02625	REMOVE HEADWALL	EA	69	30	99
10020NS	FUEL ADJUSTMENT	DOLL			47,688
10030NS	ASPHALT ADJUSTMENT	DOLL			80,894
05992	AGRICULTURAL LIMESTONE	TON	114	58	172
05963	INITIAL FERTILIZER	TON	10	5	15
05964	MAINTENANCE FERTILIZER	TON	6	3	9
03269	TRIM & REMOVE TREES & BRUSH ⑯	LF	600	275	875
02569	DEMOBILIZATION	LS			1
21289ED	LONGITUDINAL EDGE KY	LF		32,930	32,930
02568	MOBILIZATION	LS			1

ITEM CODE	DESCRIPTION	UNIT	TOTAL
02268	REMOVE & REPLACE FENCE (WOVEN WIRE) ⑪④	LF	3,075
02268	REMOVE & REPLACE FENCE (BARBED WIRE) ⑫④	LF	1,350
02268	REMOVE & REPLACE FENCE (WOOD PLANK) ⑬④	LF	200
02268	REMOVE & REPLACE FENCE (CHAIN LINK) ⑭④	LF	150
02259	TEMPORARY FENCE ⑮④	LF	2,575

FENCE STATIONS ARE APPROXIMATE AND ROUNDED UP TO THE NEAREST 25 FT.

NOTES:

① APPROXIMATELY 57.54 ACRES

② QUANTITIES ARE APPROXIMATE AND ARE FOR INFORMATION ONLY:

	SOUTH	NORTH	TOTAL	
COM:	24,819	8,871	33,690	CU YDS
EMB:	8,267	8,534	16,801	CU YDS

③ WATER SHALL BE INCIDENTAL TO MAINTAIN AND CONTROL TRAFFIC

④ TO BE USED AT ENGINEER'S DISCRETION

⑤ 133 TONS CARRIED OVER FROM DRAINAGE SUMMARY - INCLUDED IN TOTAL

⑥ TO BE USED FOR SOIL STABILIZATION FOR WIDENING - GEOTEXTILE FABRIC CLASS I REQUIRED INCIDENTAL TO BID ITEM

⑦ SEE CROSS SECTIONS & PLAN SHEET NOTES FOR LOCATIONS

⑧ GEOTEXTILE FABRIC CLASS I SHALL BE USED BETWEEEN THE INTERFACE OF SOIL AND GRANULAR EMBANKMENT IN ALL CUT AREAS WHERE GRANULAR EMBANKMENT IS INDICATED ON CROSS SECTIONS.

⑨ SAWCUT OF PAVEMENT FOR WIDENING SHALL BE INCIDENTAL TO ROADWAY EXCAVATION

⑩ TO BE USED FOR DURATION OF PROJECT IF NECESSARY - RELOCATION OF ITEM INCIDENTAL TO BID ITEM - COORDINATE WITH ENGINEER FOR LOCATION TO MINIMIZE RED TIME

⑪ ***FENCE INTENDED TO BE INSTALLED AT RIGHT OF WAY LINE. USE ENGINEER'S DISCRETION***
WOVEN WIRE, 1 STRAND BARBED WIRE
LT STA 228+00 TO 231+00 - 300 LF
LT STA 316+00 TO 317+00 - 100 LF
LT STA 357+50 TO 377+25 - 1975 LF
LT STA 418+25 TO 421+00 - 275 LF
RT STA 387+50 TO 391+75 - 425 LF

⑫ BARBED WIRE
LT STA 356+00 TO 356+75 - 75 LF
LT STA 425+50 TO 426+00 - 50 LF
LT STA 568+25 TO 569+00 - 75 LF
LT STA 571+00 TO 573+50 - 250 LF
LT STA 577+00 TO 580+00 - 300 LF
LT STA 608+50 TO 614+50 - 600 LF

⑬ WOOD PLANK
LT ST 146+50 TO 148+00 - 150 LF
RT STA 371+75 TO 372+25 - 50 LF

⑭ CHAIN LINK (4')
LT ST 146+50 TO 148+00 150 LF

⑮ TEMPORARY FENCE FOR CATTLE - USE AT ENGINEER'S DISCRETION
LT STA 357+50 TO 377+25 - 1975 LF
LT STA 608+50 TO 614+50 - 600 LF

⑯ TREE REMOVAL-SEE PLAN SHEETS FOR C&R AGREEMENT NOTE
LT STA 389+90
RT STA 578+25 TO 579+25
RT STA 581+00 TO 582+75

SCALE: 1"= NA

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R2D

KY 259 ANNETA RD
GENERAL SUMMARY

GRAYSON COUNTY
043GR23T004-HSIP & STP
Contract ID: 234206
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PIPE DRAINAGE SUMMARY - SOUTH SECTION

SHEET NO.	STATION	SKEW	DESIGN PH LEVEL	COVER HEIGHT FT	ENTRANCE PIPE 15 INCH ③	ENTRANCE PIPE 18 INCH ③	REMOVE PIPE	CULVERT PIPE 18 INCH ②①	CULVERT PIPE 24 INCH ②①	CULVERT PIPE 30 INCH ②①	CULVERT PIPE 36 INCH ②①	SAFELOADING	PIPE CULVERT HEADWALL 18 IN (S&M)	PIPE CULVERT HEADWALL 24 IN (S&M)	PIPE CULVERT HEADWALL 30 IN (S&M)	SAFETY BOX INLET- 18 IN SDB-1	SAFETY BOX INLET- 18 IN DBL SDB-5	SAFETY BOX INLET- 24 IN DBL SDB-5	PIPE CULVERT HEADWALL 18 IN	PIPE CULVERT HEADWALL 24 IN	KYTC SLOPED & FLARED HDWL 18 IN	DROP BOX INLET TYPE 1	CHANNEL LINING CLASS II	HDPE PIPE LINER	PIPELINE INSPECTION	REMARKS
ITEM CODE					00440	00441	01310	00462	00464	00466	00468	02690	24575ES610	24575ES610	24575ES610	01726	01728	01729	01204	01208	40023	01490	02483	24583EC	24814EC	
UNIT TO BID					LINEAR FEET							CU YD	EACH										TONS	LF		
R3/R54	15+79.64		M	1'			15	30					2												36	EXTENSION
R4/R55	128+78.48		M	0.5'			12	18					2												42	EXTENSION
R5/R56	134+06.44		M	3'			9	33					2												37	EXTENSION
R6/R57	146+51.42		M	6'			16	34					1						1						47	EXTENSION; STD CONCR HDWL
R6/R57	147+51.00		M	2.5'			6		26					2											43	EXTENSION
R8/R58	164+75.98		M					15					2												34	EXTENSION
R10/R59	181+30.40		M	2.5'			6		28					2											37	EXTENSION
R12/R60	203+88.45		M	0.5'			41	45					2												41	REPLACE
R12/R60	209+12.10		M					20															5		59	EXTENSION
R13/R61	214+65.69		M	1'			12	27					2												34	EXTENSION
R14/R62	222+63.44	20° RT	M	1.5'			37	43								1					1		5		37	REPLACE; S&F HDWL
R16/R63	242+72.25		M				9	15											1						44	EXTENSION; STD CONCR HDWL
R16/R63	247+96.68		M	2.5'									2											63	43	SLIPLINE; EXTENSION
R18/R64	263+07.71		M	5.5'			12		27									1		1					48	EXTENSION; STD CONCR HDWL
R18/R64	269+40.83	5.5° LT	M					2									1								47	EXTENSION
R19/R65	278+02.76	1° RT	M	2'			9	26					1						1						40	EXTENSION; STD CONCR HDWL
R20/R66	280+62.23		M	1.5'			40	60					2												40	REPLACE
R20/R66	285+89.89		M	0.5'			38	50					2												39	REPLACE
R21/R67	293+22.77		M	6'			18	37					1						1						49	EXTENSION; STD CONCR HDWL
R22/R68	305+49.59		M	1'			3	9					1												41	EXTENSION
R23/R69	311+88.18		M	1.5'			6	16					1												40	EXTENSION
R23/R69	319+21.76		M	1'			36	52					2												37	REPLACE
R25/R70	330+61.28		M	1'			34		52					2											34	REPLACE
R26/R71	341+81.78		M	0.5'			38	47					2												38	REPLACE
R26/R71	344+50.83		M	0.5'			9	22					2												34	EXTENSION
R26/R72	348+62.63		M	3'				59				4	2												52	REPLACE
R27/R73	352+44.79		M	2'			37	55					2												37	REPLACE
R27/R73	356+49.43	7° RT	M	1'			50	55					1						1				5		50	REPLACE; STD CONCR HDWL
R28/R74	364+68.49		M	4.5'			21	39					1						1						46	EXTENSION; STD CONCR HDWL
R28/R74	369+54.44		M	2'			15	32					2												37	EXTENSION
R29/R75	372+37.96	30° RT	M	3'			12	30					1			1									49	EXTENSION
R29/R75	378+71.37		M					10					1			1									34	EXTENSION
R31/R76	390+68.57		M	3'														1		1			5	60	45	SLIPLINE; EXTENSION
R31/R76	396+89.70	1° RT	M	2.5'			15	29					1						1						43	EXTENSION; STD CONCR HDWL
R32/R77	403+22.78		M	2.5'										2										70	46	SLIPLINE; EXTENSION
R32/R77	406+17.62	5.5° LT	M	2'			37		59					2											37	REPLACE
R34/R78	420+67.09		M				9	17											2						58	EXTENSION; STD CONCR HDWL
R34/R78	425+73.79	5.5° RT	M	1'			12	28					2												34	EXTENSION
R34/R79	428+94.83	2.75° RT	M					13					2												34	EXTENSION
	SOUTH TOTALS				2405	270	614	968	192	0	0	4	44	10	0	3	1	2	9	2	1	0	20	193	1623	

NOTES:

- ALL MATERIALS REQUIRED TO EXTEND PIPE SHALL BE INCIDENTAL TO THE CULVERT PIPE BID ITEM
- REMOVAL OF HEADWALLS HAS BEEN SET UP ON SHEET R2D. IT IS THE ENGINEER'S DISCRETION AS TO WHICH HEADWALLS WILL BE REMOVED ON A CASE-BY-CASE BASIS
- REMOVAL OF EXISTING ENTRANCE PIPES WITHIN DISTURB LIMITS SHALL BE INCIDENTAL TO ROADWAY EXCAVATION
- CONTRACTOR IS TO CLEAN ALL PIPES BEING EXTENDED
- ANY CONNECTIONS TO THE CULVERT PIPE ARE INCIDENTAL TO THE PIPE AND SHALL BE APPROVED BY THE SECTION ENGINEER.

① FABRIC-GEOTEXTILE CLASS II FOR PIPE INCIDENTAL TO CULVERT PIPE

② FLOWABLE FILL IS INCIDENTAL TO PLACEMENT OF PIPE. SEE PIPE SHEETS.

③ REFER TO PLAN SHEETS FOR LOCATION

④ METHODS OF TYING IN TO EXISTING DRAINAGE STRUCTURES MUST BE APPROVED BY THE ENGINEER PRIOR TO WORK TAKING PLACE

⑤ ANY TIE INS TO EXISTING DRAINAGE STRUCTURES MUST MAINTAIN THE STRUCTURAL INTEGRITY OF THE DRAINAGE STRUCTURE

SCALE: 1"= NA

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R2E

KY 259 ANNETA RD
DRAINAGE SUMMARY 1 OF 2

GRAYSON COUNTY
043GR23T004-HSIP & STP
Contract ID: 234206
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PIPE DRAINAGE SUMMARY - NORTH SECTION

SHEET NO.	STATION	SKEW	DESIGN PH LEVEL	COVER HEIGHT FT	ENTRANCE PIPE 15 INCH ③	ENTRANCE PIPE 18 INCH ③	REMOVE PIPE	CULVERT PIPE 18 INCH ②①	CULVERT PIPE 24 INCH ②①	CULVERT PIPE 30 INCH ②①	CULVERT PIPE 36 INCH ②①	SAFELOADING	PIPE CULVERT HEADWALL 18 IN (S&M)	PIPE CULVERT HEADWALL 24 IN (S&M)	PIPE CULVERT HEADWALL 30 IN (S&M)	SAFETY BOX INLET- 18 IN SDB-1	SAFETY BOX INLET- 18 IN DBL SDB-5	SAFETY BOX INLET- 24 IN DBL SDB-5	PIPE CULVERT HEADWALL 18 IN	PIPE CULVERT HEADWALL 24 IN	KYTC SLOPED & FLARED HDWL 18 IN	DROP BOX INLET TYPE I	DROP BOX INLET TYPE II	CHANNEL LINING CLASS II	HDPE PIPE LINER	PIPELINE INSPECTION	REMARKS
ITEM CODE					00440	00441	01310	00462	00464	00466	00468	02690	24575ES610	24575ES610	24575ES610	01726	01728	01729	01204	01208	40023	01490	01544	02483	24583EC	24814EC	
UNIT TO BID					LINEAR FEET							CU YD	EACH											TONS	LF		
R36/R80	504+97.84		M	2'			6	20					1								1					31	EXTENSION
R37/R81	513+97.97		M	1.5'			6	28					1						1							28	EXTENSION; STD CONCR HDWL
R38/R82	522+72.75		M	2'			12	29					1						1							40	EXTENSION; STD HDWL
R38/R82	528+72.25		M				9	22																5		55	EXTENSION
R39/R83	532+21.70		M	4.5'			12	26									1		1							43	EXTENSION; STD CONCR HDWL
R39/R83	535+13.40	12° LT	M	6.5'				50				4							2					5		56	REPLACE; SAFELOAD EX. PIPE
R40/R84	543+20.04		M	1'			37		53					2												37	REPLACE
R40/R84	545+80.98		M	4'			9	17											1			1				43	EXTENSION; STD CONCR HDWL
R41/R85	552+34.88		M	1'			18	32					2													37	EXTENSION
R41/R85	555+94.25		M	8'			21		52											1				5		53	EXTENSION; STD CONCR HDWL
R42/R86	562+48.04	1.5° LT	M	1'			15	24									1						1			38	EXTENSION
R42/R86	569+56.77		M	2.5'			12	22									1		1							40	EXTENSION; STD CONCR HDWL
R43/R87	572+97.12	44.25° LT	M				8	24											2					10		59	EXTENSION; STD CONCR HDWL
R43/R87	578+51.31		M				12	44																10		61	EXTENSION
R44/R88	585+75.00		M	2'				57					2											5		57	NEW
R44/R88	586+73.47	1° RT	M	3'								3.5														53	SAFELOAD EX. PIPE
R45/R89	596+73.15		M	1'			12	31					2													37	EXTENSION
R47/R90	611+80.14		M	0.5'			34	48					2													34	REPLACE
R47/R90	614+78.75		M	1'			15	32					2													34	EXTENSION
R48/R91	623+76.40		M				30				32													15		86	EXTENSION ④⑤
R49/R92	630+53.17		M	2.5'																				5	50	50	SLIPLINE
R49/R93	634+28.58						16		16															20		80	EXTENSION
R50/R94	641+08.79		M	2'			9	19								1			1							34	EXTENSION; STD CONCR HDWL
R50 R95	644+54.05	24.67° LT	M	1'						58					2									23		58	NEW
R50/R95	644+74.60	28.75° LT	M				10		32															5		62	EXTENSION
R50/R96	647+22.68	1° RT	M	2.5'			12	25					1			1										40	EXTENSION
R51/R97	652+82.09		M	1'			34		38									1		1						34	REPLACE; STD CONCR HDWL
R51/R97	656+06.98	1° RT	M	1'			21	33					1						1					5		34	EXTENSION; STD CONCR HDWL
R51/R98	659+91.89	1.23° LT	M	2'			8										1		1						57	43	SLIPLINE; EXTENSION
R52/R99	662+41.27		M	0.5'			33	44					1			1										34	REPLACE
	NORTH TOTALS				878	166	411	627	191	58	32	7.5	16	2	2	3	4	1	12	2	1	1	1	113	107	1391	
	SOUTH TOTALS - CARRIED OVER R2E				2405	270	614	968	192	0	0	4	44	10	0	3	1	2	9	2	1	0	0	20	193	1623	
	TOTAL PROJECT				3283	436	1025	1595	383	58	32	11.5	60	12	2	6	5	3	21	4	2	1	1	133	300	3014	

NOTES:

- ALL MATERIALS REQUIRED TO EXTEND PIPE SHALL BE INCIDENTAL TO THE CULVERT PIPE BID ITEM
- REMOVAL OF HEADWALLS HAS BEEN SET UP ON SHEET R2D. IT IS THE ENGINEER'S DISCRETION AS TO WHICH HEADWALLS WILL BE REMOVED ON A CASE-BY-CASE BASIS
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- CONTRACTOR IS TO CLEAN ALL PIPES BEING EXTENDED
- ANY CONNECTIONS TO THE CULVERT PIPE ARE INCIDENTAL TO THE PIPE AND SHALL BE APPROVED BY THE SECTION ENGINEER.

① FABRIC-GEOTEXTILE CLASS II FOR PIPE INCIDENTAL TO CULVERT PIPE

② FLOWABLE FILL IS INCIDENTAL TO PLACEMENT OF PIPE. SEE PIPE SHEETS.

③ REFER TO PLAN SHEETS FOR LOCATION

④ METHODS OF TYING IN TO EXISTING DRAINAGE STRUCTURES MUST BE APPROVED BY THE ENGINEER PRIOR TO WORK TAKING PLACE

⑤ ANY TIE INS TO EXISTING DRAINAGE STRUCTURES MUST MAINTAIN THE STRUCTURAL INTEGRITY OF THE DRAINAGE STRUCTURE

SCALE: 1"= NA

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R2F

KY 259 ANNETA RD
DRAINAGE SUMMARY 2 OF 2

GRAYSON COUNTY
043GR23T004-HSIP & STP
Contract ID: 234206
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PAVING SUMMARY

PAVING AREAS

ITEM	SOUTH SECTION	NORTH SECTION	TOTAL PROJECT
	SQUARE YARDS		
5/8" CL 2 ASPH SURF No.4D PG 64-22 (NORTH THINLAY)		48,500	48,500
3.75" CL 2 ASPH BASE 1.00D PG 64-22 - TOP LAYER	26,780	16,786	43,566
4.0" CL 2 ASPH BASE 1.00D PG 64-22 - BOTTOM LAYER	29,012	13,217	42,229
6.0" CRUSHED STONE BASE	31,391	14,435	45,826
ASPHALT MATERIAL FOR TACK NON-TRACKING	55,792	78,503	134,295
CEM CONC ENT PAVEMENT-8 IN			700

NOTES:

ALL ASPHALT MIXTURES SHALL BE ESTIMATED AT 110 LBS. PER SQ. YD. PER INCH OF DEPTH, UNLESS NOTED OTHERWISE.

① SURFACE/OVERLAY EXISTING ROADWAY AND PROPOSED WIDENING FROM STA 500+00 TO STA 667+90.

② 165 TONS FOR ENTRANCES - INCLUDED IN TOTAL

③ 330 TONS FOR ENTRANCE CONSTRUCTION - INCLUDED IN TOTAL

④ 886 TONS FOR ENTRANCE CONSTRUCTION - INCLUDED IN TOTAL

⑤ ESTIMATED AT 115 LBS. PER SQ.YD. PER INCH OF DEPTH.

⑥ TO BE USED BETWEEN ALL ASPHALT COURSE LAYERS AT A RATE OF 0.7 LB/SY

⑦ USE PER ENGINEER'S DISCRETION

⑧ TO BE USED FOR EXISTING CONCRETE ENTRANCE TIE-INS

⑨ 1311 TONS FOR ENTRANCE TIE-INS

PAVING SUMMARY

ITEM CODE	ITEM	UNIT	SOUTH SECTION	NORTH SECTION	TOTAL PROJECT
21653ES403	CL 2 ASPH SURF No.4D PG 64-22 ①②	TON	-	1,668	1,833
00212	CL 2 ASPH BASE 1.00D PG 64-22 ③	TON	11,907	6,371	18,608
00C03	CRUSHED STONE BASE ④⑤	TON	10,830	4,981	16,697
24970EC	ASPHALT MATERIAL FOR TACK NON-TRACKING ⑥	TON	20	26	46
00190	LEVELING & WEDGING PG64-22 ⑦	TON		250	250
02101	CEM CONC ENTR PAVEMENT-8 IN ⑧	SQYD			700
00001	DGA BASE ⑤⑨	TON			1311
02676	MOBILIZATION FOR MILL & TEXT	LS			1

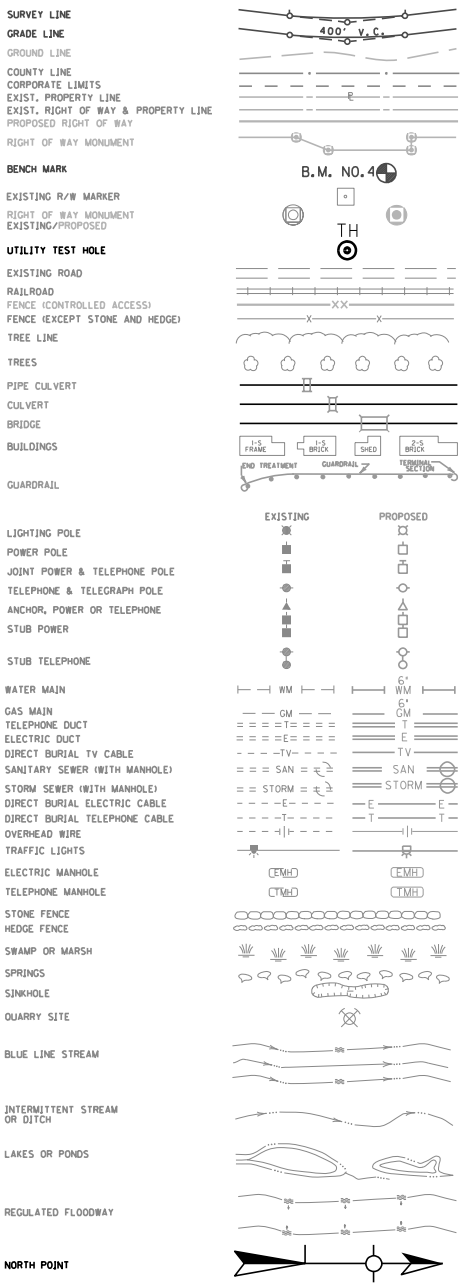
*ASPHALT MILLINGS WILL BE USED FOR SHOULDER WEDGING

SCALE: 1"= NA

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R2G

KY 259 ANNETA RD
PAVING SUMMARY

CONVENTIONAL SIGNS



GENERAL NOTES

COMPACTION OF ASPHALT MIXTURES

WILL ACCEPT THE COMPACTION OF ASPHALT MIXTURES ON THIS PROJECT BY OPTION B ACCORDING TO SUBSECTIONS 402.03.02 OF THE STANDARD SPECIFICATIONS.

BEFORE YOU DIG

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

UTILTIY COMPANY CONTACTS

WARREN RECC
JONATHAN LINDSEY - FIELD ENGINEERING SUPERVISOR
270-842-6541
JONATHANL@WRECC.COM

WINDSTREAM
STEVE JOHNSON - SR ENGINEER
859-357-6209 (OFFICE)
859-321-2035 (MOBILE)
STEVE.JOHNSON@WINDSTREAM.COM

EDMONSON COUNTY WATER DISTRICT
TONY SANDERS - GENERAL MANAGER
270-597-2165
TONY.SANDERS@ECWDWATER.COM

GRAYSON COUNTY WATER DISTRICT
KEVIN SHAW - DISTRICT MANAGER
270-200-4302 (OFFICE)
270-230-2994 (MOBILE)
KSHAW@GRAYSONWATER.COM

STANDARD DRAWINGS

STANDARD DRAWINGS ARE NOT ATTACHED TO THESE PLANS. A STANDARD DRAWING BOOK AND THE HEADWALL SUPPLEMENTAL BOOK MAY BE OBTAINED FROM THE POLICY SUPPORT BRANCH OF THE DEPARTMENT OF ADMINISTRATIVE SERVICES IN FRANKFORT, KY. AT (502) 564-3670

SPECIAL NOTES

SPECIAL NOTE 11 PORTABLE CHANGEABLE MESSAGE SIGNS
SPECIAL NOTE FOR NON-TRACKING TACK COAT
SPECIAL NOTE FOR CULVERT PIPE REHABILITATION WITH HDPE PIPE
SPECIAL NOTE FOR TREE, STUMP, AND BRUSH REMOVAL

PAVEMENT MARKINGS

CONTACT KYTC TRAFFIC ENGINEER (JUSTIN WALLACE) PRIOR TO PERMANENT STRIPING. 270-766-5066

DEPARTMENT OF THE ARMY PERMIT AND WATER QUALITY CERTIFICATION APPROVALS

A DEPARTMENT OF THE ARMY (DA) PERMIT, WHICH MAY REQUIRE APPROVAL OF A STATE WATER QUALITY CERTIFICATION FROM THE KENTUCKY DIVISON OF WATER, REGULATES THIS PROJECT AT ONE OR MORE LOCATIONS. PERFORM ALL APPLICABLE WORK IN COMPLIANCE WITH THE CONDITIONS STATED IN THE DA PERMIT AND THE APPROVED WATER QUALITY CERTIFICATION. POST A COPY OF THE DA PERMIT AND THE WATER QUALITY CERTIFICATION IN A CONSPICUOUS PLACE AT THE PROJECT SITE. IF A DA PERMIT OR WATER QUALITY CERTIFICATION APPROVAL IS PENDING, DO NOT WORK IN OR DISTURB THE DESIGNATED AREA(S) UNTIL OBTAINING THE APPROPRIATE APPROVAL(S). REFER TO NOTICE(S) CONTAINED IN THE CONTRACT BID PROPOSAL FOR DESIGNATED AREA(S) WHERE WORK IS PROHIBITED BY THE ABSENCE OF APPROVAL.

SCALE: 1"= NA

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R2H

KY 259 ANNETA RD
GENERAL NOTES

BEFORE YOU DIG

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.

KY 259 WIDENING			
PROPOSED ALIGNMENT CURVE POINTS			
POINT	STATION	NORTHING	EASTING
P.O.B.	110+00.00	3644225.38	4774232.77
PI	113+58.41	3644379.21	4774556.48

BEGIN PROJECT
STA 110+90

110+00 111+00 112+00 113+00 114+00 115+00 116+00 117+00 118+00 119+00 120+00

**NOTE: EXISTING R/W 35' OFFSET FROM EXSTING CENTERLINE

EXIST R/W

PR DISTURB LIMIT

S & M CONCRETE HEADWALL
18" - 12 LF EXTENSION

PR 15" ENT PIPE
24 FT

PR 15" ENT PIPE
34 FT

CMP FES

IE=695.91

Ex 18" RCP

IE=695.31

22 LF EDGE KEY

N64° 48' 32"E

IE=697.05

Ex 15" RCP

IE=695.79

Ex 18" RCP

IE=694.44

IE=706.29

Ex 15" CPP

IE=706.87

PI 113+58.41

S & M CONCRETE HEADWALL
18" - 18 LF EXTENSION

GRAYSON COUNTY
EDMONSON COUNTY

MATCHLINE STA 120+00

ENTRANCE PIPE	
SHEET TOTALS	
PIPE SIZE	LF
15"	58
18"	--

SCALE: 1"=100

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R3

KY HWY 259 ANNETA RD
PLAN SHEET

STA 110+00 TO STA 120+00

ENTRANCE PIPE

SHEET TOTALS	
PIPE SIZE	LF
15"	124
18"	--

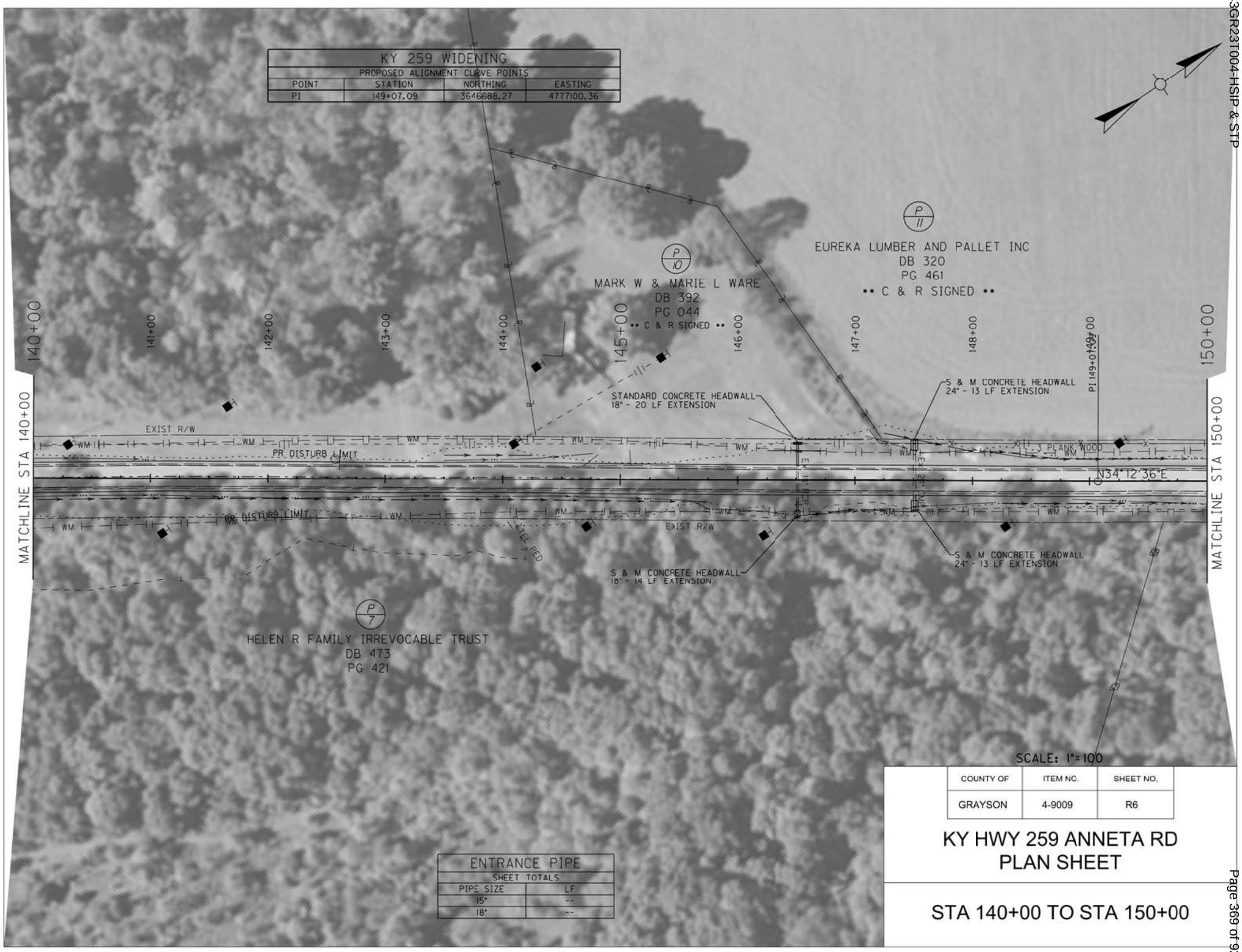
SCALE: 1"=100

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R4

KY HWY 259 ANNETA RD
PLAN SHEET

STA 120+00 TO STA 130+00

KY 259 WIDENING
PROPOSED ALIGNMENT CURVE POINTS
POINT | STATION | NORTHING | EASTING
PT | 131+41.86 | 3645230.55 | 4776104.83
PI | 138+79.24 | 3645840.29 | 4776519.50
130+00
131+00
132+00
133+00
134+00
135+00
136+00
137+00
138+00
139+00
140+00
PT 131+41.86
MATCHLINE STA 130+00
MATCHLINE STA 140+00
S & M CONCRETE HEADWALL
18" - 24 LF EXTENSION
PR 15" ENT PIPE
50 FT
EXIST R/W
Ex 15" CMP
PR DISTURB LIMIT
N34°13'07"E
N34°24'40"E
DO NOT DISTURB
Ex 18" RCP
3 PLANK WOOD
WM
Ex 15" CMP
PR DISTURB LIMIT
EXIST R/W
S & M CONCRETE HEADWALL
18" - 9 LF EXTENSION
PR 15" ENT PIPE
28 FT
MOUTARDIER RD
C.R. 1738
48 LF EDGE KEY
PI 138+79.24
P
5
STANLEY DUVALL, JR
JEFFREY DUVALL
DB 120
PG 344
•• C & R SIGNED ••
ENTRANCE PIPE
SHEET TOTALS
PIPE SIZE | LF
15" | 78
18" | --
SCALE: 1" = 100
COUNTY OF | ITEM NO. | SHEET NO.
GRAYSON | 4-9009 | R5
KY HWY 259 ANNETA RD
PLAN SHEET
STA 130+00 TO STA 140+00



ENTRANCE PIPE	
SHEET TOTALS	
PIPE SIZE	LF
15"	--
18"	--

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R6

KY HWY 259 ANNETA RD
PLAN SHEET

STA 140+00 TO STA 150+00

SCALE: 1"=100

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R7

KY HWY 259 ANNETA RD
PLAN SHEET

STA 150+00 TO STA 160+00

KY 259 WIDENING
PROPOSED ALIGNMENT CURVE POINTS
POINT | STATION | NORTHING | EASTING
PI | 164+06.72 | 3647929.87 | 4777941.38
160+00
161+00
162+00
163+00
164+00
165+00
166+00
167+00
168+00
169+00
170+00
MATCHLINE STA 160+00
MATCHLINE STA 170+00
S & M CONCRETE HEADWALL
18" - 8 LF EXTENSION
EXIST R/W
PR DISTURB LIMIT
3 PLANK WOOD
N34°14'52"E
Ex 15" CMP
EXIST R/W
DO NOT DISTURB
ROCK CREEK RD
PR 15" ENT PIPE
30 FT
PI 164+06.72
S & M CONCRETE HEADWALL
18" - 7 LF EXTENSION
PR 15" ENT PIPE
40 FT
PR 15" ENT PIPE
42 FT
PR 18" ENT PIPE
42 FT
FOXWOOD CIR
SCALE: 1"= 100
ENTRANCE PIPE
SHEET TOTALS
PIPE SIZE | LF
15" | 112
18" | 42
COUNTY OF | ITEM NO. | SHEET NO.
GRAYSON | 4-9009 | R8
KY HWY 259 ANNETA RD
PLAN SHEET
STA 160+00 TO STA 170+00

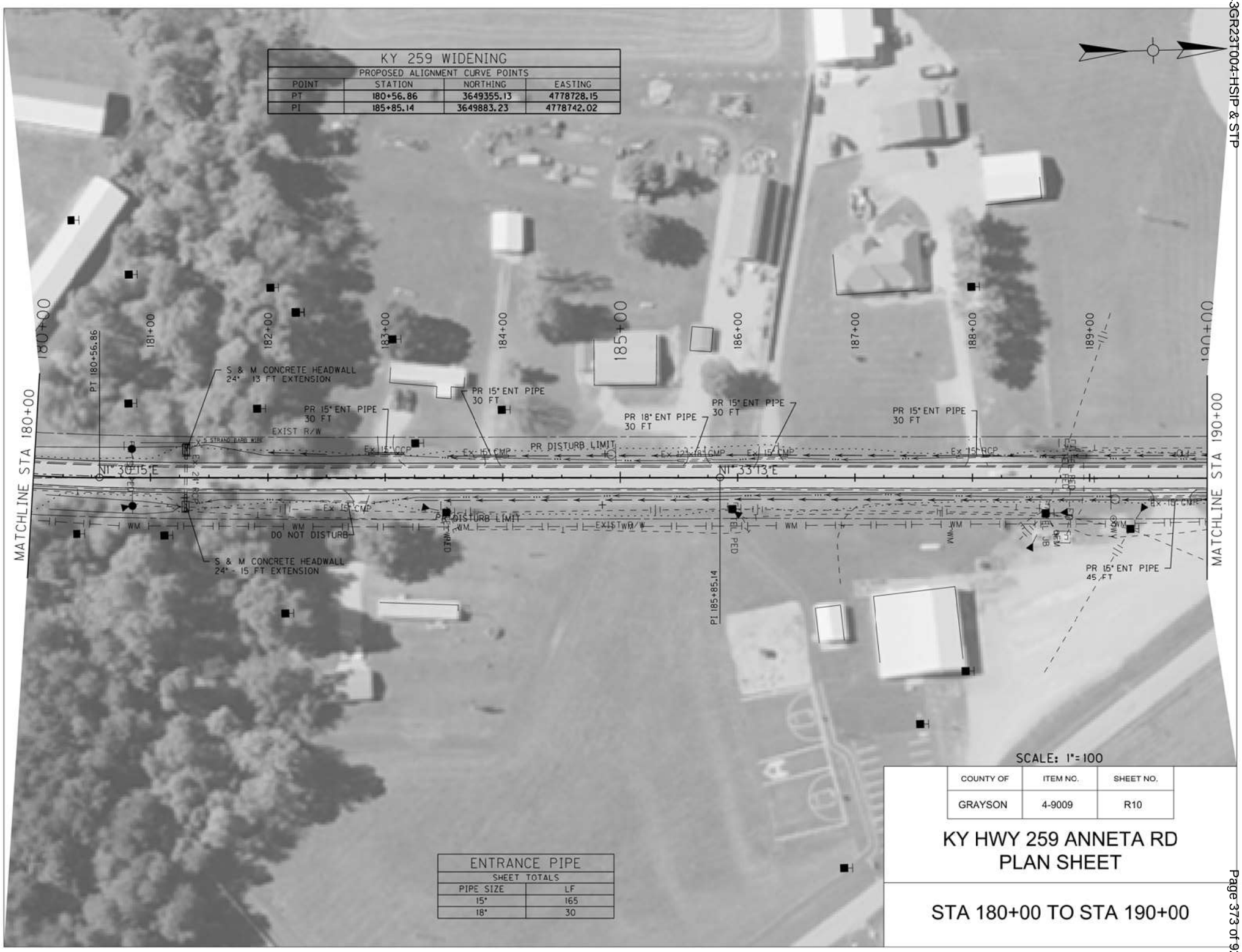
SCALE: 1"= 100

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R9

KY HWY 259 ANNETA RD
PLAN SHEET

STA 170+00 TO STA 180+00

ENTRANCE PIPE	
SHEET TOTALS	
PIPE SIZE	LF
15"	--
18"	42


KY 259 WIDENING
PROPOSED ALIGNMENT CURVE POINTS
POINT | STATION | NORTHING | EASTING
PT | 180+56.86 | 3649355.13 | 4778728.15
PI | 185+85.14 | 3649883.23 | 4778742.02
MATCHLINE STA 180+00
MATCHLINE STA 190+00
PT 180+56.86
PI 185+85.14
180+00
181+00
182+00
183+00
184+00
185+00
186+00
187+00
188+00
189+00
190+00
S & M CONCRETE HEADWALL
24" 13 FT EXTENSION
S & M CONCRETE HEADWALL
24" - 15 FT EXTENSION
PR 15" ENT PIPE
30 FT
PR 18" ENT PIPE
30 FT
PR 15" ENT PIPE
45 FT
EXIST R/W
PR DISTURB LIMIT
DO NOT DISTURB
Ex 15" CCP
Ex 15" CMP
Ex 12"x18" CMP
Ex 15" RCP
N1° 30' 15"E
N1° 33' 13"E
WM
PED
ENTRANCE PIPE
SHEET TOTALS
PIPE SIZE | LF
15" | 165
18" | 30
SCALE: 1"=100
COUNTY OF | ITEM NO. | SHEET NO.
GRAYSON | 4-9009 | R10
KY HWY 259 ANNETA RD
PLAN SHEET
STA 180+00 TO STA 190+00

KY 259 WIDENING
PROPOSED ALIGNMENT CURVE POINTS
POINT | STATION | NORTHING | EASTING
PC | 193+04.18 | 3650602.01 | 4778761.51
PI | 196+30.70 | 3650928.40 | 4778770.37
PT | 199+45.74 | 3651225.04 | 4778633.91
PI 196+30.70
Delta = 26°15'23"
T = 326.52'
L = 641.57'
R = 1400.00'
E = 37.57'
MATCHLINE STA 190+00
MATCHLINE STA 200+00
190+00
191+00
192+00
193+00
194+00
195+00
196+00
197+00
198+00
199+00
200+00
PC 193+04.18
PT 199+45.74
EXIST R/W
PR DISTURB LIMIT
PR 15" ENT PIPE
28 FT
Ex 15" CMP
N1°33'13"E
N24°42'10"W
DICKEYS MILLS RD
FO
WM
OU
ENTRANCE PIPE
SHEET TOTALS
PIPE SIZE | LF
15" | 28
18" | --
SCALE: 1"=100
COUNTY OF | ITEM NO. | SHEET NO.
GRAYSON | 4-9009 | R11
KY HWY 259 ANNETA RD
PLAN SHEET
STA 190+00 TO STA 200+00

KY 259 WIDENING			
PROPOSED ALIGNMENT CURVE POINTS			
POINT	STATION	NORTHING	EASTING
PI	203+55.82	3651597.59	4778462.54
PC	207+56.57	3651962.29	4778296.42
PI	209+70.19	3652156.69	4778207.87

CURVE WIDENING			
CURVE WIDENING TAPERS			
POINT	STATION	BEGIN WIDTH	END WIDTH
LT EP	206+20.57 - 207+56.57	-11.0'	-12.5'
RT EP	206+20.57 - 207+56.57	11.0'	12.5'

ENTRANCE PIPE	
SHEET TOTALS	
PIPE SIZE	LF
15"	76
18"	--

SCALE: 1"=100

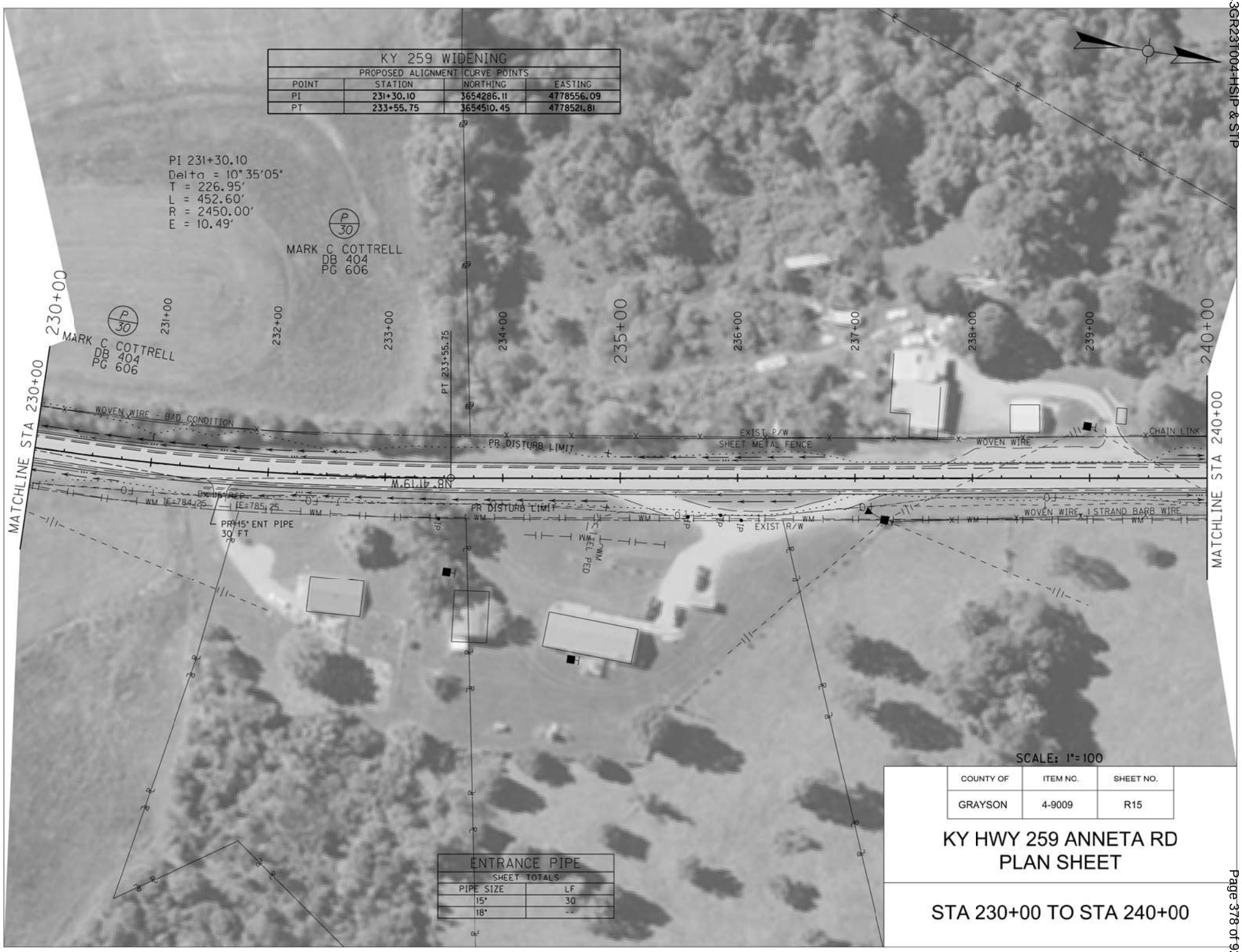
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R12

KY HWY 259 ANNETA RD
PLAN SHEET

STA 200+00 TO STA 210+00

KY 259 WIDENING
PROPOSED ALIGNMENT CURVE POINTS
POINT | STATION | NORTHING | EASTING
PT | 211+58.07 | 3652351.93 | 4778294.55
PC | 213+52.91 | 3652530.01 | 4778373.61
PI | 216+84.03 | 3652832.65 | 4778507.98
CURVE WIDENING
CURVE WIDENING TAPERS
POINT | STATION | BEGIN WIDTH | END WIDTH
LT EP | 211+58.07 - 212+94.07 | -12.5' | -11.0'
RT EP | 211+58.07 - 212+94.07 | 12.5' | 11.0'
PI 216+84.03
Delta = 22°02'39"
T = 331.13'
L = 654.06'
R = 1700.00'
E = 31.95'
NOTE: STA 216+50 - STA 222+00 LT
CONSTRUCT UNPAVED SHOULDER
AS SHOWN WITH 2:1 FILL SLOPES
(USE 3:1 FILL SLOPES WITH PARCEL
OWNER CONSENT & RELEASE)
MATCHLINE STA 210+00
MATCHLINE STA 220+00
211+00
212+00
213+00
214+00
215+00
216+00
217+00
218+00
219+00
PC 213+52.91
PT 211+58.07
PR DISTURB LIMIT
EXIST R/W
N23°56'24"E
S & M CONCRETE HEADWALL
18" - 19 LF EXTENSION
S & M CONCRETE HEADWALL
18" - 8 LF EXTENSION
PR 15" ENT PIPE
30 FT
PR 15" ENT PIPE
30 FT
UNPAVED SHOULDER
WOVEN WIRE
N1°53'46"E
P
20
VANMETER BOAT AND RV STORAGE
DB 287
PG 048
•• C & R SIGNED ••
ENTRANCE PIPE
SHEET TOTALS
PIPE SIZE | LF
15" | 60
18" | --
SCALE: 1"=100
COUNTY OF | ITEM NO. | SHEET NO.
GRAYSON | 4-9009 | R13
KY HWY 259 ANNETA RD
PLAN SHEET
STA 210+00 TO STA 220+00

KY 259 WIDENING
PROPOSED ALIGNMENT CURVE POINTS
POINT | STATION | NORTHING | EASTING
PT | 220+06.97 | 3653163.59 | 4778518.93
PC | 229+03.15 | 3654059.28 | 4778548.58
MARK C COTTRELL
DB 404
PG 606
P 30
MATCHLINE STA 220+00
MATCHLINE STA 230+00
PT 220+06.97
PC 229+03.15
STA 227+00 - STA 231+00 CUT 1.5:1 BACKSLOPE
STABILIZE WITH 600 SQYD GEOTEXTILE FABRIC CLASS 2 AND
200 CUYD GRANULAR EMBANKMENT
DO NOT CUT TREES OUTSIDE EXISTING RIGHT OF WAY
PR 18" ENT PIPE
36 FT
PR DISTURB LIMIT
EXIST R/W
WOVEN WIRE - BAD CONDITION
N1° 53' 46"E
IE=727.16
IE=736.90
IE=737.99
IE=731.15
IE=740.40
PR 18" ENT PIPE
42 FT
1 - SAFETY BOX INLET - 18" &
1 - S & F HEADWALL - 18" &
5 TON CHANNEL LINING CL 2 &
& 43 FT REPLACEMENT CULVERT PIPE
STA 222+00 RT CONSTRUCT
125 LF GUARDRAIL &
2 GR END TREATMENT TY 4A
P 25
TOMMY L & DORIS J DUVALL
DB 209
PG 276
•• C & R SIGNED ••
VANMETER SCHOOL RD
ENTRANCE PIPE
SHEET TOTALS
PIPE SIZE | LF
15" | --
18" | 78
SCALE: 1"=100
COUNTY OF | ITEM NO. | SHEET NO.
GRAYSON | 4-9009 | R14
KY HWY 259 ANNETA RD
PLAN SHEET
STA 220+00 TO STA 230+00



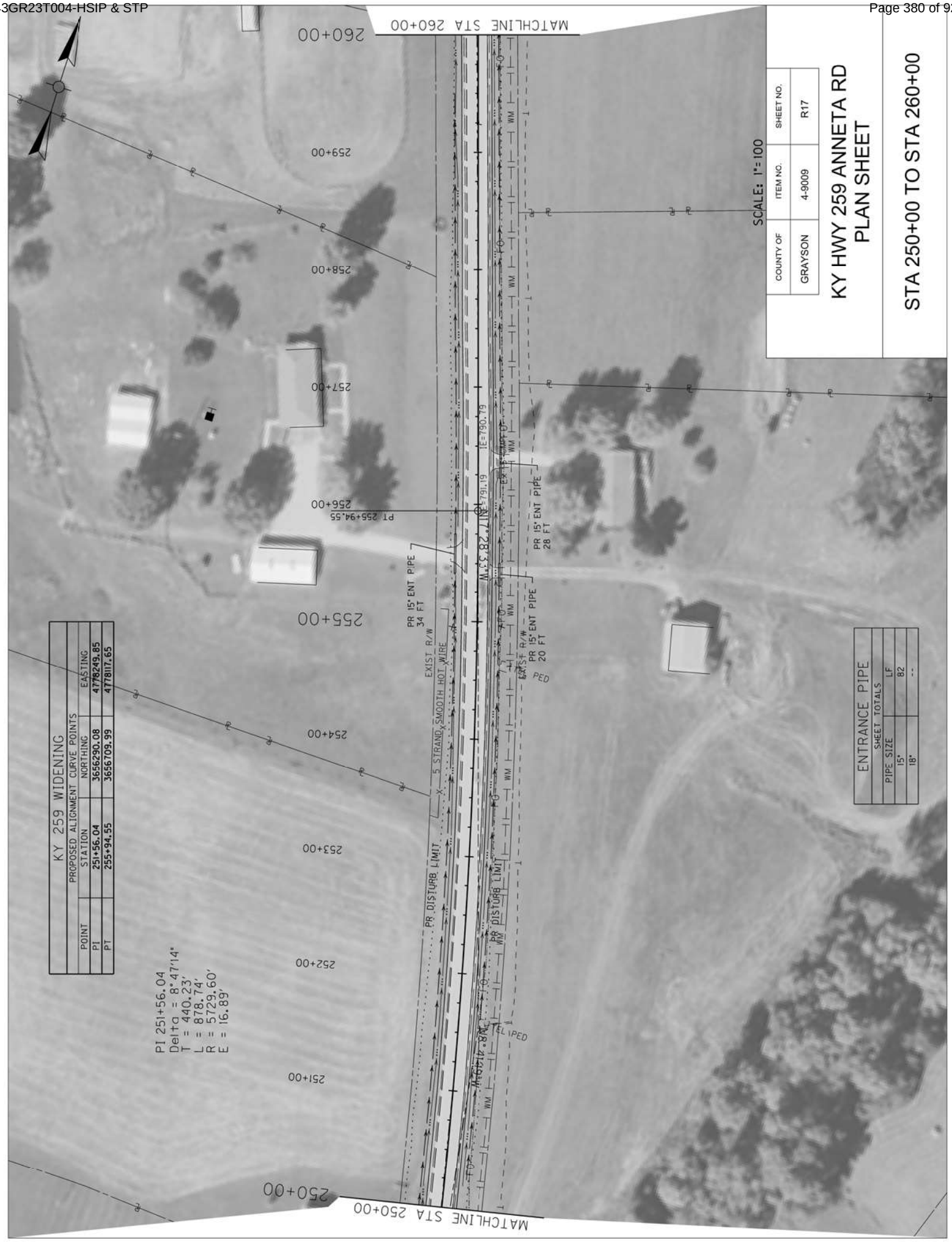
SCALE: 1"=100

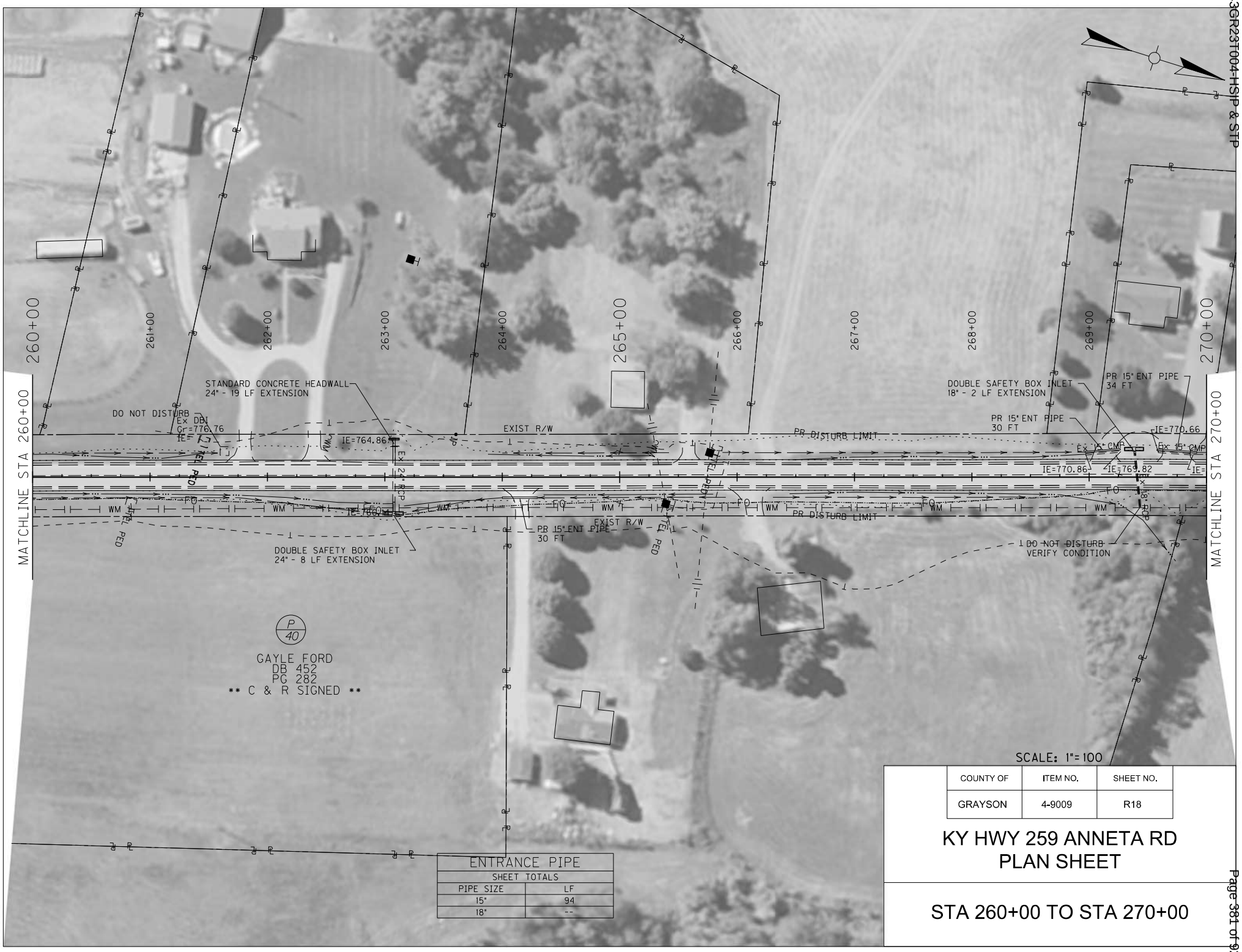
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R15

KY HWY 259 ANNETA RD
PLAN SHEET

STA 230+00 TO STA 240+00

KY 259 WIDENING
PROPOSED ALIGNMENT CURVE POINTS
POINT | STATION | NORTHING | EASTING
PC | 247+15.81 | 3655854.90 | 4778316.35
240+00
241+00
242+00
243+00
244+00
245+00
246+00
247+00
248+00
249+00
250+00
MATCHLINE STA 240+00
MATCHLINE STA 250+00
ROBERT W & TINA MARIE GOLDSMITH
DB 415
PG 295
•• C & R SIGNED ••
STANDARD CONCRETE HEADWALL
18" - 15 LF EXTENSION
PR 15" ENT PIPE
56 FT
PC 247+15.81
SLIPLINE EXISTING PIPE
USING 43 LF HDPE LINER
S & M CONCRETE HEADWALL
18" - 8 LF EXTENSION
EXIST R/W
CHAIN LINK
PR DISTURB LIMIT
IE=776.93
IE=790.32
IE=791.53
IE=780.25
IE=785.70
IE=788.60
IE=790.72
IE=794.70
Ex 15" RCP
Ex 18" RCP
Ex DBI
Gr.=784.80
IE=778.80
IE=784.80
PR 15" ENT PIPE
40 FT
PR 15" ENT PIPE
42 FT
WOVEN WIRE
STRAND BARB WIRE
DO NOT DISTURB
DO NOT DISTURB
DO NOT DISTURB
BAT BLANTON RD
S & M CONCRETE HEADWALL
18" - 12 LF EXTENSION
GAYLE FORD
DB 452
PG 282
•• C & R SIGNED ••
ENTRANCE PIPE
SHEET TOTALS
PIPE SIZE | LF
15" | 138
18" | --
SCALE: 1"= 100
COUNTY OF | ITEM NO. | SHEET NO.
GRAYSON | 4-9009 | R16
KY HWY 259 ANNETA RD
PLAN SHEET
STA 240+00 TO STA 250+00


KY HWY 259 ANNETA RD
PLAN SHEET
STA 250+00 TO STA 260+00
SCALE: 1"=100
COUNTY OF
GRAYSON
ITEM NO.
4-9009
SHEET NO.
R17
KY 259 WIDENING
PROPOSED ALIGNMENT CURVE POINTS
POINT
PI
PT
STATION
251+56.04
255+94.55
NORTHING
3656290.08
3656709.99
EASTING
4778249.85
4778117.65
PI 251+56.04
Delta = 8°47'14"
T = 440.23'
L = 878.74'
R = 5729.60'
E = 16.89'
ENTRANCE PIPE
SHEET TOTALS
PIPE SIZE
15"
18"
LF
82
--
MATCHLINE STA 260+00
MATCHLINE STA 250+00
260+00
259+00
258+00
257+00
256+00
255+00
254+00
253+00
252+00
251+00
250+00
PT 255+94.55
PR DISTURB LIMIT
EXIST R/W
5 STRAND SMOOTH HOT WIRE
PR 15" ENT PIPE
34 FT
PR 15" ENT PIPE
28 FT
PR 15" ENT PIPE
20 FT
EXIST R/W
PED
WM
FO
TEL
IE=791.19
IE=790.79
N 28°33'W



SCALE: 1"= 100

ENTRANCE PIPE	
SHEET TOTALS	
PIPE SIZE	LF
15"	94
18"	--

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R18

KY HWY 259 ANNETA RD
PLAN SHEET

STA 260+00 TO STA 270+00

KY 259 WIDENING			
PROPOSED ALIGNMENT CURVE POINTS			
POINT	STATION	NORTHING	EASTING
TS	277+21.66	3658738.92	4777478.87

CURVE WIDENING			
CURVE WIDENING TAPERS			
POINT	STATION	BEGIN WIDTH	END WIDTH
LT EP	277+21.66 - 280+21.66	-11.0'	-12.5'
RT EP	277+21.66 - 280+21.66	11.0'	12.5'

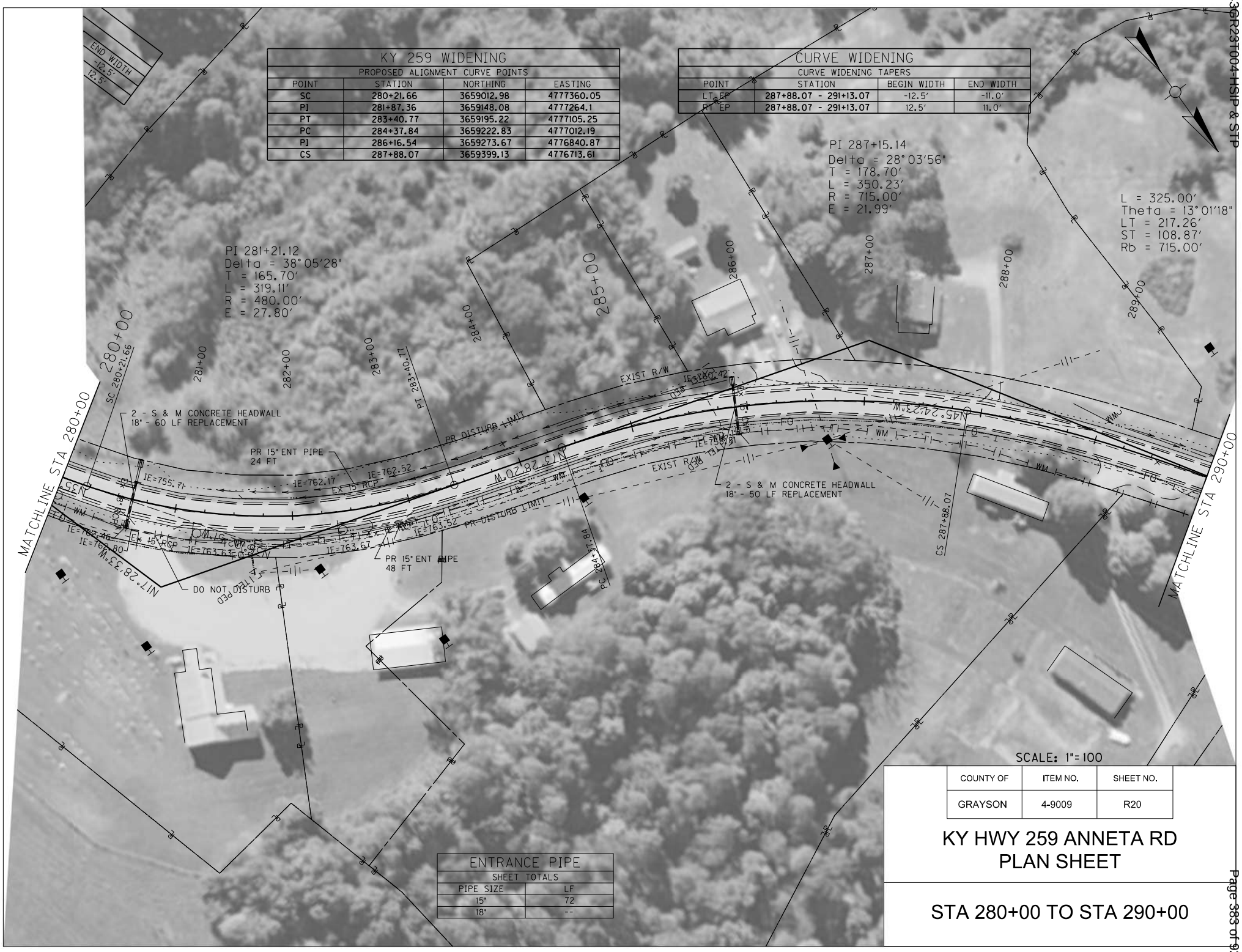
ENTRANCE PIPE	
SHEET TOTALS	
PIPE SIZE	LF
15"	102
18"	--

SCALE: 1"= 100

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R19

KY HWY 259 ANNETA RD PLAN SHEET

STA 270+00 TO STA 280+00



KY 259 WIDENING

PROPOSED ALIGNMENT CURVE POINTS

POINT	STATION	NORTHING	EASTING
SC	280+21.66	3659012.98	4777360.05
PI	281+87.36	3659148.08	4777264.1
PT	283+40.77	3659195.22	4777105.25
PC	284+37.84	3659222.83	4777012.19
PI	286+16.54	3659273.67	4776840.87
CS	287+88.07	3659399.13	4776713.61

CURVE WIDENING

CURVE WIDENING TAPERS

POINT	STATION	BEGIN WIDTH	END WIDTH
LT EP	287+88.07 - 291+13.07	-12.5'	-11.0'
RT EP	287+88.07 - 291+13.07	12.5'	11.0'

ENTRANCE PIPE

SHEET TOTALS

PIPE SIZE	LF
15"	72
18"	--

SCALE: 1"= 100

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R20

KY HWY 259 ANNETA RD
PLAN SHEET

STA 280+00 TO STA 290+00

SCALE: 1"= 100

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R21

KY HWY 259 ANNETA RD
PLAN SHEET

STA 290+00 TO STA 300+00

SCALE: 1"=100

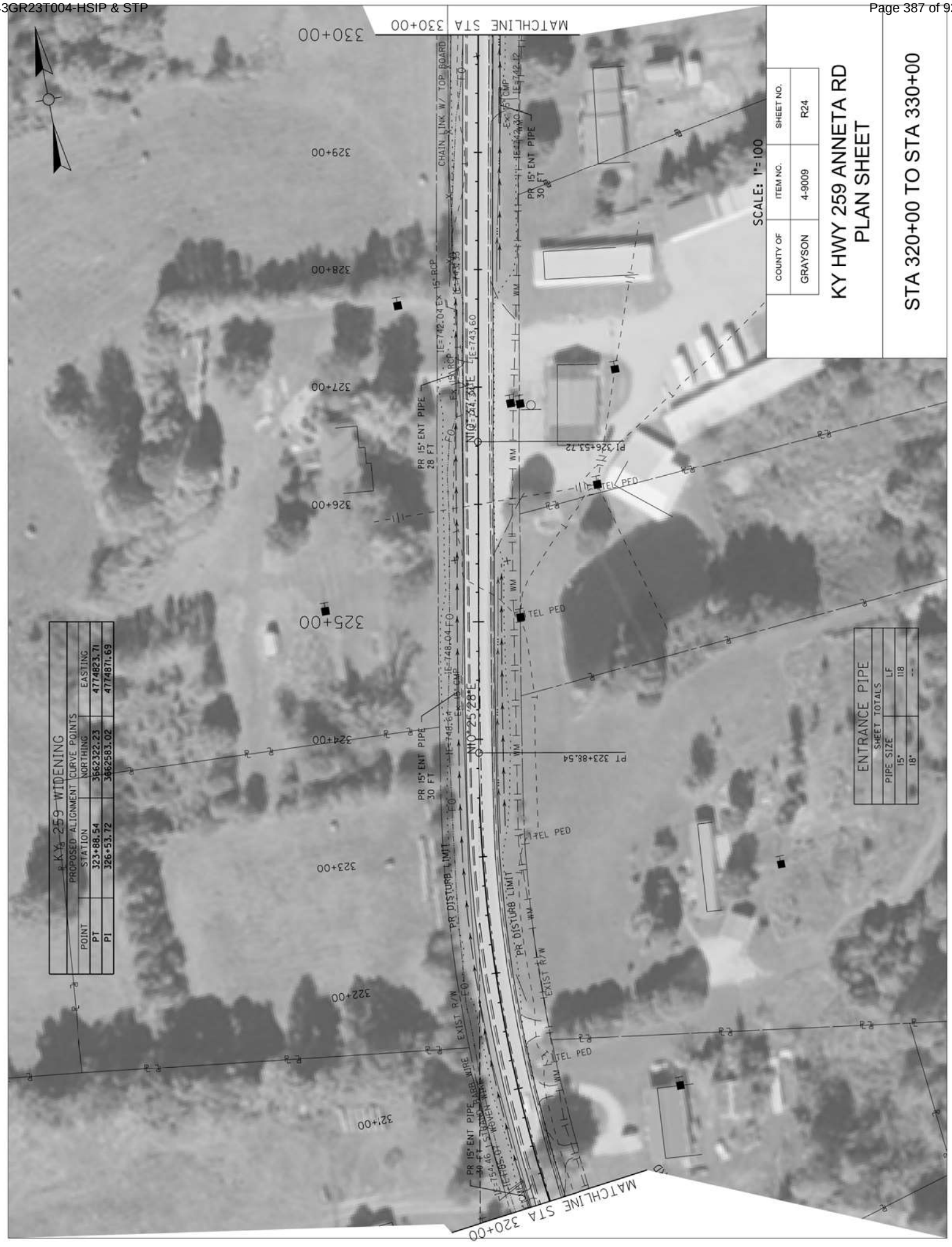
ENTRANCE PIPE	
SHEET TOTALS	
PIPE SIZE	LF
15"	150
18"	--

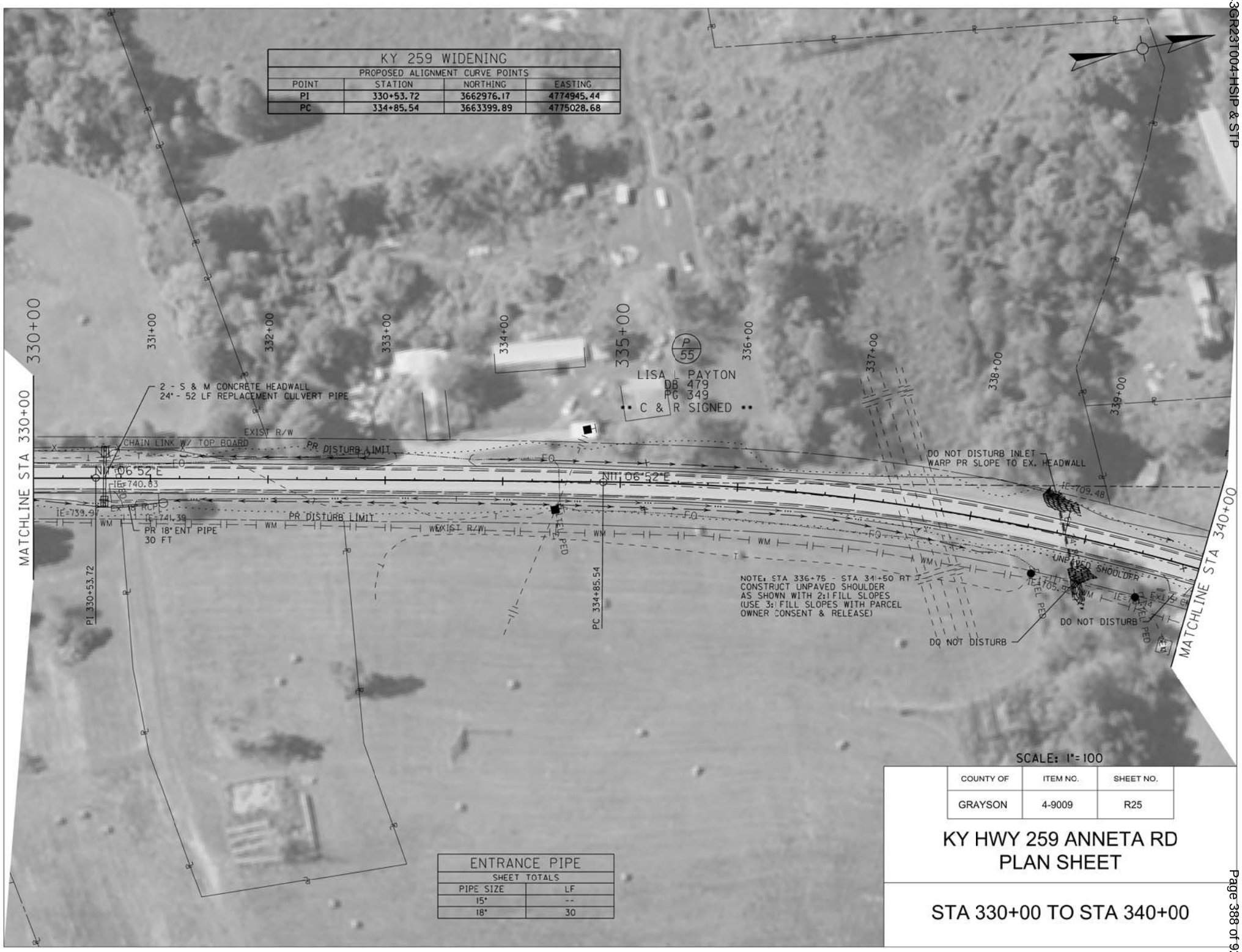
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R22

KY HWY 259 ANNETA RD
PLAN SHEET

STA 300+00 TO STA 310+00

KY 259 WIDENING
PROPOSED ALIGNMENT CURVE POINTS
POINT | STATION | NORTHING | EASTING
PC | 311+89.09 | 3661214.26 | 4775152.44
PI | 318+37.35 | 3661684.67 | 4774706.41
PI 318+37.35
Delta = 53°54'02"
T = 648.25'
L = 1199.45'
R = 1275.00'
E = 155.33'
N43° 28' 34"W
N10° 25' 28"E
310+00
311+00
312+00
313+00
314+00
315+00
316+00
317+00
318+00
319+00
320+00
MATCHLINE STA 310+00
MATCHLINE STA 320+00
DO NOT DISTURB
PR DISTURB LIMIT
EXIST R/W
WOVEN WIRE, 1 STRAND BARB WIRE
2 - S & M CONCRETE HEADWALL
18" - 52 LF PIPE REPLACEMENT
PR 15" ENT PIPE
34 FT
PR 15" ENT PIPE
28 FT
PR 15" ENT PIPE
42 FT
S & M CONCRETE HEADWALL
18" - 16 LF EXTENSION
PC 311+89.09
EX 15" RCP
IE=766.70
IE=763.26
IE=761.79
IE=751.12
IE=754.57
IE=754.92
P
53
ERIC & KAY HAFFORD
DB 379
PG 565
•• C & R SIGNED ••
SCALE: 1"=100
ENTRANCE PIPE
SHEET TOTALS
PIPE SIZE | LF
15" | 104
18" | --
COUNTY OF | ITEM NO. | SHEET NO.
GRAYSON | 4-9009 | R23
KY HWY 259 ANNETA RD
PLAN SHEET
STA 310+00 TO STA 320+00


KY 259 WIDENING
PROPOSED ALIGNMENT CURVE POINTS
POINT | STATION | NORTHING | EASTING
PT | 323+88.54 | 3662322.23 | 4774823.71
PI | 326+53.72 | 3662583.02 | 4774871.69
ENTRANCE PIPE
SHEET TOTALS
PIPE SIZE | LF
15" | 118
18" | --
COUNTY OF GRAYSON
ITEM NO. 4-9009
SHEET NO. R24
SCALE: 1"=100
KY HWY 259 ANNETA RD
PLAN SHEET
STA 320+00 TO STA 330+00
MATCHLINE STA 330+00
MATCHLINE STA 320+00
PR DISTURB LIMIT
EXIST R/W
PR 15" ENT PIPE 30 FT
PR 15" ENT PIPE 28 FT
PR 15" ENT PIPE 30 FT
PR 15" ENT PIPE 30 FT
CHAIN LINK W/ TOP BOARD
TEL PED
PI 326+53.72
PT 323+88.54
N10° 25' 28"E
N10° 24' 30"E
IE=748.04 FO
IE=748.54
IE=742.04 EX 15" RCP
IE=743.60
IE=742.42
IE=742.12
IE=754.46
IE=745.01
Ex. 15" CMP
FO
WM
TO
320+00
321+00
322+00
323+00
324+00
325+00
326+00
327+00
328+00
329+00
330+00

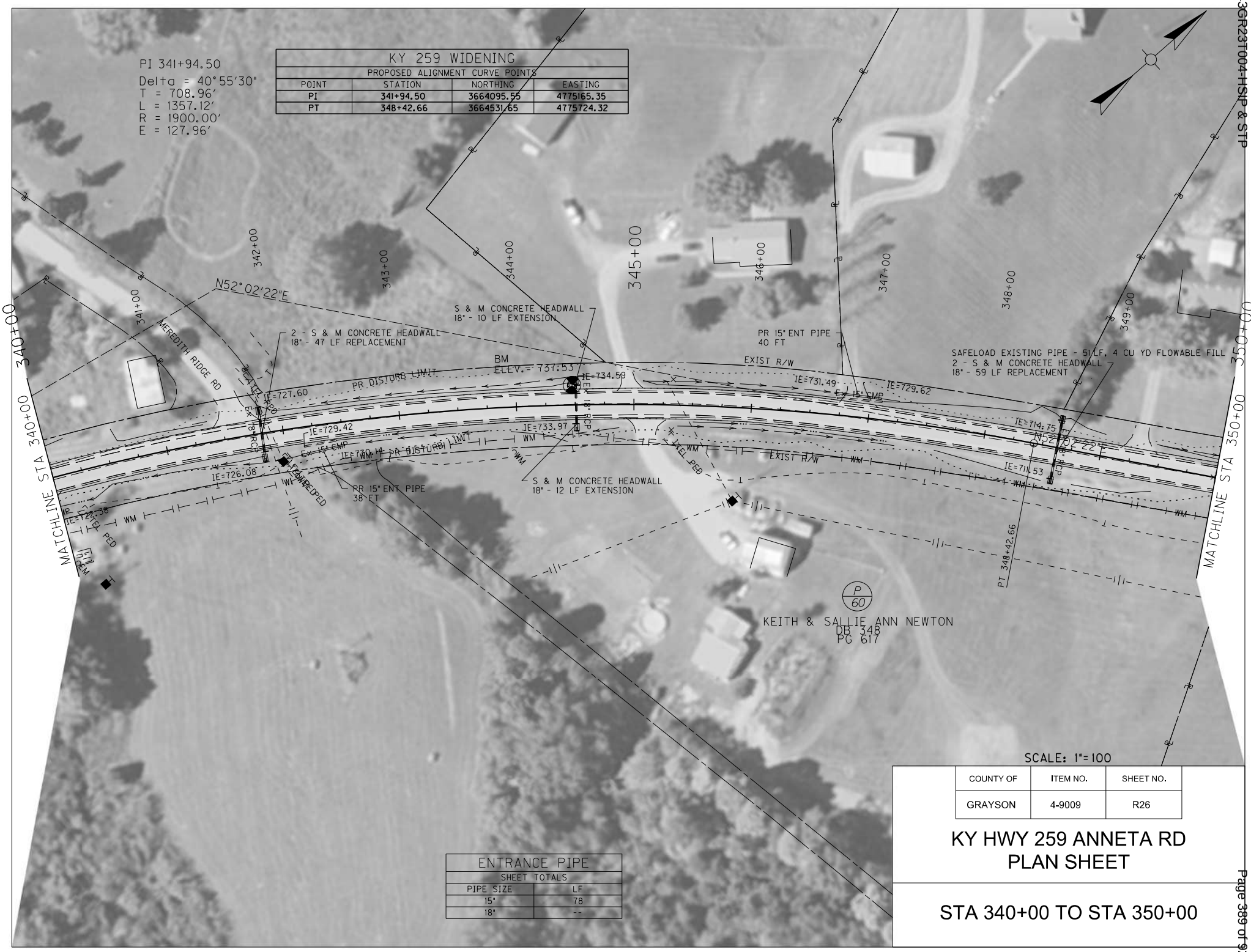


SCALE: 1" = 100

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R25

KY HWY 259 ANNETA RD
PLAN SHEET

STA 330+00 TO STA 340+00



ENTRANCE PIPE	
SHEET TOTALS	
PIPE SIZE	LF
15"	78
18"	--

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R26

KY HWY 259 ANNETA RD
PLAN SHEET

STA 340+00 TO STA 350+00

SCALE: 1"=100

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R27

KY HWY 259 ANNETA RD
PLAN SHEET

STA 350+00 TO STA 360+00

ENTRANCE PIPE	
SHEET TOTALS	
PIPE SIZE	LF
15"	138
18"	--

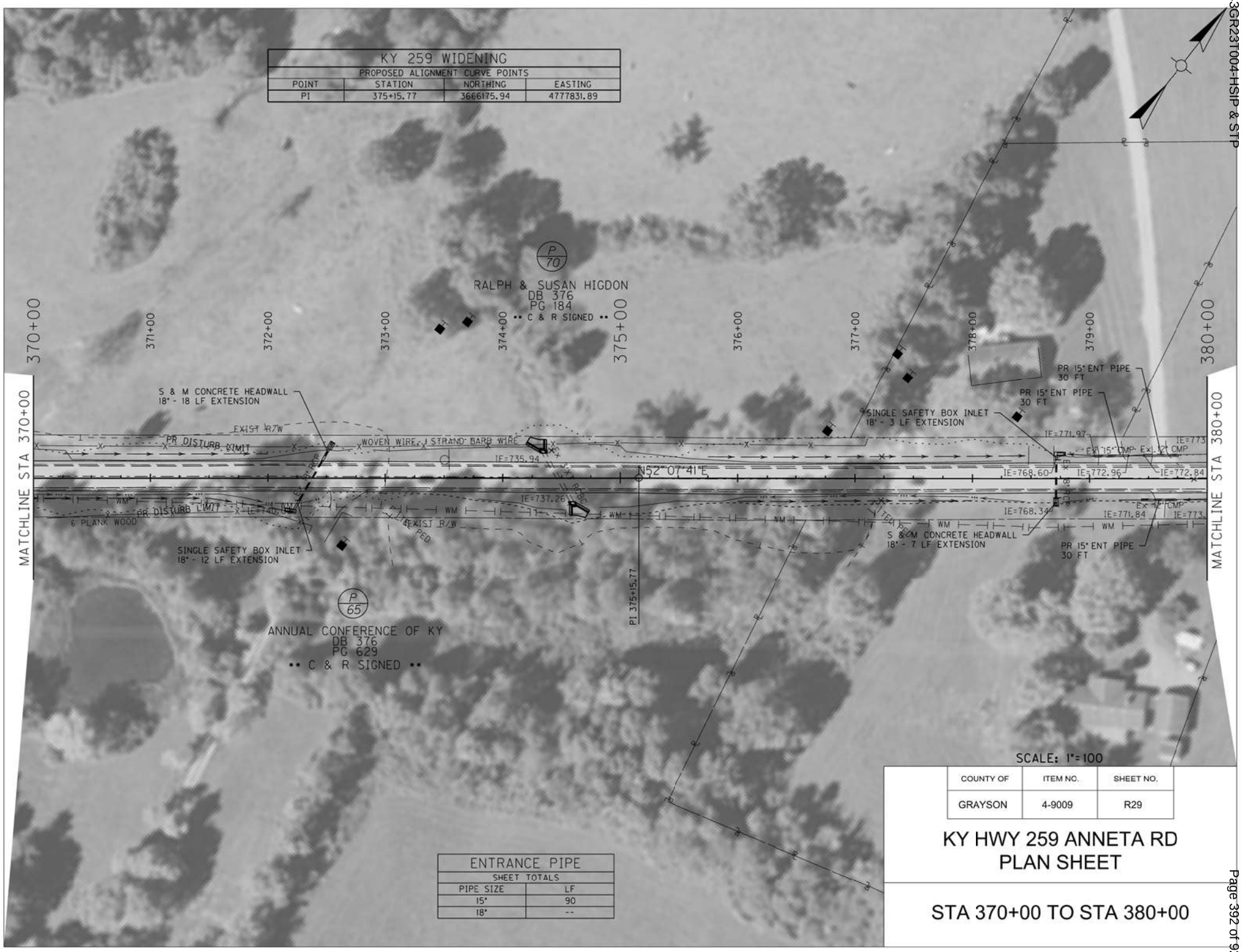
SCALE: 1"=100

ENTRANCE PIPE	
SHEET TOTALS	
PIPE SIZE	LF
15"	--
18"	--

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R28

KY HWY 259 ANNETA RD
PLAN SHEET

STA 360+00 TO STA 370+00



ENTRANCE PIPE	
SHEET TOTALS	
PIPE SIZE	LF
15"	90
18"	--

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R29

KY HWY 259 ANNETA RD
PLAN SHEET

STA 370+00 TO STA 380+00

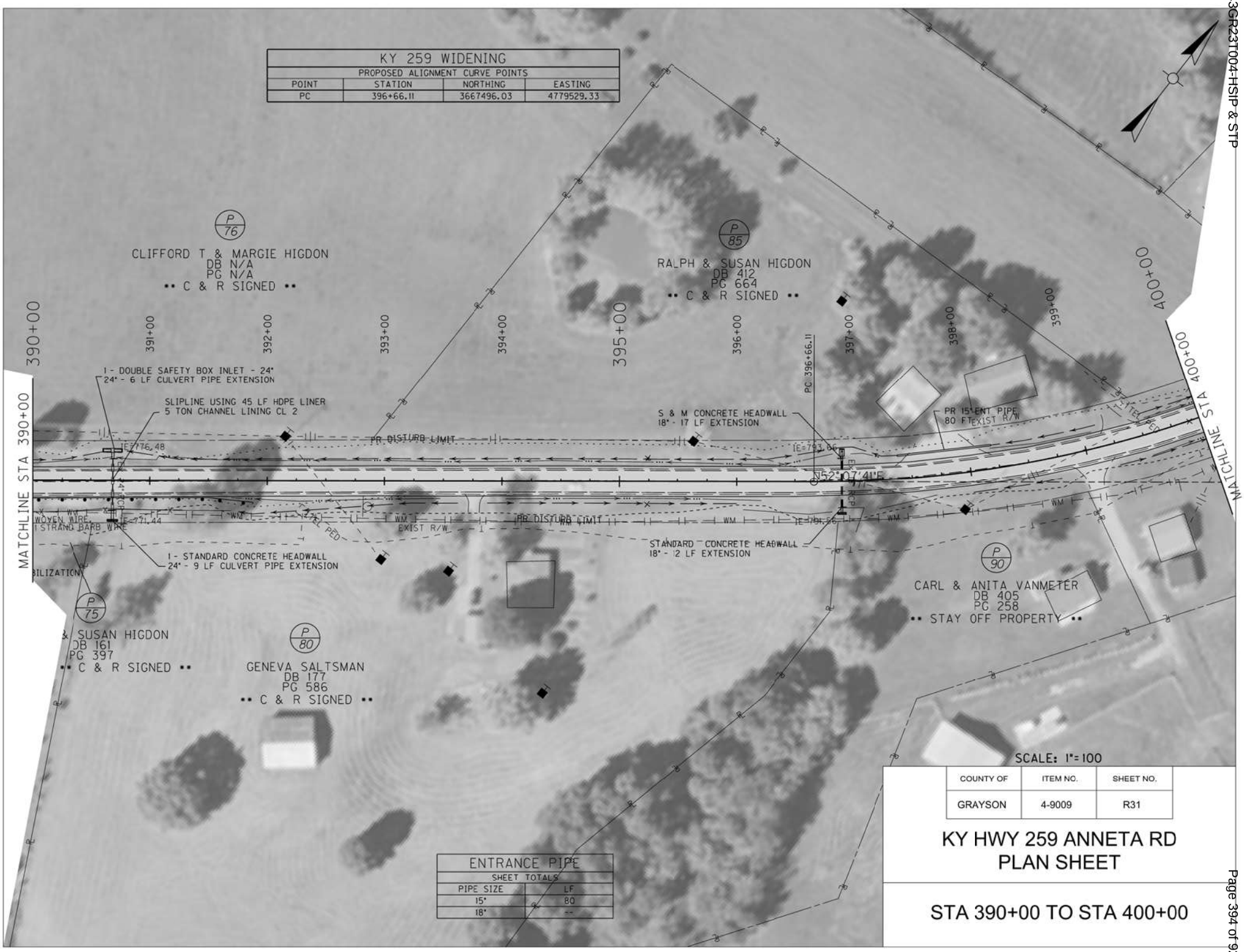
SCALE: 1"= 100

ENTRANCE PIPE	
SHEET TOTALS	
PIPE SIZE	LF
15"	88
18"	--

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R30

KY HWY 259 ANNETA RD
PLAN SHEET

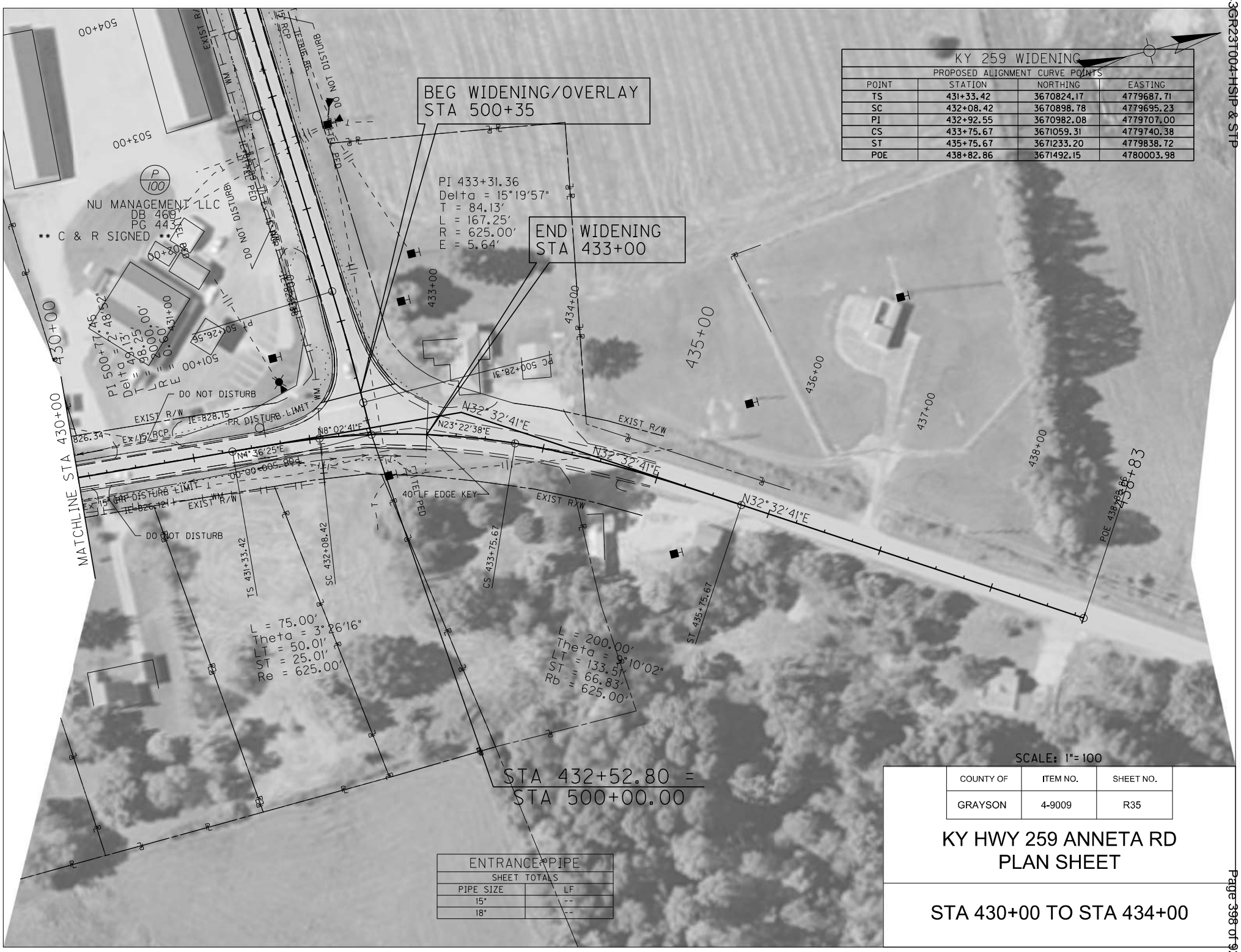
STA 380+00 TO STA 390+00


KY 259 WIDENING
PROPOSED ALIGNMENT CURVE POINTS
POINT | STATION | NORTHING | EASTING
PC | 396+66.11 | 3667496.03 | 4779529.33
P 76
CLIFFORD T & MARGIE HIGDON
DB N/A
PG N/A
•• C & R SIGNED ••
P 85
RALPH & SUSAN HIGDON
DB 412
PG 664
•• C & R SIGNED ••
390+00
391+00
392+00
393+00
394+00
395+00
396+00
397+00
398+00
399+00
400+00
MATCHLINE STA 390+00
MATCHLINE STA 400+00
1 - DOUBLE SAFETY BOX INLET - 24"
24" - 6 LF CULVERT PIPE EXTENSION
SLIPLINE USING 45 LF HDPE LINER
5 TON CHANNEL LINING CL 2
S & M CONCRETE HEADWALL
18" - 17 LF EXTENSION
PC 396+66.11
PR 15" ENT PIPE
80 FT EXIST R/W
PR DISTURB LIMIT
IE=776.48
IE=791.06
N52°07'41"E
IE=771.44
WOVEN WIRE
STRAND BARB WIRE
EXIST R/W
PR DISTURB LIMIT
IE=781.56
STANDARD CONCRETE HEADWALL
18" - 12 LF EXTENSION
1 - STANDARD CONCRETE HEADWALL
24" - 9 LF CULVERT PIPE EXTENSION
P 90
CARL & ANITA VANMETER
DB 405
PG 258
•• STAY OFF PROPERTY ••
P 75
& SUSAN HIGDON
DB 161
PG 397
•• C & R SIGNED ••
P 80
GENEVA SALTSMAN
DB 177
PG 586
•• C & R SIGNED ••
ENTRANCE PIPE
SHEET TOTALS
PIPE SIZE | LF
15" | 80
18" | --
SCALE: 1"= 100
COUNTY OF | ITEM NO. | SHEET NO.
GRAYSON | 4-9009 | R31
KY HWY 259 ANNETA RD
PLAN SHEET
STA 390+00 TO STA 400+00

KY 259 WIDENING
PROPOSED ALIGNMENT CURVE POINTS
POINT | STATION | NORTHING | EASTING
PI | 402+54.57 | 3667857.29 | 4779993.85
PT | 407+29.90 | 3668438.79 | 4779903.6
PI 402+54.57
Delta = 60°57'03"
T = 588.47'
L = 1063.79'
R = 1000.00'
E = 160.30'
CARL D & NEIL T VANMETER
DB 411
PG 567
** STAY OFF PROPERTY **
STACY KINCADE COCKRELL
DB 273
PG 077
** C & R SIGNED **
MATCHLINE STA 400+00
MATCHLINE STA 410+00
PR 15" ENT PIPE
30 FT
S & M CONCRETE HEADWALL
24" - 13 LF EXTENSION
2 - S & M CONCRETE HEADWALL
24" - 59 LF REPLACEMENT
PR 15" ENT PIPE
28 FT
SLIPLINE USING
47 LF HDPE LINER
S & M CONCRETE HEADWALL
24" - 10 LF EXTENSION
STUMP GRIND
SMALLER TREE
TO AVOID
DAMAGE TO
LARGER TREE
DO NOT
DISTURB
LARGER TREE
PR 18" ENT PIPE
48 FT
PR 15" ENT PIPE
30 FT
EXIST R/W
PR DISTURB LIMIT
HUFFMAN RD
TEL PED
WM
ENTRANCE PIPE
SHEET TOTALS
PIPE SIZE | LF
15" | 88
18" | 48
SCALE: 1"=100
COUNTY OF | ITEM NO. | SHEET NO.
GRAYSON | 4-9009 | R32
KY HWY 259 ANNETA RD
PLAN SHEET
STA 400+00 TO STA 410+00

KY 259 WIDENING
PROPOSED ALIGNMENT CURVE POINTS
POINT | STATION | NORTHING | EASTING
PI | 412+48.78 | 366895I.53 | 4779824.0I
410+00
411+00
412+00
413+00
414+00
415+00
416+00
417+00
418+00
419+00
420+00
P 95
TERRELL SALTSMAN & BERNICE DECKER
DB 438
PG 531
•• C & R SIGNED ••
NOTE: STA 417+75 - STA 423+50 LT
CONSTRUCT UNPAVED SHOULDER
AS SHOWN WITH 2:1 FILL SLOPES
(USE 3:1 FILL SLOPES WITH PARCEL
OWNER CONSENT & RELEASE)
MATCHLINE STA 410+00
MATCHLINE STA 420+00
PR 15" ENT PIPE
28 FT
IE=809.54
IE=810.56
Ex 127" VCP
EXIST R/W
PR DISTURB LIMIT
WOVEN WIRE
STRAND BARB WIRE
N8°49'22"W
Ex 15" CMP
IE=809.68
IE=810.30
WM
EXIST R/W
PR 15" ENT PIPE
32 FT
PI 412+46.78
NOTE: STA 417+75 - STA 423+50 RT
CONSTRUCT UNPAVED SHOULDER
AS SHOWN WITH 2:1 FILL SLOPES
(USE 3:1 FILL SLOPES WITH PARCEL
OWNER CONSENT & RELEASE)
ENTRANCE PIPE
SHEET TOTALS
PIPE SIZE | LF
15" | 60
18" | --
SCALE: 1"=100
COUNTY OF | ITEM NO. | SHEET NO.
GRAYSON | 4-9009 | R33
KY HWY 259 ANNETA RD
PLAN SHEET
STA 410+00 TO STA 420+00

KY 259 WIDENING
PROPOSED ALIGNMENT CURVE POINTS
POINT | STATION | NORTHING | EASTING
PC | 422+48.47 | 3669941.58 | 4779685.50
PI | 425+64.04 | 3670254.11 | 4779641.78
PT | 428+77.08 | 3670568.66 | 4779667.12
P 95
TERRELL SALTSMAN & BERNICE DECKER
DB 438
PG 531
•• C & R SIGNED ••
PI 425+64.04
Delta = 12° 34'17"
T = 315.57'
L = 628.61'
R = 2865.00'
E = 17.33'
420+00
421+00
422+00
423+00
424+00
425+00
426+00
427+00
428+00
429+00
430+00
MATCHLINE STA 420+00
MATCHLINE STA 430+00
STANDARD CONCRETE HEADWALL
18" - 11 LF EXTENSION
WOVEN WIRE
1 STRAND BARB WIRE
IE=804.06
STANDARD CONCRETE HEADWALL
18" - 6 LF EXTENSION
PC 422+48.47
EXIST R/W 30 FT
PR 15" ENT PIPE
PR DISTURB LIMIT
S & M CONCRETE HEADWALL
18" - 17 LF EXTENSION
N7°57'51"W
N4°36'25"E
IE=809.04
IE=805.51
WOVEN WIRE
1 STRAND BARB WIRE
EXIST R/W
S & M CONCRETE HEADWALL
18" - 11 LF EXTENSION
5 STRAND BARB WIRE
S & M CONCRETE HEADWALL
18" - 5 LF EXTENSION
PR 15" ENT PIPE
60 FT
IE=817.57
IE=819.47
PR 15" ENT PIPE
30 FT
IE=814.14
S & M CONCRETE HEADWALL
18" - 8 LF EXTENSION
PT 428+77.08
SCALE: 1"=100
ENTRANCE PIPE
SHEET TOTALS
PIPE SIZE | LF
15" | 120
18" | --
COUNTY OF | ITEM NO. | SHEET NO.
GRAYSON | 4-9009 | R34
KY HWY 259 ANNETA RD
PLAN SHEET
STA 420+00 TO STA 430+00



KY 259 WIDENING			
PROPOSED ALIGNMENT CURVE POINTS			
POINT	STATION	NORTHING	EASTING
TS	431+33.42	3670824.17	4779687.71
SC	432+08.42	3670898.78	4779695.23
PI	432+92.55	3670982.08	4779707.00
CS	433+75.67	3671059.31	4779740.38
ST	435+75.67	3671233.20	4779838.72
POE	438+82.86	3671492.15	4780003.98

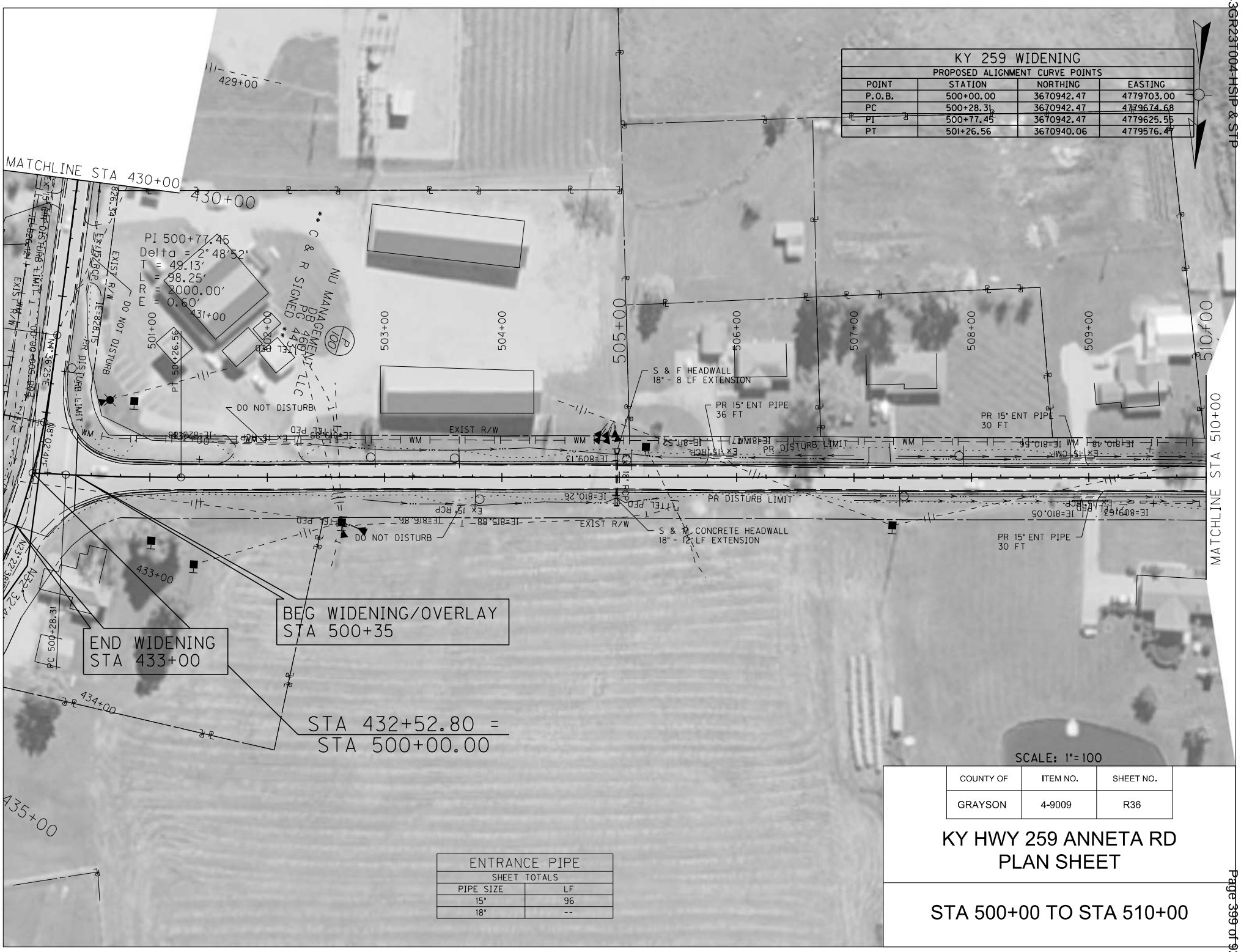
ENTRANCE PIPE	
SHEET TOTALS	
PIPE SIZE	LF
15"	--
18"	--

SCALE: 1"= 100

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R35

KY HWY 259 ANNETA RD
PLAN SHEET

STA 430+00 TO STA 434+00



KY 259 WIDENING			
PROPOSED ALIGNMENT CURVE POINTS			
POINT	STATION	NORTHING	EASTING
P.O.B.	500+00.00	3670942.47	4779703.00
PC	500+28.31	3670942.47	4779674.68
PI	500+77.45	3670942.47	4779625.55
PT	501+26.56	3670940.06	4779576.47

ENTRANCE PIPE	
SHEET TOTALS	
PIPE SIZE	LF
15"	96
18"	--

SCALE: 1"= 100

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R36

KY HWY 259 ANNETA RD
PLAN SHEET

STA 500+00 TO STA 510+00

KY 259 WIDENING			
PROPOSED ALIGNMENT CURVE POINTS			
POINT	STATION	NORTHING	EASTING
PC	514+26.24	3670876.24	4778278.36
PI	515+33.30	3670870.98	4778171.43
PT	516+36.69	3670913.01	4778072.97

CURVE WIDENING			
CURVE WIDENING TAPERS			
POINT	STATION	BEGIN WIDTH	END WIDTH
LT EP	512+90.24 - 514+26.24	-11.0'	-12.5'
RT EP	512+90.24 - 514+26.24	11.0'	12.5'
LT EP	516+36.69 - 517+72.69	-12.5'	-11.0'
RT EP	516+36.69 - 517+72.69	12.5'	11.0'

P 102

PERRY & FREIDA ALEXANDER
DB 167
PG 518
** C & R SIGNED **

PI 515+33.30
Delta = 25°55'50"
T = 107.06'
L = 210.45'
R = 465.00'
E = 12.16'

STANDARD CONCRETE HEADWALL
18" - 12 LF EXTENSION

PR 15" ENT PIPE
34 FT

PR 15" ENT PIPE
40 FT

PR 15" ENT PIPE
32 FT

PR 15" ENT PIPE
28 FT

S & M CONCRETE HEADWALL
18" - 16 LF EXTENSION

PR DISTURB LIMIT

EXIST R/W

LONG BRANCH RD

MATCHLINE STA 510+00

MATCHLINE STA 520+00

PC 514+26.24

PT 516+36.69

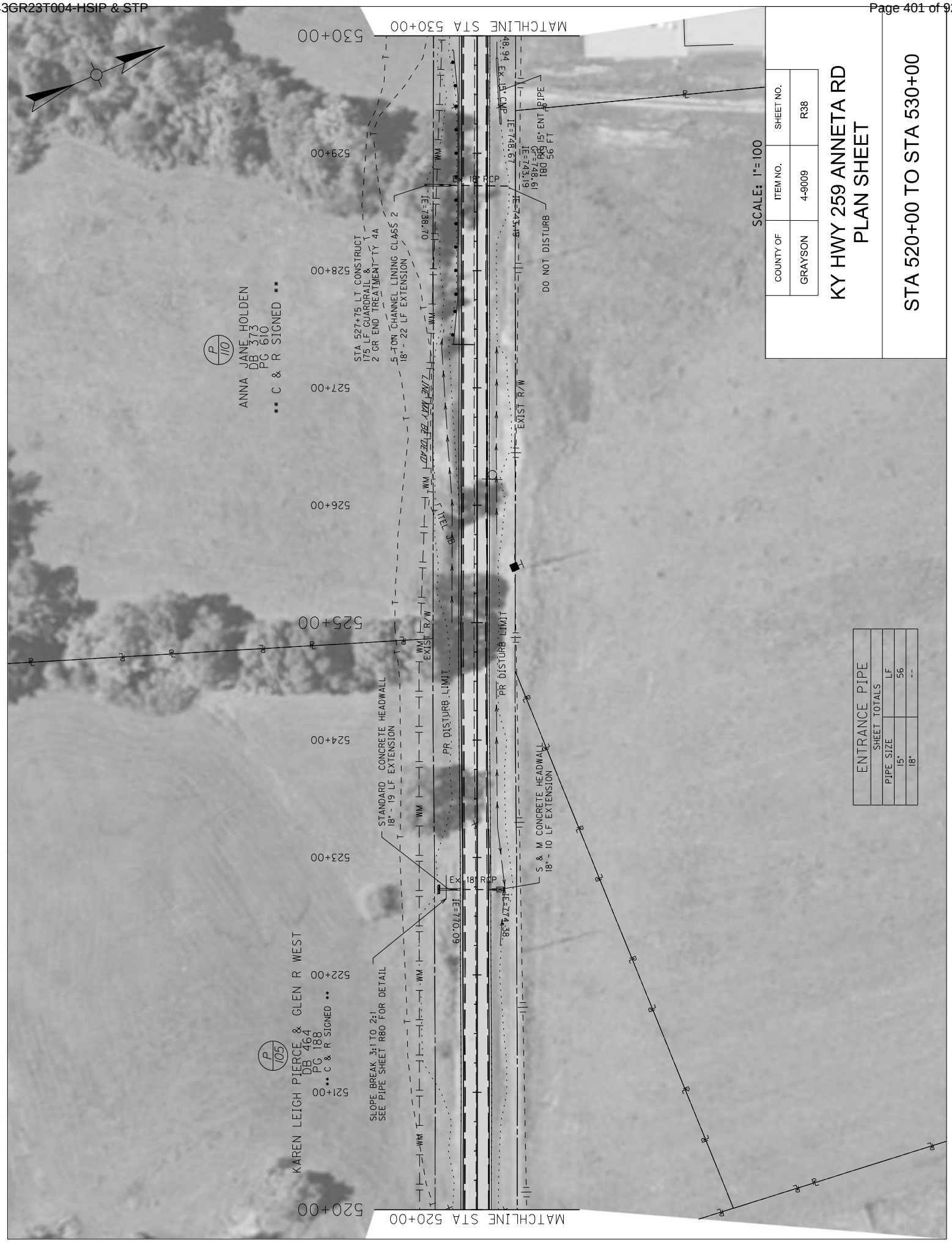
ENTRANCE PIPE	
SHEET TOTALS	
PIPE SIZE	LF
15"	134
18"	--

SCALE: 1"= 100

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R37

KY HWY 259 ANNETA RD
PLAN SHEET

STA 510+00 TO STA 520+00


MATCHLINE STA 530+00
MATCHLINE STA 520+00
520+00
521+00
522+00
523+00
524+00
525+00
526+00
527+00
528+00
529+00
530+00
SCALE: 1"=100
COUNTY OF
GRAYSON
ITEM NO.
4-9009
SHEET NO.
R38
KY HWY 259 ANNETA RD
PLAN SHEET
STA 520+00 TO STA 530+00
ENTRANCE PIPE
SHEET TOTALS
PIPE SIZE
LF
15"
56
18"
--
ANNA JANE HOLDEN
DB 373
PG 610
** C & R SIGNED **
KAREN LEIGH PIERCE & GLEN R WEST
DB 464
PG 188
** C & R SIGNED **
P 110
P 105
STA 527+75 LT CONSTRUCT
175 LF GUARDRAIL &
2 GR END TREATMENT-TY 4A
5-TON CHANNEL LINING CLASS 2
18" - 22 LF EXTENSION
STANDARD CONCRETE HEADWALL
18" - 19 LF EXTENSION
S & M CONCRETE HEADWALL
18" - 10 LF EXTENSION
SLOPE BREAK 3:1 TO 2:1
SEE PIPE SHEET R80 FOR DETAIL
DO NOT DISTURB
EXIST R/W
PR DISTURB LIMIT
48.94 Ex 15" CMP
IE=748.67
IE=747.19
19"x148"x95" ENT PIPE
180 RISE 15" ENT PIPE
56 FT
IE=738.70
IE=737.41
IE=710.09
IE=714.38
Ex 18" RCP

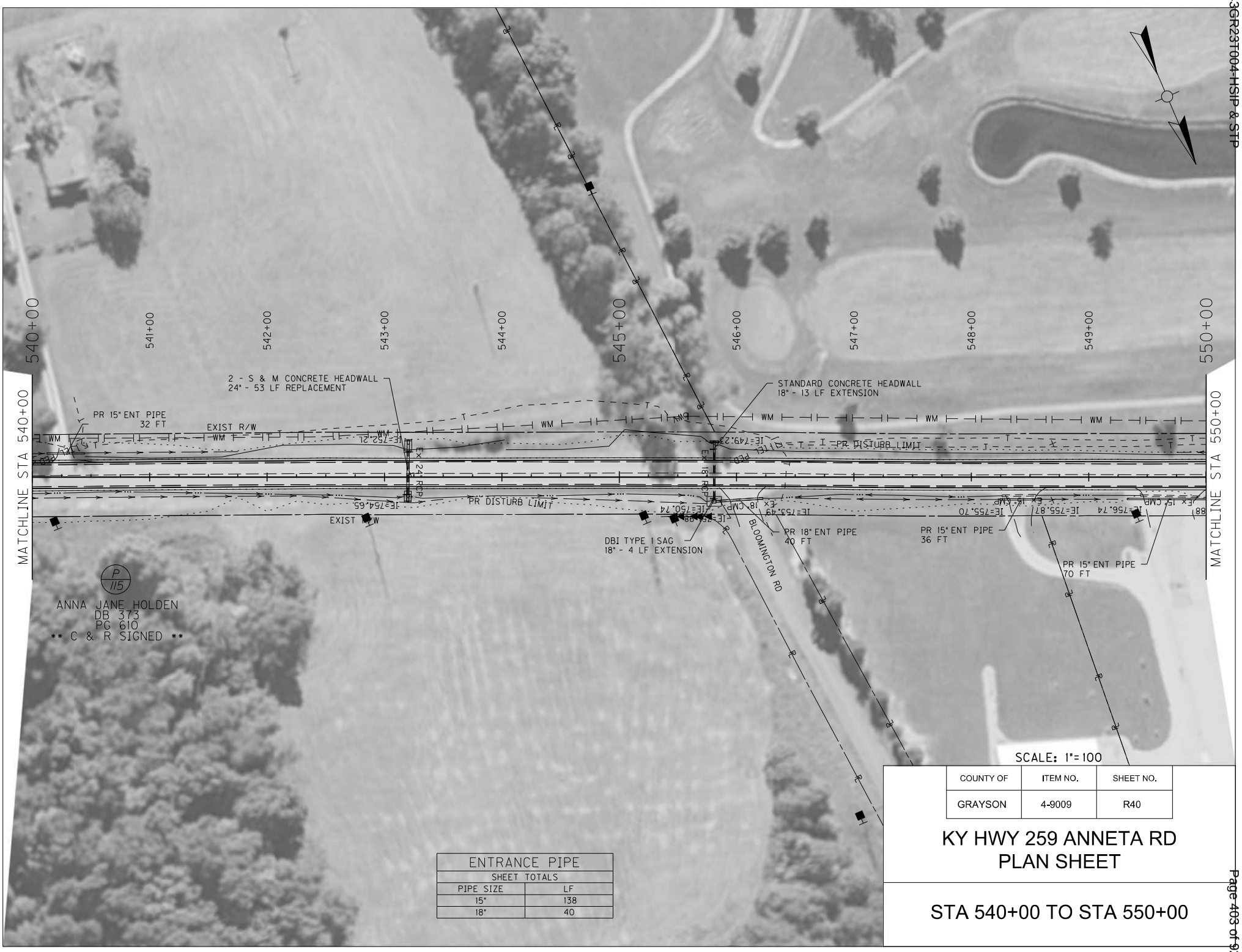
SCALE: 1"=100

ENTRANCE PIPE	
SHEET TOTALS	
PIPE SIZE	LF
15"	104
18"	--

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R39

KY HWY 259 ANNETA RD
PLAN SHEET

STA 530+00 TO STA 540+00



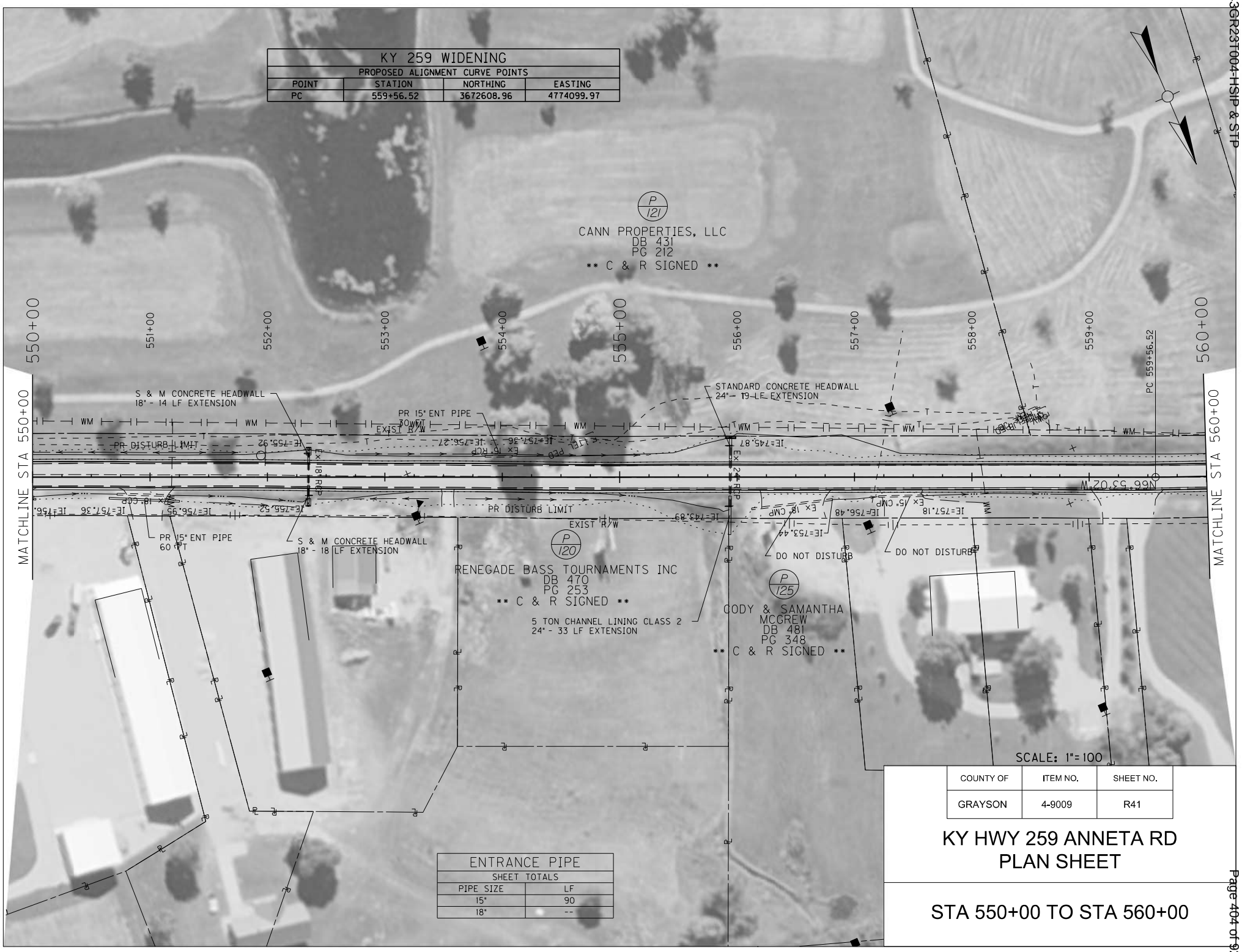
SCALE: 1"=100

ENTRANCE PIPE	
SHEET TOTALS	
PIPE SIZE	LF
15"	138
18"	40

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R40

KY HWY 259 ANNETA RD
PLAN SHEET

STA 540+00 TO STA 550+00



ENTRANCE PIPE	
SHEET TOTALS	
PIPE SIZE	LF
15"	90
18"	--

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R41

KY HWY 259 ANNETA RD
PLAN SHEET

STA 550+00 TO STA 560+00

KY 259 WIDENING
PROPOSED ALIGNMENT CURVE POINTS
POINT | STATION | NORTHING | EASTING
PI | 561+52.62 | 3672685.94 | 4773919.62
PT | 563+46.12 | 3672709.72 | 4773724.96
PI 561+52.62
Delta = 16°09'09"
T = 196.10'
L = 389.60'
R = 1382.00'
E = 13.84'
560+00
561+00
562+00
563+00
564+00
565+00
566+00
567+00
568+00
569+00
570+00
MATCHLINE STA 560+00
MATCHLINE STA 570+00
PT 563+46.12
GOLF COURSE RD
DOUBLE SAFETY BOX INLET
18" - 17 LF EXTENSION
STANDARD CONCRETE HEADWALL
18" - 9 LF EXTENSION
4 STRAND BARB WIRE
EXIST R/W
PR DISTURB LIMIT
N66°53'02"W
N23°02'11"W
DBI TY II
TOG = 767.68'
H = 3'-3"
18 IN - 7 LF EXTENSION
STORM SEWER TO BE
INSTALLED BY PERMIT.
PERMIT WORK TO BE
COORDINATED W/ROAD CONSTRUCTION.
•SEE SPECIAL NOTE
PR 18" ENT PIPE
34 FT
DOUBLE SAFETY BOX INLET
18" - 13 LF EXTENSION
ENTRANCE PIPE
SHEET TOTALS
PIPE SIZE | LF
15" | --
18" | 24
SCALE: 1"=100
COUNTY OF | ITEM NO. | SHEET NO.
GRAYSON | 4-9009 | R42
KY HWY 259 ANNETA RD
PLAN SHEET
STA 560+00 TO STA 570+00

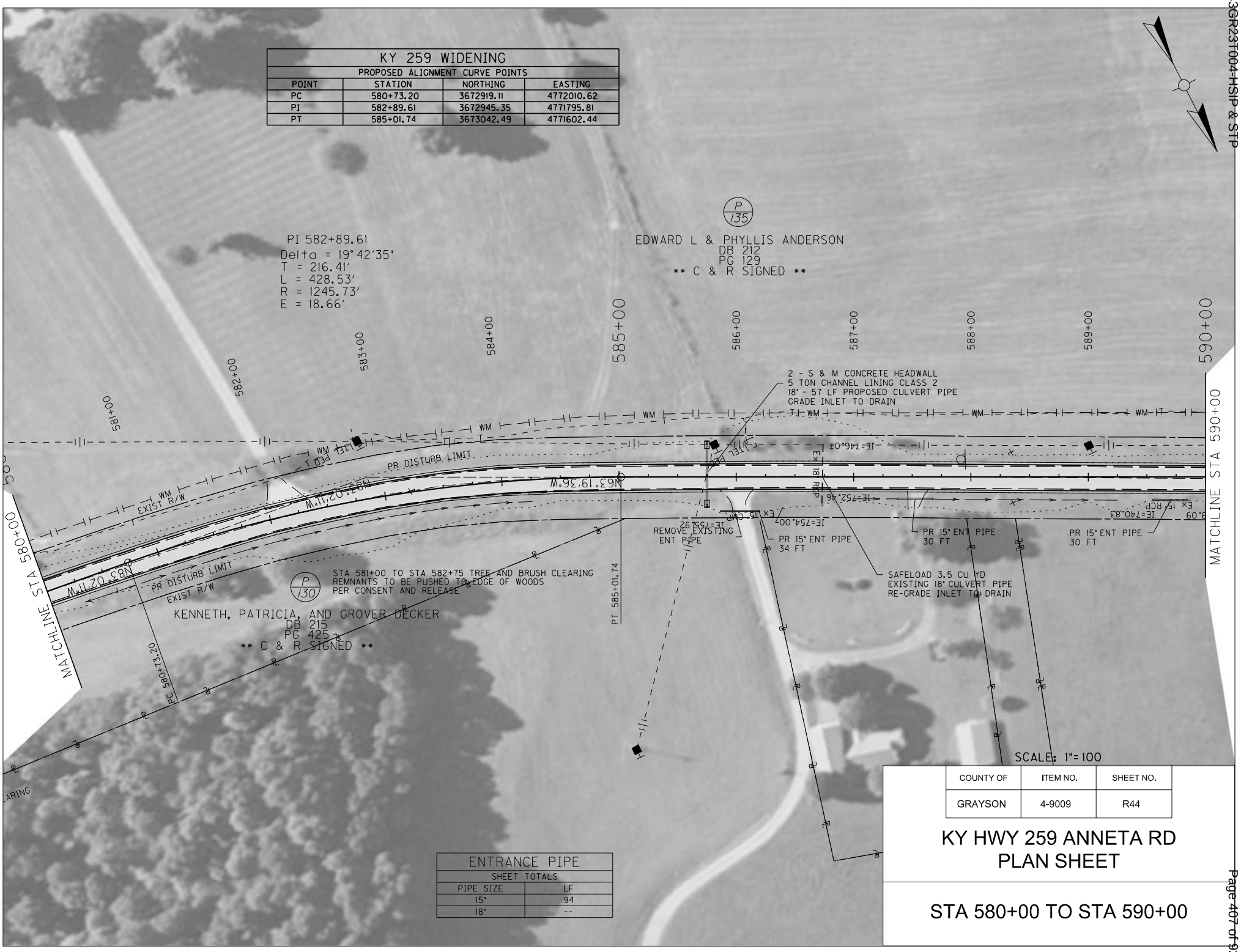
SCALE: 1"= 100

ENTRANCE PIPE	
SHEET TOTALS	
PIPE SIZE	LF
15"	32
18"	--

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R43

KY HWY 259 ANNETA RD
PLAN SHEET

STA 570+00 TO STA 580+00



KY 259 WIDENING			
PROPOSED ALIGNMENT CURVE POINTS			
POINT	STATION	NORTHING	EASTING
PC	580+73.20	3672919.11	4772010.62
PI	582+89.61	3672945.35	4771795.81
PT	585+01.74	3673042.49	4771602.44

PI 582+89.61
Delta = 19° 42' 35"
T = 216.41'
L = 428.53'
R = 1245.73'
E = 18.66'

P 135
EDWARD L & PHYLLIS ANDERSON
DB 212
PG 129
** C & R SIGNED **

581+00 582+00 583+00 584+00 585+00 586+00 587+00 588+00 589+00 590+00

2 - S & M CONCRETE HEADWALL
5 TON CHANNEL LINING CLASS 2
18" - 57 LF PROPOSED CULVERT PIPE
GRADE INLET TO DRAIN

PR DISTURB LIMIT
EXIST R/W
N83°11'20"W
N63°19'36"W
REMOVE EXISTING ENT PIPE
PR 15" ENT PIPE 34 FT
PR 15" ENT PIPE 30 FT
PR 15" ENT PIPE 30 FT
SAFELOAD 3.5 CU YD EXISTING 18" CULVERT PIPE RE-GRADE INLET TO DRAIN
IE=754.00
IE=752.46
IE=740.83
IE=755.92
IE=746.02

MATCHLINE STA 580+00
MATCHLINE STA 590+00

P 130
STA 581+00 TO STA 582+75 TREE AND BRUSH CLEARING
REMNANTS TO BE PUSHED TO EDGE OF WOODS
PER CONSENT AND RELEASE

KENNETH, PATRICIA, AND GROVER DECKER
DB 215
PG 425
** C & R SIGNED **

PC 580+73.20
PT 585+01.74

SCALE: 1"= 100

ENTRANCE PIPE	
SHEET TOTALS	
PIPE SIZE	LF
15"	94
18"	--

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R44

KY HWY 259 ANNETA RD
PLAN SHEET

STA 580+00 TO STA 590+00

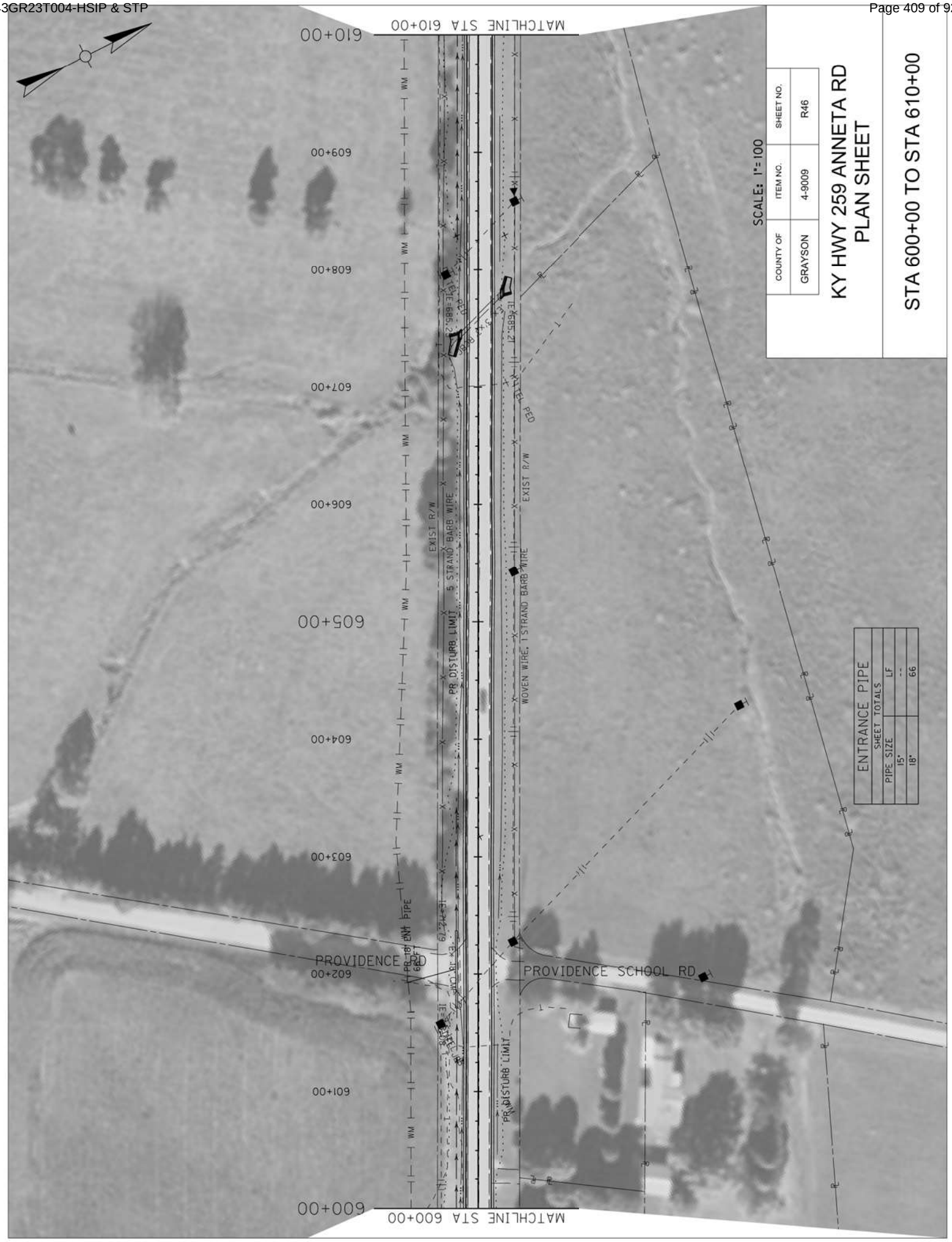
SCALE: 1"=100

ENTRANCE PIPE	
SHEET TOTALS	
PIPE SIZE	LF
15"	--
18"	--

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R45

KY HWY 259 ANNETA RD
PLAN SHEET

STA 590+00 TO STA 600+00


MATCHLINE STA 610+00
MATCHLINE STA 600+00
610+00
609+00
608+00
607+00
606+00
605+00
604+00
603+00
602+00
601+00
600+00
PROVIDENCE RD
PROVIDENCE SCHOOL RD
EXIST R/W
5 STRAND BARB WIRE
PR DISTURB LIMIT
WOVEN WIRE, 1 STRAND BARB WIRE
SCALE: 1"=100
COUNTY OF
GRAYSON
ITEM NO.
4-9009
SHEET NO.
R46
KY HWY 259 ANNETA RD
PLAN SHEET
STA 600+00 TO STA 610+00
ENTRANCE PIPE
SHEET TOTALS
PIPE SIZE
LF
15"
--
18"
66

KY 259 WIDENING			
PROPOSED ALIGNMENT CURVE POINTS			
POINT	STATION	NORTHING	EASTING
PC	618+84.86	3674561.19	4768579.34

ENTRANCE PIPE	
SHEET TOTALS	
PIPE SIZE	LF
15"	--
18"	--

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R47

KY HWY 259 ANNETA RD
PLAN SHEET

STA 610+00 TO STA 620+00

KY 259 WIDENING			
PROPOSED ALIGNMENT CURVE POINTS			
POINT	STATION	NORTHING	EASTING
PI	623+09.22	3674751.69	4768200.15
PT	626+73.29	3675168.53	4768120.63

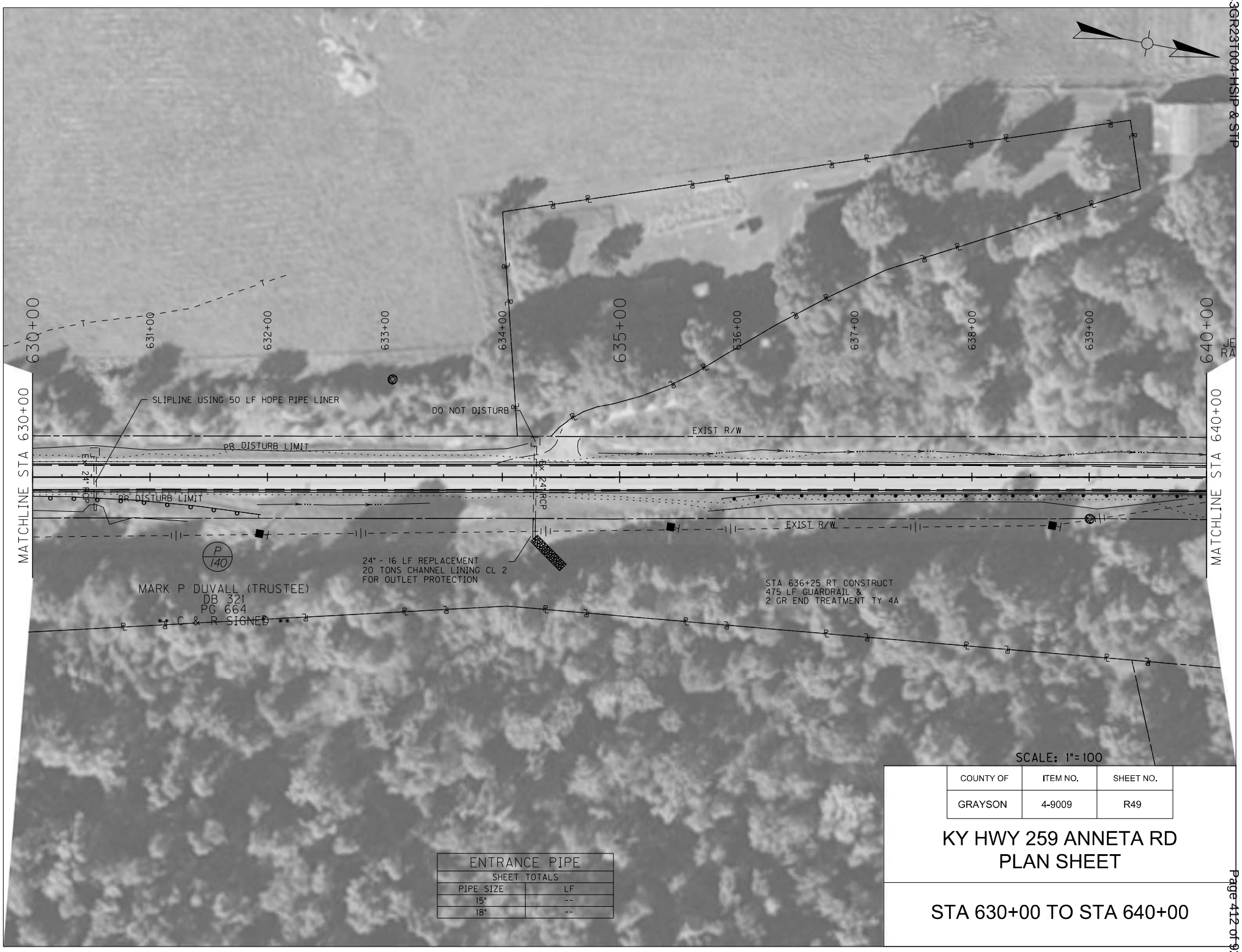
ENTRANCE PIPE	
SHEET TOTALS	
PIPE SIZE	LF
15"	--
18"	--

SCALE: 1"=100

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R48

KY HWY 259 ANNETA RD
PLAN SHEET

STA 620+00 TO STA 630+00



SCALE: 1"= 100

ENTRANCE PIPE	
SHEET TOTALS	
PIPE SIZE	LF
15"	--
18"	--

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R49

KY HWY 259 ANNETA RD
PLAN SHEET

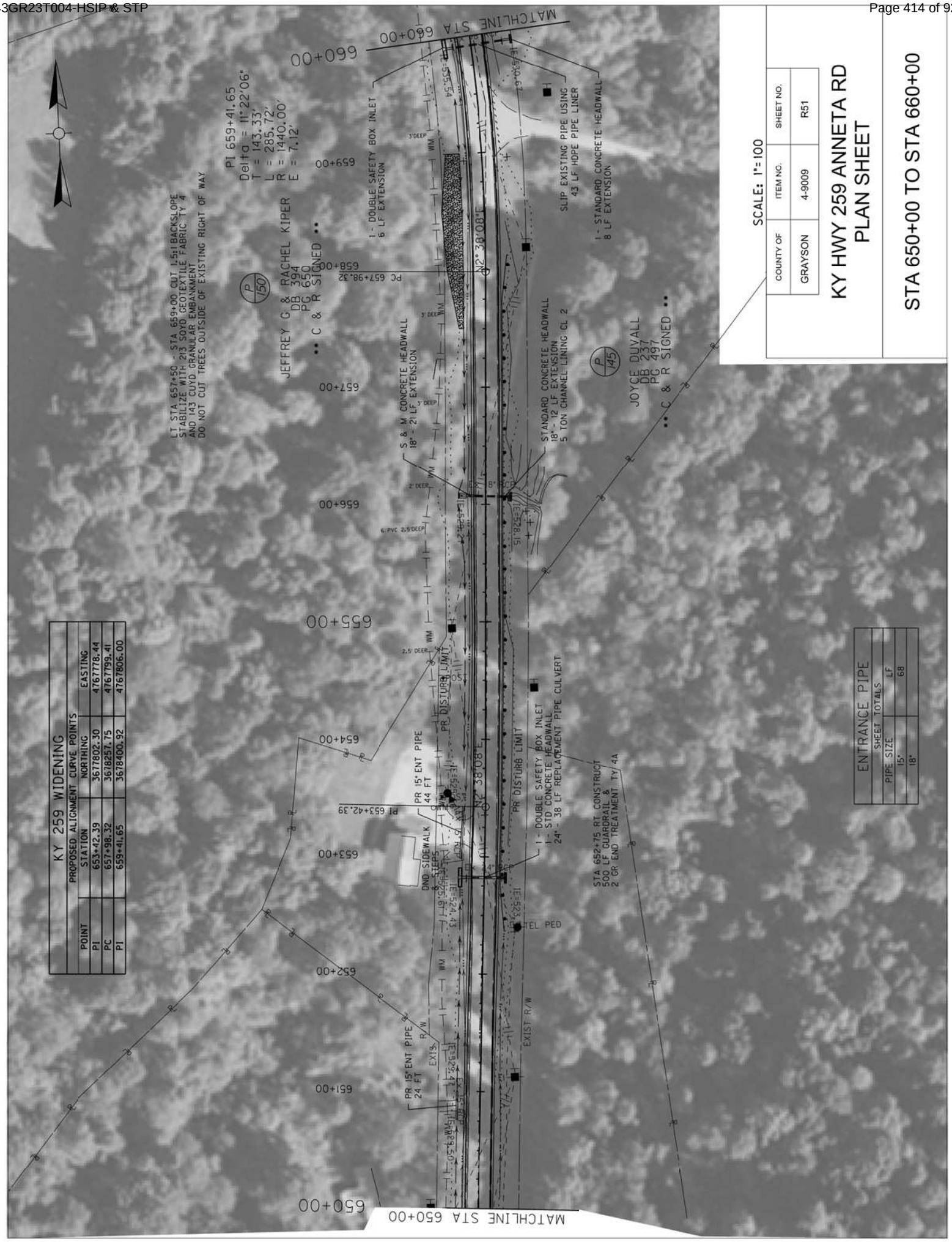
STA 630+00 TO STA 640+00

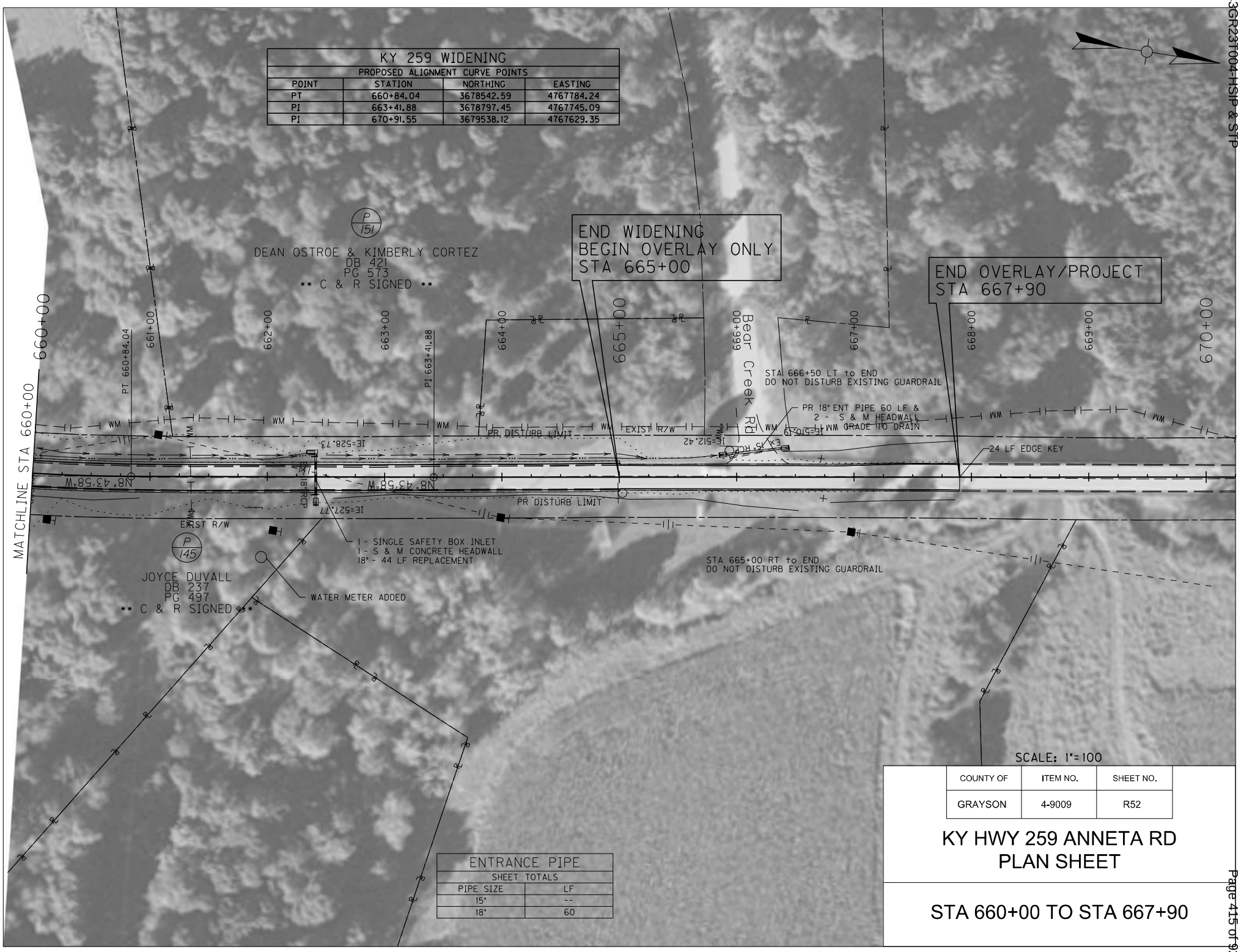
ENTRANCE PIPE	
SHEET TOTALS	
PIPE SIZE	LF
15"	--
18"	32

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R50

KY HWY 259 ANNETA RD
PLAN SHEET

STA 640+00 TO STA 650+00


KY 259 WIDENING
PROPOSED ALIGNMENT CURVE POINTS
POINT | STATION | NORTHING | EASTING
PI | 653+42.39 | 3677802.30 | 4767778.44
PC | 657+98.32 | 3678251.75 | 4767799.41
PI | 659+41.65 | 3678400.92 | 4767806.00
PI 659+41.65
Delta = 11°22'06"
T = 143.33'
L = 285.72'
R = 1440.00'
E = 7.12'
JEFFREY G & RACHEL KIPER
DB 394
PG 650
•• C & R SIGNED ••
PC 657+98.32
LT STA 657+50 - STA 659+00 CUT 1.5:1 BACKSLOPE
STABILIZE WITH 213 SQYD GEOTEXTILE FABRIC TY 4
AND 143 CUYD GRANULAR EMBANKMENT
DO NOT CUT TREES OUTSIDE OF EXISTING RIGHT OF WAY
1 - DOUBLE SAFETY BOX INLET
6 LF EXTENSION
SLIP EXISTING PIPE USING
43 LF HDPE PIPE LINER
1 - STANDARD CONCRETE HEADWALL
8 LF EXTENSION
S & M CONCRETE HEADWALL
18" - 21 LF EXTENSION
STANDARD CONCRETE HEADWALL
18" - 12 LF EXTENSION
5 TON CHANNEL LINING CL 2
JOYCE DUVALL
DB 237
PG 497
•• C & R SIGNED ••
PR 15" ENT PIPE
44 FT
PR DISTURB LIMIT
1 - DOUBLE SAFETY BOX INLET
1 - STD CONCRETE HEADWALL
24" - 38 LF REPLACEMENT PIPE CULVERT
STA 652+75 RT CONSTRUCT
500 LF GUARDRAIL &
2 GR END TREATMENT TY 4A
DND SIDEWALK & STEPS
TEL PED
EXIST R/W
PR 15" ENT PIPE
24 FT
MATCHLINE STA 650+00
MATCHLINE STA 660+00
650+00
651+00
652+00
653+00
654+00
655+00
656+00
657+00
658+00
659+00
660+00
ENTRANCE PIPE
SHEET TOTALS
PIPE SIZE | LF
15" | 68
18"
SCALE: 1"=100
COUNTY OF | ITEM NO. | SHEET NO.
GRAYSON | 4-9009 | R51
KY HWY 259 ANNETA RD
PLAN SHEET
STA 650+00 TO STA 660+00


KY 259 WIDENING
PROPOSED ALIGNMENT CURVE POINTS
POINT | STATION | NORTHING | EASTING
PT | 660+84.04 | 3678542.59 | 4767784.24
PI | 663+41.88 | 3678797.45 | 4767745.09
PI | 670+91.55 | 3679538.12 | 4767629.35
P 151
DEAN OSTROE & KIMBERLY CORTEZ
DB 421
PG 573
** C & R SIGNED **
END WIDENING
BEGIN OVERLAY ONLY
STA 665+00
END OVERLAY/PROJECT
STA 667+90
660+00
661+00
662+00
663+00
664+00
665+00
666+99
667+00
668+00
669+00
670+00
PT 660+84.04
PI 663+41.88
Bear Creek Rd
MATCHLINE STA 660+00
STA 666+50 LT to END
DO NOT DISTURB EXISTING GUARDRAIL
PR 18" ENT PIPE 60 LF &
2 - S & M HEADWALL
WITH GRADE TO DRAIN
24 LF EDGE KEY
PR DISTURB LIMIT
EXIST R/W
IE=528.73
IE=512.42
IE=510.19
IE=527.77
N8°43'58"W
P 145
JOYCE DUVALL
DB 237
PG 497
** C & R SIGNED **
1 - SINGLE SAFETY BOX INLET
1 - S & M CONCRETE HEADWALL
18" - 44 LF REPLACEMENT
WATER METER ADDED
STA 665+00 RT to END
DO NOT DISTURB EXISTING GUARDRAIL
ENTRANCE PIPE
SHEET TOTALS
PIPE SIZE | LF
15" | --
18" | 60
SCALE: 1"=100
COUNTY OF | ITEM NO. | SHEET NO.
GRAYSON | 4-9009 | R52
KY HWY 259 ANNETA RD
PLAN SHEET
STA 660+00 TO STA 667+90

MAINTENANCE OF TRAFFIC

GENERAL NOTES

1. TRAFFIC SHALL BE MAINTAINED IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND THE STANDARD DRAWINGS, CURRENT EDITIONS.

2. 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" AS SET FORTH IN THE CURRENT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION UNLESS OTHERWISE PROVIDED FOR IN THESE NOTES. THE LUMP SUM BID TO "MAINTAIN AND CONTROL TRAFFIC" SHALL ALSO INCLUDE, BUT IS NOT LIMITED TO, THE FOLLOWING ITEMS AND OPERATIONS:

   A. ALL GRADING AND NECESSARY DRAINAGE (UNLESS A BID ITEM FOR DETOUR CONSTRUCTION IS INCLUDED) FOR THE TEMPORARY ROADWAY AND REMOVAL THEREOF, WHEN IT IS NO LONGER NEEDED. IF A BID ITEM FOR DETOUR CONSTRUCTION IS INCLUDED, GRADING AND DRAINAGE WILL BE PAID FOR IN THE BID ITEM "DETOUR CONSTRUCTION".

   B. ALL LABOR AND MATERIALS NECESSARY FOR CONSTRUCTION AND MAINTENANCE OF TRAFFIC CONTROL DEVICES AND MARKINGS.

   C. ALL FLAGPERSONS AND TRAFFIC CONTROL DEVICES SUCH AS, BUT NOT LIMITED TO, FLASHERS, SIGNS BARRICADES AND VERTICAL PANELS, PLASTIC DRUMS (STEEL DRUMS WILL NOT BE PERMITTED) AND CONES NECESSARY FOR THE CONTROL AND PROTECTION OF VEHICULAR AND PEDESTRIAN TRAFFIC AS SPECIFIED IN THESE NOTES, THE PLANS, THE MUTCD OR THE ENGINEER.

3. ANY TEMPORARY TRAFFIC CONTROL ITEMS, DEVICES, MATERIALS AND INCIDENTALS SHALL REMAIN THE PROPERTY OF THE CONTRACTOR WHEN NO LONGER NEEDED.

4. THE CONTRACTOR SHALL MAINTAIN A TWO-LANE TRAVELED WAY WITH A MINIMUM LANE WIDTH OF 9 FEET DURING ALL NON WORKING HOURS, IN AREAS TEMP SIGNAL IS NOT IN USE. HOWEVER, DURING WORKING HOURS, ONE-WAY TRAFFIC MAY BE PERMITTED (9 FT LANES) OUTSIDE LIMITS OF TEMP SIGNAL, PROVIDED THAT ADEQUATE SIGNING AND FLAGPERSONS ARE AT THE LOCATION.

5. THE CONTRACTOR SHALL COMPLETELY COVER ANY SIGNS, EITHER EXISTING, PERMANENT OR TEMPORARY, WHICH DO NOT PROPERLY APPLY TO THE CURRENT TRAFFIC PHASING, AND SHALL MAINTAIN THE COVERING UNTIL THE SIGNS ARE APPLICABLE OR ARE REMOVED.

6. IN GENERAL, ALL TRAFFIC CONTROL DEVICES SHALL BE PLACED STARTING AND PROCEEDING IN THE DIRECTION OF THE FLOW OF TRAFFIC AND REMOVED STARTING AND PROCEEDING IN THE DIRECTION OPPOSITE THE FLOW OF TRAFFIC.

7. THE ENGINEER AND THE CONTRACTOR, OR THEIR AUTHORIZED REPRESENTATIVES, SHALL REVIEW THE SIGNING BEFORE TRAFFIC IS ALLOWED TO USE ANY LANE CLOSURES, CROSSOVERS OR DETOURS. ALL SIGNING SHALL BE APPROVED BY THE ENGINEER BEFORE WORK CAN BE STARTED BY THE CONTRACTOR.

8. IF THE CONTRACTOR DESIRES TO DEVIATE FROM THE TRAFFIC CONTROL SCHEME AND CONSTRUCTION SCHEDULE OUTLINED IN THESE PLANS AND THIS PROPOSAL, HE SHALL PREPARE AN ALTERNATE PLAN AND PRESENT IT IN WRITING TO THE ENGINEER. THIS ALTERNATE PLAN CAN BE USED ONLY AFTER REVIEW AND APPROVAL OF THE DIVISIONS OF TRAFFIC, DESIGN AND CONSTRUCTION, AND THE FEDERAL HIGHWAY ADMINISTRATION, WHERE APPLICABLE.

9. IF TRAFFIC SHOULD BE STOPPED DUE TO CONSTRUCTION OPERATIONS AND AN EMERGENCY VEHICLE ON AN OFFICIAL EMERGENCY RUN ARRIVES AT THE SCENE, THE CONTRACTOR SHALL MAKE THE PROVISIONS FOR THE PASSAGE OF THAT VEHICLE AS QUICKLY AS POSSIBLE.

10. ONLY (1) SIDE OF WIDENING CONSTRUCTION (EAST OR WEST BOUND) SHALL BE BUILT AT A TIME. THE CONTRACTOR SHALL NOT CONSTRUCT EAST AND WEST WIDENING ALONG THE SAME STATION RANGE, AT THE SAME TIME.

PAVEMENT DROP-OFF

A PAVEMENT EDGE THAT TRAFFIC IS NOT EXPECTED TO CROSS, EXCEPT ACCIDENTALLY, SHOULD BE TREATED AS FOLLOWS:

- LESS THAN TWO INCHES - NO PROTECTION REQUIRED. WARNING SIGNS SHOULD BE PLACED IN ADVANCE AND THROUGHOUT THE DROP-OFF AREA.

- TWO TO FOUR INCHES - PLASTIC DRUMS, VERTICAL PANELS OR BARRICADES EVERY 100 FEET ON TANGENT SECTIONS FOR SPEEDS OF 50 MPH OR GREATER. CONES MAY BE USED IN PLACE OF PLASTIC DRUMS, PANELS AND BARRICADES DURING DAYLIGHT HOURS. FOR TANGENT SECTIONS WITH SPEEDS LESS THAN 50 MPH AND FOR CURVES, DEVICES SHOULD BE PLACED EVERY 50 FEET. SPACING OF DEVICES ON TAPERED SECTIONS SHOULD BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, CURRENT EDITION.

- GREATER THAN FOUR INCHES - POSITIVE SEPARATION OR WEDGE WITH 3:1 OR FLATTER SLOPE NEEDED. IF THERE IS FIVE FEET OR MORE DISTANCE BETWEEN THE EDGE OF THE PAVEMENT AND THE DROP-OFF, THEN DRUMS, PANEL, OR BARRICADES MAY BE USED. IF THE DROP-OFF IS GREATER THAN 12 INCHES, POSITIVE SEPARATION IS STRONGLY ENCOURAGED. IF CONCRETE BARRIERS ARE USED, SPECIAL REFLECTIVE DEVICES OR STEADY BURN LIGHTS SHOULD BE USED FOR OVERNIGHT INSTALLATIONS.

FOR TEMPORARY CONDITIONS, DROP-OFFS GREATER THAN FOUR INCHES MAY BE PROTECTED WITH PLASTIC DRUMS, VERTICAL PANELS OR BARRICADES FOR SHORT DISTANCES DURING DAYLIGHT HOURS WHILE WORK IS BEING DONE IN THE DROP-OFF AREA.

LESSER TREATMENTS THAN THOSE DESCRIBED ABOVE MAY BE CONSIDERED FOR LOW-VOLUME LOCAL STREETS.

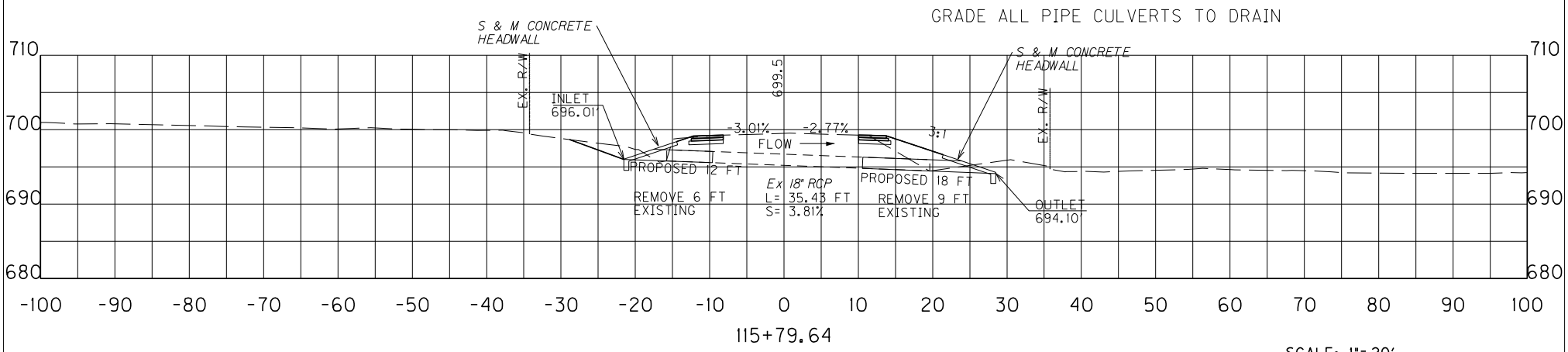
PAYMENT WILL BE ALLOWED FOR CSB MATERIAL USED FOR WEDGING.

REASONABLE MEANS OF INGRESS AND EGRESS SHALL BE MAINTAINED TO ALL PROPERTIES WITHIN THE PROJECT LIMITS. ACCESS TO FIRE HYDRANTS MUST ALSO BE MAINTAINED AT ALL TIMES.

SCALE: 1"= NA

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R53

KY 259 ANNETA RD
WIDENING PROJECT
MAINTENANCE OF TRAFFIC

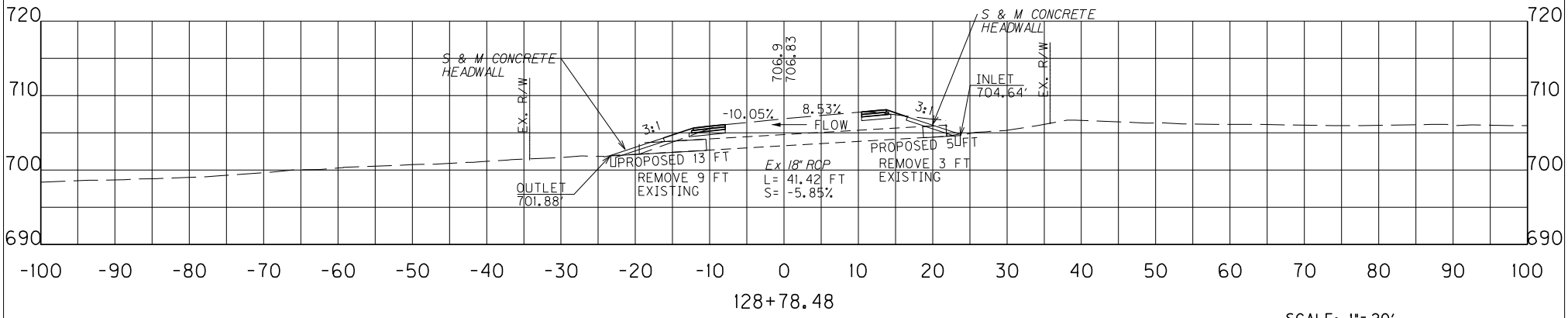


SCALE: 1"= 20'

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R54

KY HWY 259 ANNETA RD
CULVERT PIPE SECTIONS SHEET

STA.110+00 TO STA.120+00

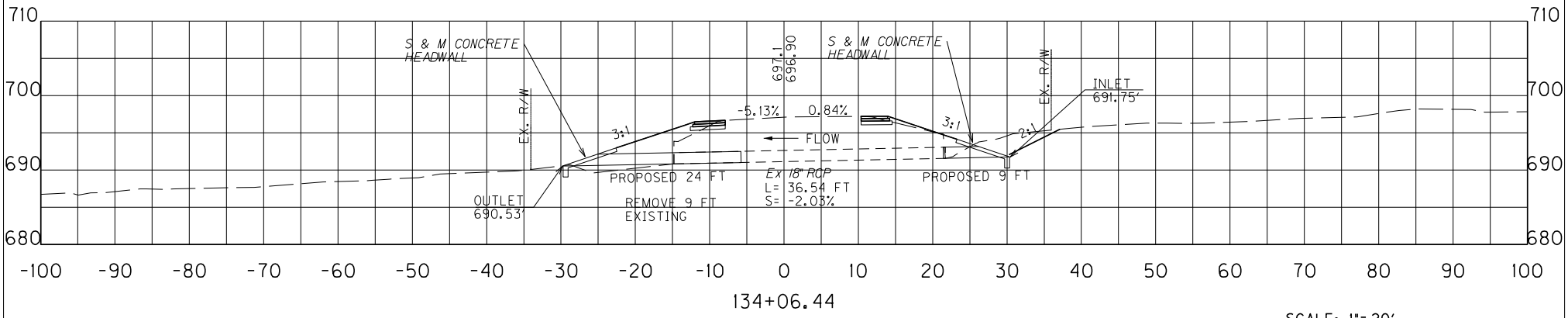


SCALE: 1"= 20'

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R55

KY HWY 259 ANNETA RD
CULVERT PIPE SECTIONS SHEET

STA.120+00 TO STA.130+00

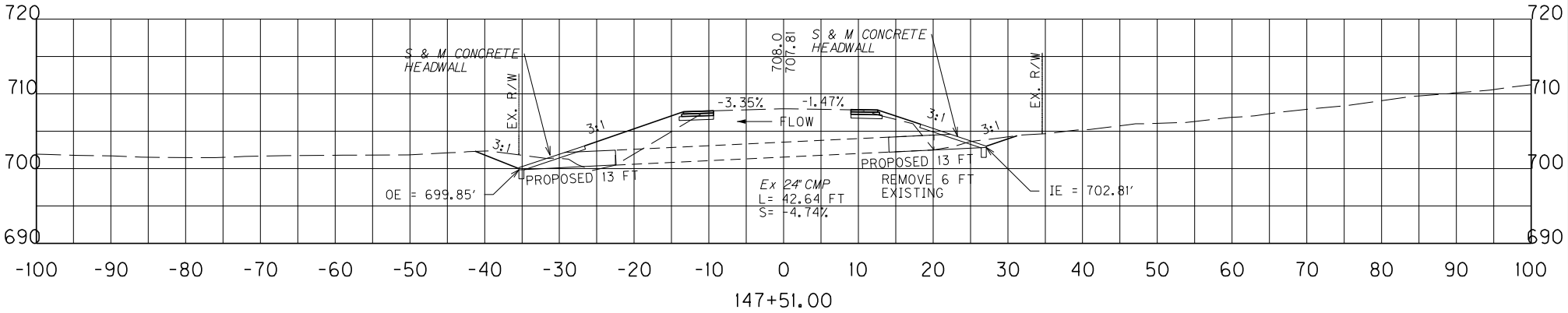


SCALE: 1"= 20'

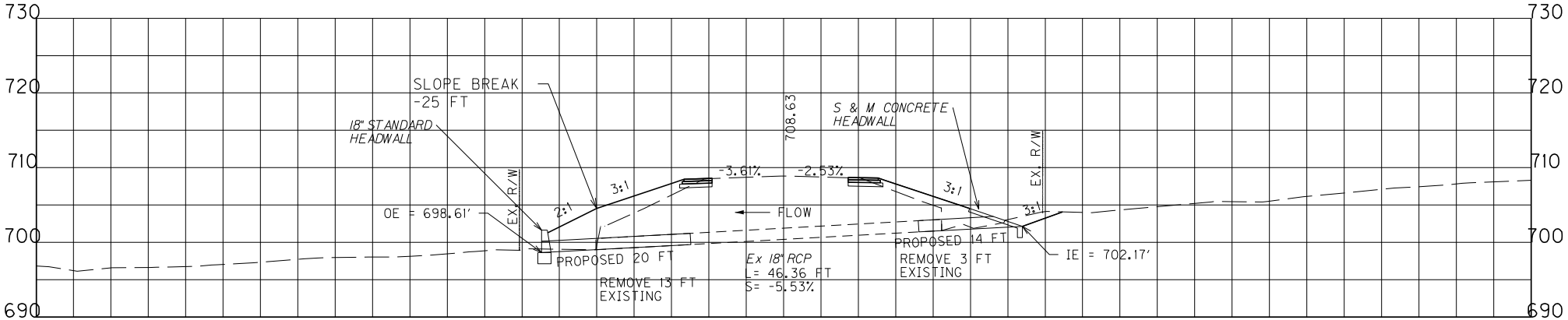
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R56

KY HWY 259 ANNETA RD
CULVERT PIPE SECTIONS SHEET

STA.130+00 TO STA.140+00



147+51.00



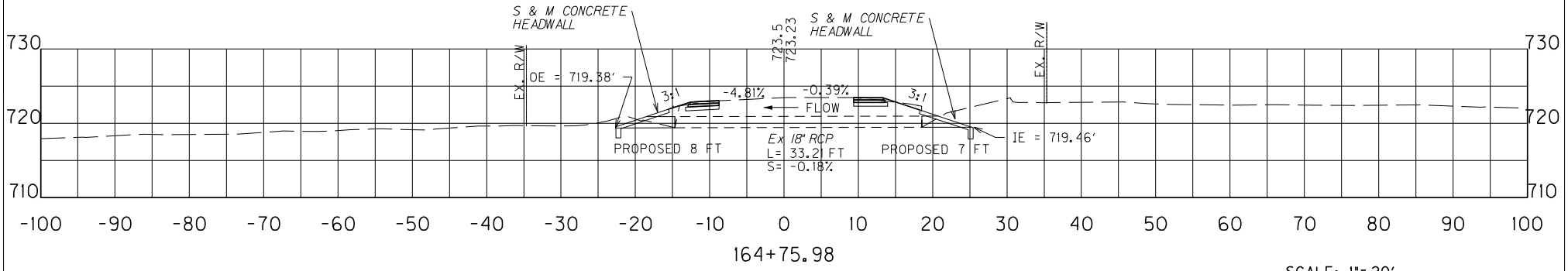
146+51.42

SCALE: 1"= 20'

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R57

KY HWY 259 ANNETA RD
CULVERT PIPE SECTIONS SHEET

STA.140+00 TO STA.150+00

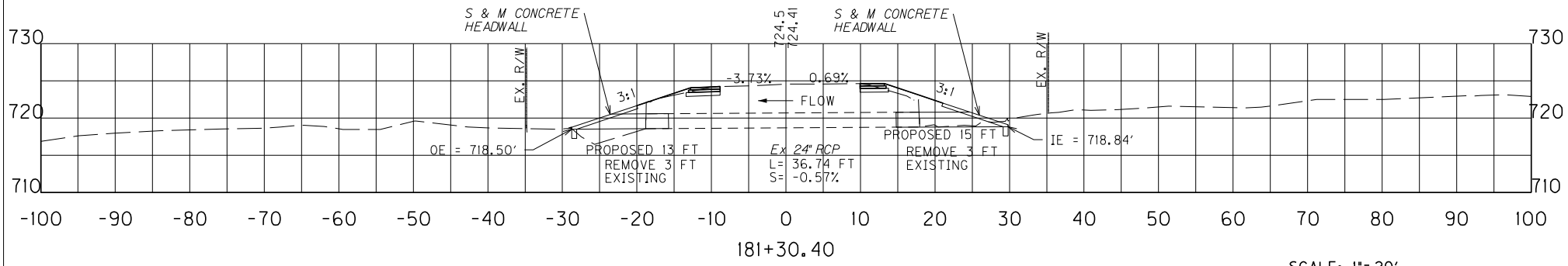


SCALE: 1"= 20'

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R58

KY HWY 259 ANNETA RD
CULVERT PIPE SECTIONS SHEET

STA.160+00 TO STA.170+00

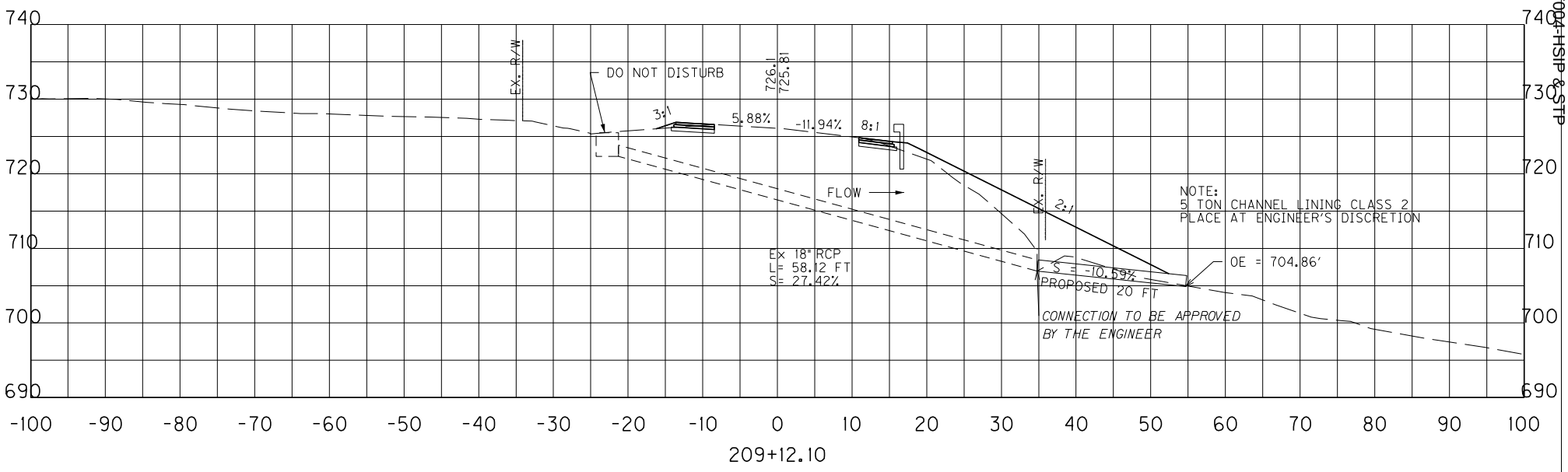


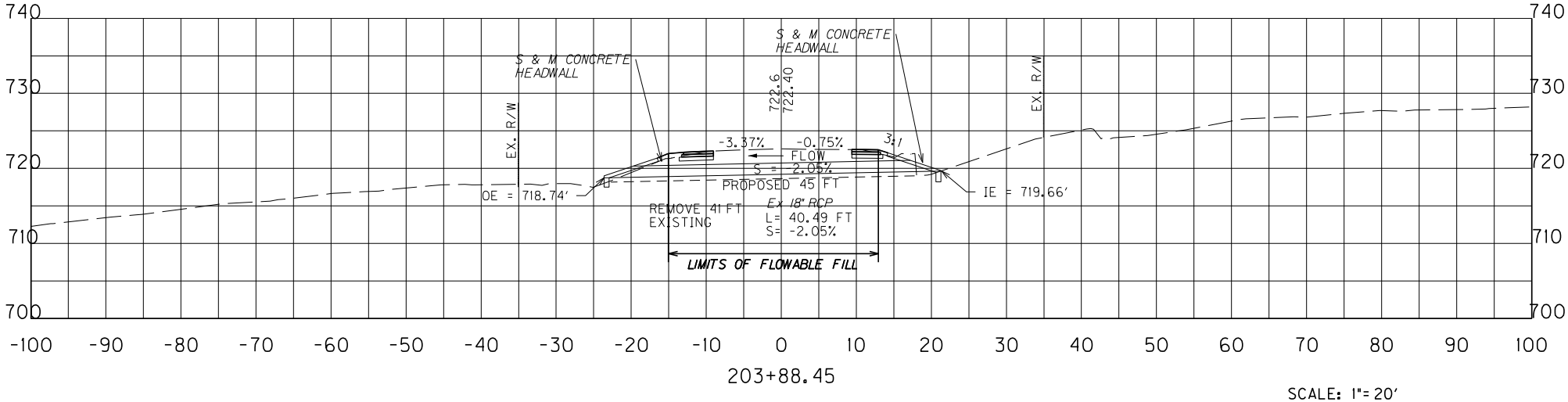
SCALE: 1"= 20'

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R59

KY HWY 259 ANNETA RD
CULVERT PIPE SECTIONS SHEET

STA.180+00 TO STA.190+00



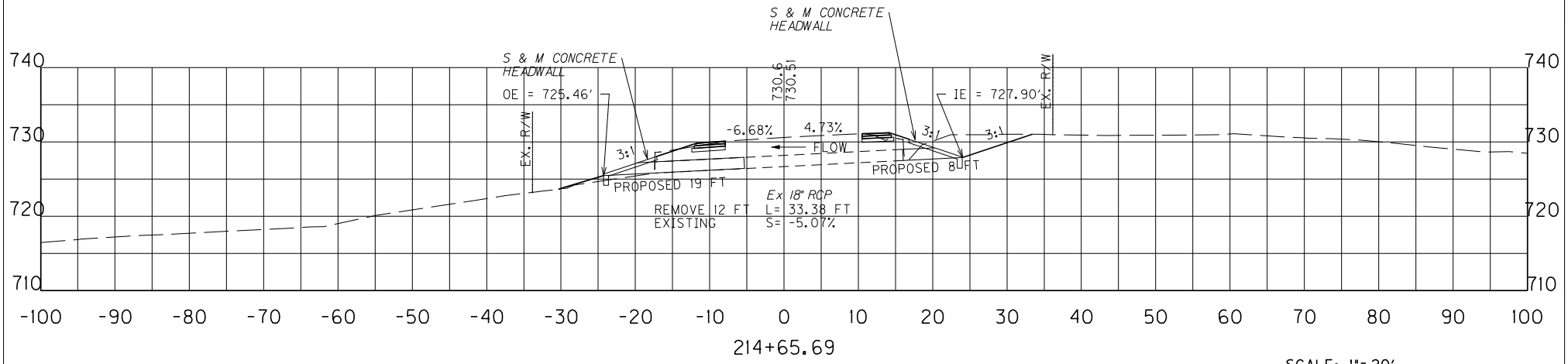


SCALE: 1"= 20'

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R60

KY HWY 259 ANNETA RD
CULVERT PIPE SECTIONS SHEET

STA.200+00 TO STA.210+00

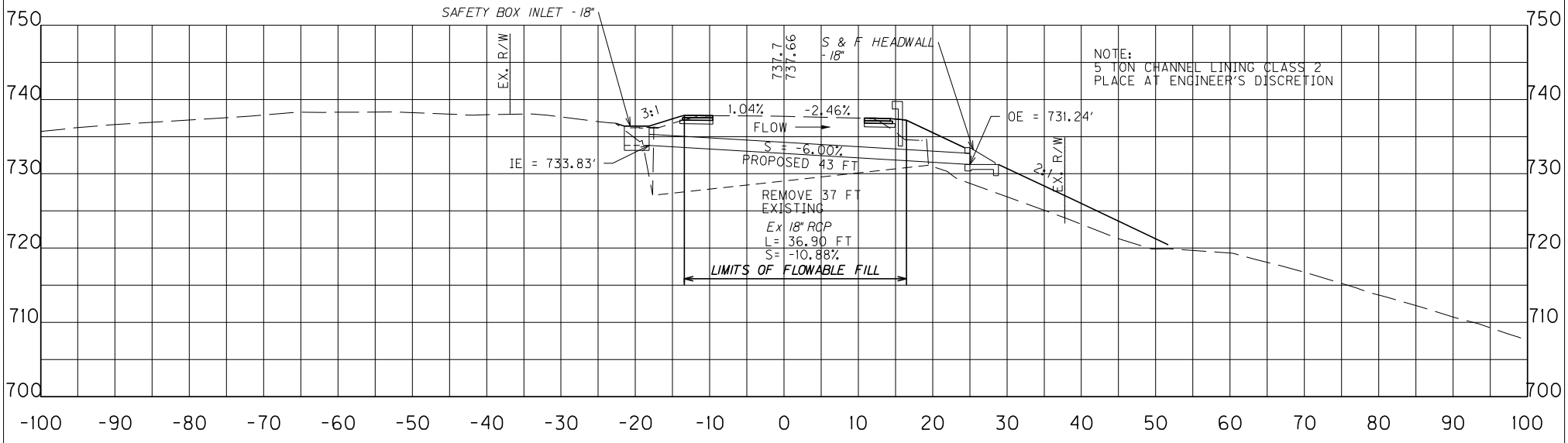


SCALE: 1"= 20'

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R61

KY HWY 259 ANNETA RD
CULVERT PIPE SECTIONS SHEET

STA.210+00 TO STA.220+00



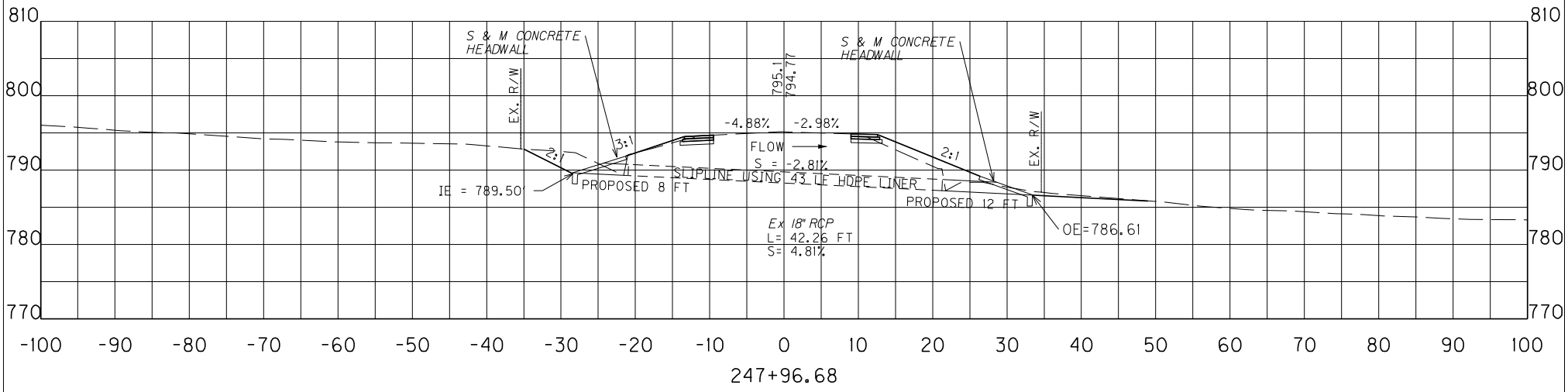
222+63.44
SKEW 20°20' RT

SCALE: 1"= 20'

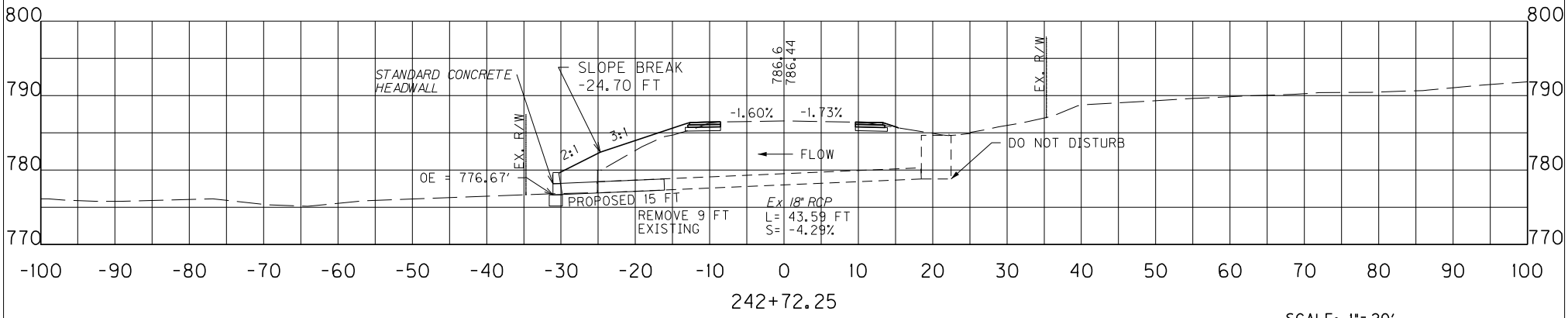
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R62

KY HWY 259 ANNETA RD
CULVERT PIPE SECTIONS SHEET

STA.220+00 TO STA.230+00



247+96.68



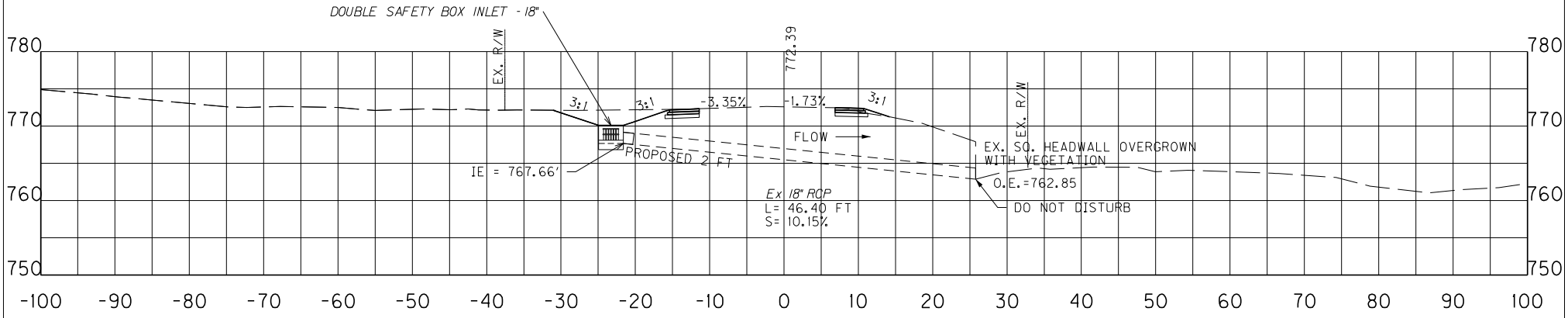
242+72.25

SCALE: 1"= 20'

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R63

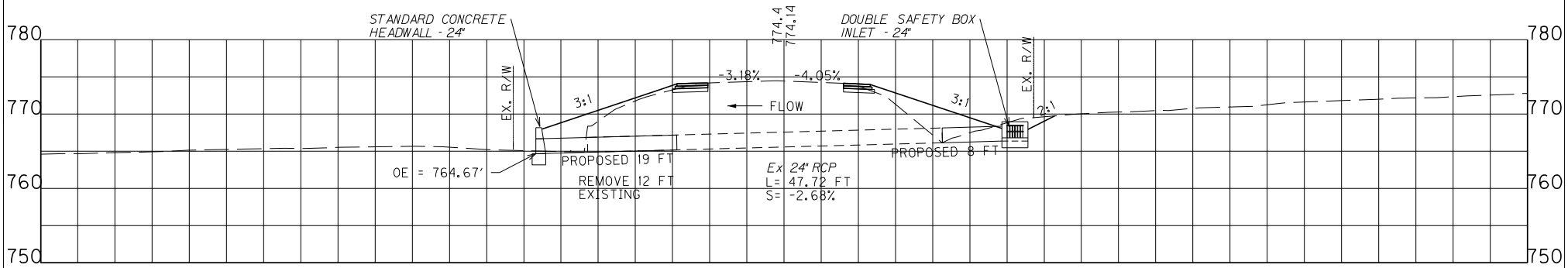
KY HWY 259 ANNETA RD
CULVERT PIPE SECTIONS SHEET

STA.240+00 TO STA.250+00



269+40.83

SKEW 5°28' LT



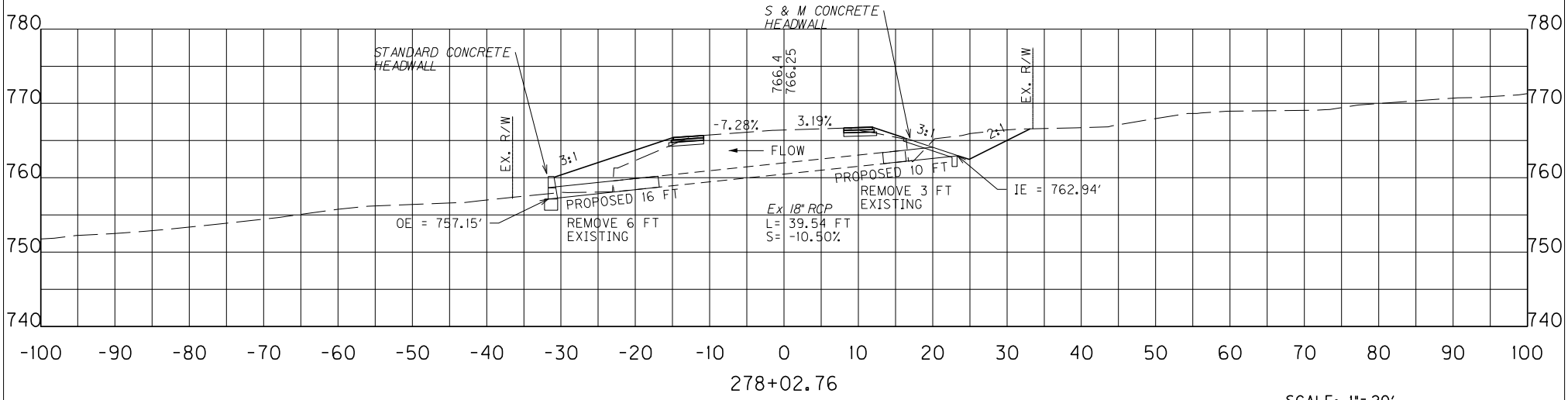
263+07.71

SCALE: 1"= 20'

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R64

KY HWY 259 ANNETA RD
CULVERT PIPE SECTIONS SHEET

STA.260+00 TO STA.270+00

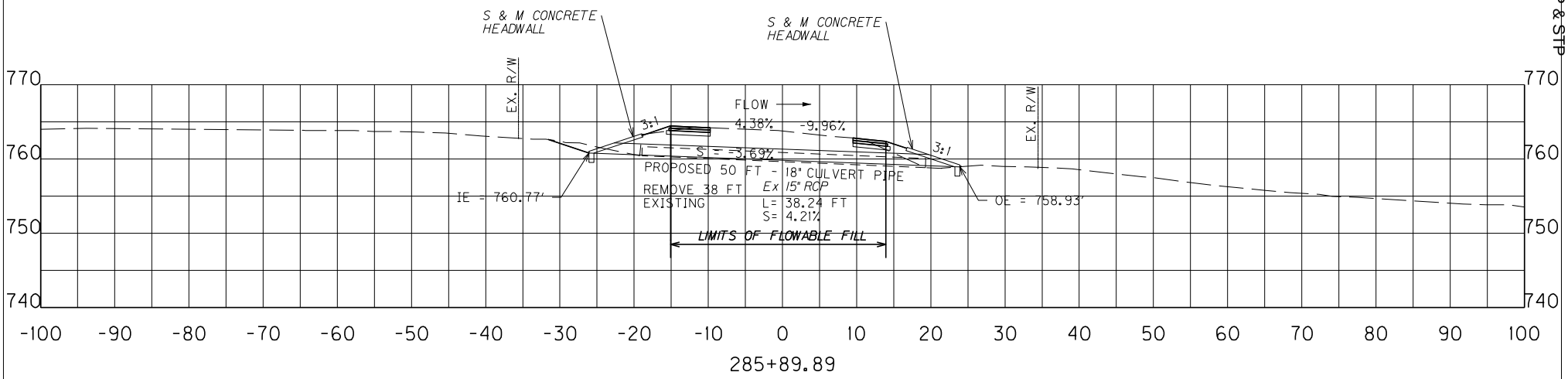


SCALE: 1"= 20'

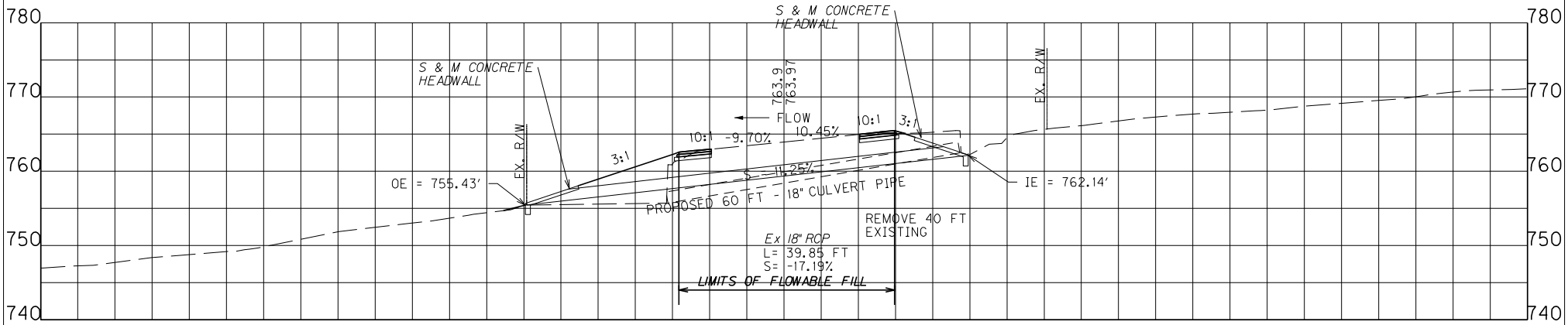
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R65

KY HWY 259 ANNETA RD
CULVERT PIPE SECTIONS SHEET

STA.270+00 TO STA.280+00



285+89.89



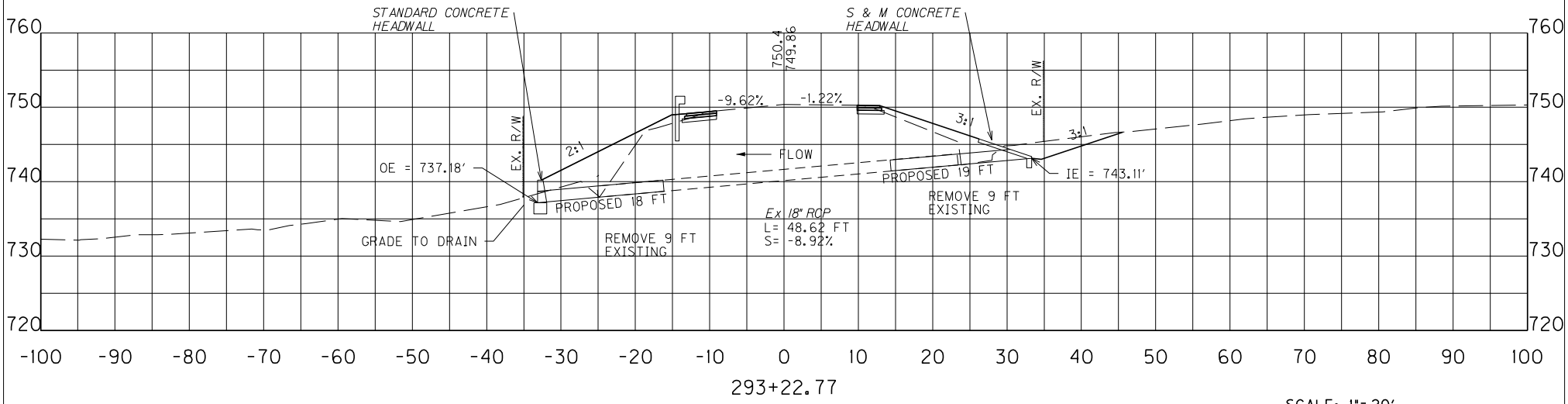
280+62.23

SCALE: 1"= 20'

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R66

KY HWY 259 ANNETA RD
CULVERT PIPE SECTIONS SHEET

STA.280+00 TO STA.290+00

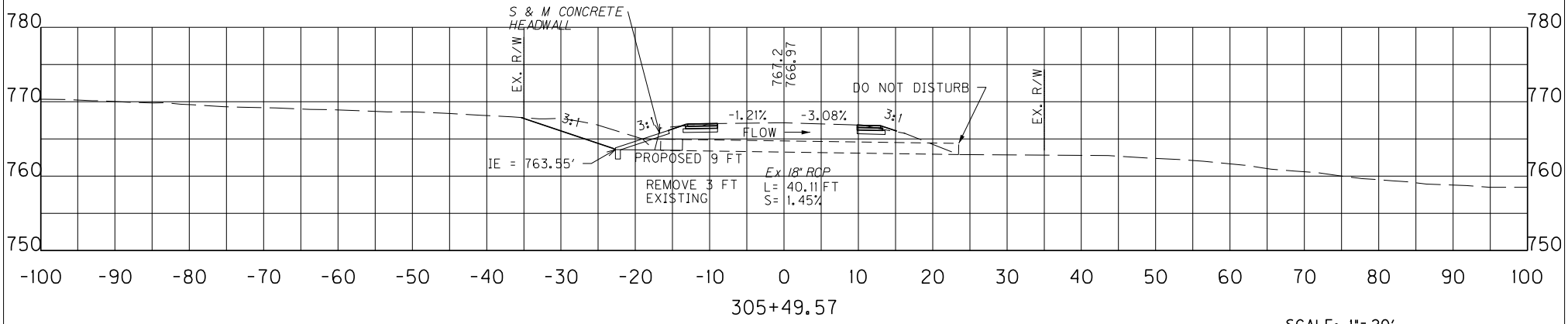


SCALE: 1"= 20'

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R67

KY HWY 259 ANNETA RD
CULVERT PIPE SECTIONS SHEET

STA.290+00 TO STA.300+00

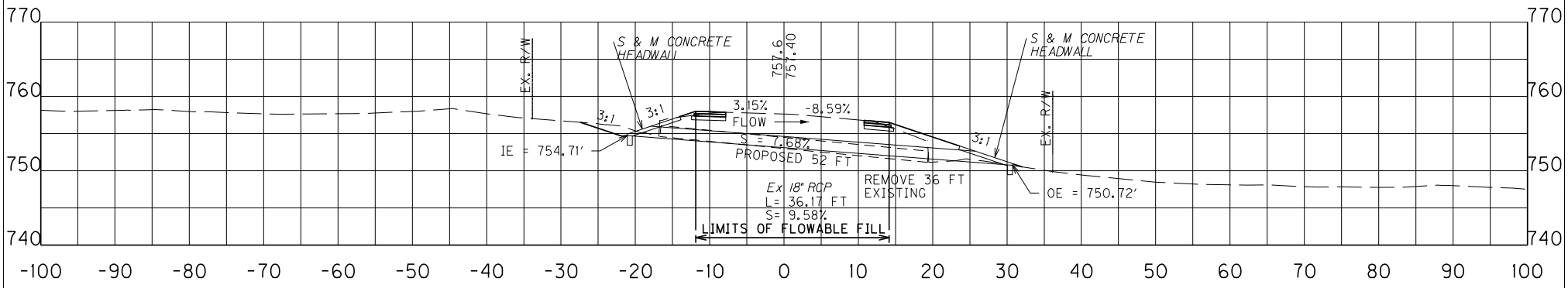


SCALE: 1"= 20'

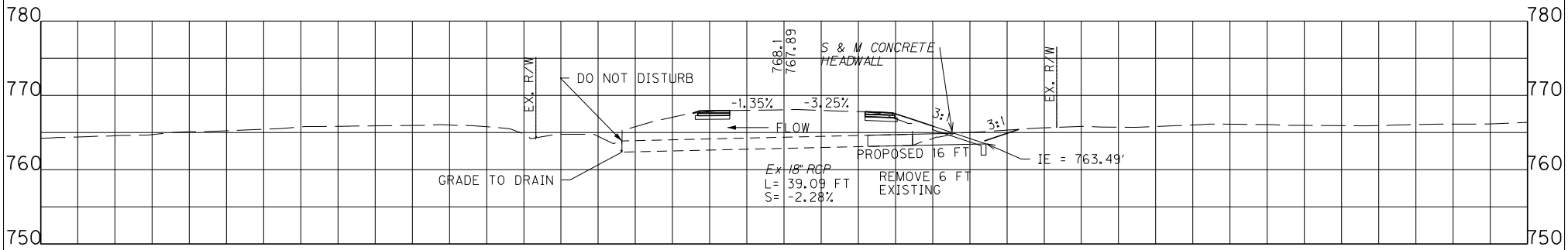
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R68

KY HWY 259 ANNETA RD
CULVERT PIPE SECTIONS SHEET

STA.300+00 TO STA.310+00



319+21.76



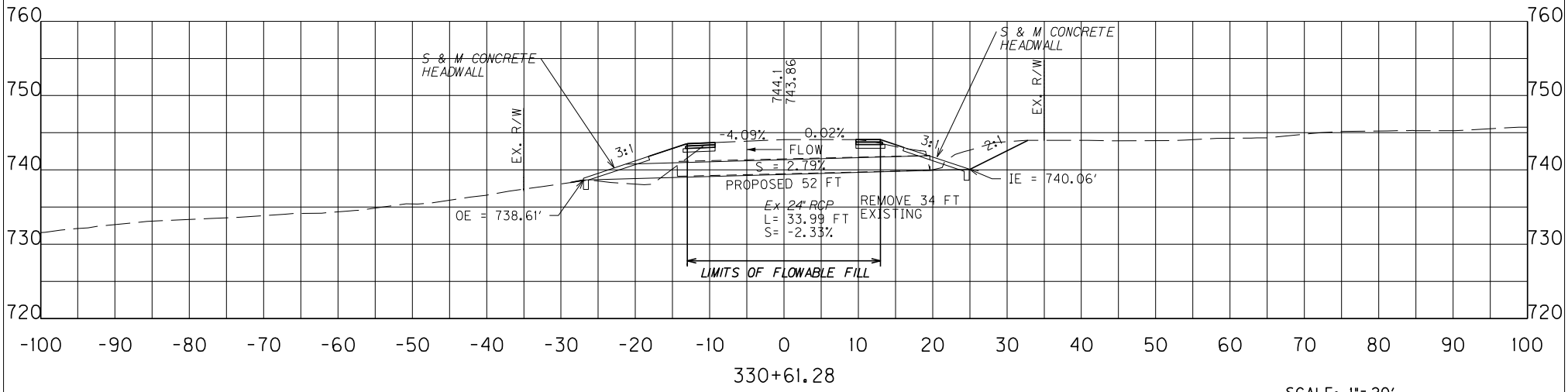
311+88.18

SCALE: 1"= 20'

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R69

KY HWY 259 ANNETA RD
CULVERT PIPE SECTIONS SHEET

STA.310+00 TO STA.320+00

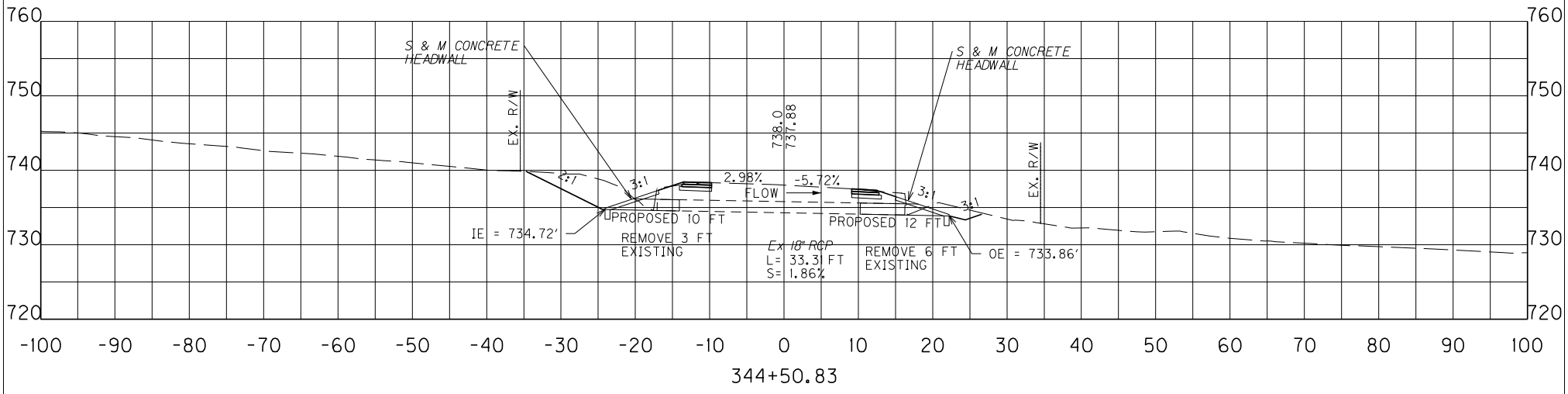


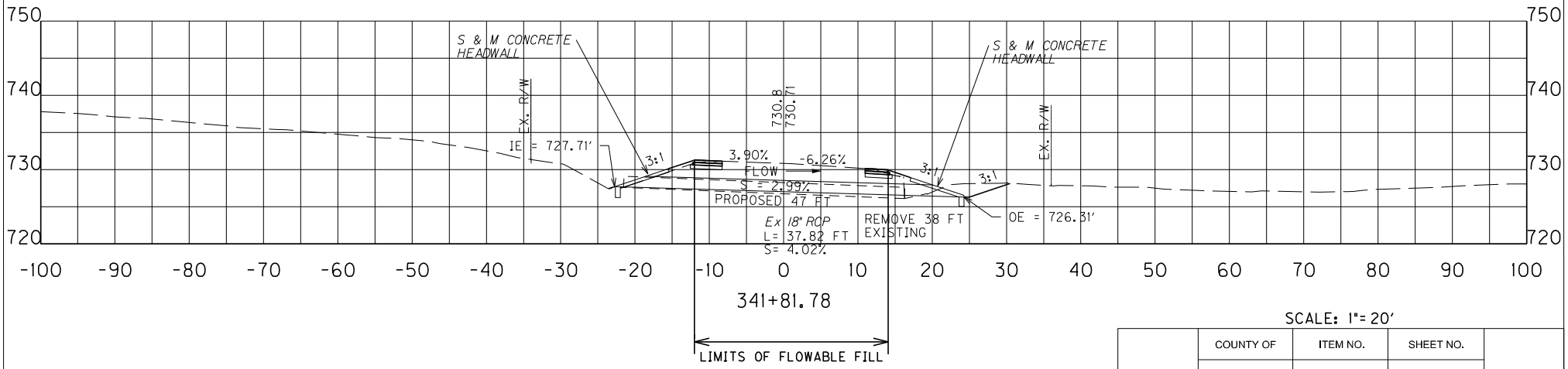
SCALE: 1"= 20'

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R70

KY HWY 259 ANNETA RD
CULVERT PIPE SECTIONS SHEET

STA.330+00 TO STA.340+00



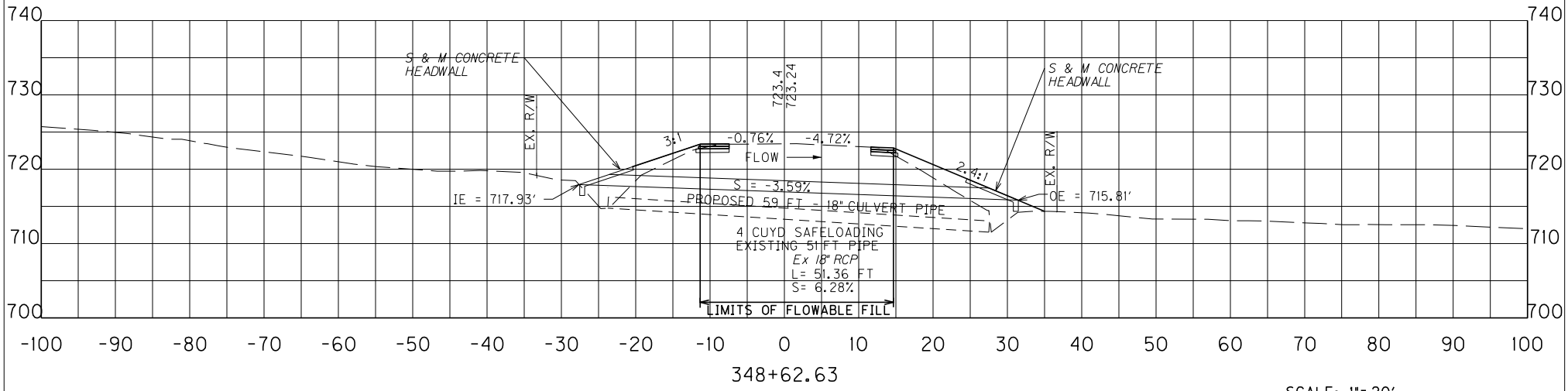


SCALE: 1"= 20'

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R71

KY HWY 259 ANNETA RD
CULVERT PIPE SECTIONS SHEET

STA.340+00 TO STA.345+00

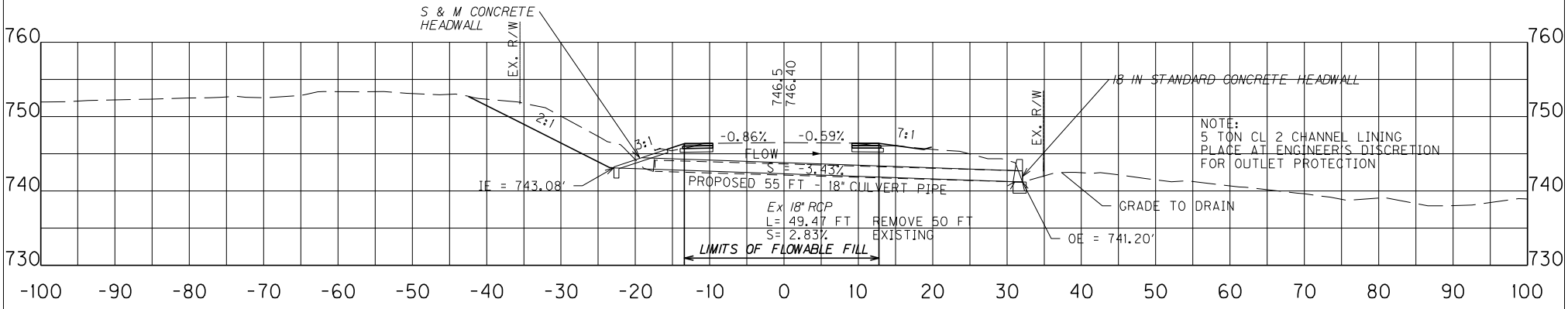


SCALE: 1"= 20'

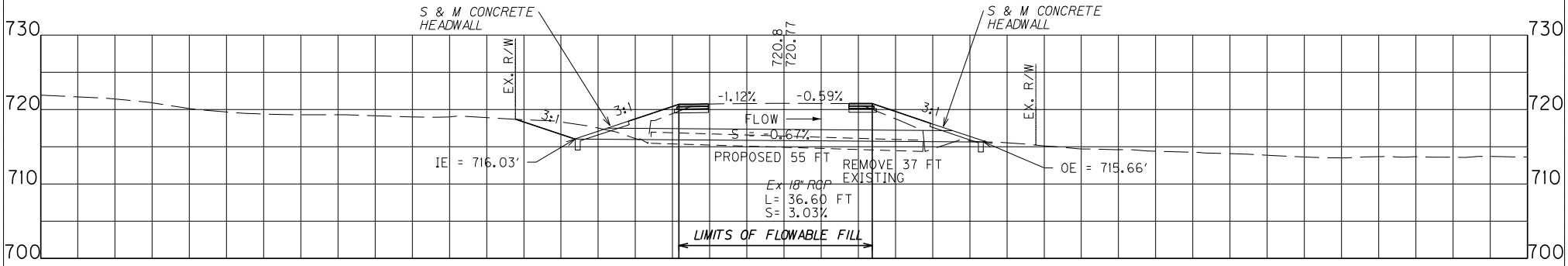
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R72

KY HWY 259 ANNETA RD
CULVERT PIPE SECTIONS SHEET

STA.348+62



356+49.43
SKEW 6° 47' RT



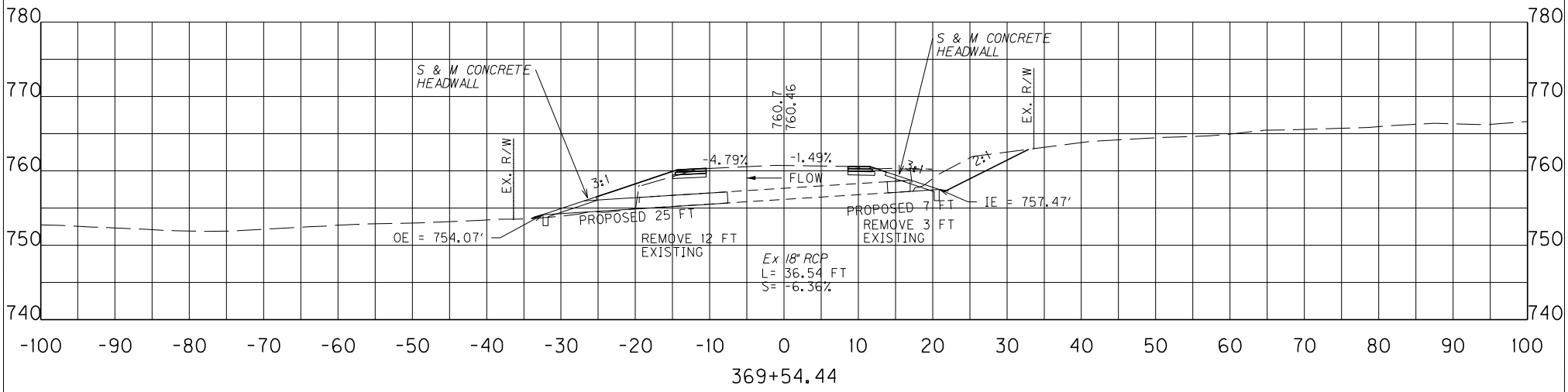
352+44.79

SCALE: 1"= 20'

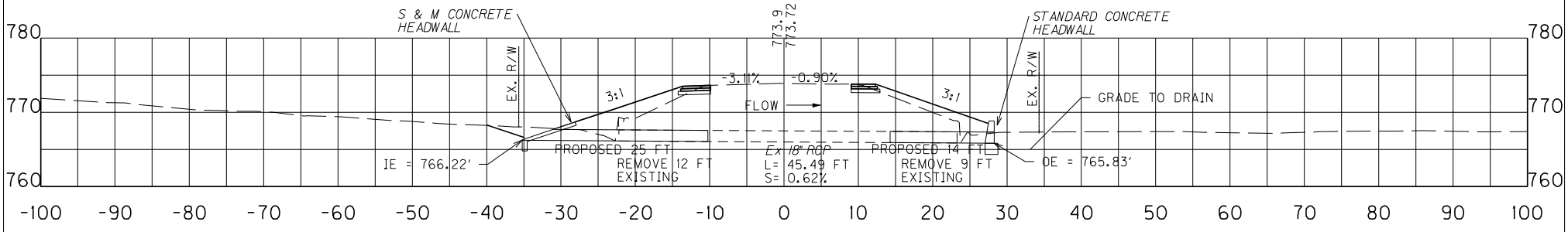
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R73

KY HWY 259 ANNETA RD
CULVERT PIPE SECTIONS SHEET

STA.350+00 TO STA.360+00



369+54.44



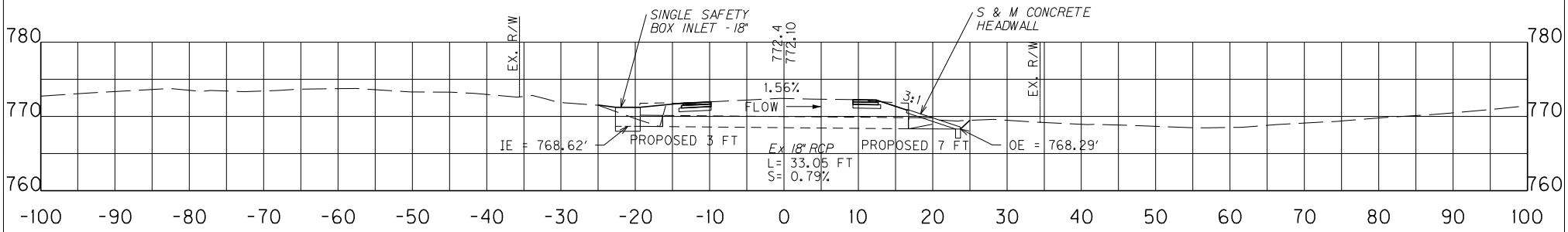
364+68.49

SCALE: 1"= 20'

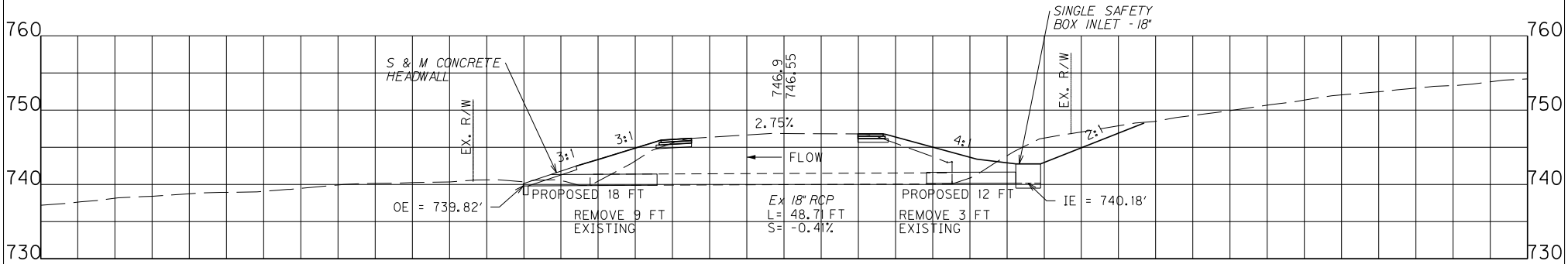
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R74

KY HWY 259 ANNETA RD
CULVERT PIPE SECTIONS SHEET

STA.360+00 TO STA.370+00



378+71.37



372+37.91

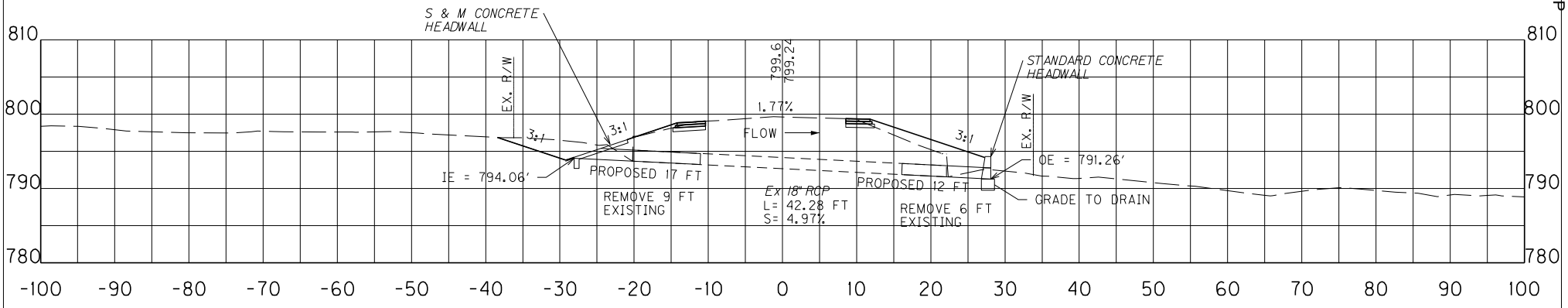
SKEW 29° 51' RT

SCALE: 1"= 20'

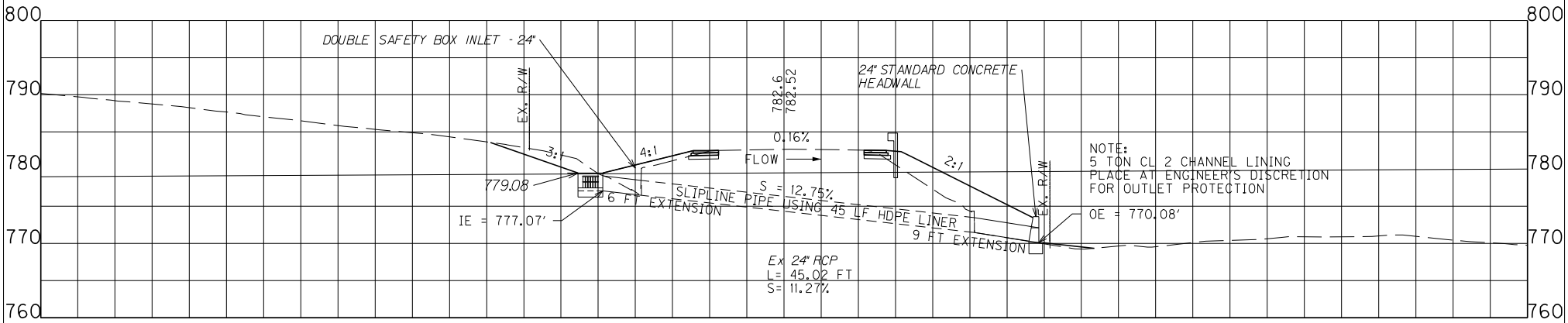
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R75

KY HWY 259 ANNETA RD
CULVERT PIPE SECTIONS SHEET

STA.370+00 TO STA.380+00



396+89.70
SKEW 1°07' RT



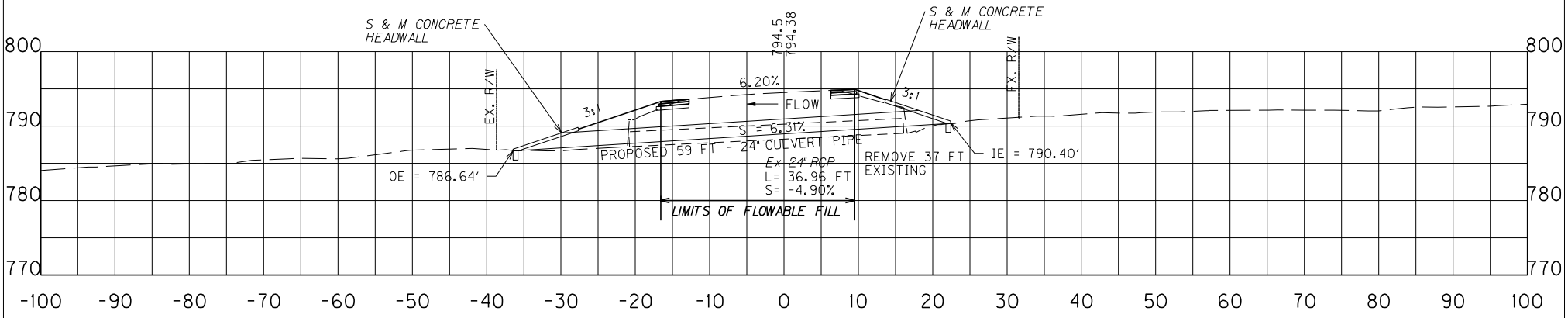
390+68.64

SCALE: 1"= 20'

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R76

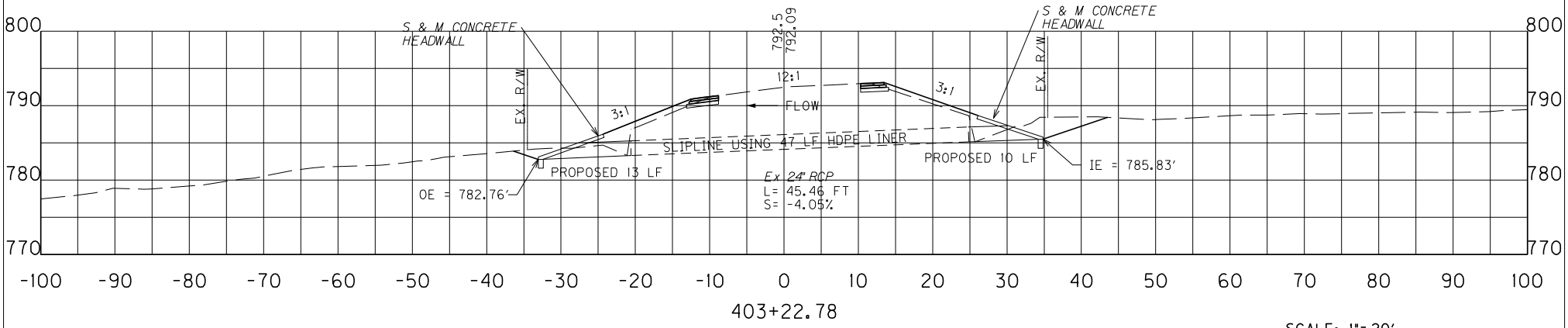
KY HWY 259 ANNETA RD
CULVERT PIPE SECTIONS SHEET

STA.390+00 TO STA.400+00



406+17.62

SKEW 5° 31' LT



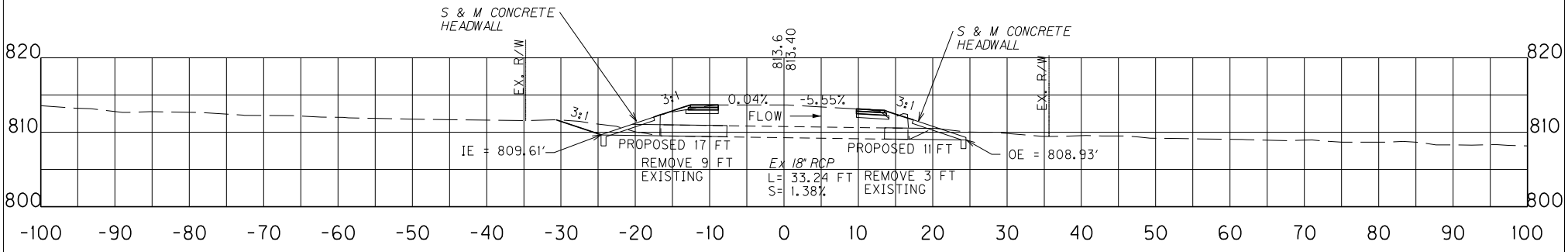
403+22.78

SCALE: 1"= 20'

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R77

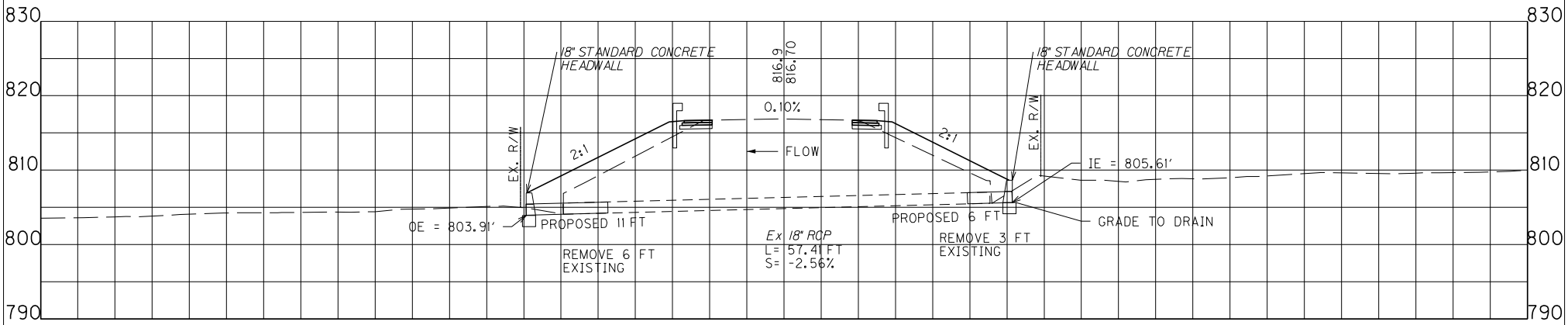
KY HWY 259 ANNETA RD
CULVERT PIPE SECTIONS SHEET

STA.400+00 TO STA.410+00



425+73.69

SKEW 5° 32' RT



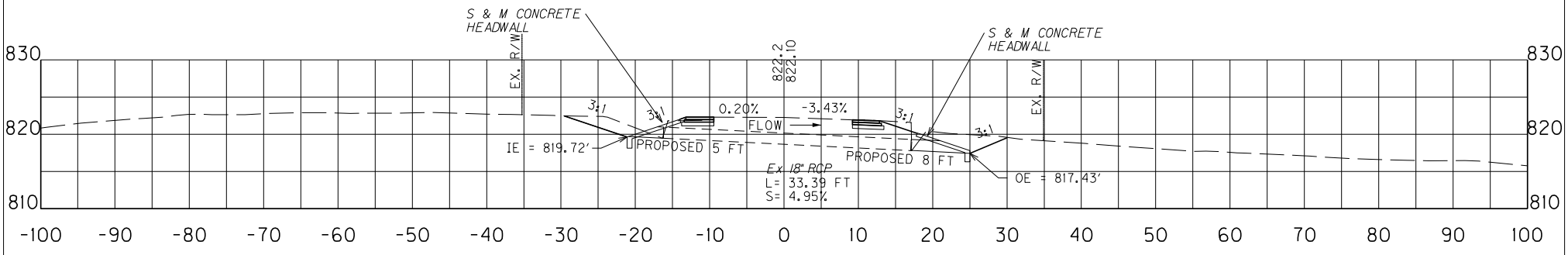
420+67.09

SCALE: 1"= 20'

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R78

KY HWY 259 ANNETA RD
CULVERT PIPE SECTIONS SHEET

STA.420+00 TO STA.425+73.69



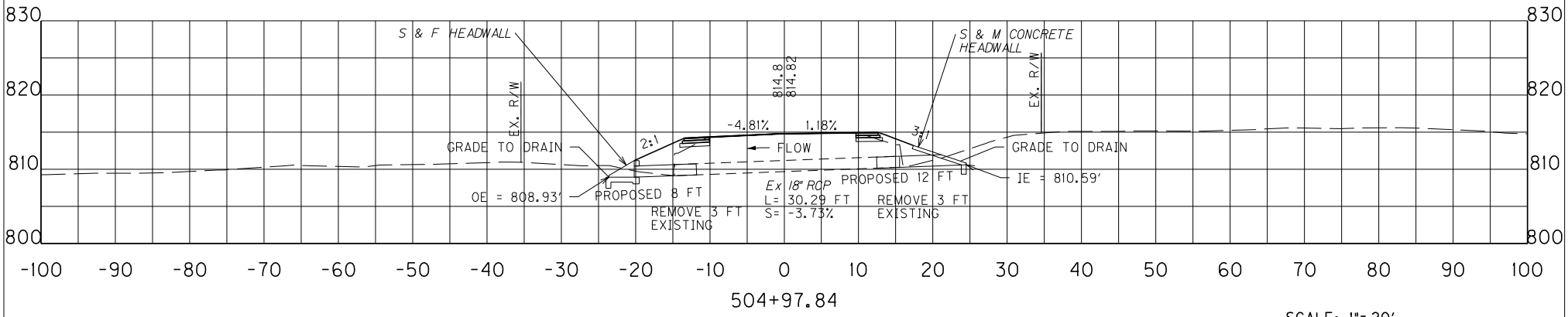
428+94.83
SKEW 2° 46' RT

SCALE: 1"= 20'

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R79

KY HWY 259 ANNETA RD
CULVERT PIPE SECTIONS SHEET

STA.428+94.83

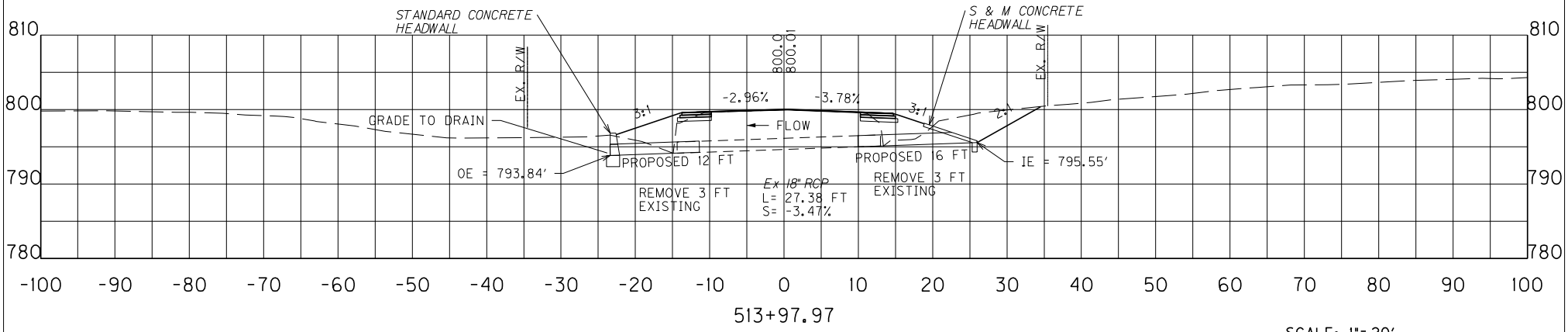


SCALE: 1"= 20'

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R80

KY HWY 259 ANNETA RD
CULVERT PIPE SECTIONS SHEET

STA.500+00 TO STA.510+00

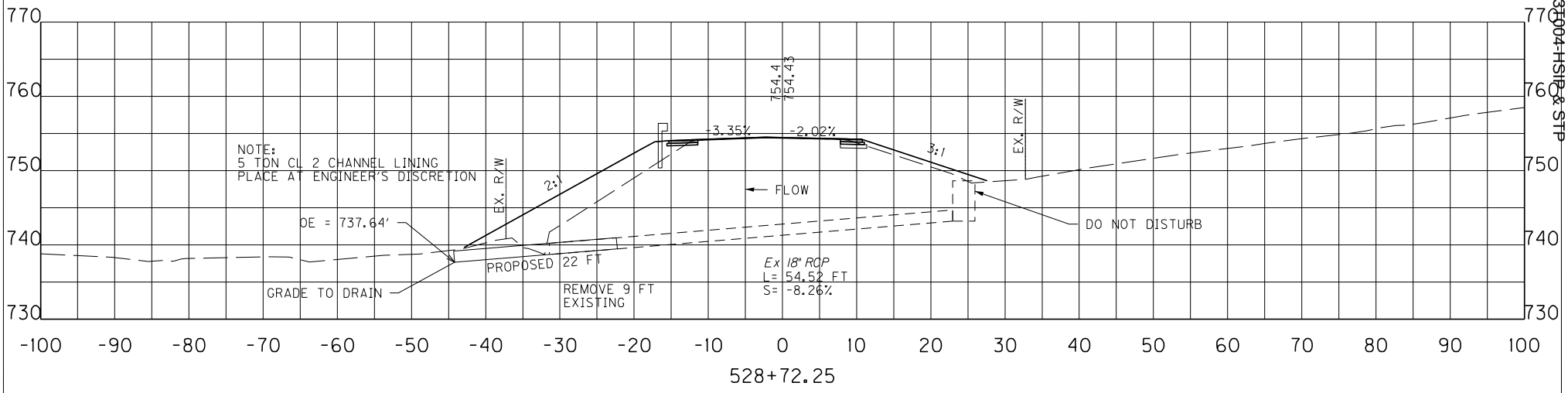


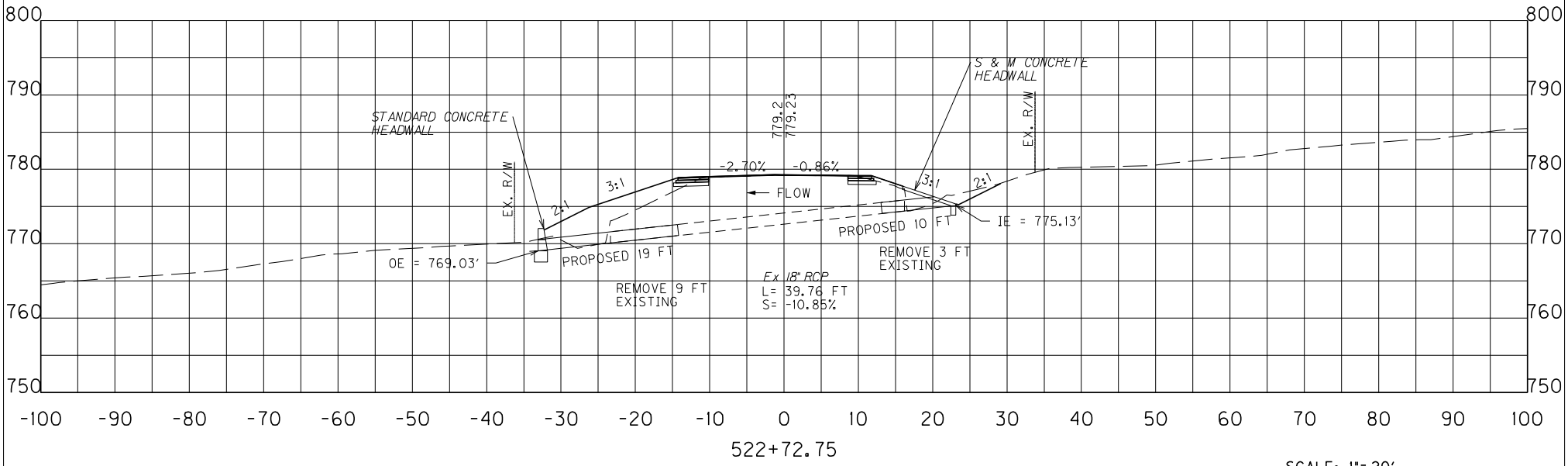
SCALE: 1"= 20'

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R81

KY HWY 259 ANNETA RD
CULVERT PIPE SECTIONS SHEET

STA.510+00 TO STA.520+00



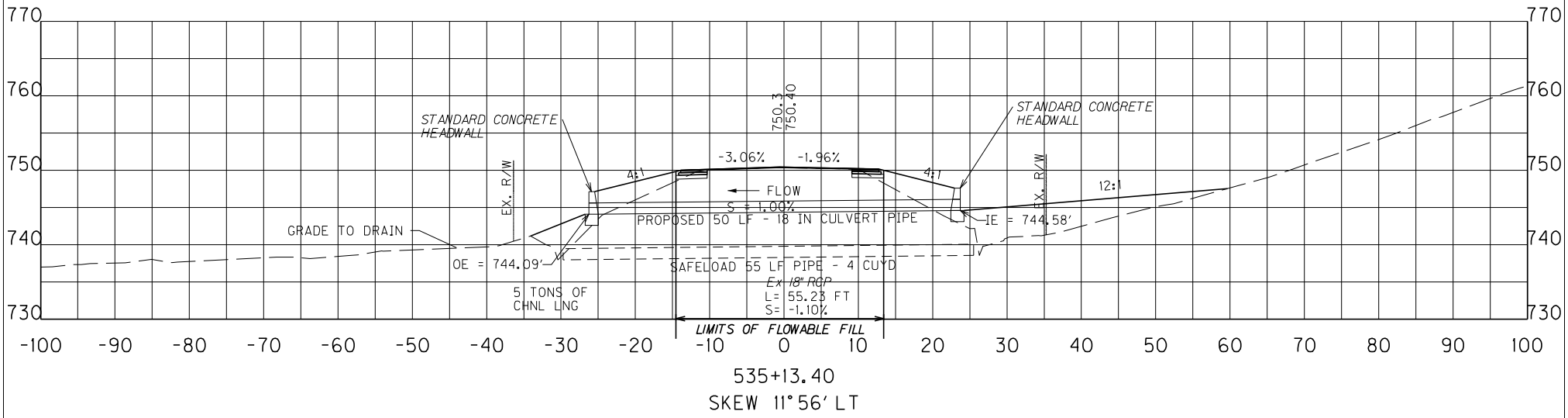


SCALE: 1"= 20'

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R82

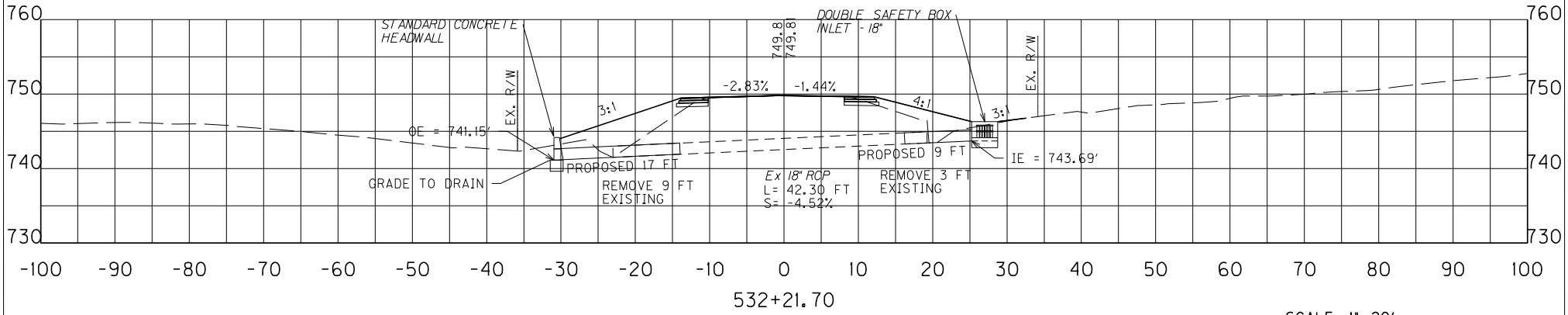
KY HWY 259 ANNETA RD
CULVERT PIPE SECTIONS SHEET

STA.520+00 TO STA.530+00



535+13.40

SKEW 11°56' LT



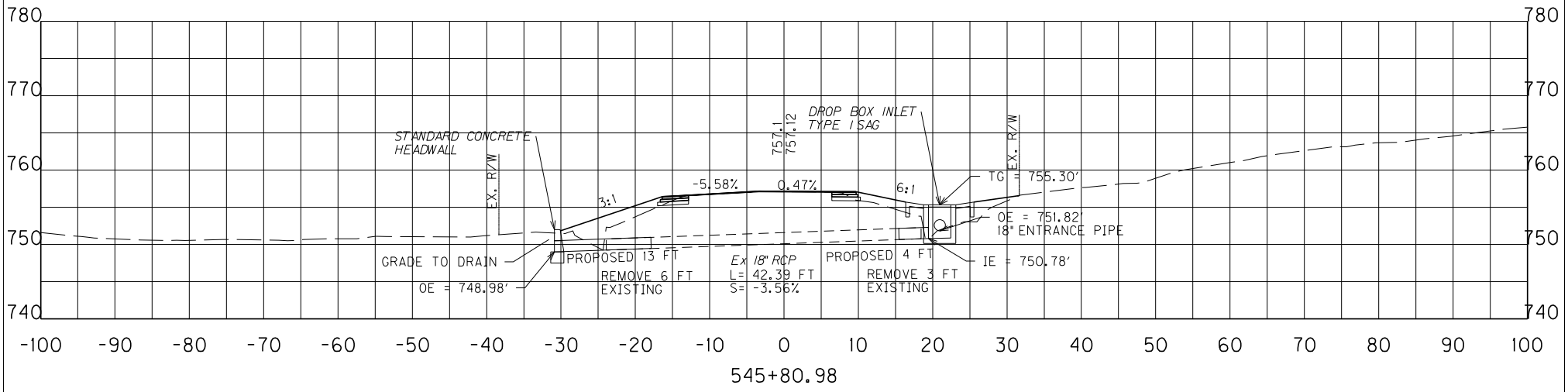
532+21.70

SCALE: 1"= 20'

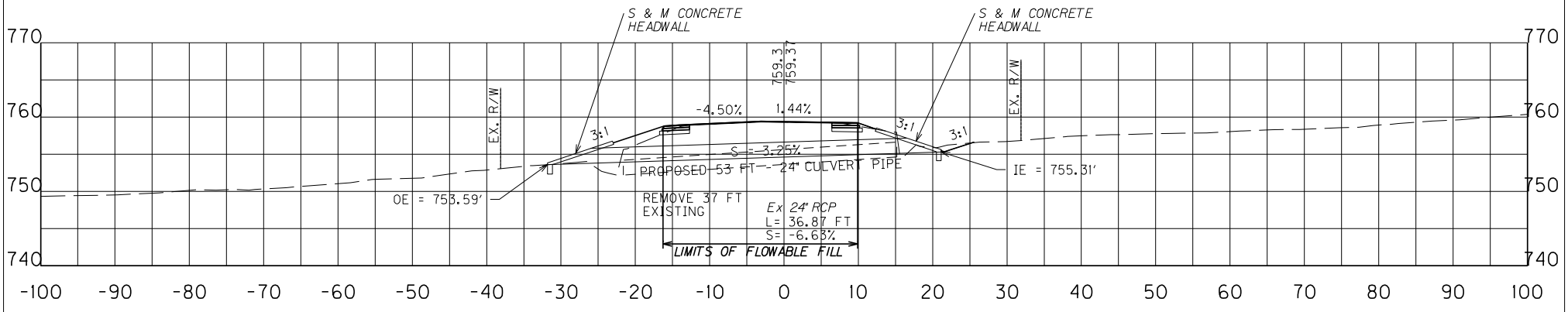
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R83

KY HWY 259 ANNETA RD
CULVERT PIPE SECTIONS SHEET

STA.530+00 TO STA.540+00



545+80.98



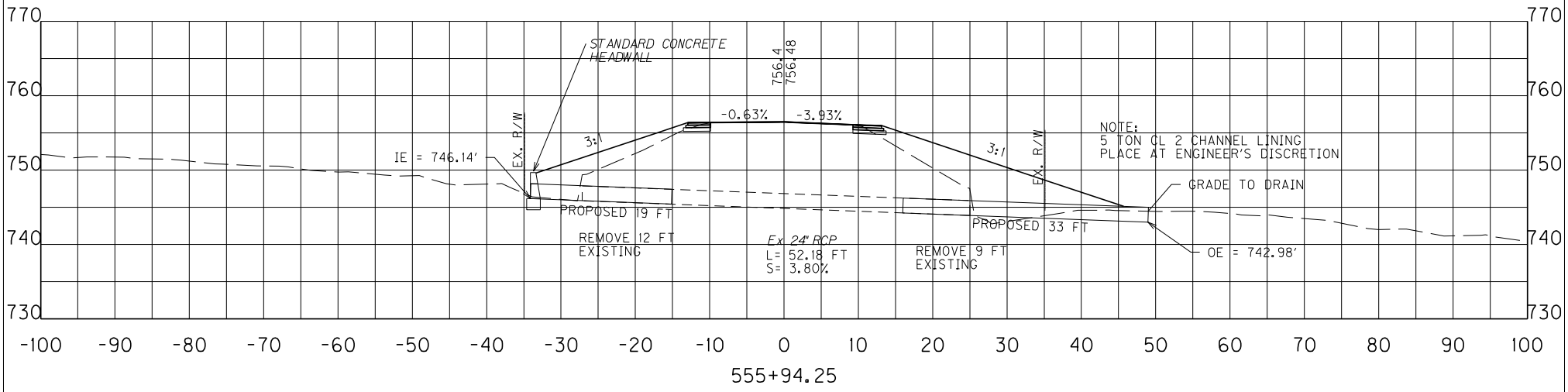
543+20.04

SCALE: 1"= 20'

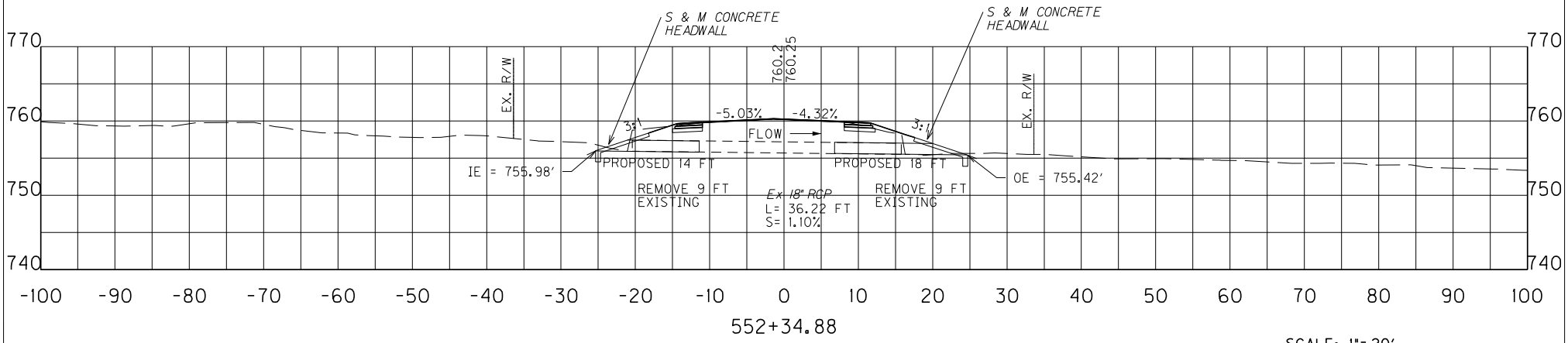
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R84

KY HWY 259 ANNETA RD
CULVERT PIPE SECTIONS SHEET

STA.540+00 TO STA.550+00



555+94.25



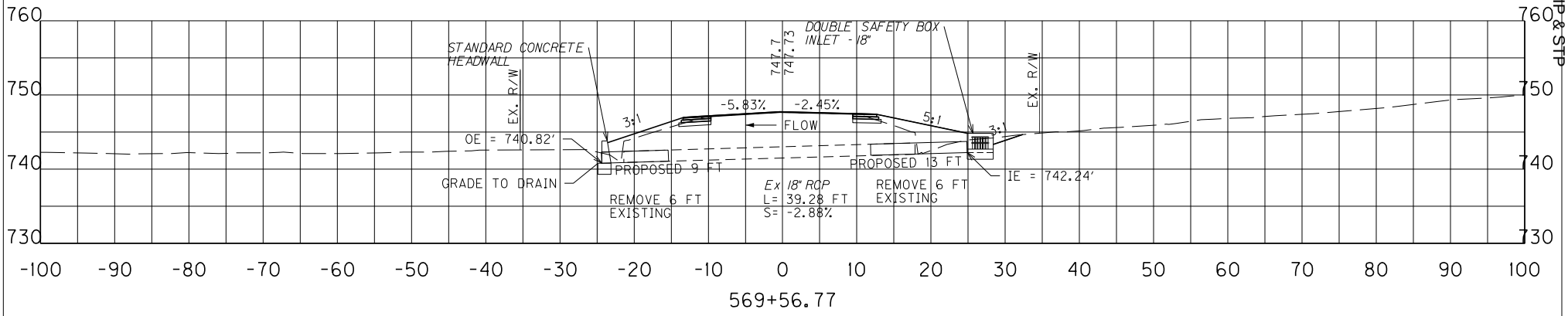
552+34.88

SCALE: 1"= 20'

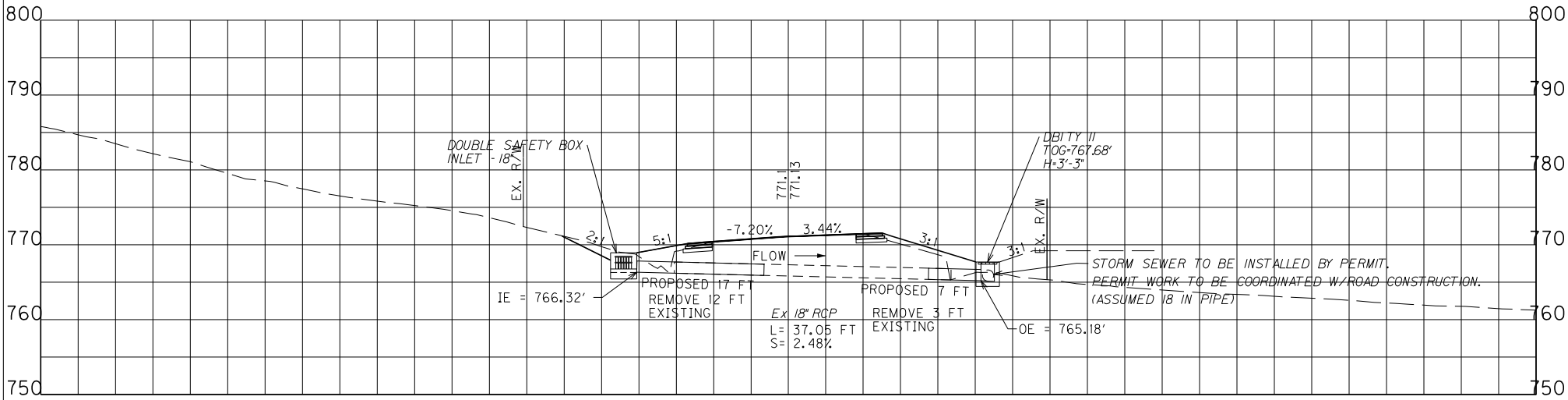
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R85

KY HWY 259 ANNETA RD
CULVERT PIPE SECTIONS SHEET

STA.550+00 TO STA.560+00



569+56.77



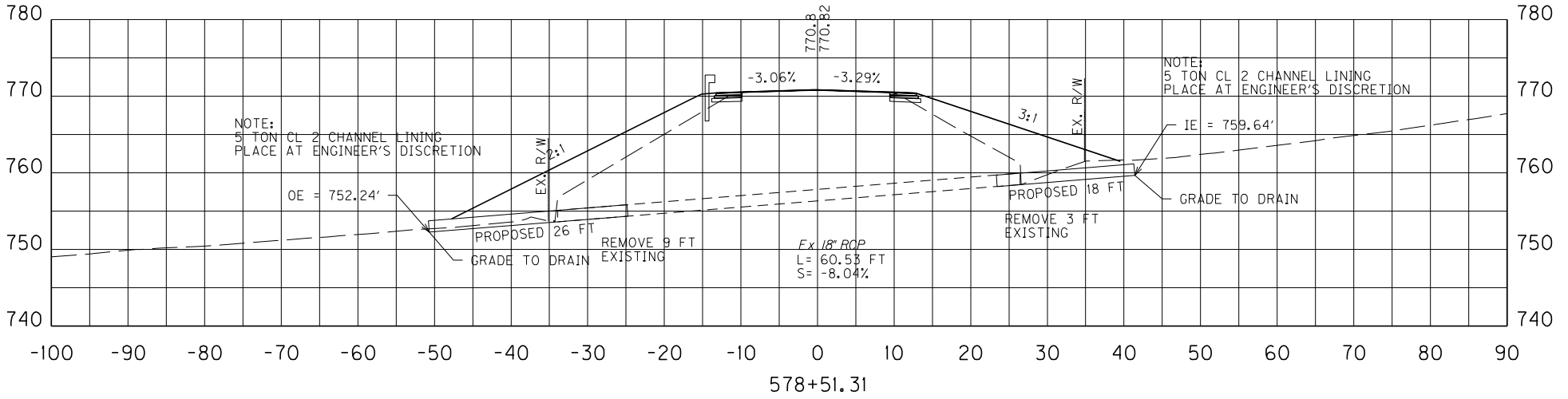
562+48.04
SKEW 1°26' LT

SCALE: 1"= 20'

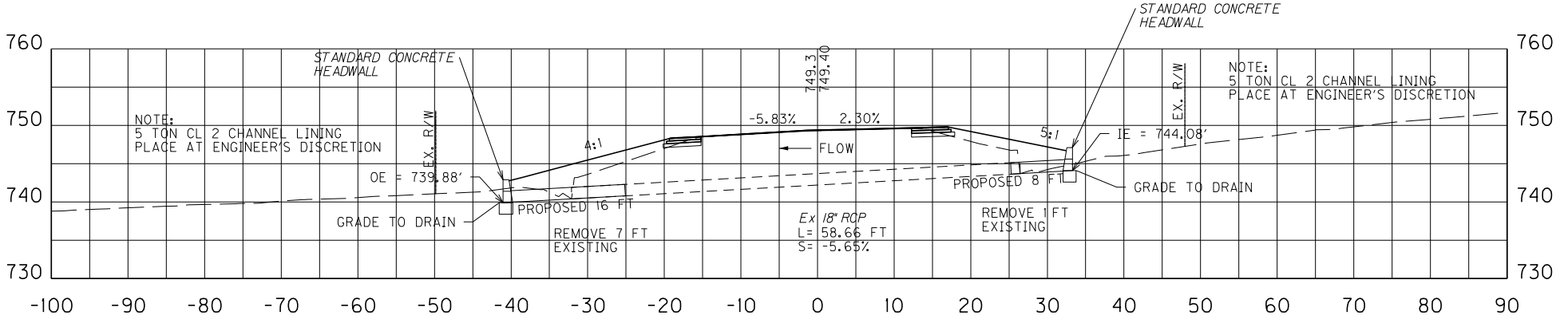
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R86

KY HWY 259 ANNETA RD
CULVERT PIPE SECTIONS SHEET

STA.560+00 TO STA.570+00



578+51.31



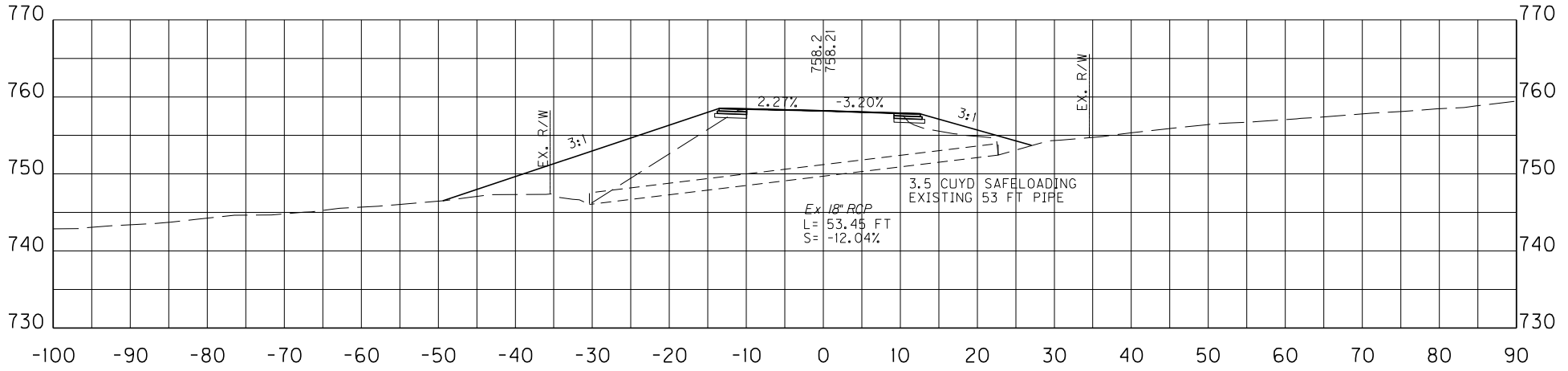
572+97.12
SKEW 44°16' LT

SCALE: 1"= 20'

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R87

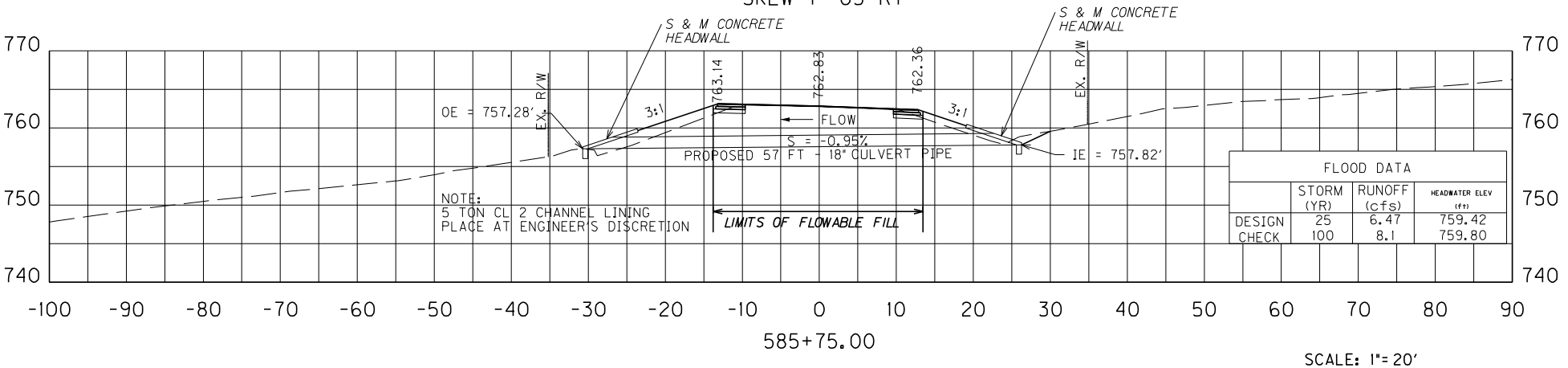
KY HWY 259 ANNETA RD
CULVERT PIPE SECTIONS SHEET

STA.570+00 TO STA.580+00



586+73.47

SKEW 1° 05' RT



FLOOD DATA			
	STORM (YR)	RUNOFF (cfs)	HEADWATER ELEV (ft)
DESIGN	25	6.47	759.42
CHECK	100	8.1	759.80

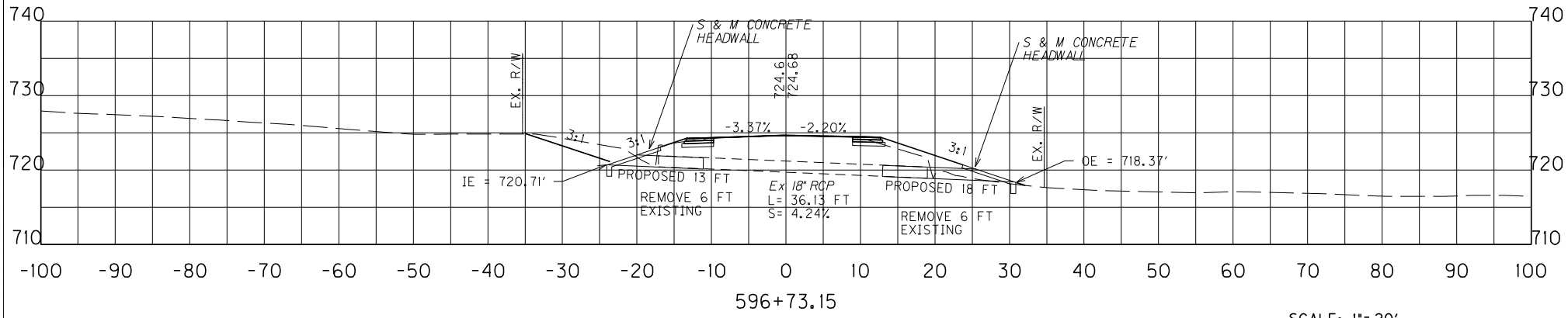
585+75.00

SCALE: 1"= 20'

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R88

KY HWY 259 ANNETA RD
CULVERT PIPE SECTIONS SHEET

STA.580+00 TO STA.590+00

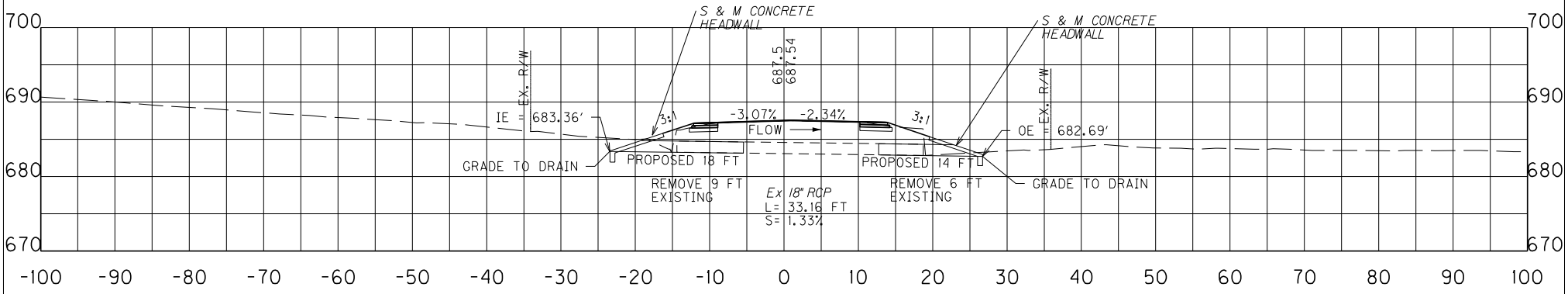


SCALE: 1"= 20'

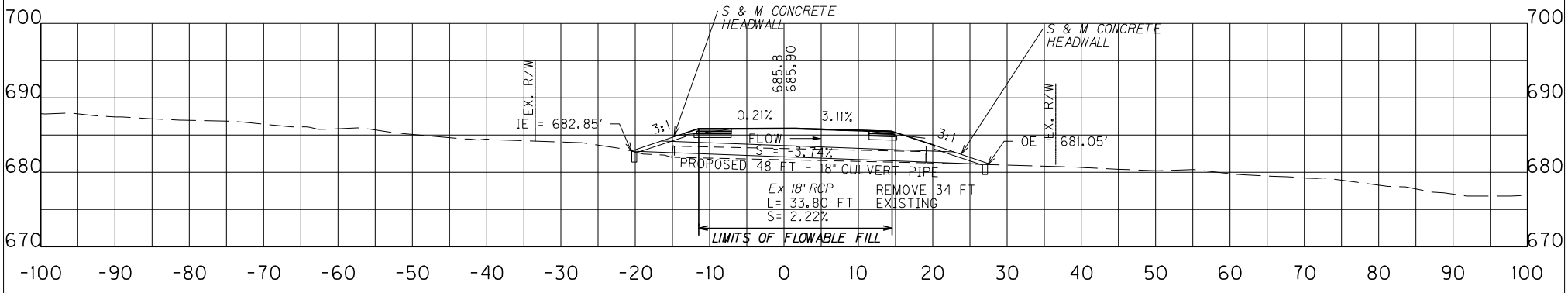
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R89

KY HWY 259 ANNETA RD
CULVERT PIPE SECTIONS SHEET

STA.590+00 TO STA.600+00



614+78.75



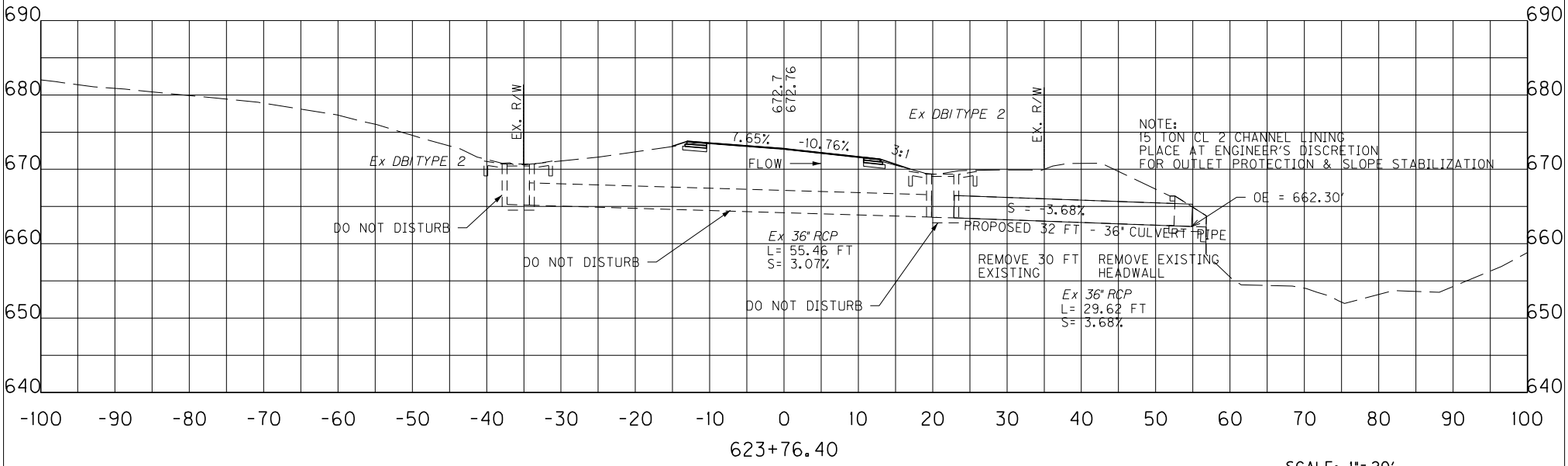
611+80.14

SCALE: 1"= 20'

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R90

KY HWY 259 ANNETA RD
CULVERT PIPE SECTIONS SHEET

STA.610+00 TO STA.620+00

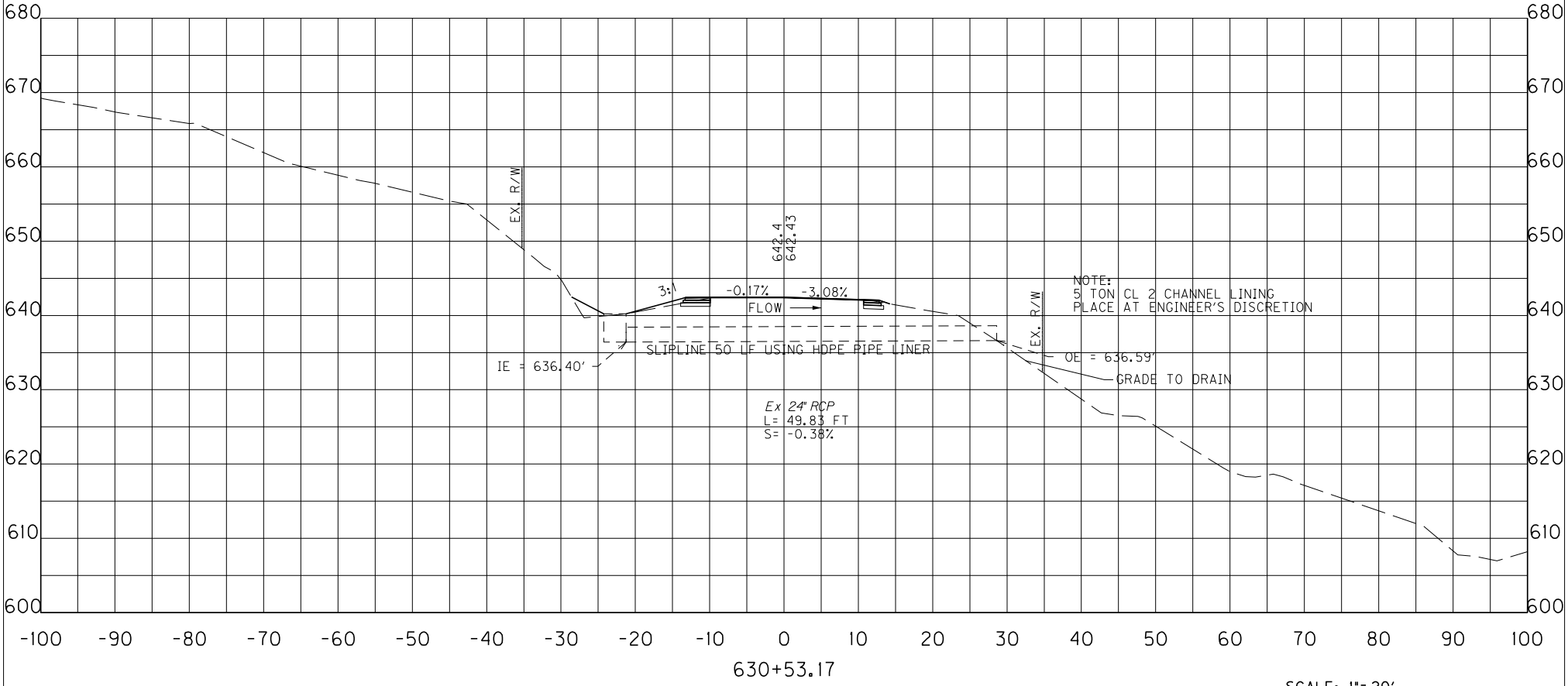


SCALE: 1"= 20'

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R91

KY HWY 259 ANNETA RD
CULVERT PIPE SECTIONS SHEET

STA.620+00 TO STA.630+00

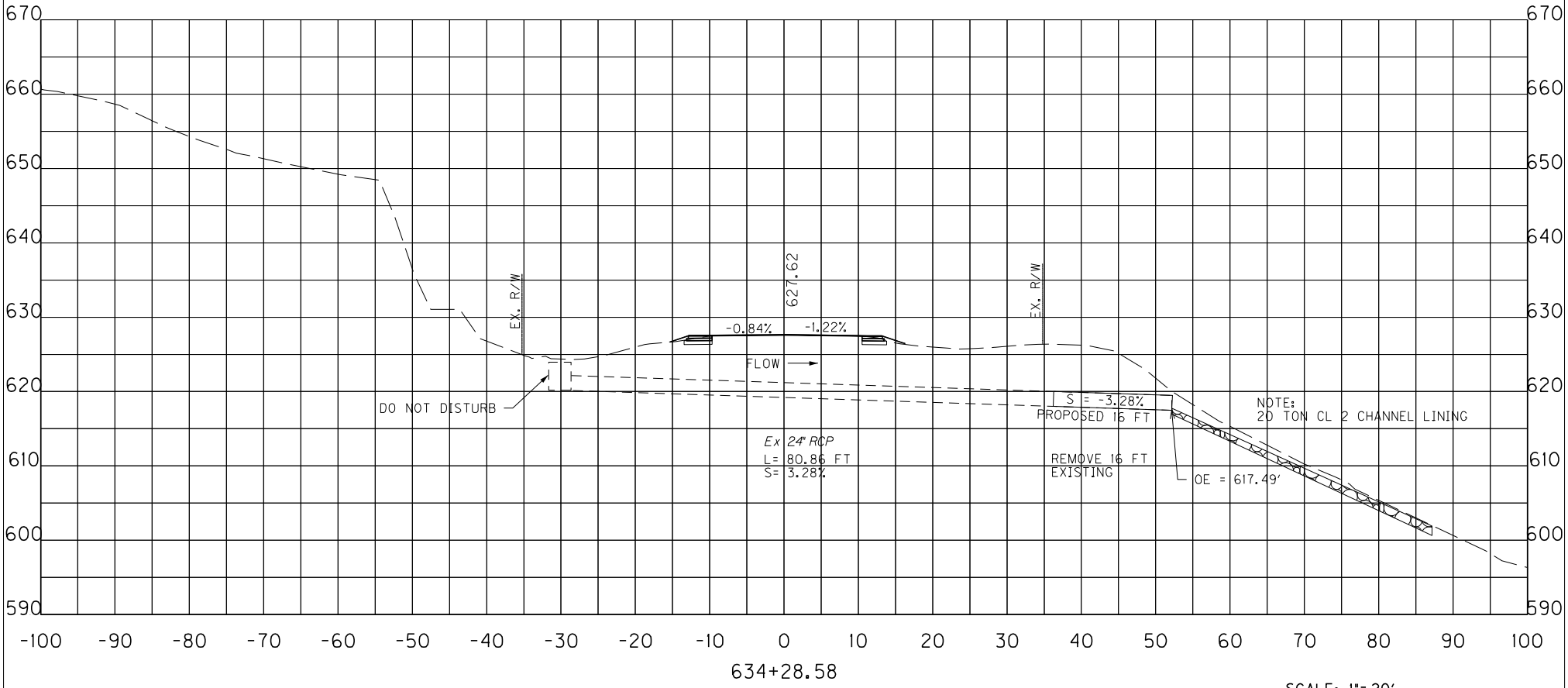


SCALE: 1"= 20'

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R92

KY HWY 259 ANNETA RD
CULVERT PIPE SECTIONS SHEET

STA.630+53.17

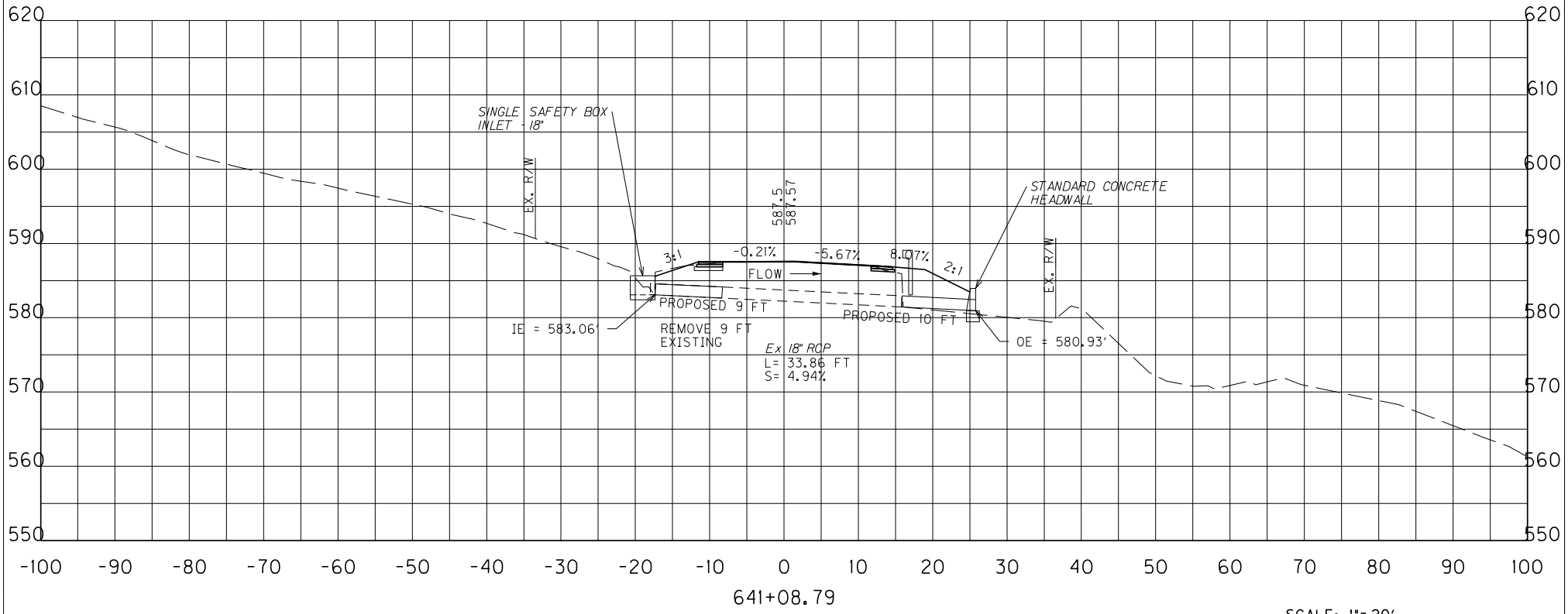


SCALE: 1"= 20'

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R93

KY HWY 259 ANNETA RD
CULVERT PIPE SECTIONS SHEET

STA.634+28.58

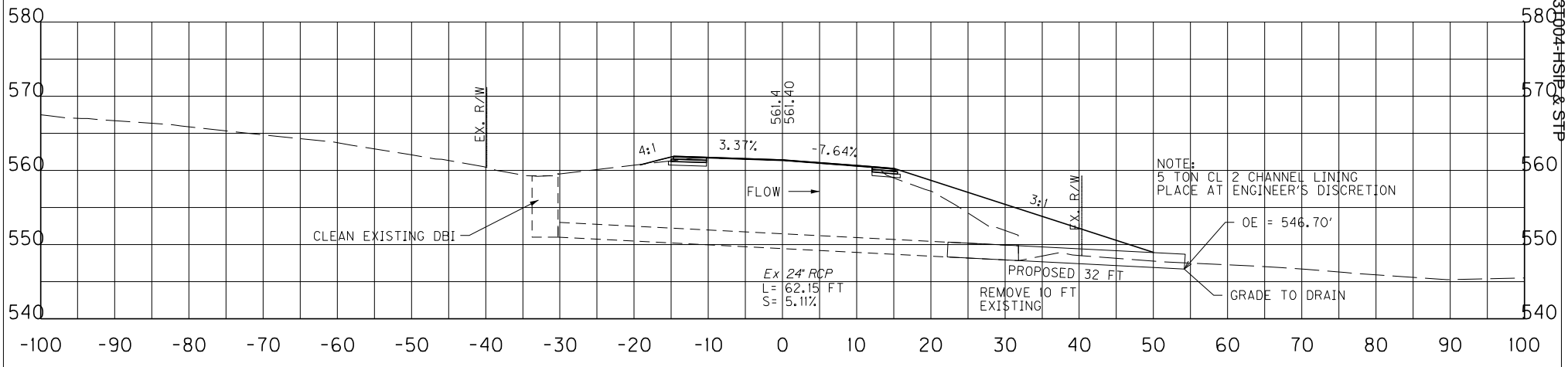


SCALE: 1"= 20'

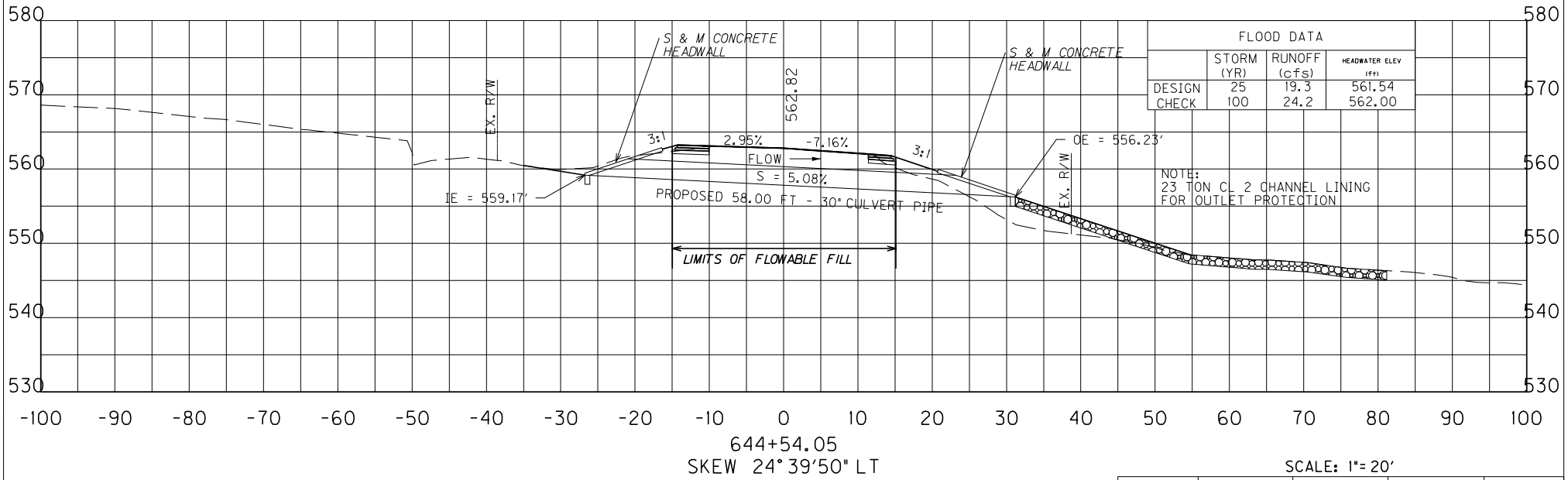
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R94

KY HWY 259 ANNETA RD
CULVERT PIPE SECTIONS SHEET

STA.640+00 TO STA.642+00



644+74.60
SKEW 28°47' LT



FLOOD DATA

	STORM (YR)	RUNOFF (cfs)	HEADWATER ELEV (ft)
DESIGN	25	19.3	561.54
CHECK	100	24.2	562.00

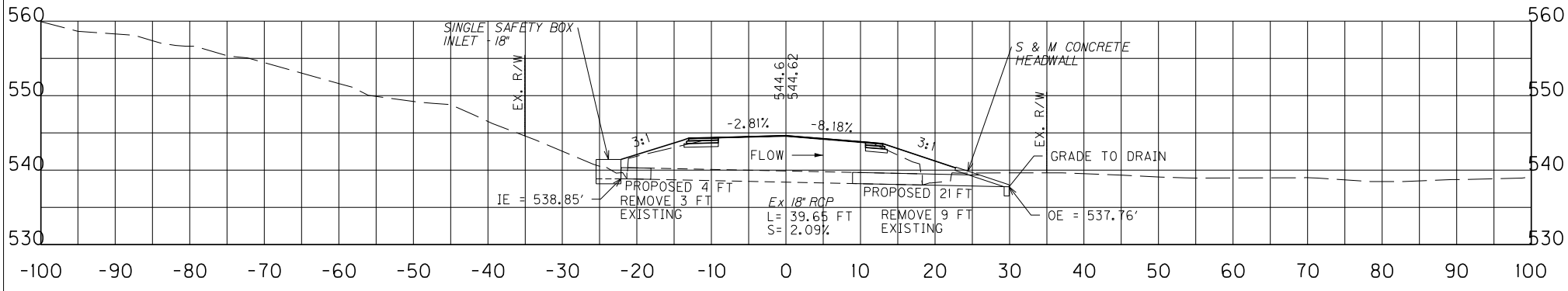
644+54.05
SKEW 24°39'50" LT

SCALE: 1"= 20'

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R95

KY HWY 259 ANNETA RD
CULVERT PIPE SECTIONS SHEET

STA.642+00 TO STA.645+00



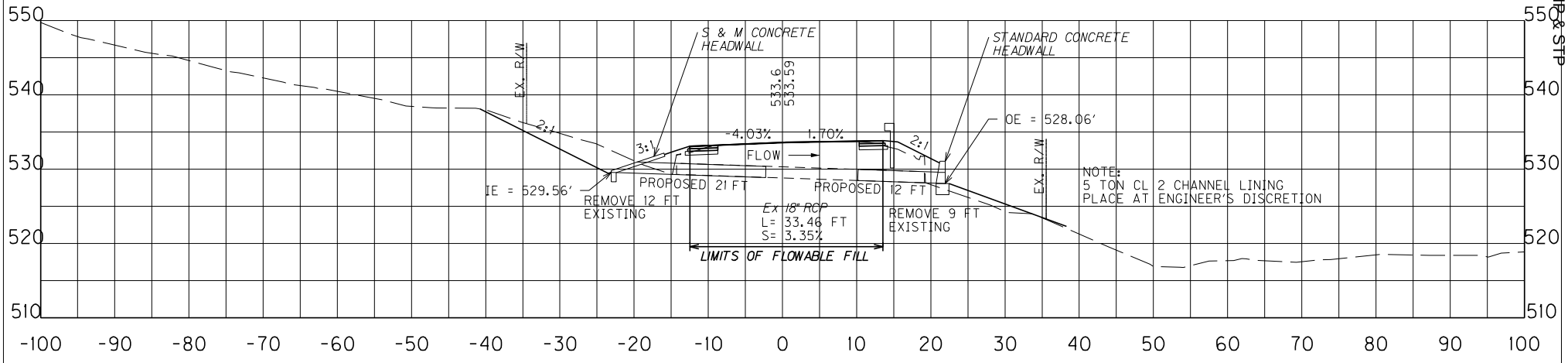
647+22.68
SKEW 1°05' RT

SCALE: 1"= 20'

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R96

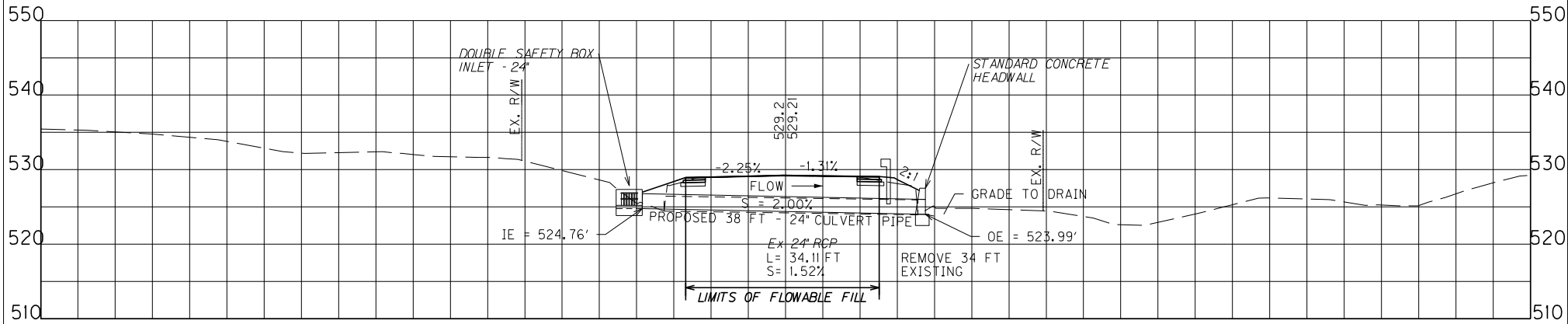
KY HWY 259 ANNETA RD
CULVERT PIPE SECTIONS SHEET

STA.647+22.68



656+06.98

SKEW 1°09' RT



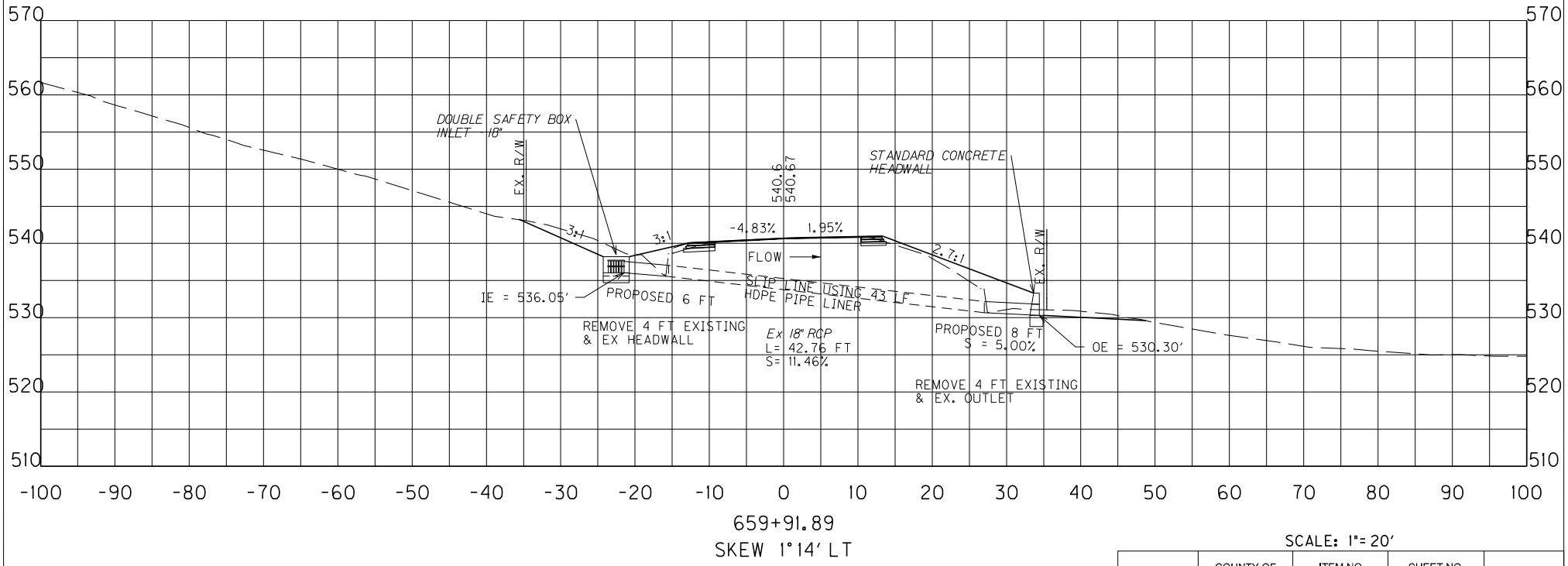
652+82.09

SCALE: 1"= 20'

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R97

KY HWY 259 ANNETA RD
CULVERT PIPE SECTIONS SHEET

STA.650+00 TO STA.658+00



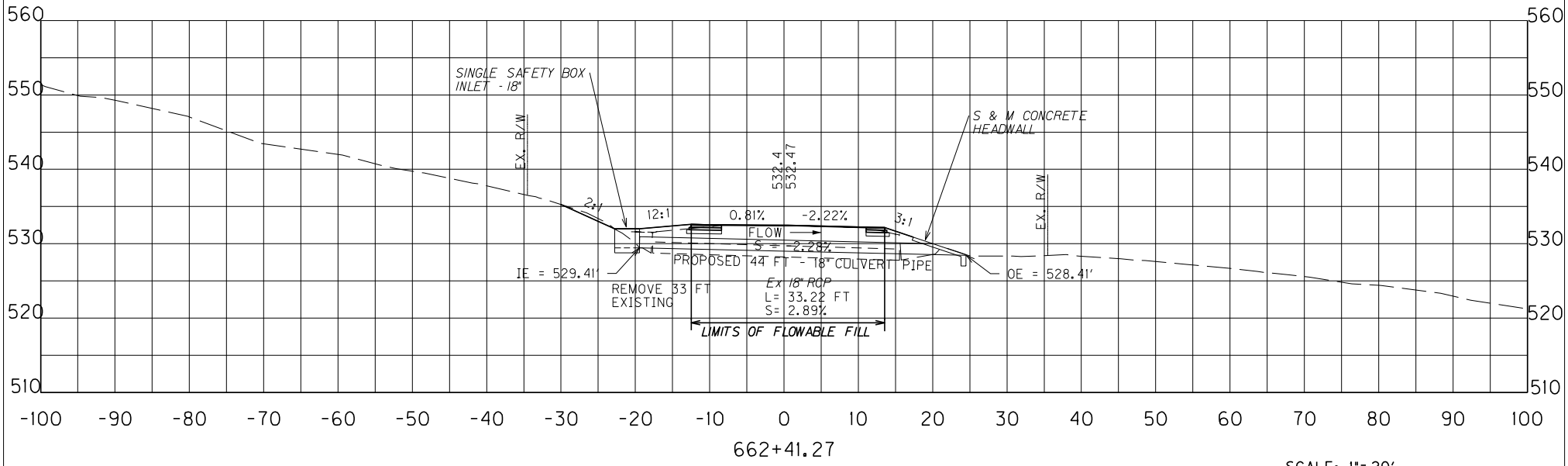
659+91.89
SKEW 1°14' LT

SCALE: 1"= 20'

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R98

KY HWY 259 ANNETA RD
CULVERT PIPE SECTIONS SHEET

STA.658+50 TO STA.660+00



SCALE: 1"= 20'

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	R99

KY HWY 259 ANNETA RD
CULVERT PIPE SECTIONS SHEET

STA.660+00 TO PROJECT END

GRAYSON COUNTY
043GR23T004-HSIP & STP

LETTING DATE

CONSTRUCTION PROJECT NO.

FILE NAME: C:\Users\Lizabeth.Likins\Desktop\4-9009 Post Constructibility Review\28341.dgn

USER: Lizabeth.Likins
DATE PLOTTED: 18-FEB-2021

E-SHEET NAME:

MicroStation v8.11.9.832

TRANSPORTATION CABINET
DEPARTMENT OF HIGHWAYS

GRAYSON COUNTY
KY 259
KY 259 OVER UNNAMED CREEK
Station 374+47.11

ESTIMATE OF QUANTITIES			
BID CODE	ITEM	QUANTITY	UNIT
8100	Class "A" Concrete	25.6	C.Y.
8150	Reinforcement	2796	Lb
8003	Foundation Preparation	1	L.S.
2403	Remove Concrete Masonry	1	C.Y.
8002	Structure Excavation Solid Rock	13	C.Y.

GENERAL NOTES

SPECIFICATIONS: All references to the standard Specifications are to the current edition of the Kentucky Department of Highways Standard Specifications for Road and Bridge Construction with current Supplemental Specifications. All references to the AASHTO are to the current edition of the AASHTO LRFD Bridge Design Specifications, with interims.

DESIGN LOAD: This structure is designed for HL-93 live load increased by 25%. The 25% increase is arrived by increasing the design truck or tandem and the design lane load by 25%.

DESIGN METHOD: All reinforced concrete members are designed by the load and resistance factor method as specified in the current AASHTO Specifications.

MASONRY COATING: Masonry coating will not be required for this structure.

COMPLETION OF THE STRUCTURE: The Contractor is required to complete the structure in accordance with the plans and specifications. Material, labor or construction operations, not otherwise specified, are to be included in the bid item most appropiate to the work involved. This may include cofferdams, shoring, excavatuions, backfilling, removal of all or parts of existing structures, phase construction, incidental materials, labor, or anything else required to complete the structure.

REINFORCEMENT: Dimensions shown from the face of concrete to bars are to center of bars unless otherwise shown. Spacing of bars is from center to center of bars. Clear distance to face of concrete is 2" unless otherwise noted. Any reinforcing bars designated by suffix (e) in the Plans shall be epoxy coated in accordance with section 811.10 of the Standard Specifications. Any reinforcing bars designated by suffix (s) in a Bill of Reinforcement shall be considered a stirrup for purposes of bend diameters.

BEVELED EDGES: All exposed edges shall be beveled ¾" unless otherwise shown.

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

WEIGHT OF FILL MATERIAL: The assumed weight of fill material is 120 lbs per cubic foot.

CONCRETE: Class "A" concrete shall be used throughout.

CONSTRUCTION JOINTS: Vertical construction joints shall be located in the field, except that no construction joint shall be located in the barrel within six feet of the ends of the culvert.

FOOTING PRESSURE: Foundation materials for barrel and wing footings shall resist a maximum bearing pressure of 797 PSF.

FLOWLINE REINFORCEMENT: Reinforcement in the 6 in thick slab shall be Size 4 bars at 18 in centers in each direction or an equivalent area of welded deformed steel fabric. The bars shall extend a minimum of 12 in into wing footings and/or the bottom slab. The cost of this reinforcement shall be incidental to the unit price bid for Concrete, Class "A".

CULVERTS WITH UNKNOWN FOUNDATIONS: Construct the extension as the original box culvert, either entirely on compressible or non-compressible material. For non-compressible material, if solid rock is not encountered at the design footing elevation, soil must be excavated and backfilled with "Granular Embankment," non-erodible only, meeting the material requirements of Section 805 in the current edition of the Kentucky Standard Specifications with the exception that the maximum size is 4 inches. For compressible material, rock within 3ft of the design flowline must be excavated and backfilled with properly compacted soil to the base of the slab. Include all costs associated with this item of work including, but not limited to excavation (common or solid rock), rock, and backfilling in the lump sum bid for Foundation Preparation.

DAMAGE TO THE STRUCTURE: The Contractor is responsible for any damage to the structure during construction.

EXISTING HEADWALLS: Existing headwalls may remain in place where there is no conflict with proposed extension construction. Remove portions of wing walls as required for construction and/or as directed by the Engineer.

CHANNEL LINING: Place channel lining at inlet and outlet of culvert extension as shown in roadway plans and in accordance with Standard Drawing RDD-040-05 or as directed by the Engineer.

VARIATION IN DIMENSIONS: Variation in dimensions along the length of the existing culvert may be encountered. Construct culvert extensions to match existing dimensions.

DAMAGE TO THE STRUCTURE: The Contractor is responsible for any damage to the structure during construction.

CONSTRUCTION NOTE: Temporary sheeting, shoring, cofferdams, and/or a dewatering method may be required for construction of the culvert and footings. Include all costs in the price bid for Foundation Preparation.

BONDING TO EXISTING CONCRETE USING STRUCTURAL ADHESIVES: concrete to existing hardened concrete in all locations using a Type V Epoxy Resin or other approved Structural Adhesive as prescribed in section 826 of the specifications. Follow the manufacturer's recommended application instructions. This work and material is incidental to the unit price bid for concrete.

SAWCUTTING EXISTING CONCRETE: Prior to the removal of the existing concrete masonry, cut the surface with a concrete saw to a depth of one inch to facilitate a neat line. The cost of cutting concrete shall be included in the unit price bid for Remove Concrete Masonry.

DRILL AND EPOXY-GROUT REINFORCEMENT: Where shown on the plans, drill and epoxy-grout new reinforcement into existing concrete using a Type IV epoxy resin adhesive conforming to section 826 of the standard specifications. Embedment length shall be sufficient to develop 100% of the yield strength of the reinforcing bar in no case shall the embedment length be less than the minimum embedment shown on the plans. Installation is to be in strict conformance with the manufacturer's recommendations for the epoxy-adhesive being used and section 511 of the standard specifications. The cost of this work, including all labor, tools and materials, is to be considered incidental to the unit price bid for Class "A" concrete.

INDEX OF SHEETS

Sheet No.	Description
1	Title
2	Layout
3 & 4	Barrel Details
5	Wing 1
6	Wing 2
7	Wing 3
8	Wing 4
9	Bill of Reinforcement

SPECIAL NOTES

SPECIAL PROVISIONS

STANDARD DRAWINGS

BGX-006-10	Stencils for Structures
BGX-012-02	Geotechnical Legend

SPECIFICATIONS

2019 Standard Specifications for Road and Bridge Construction

2017 AASHTO Standard Specifications for Highway Bridges

REVISION	DATE

DATE: NOVEMBER 2020	CHECKED BY
DESIGNED BY: L. LIKINS	V. RAULJI
DETAILED BY: L. LIKINS	V. RAULJI

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: GRAYSON

ROUTE: KY 259 | CROSSING: UNNAMED CREEK

SINGLE 3.0 x 3.0 CULVERT

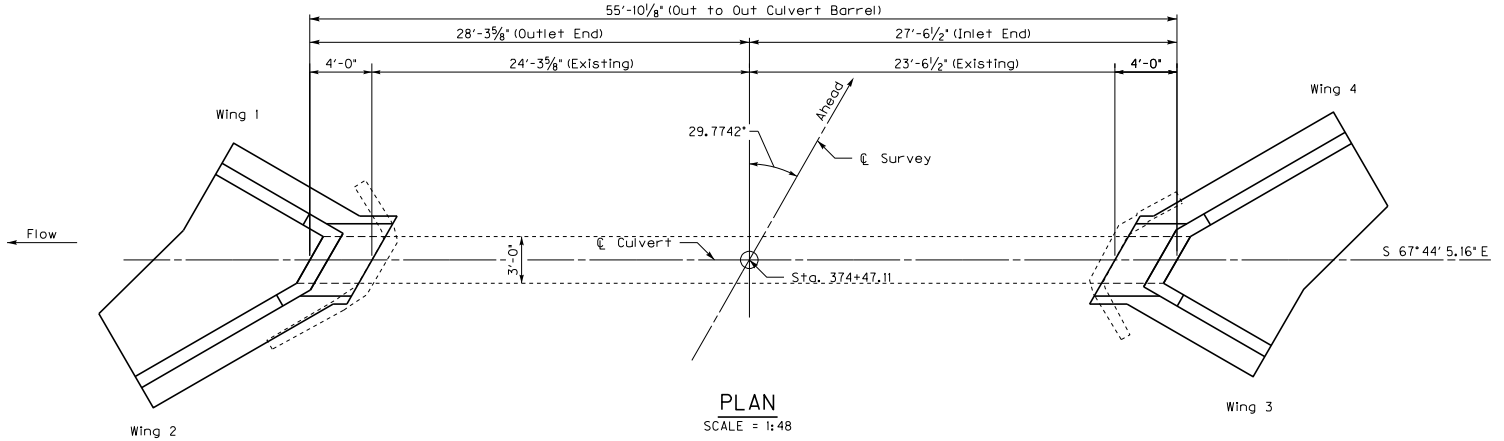
ITEM NUMBER
4-9009.00

PREPARED BY
Division of Structural Design

SHEET NO. S1

DRAWING NO. 28341

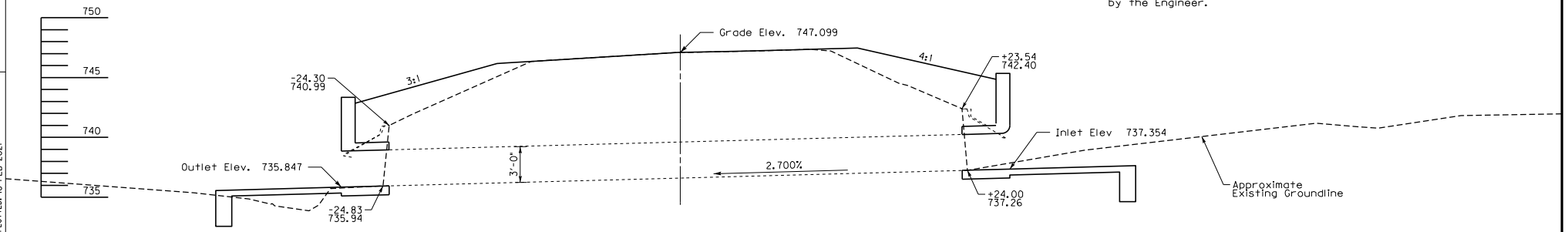
Contract ID: 234206
Page 463 of 928



PLAN
SCALE = 1:48

Note: Remove existing culvert wings and headwalls as needed for construction of extension or as directed by the Engineer.

NOTE: Field verify dimensions prior to ordering materials. All dimensions are taken from existing survey. Actual barrel lengths may vary from plans in the field. Extension lengths shall be built per these plans or as directed by the Engineer.



SECTION ON ℄

Single 3'-0" x 3'-0" x 55'-10 1/8" R.C.B.C.
27'-6 1/2" Inlet End Including 4'-0" Extension and 28'-3 5/8" Outlet End Including 4'-0" Extension
29.7742° Lt. Skew ~ KYHL-93 Loading ~ 0.50 Fill Slope
Unyielding Foundation

REVISION	DATE

DATE: NOVEMBER 2020	CHECKED BY
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DETAILED BY: L. LIKINS	V. RAULJI

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

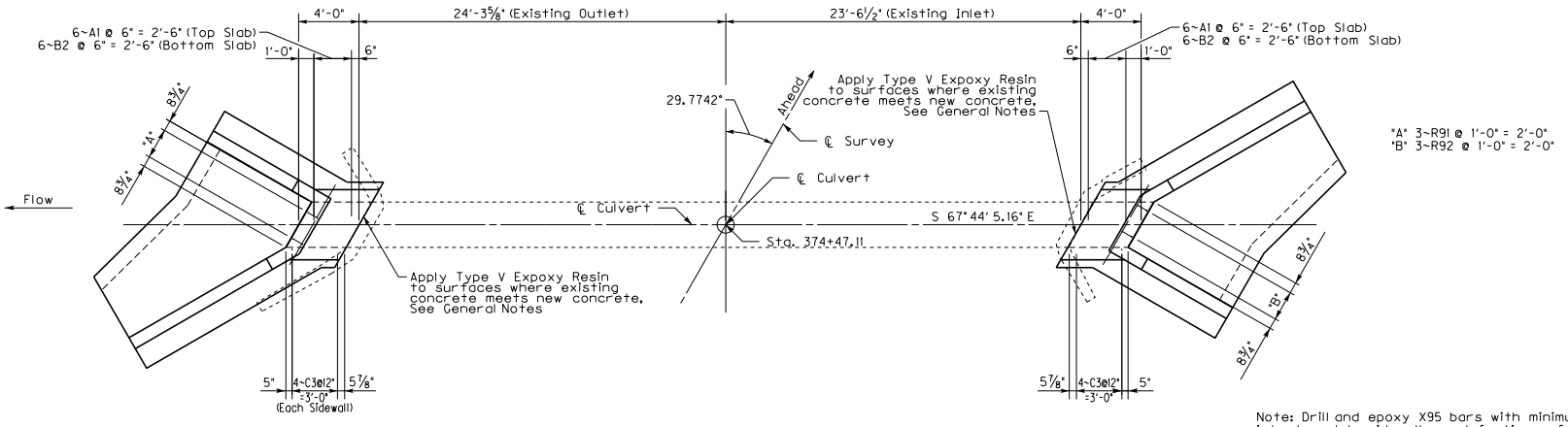
COUNTY
GRAYSON

ROUTE	CROSSING
KY 259	UNNAMED CREEK

LAYOUT

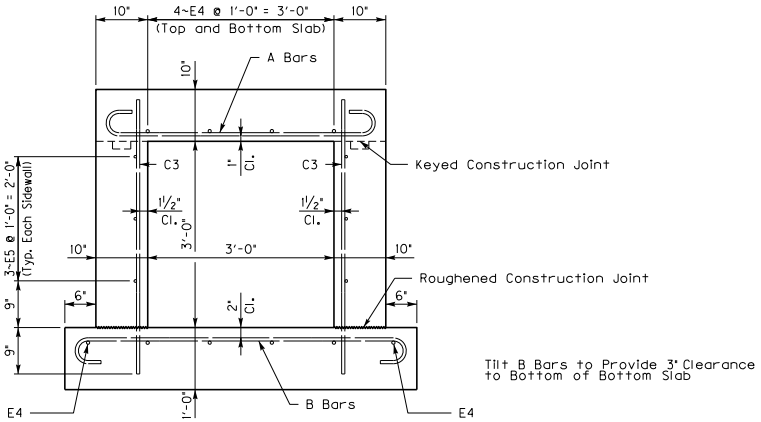
ITEM NUMBER	PREPARED BY	SHEET NO.
4-9009.00	Division of Structural Design	S2
		DRAWING NO. 28341

FILE NAME: C:\Users\lizabeth.likins\Desktop\4-9009 Post Constructibility Review\28341.dgn
USER: Lizabeth.Likins
DATE PLOTTED: 18-FEB-2021
E-SHEET NAME:
MicroStation v8.11.9.832



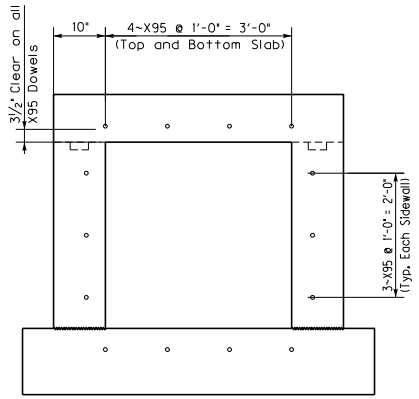
PLAN
SCALE = 1:48

NOTE: Order E bars long enough so they can be embedded into the headwall wings/parapet/flowline 1'-6" Min. to tie headwall to culvert barrel. Lap with existing culvert barrel reinforcement if possible.



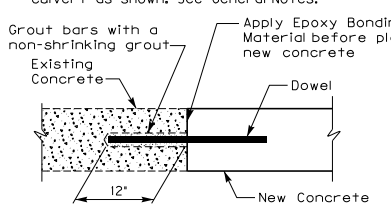
Tilt B Bars to Provide 3" Clearance to Bottom of Bottom Slab

TYPICAL BARREL SECTION
SCALE = 1:12



TYPICAL BARREL SECTION
Showing grouted dowel placement
SCALE = 1:12

Note: Drill and epoxy X95 bars with minimum 1'-0" embedment into top slab, sidewalls, and footings of the existing culvert as shown. See General Notes.



DOWEL DETAILS

NOTE: The cost of drilling holes, grouting, and epoxy bonding material shall be incidental to the cost of Class "A" Concrete.

REVISION	DATE

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Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

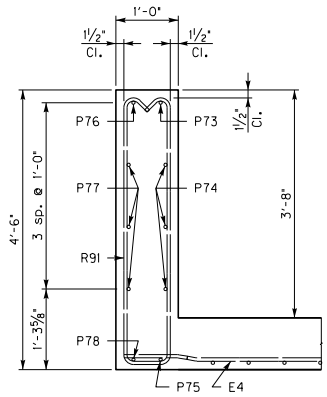
COUNTY: GRAYSON

ROUTE: KY 259 | CROSSING: UNNAMED CREEK

BARREL

ITEM NUMBER	PREPARED BY	SHEET NO.
4-9009.00	Division of Structural Design	S3
		DRAWING NO. 28341

MicroStation v8.11.9.832
USER: Lizabeth.Likins
DATE PLOTTED: 18-FEB-2021
E-SHEET NAME:
FILE NAME: C:\Users\lizabeth.likins\Desktop\4-9009 Post Constructibility Review\28341.dgn



LEFT PARAPET
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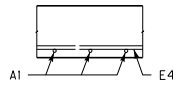
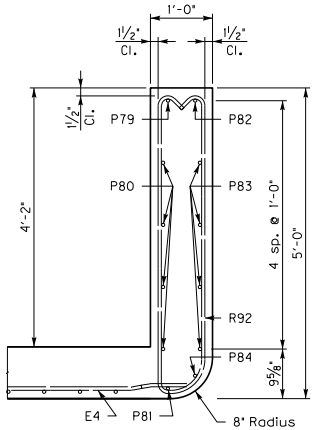
(Perpendicular to Parapet)





RIGHT PARAPET
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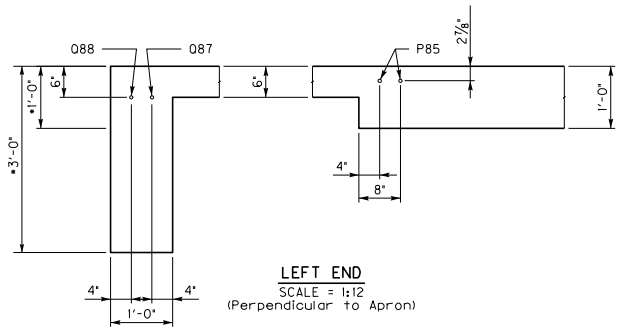
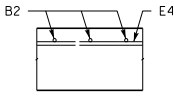
(Perpendicular to Parapet)



LEFT END
SCALE = 1:12
(Perpendicular to Apron)



SECTION ON ℄
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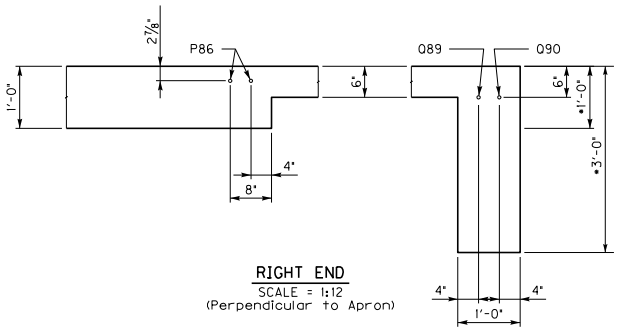

RIGHT END
SCALE = 1:12
(Perpendicular to Apron)

* Aprons shall be 3'-0" deep or extend a minimum of 1'-0" into solid bedrock.

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Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: **GRAYSON**

ROUTE: **KY 259** | CROSSING: **UNNAMED CREEK**

BARREL

ITEM NUMBER	PREPARED BY	SHEET NO.
4-9009.00	**Division of Structural Design**	S4
		DRAWING NO. 28341

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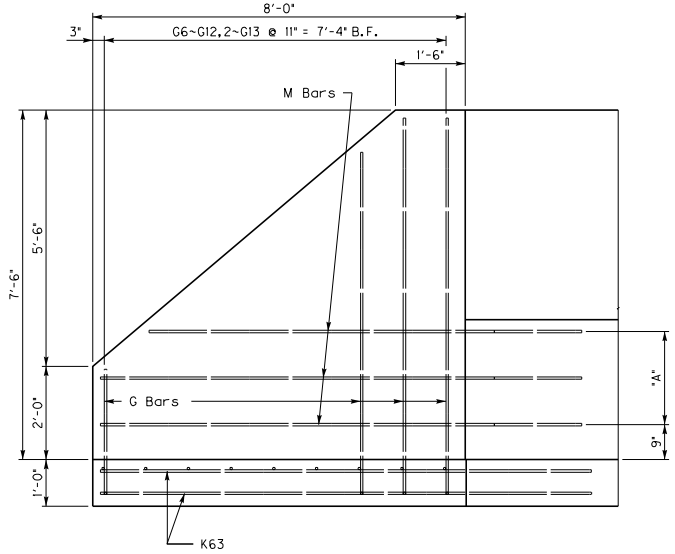
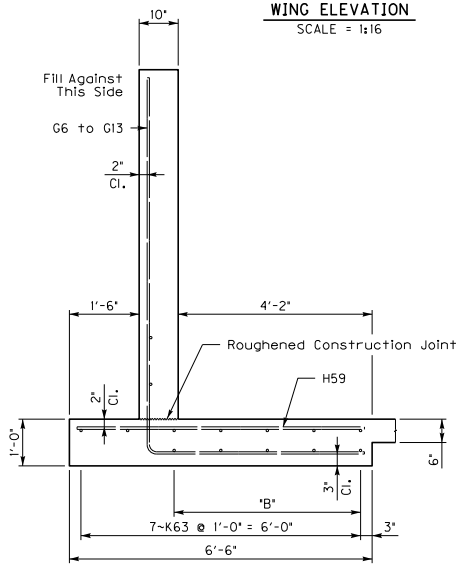


WING ELEVATION
SCALE = 1:16



WING SECTION
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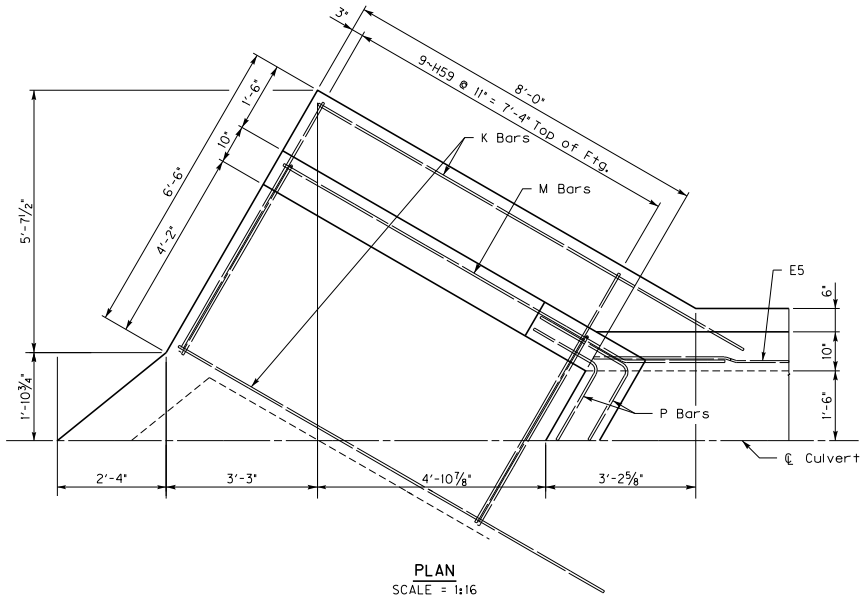

PLAN
SCALE = 1:16

"A" 2~M67,1~M68 @ 1'-0" = 2'-0" B.F.
"B" 5~K63 @ 1'-0" = 4'-0" Bot of Ftg.

REVISION	DATE
DATE: NOVEMBER 2020	CHECKED BY
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Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
GRAYSON

ROUTE
KY 259

CROSSING
UNNAMED CREEK

Wing 1

ITEM NUMBER	PREPARED BY	SHEET NO.
4-9009.00	Division of Structural Design	S5
		DRAWING NO. 28341

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FILE NAME: C:\Users\lizabeth.likins\Desktop\4-9009 Post Constructibility Review\28341.dgn

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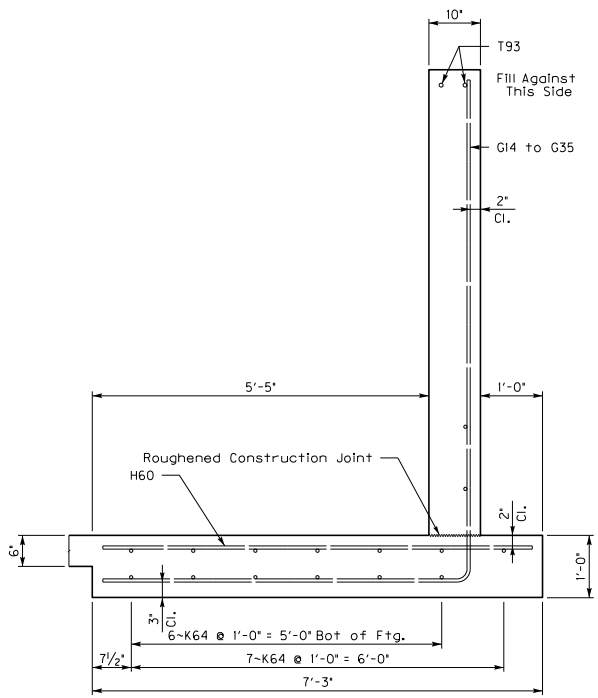
E-SHEET NAME:

GRAYSON COUNTY
043GR23T004-HSIP & STP
Contract ID: 234206
Page 467 of 928



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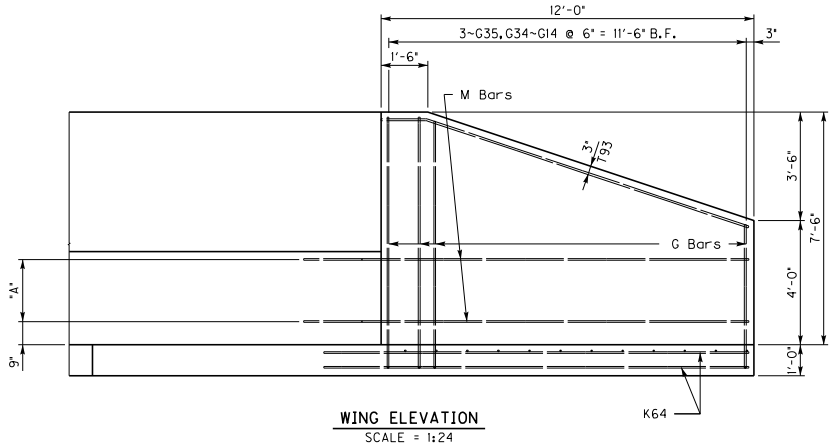

WING ELEVATION
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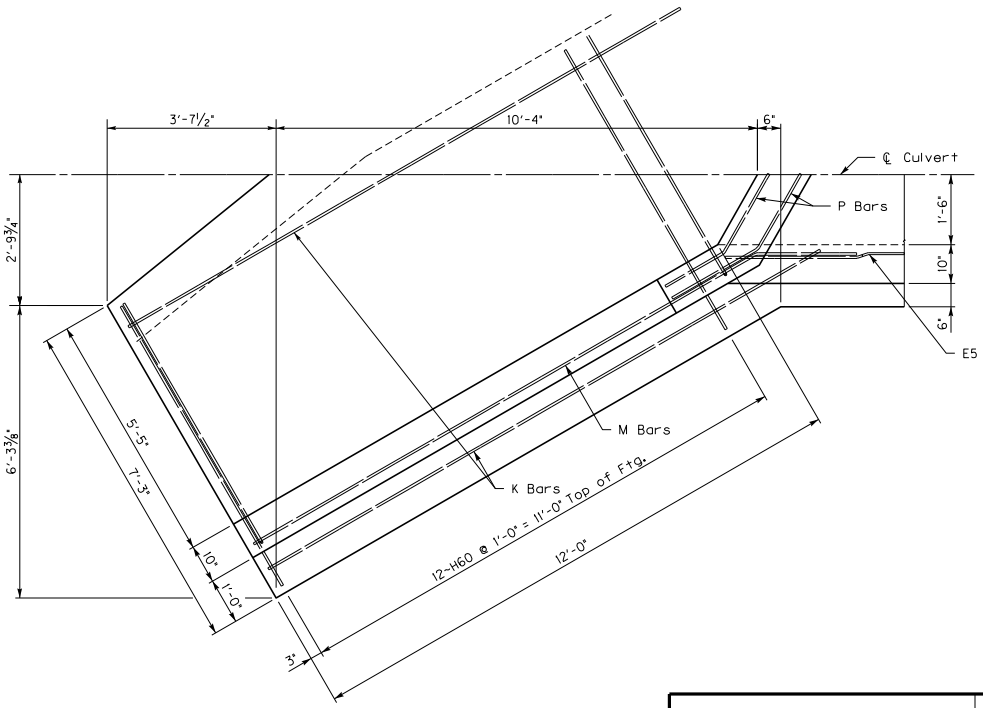

PLAN
SCALE = 1:16

"A" 3~M69 @ 1'-0" = 2'-0" B.F.

REVISION	DATE

DATE: NOVEMBER 2020	CHECKED BY
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Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
GRAYSON

ROUTE	CROSSING
KY 259	UNNAMED CREEK

Wing 2

ITEM NUMBER	PREPARED BY	SHEET NO.
4-9009.00	Division of Structural Design	S6
		DRAWING NO. 28341

USER: Lizabeth.Likins
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FILE NAME: C:\Users\lizabeth.likins\Desktop\4-9009 Post Constructibility Review\28341.dgn

E-SHEET NAME:

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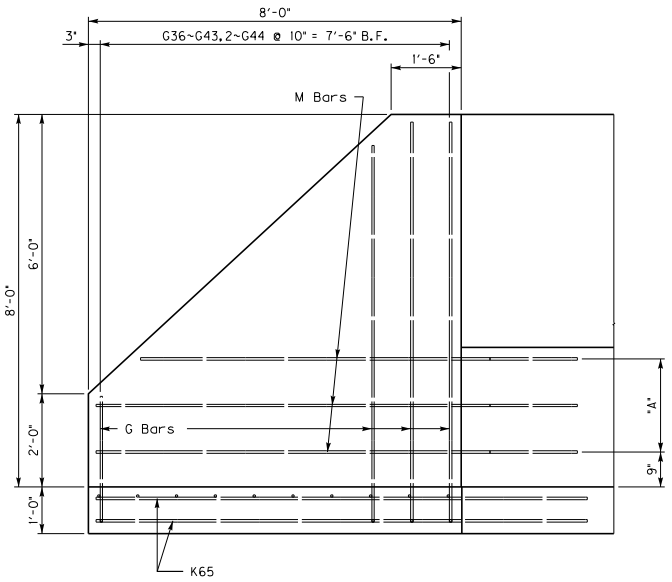

WING ELEVATION
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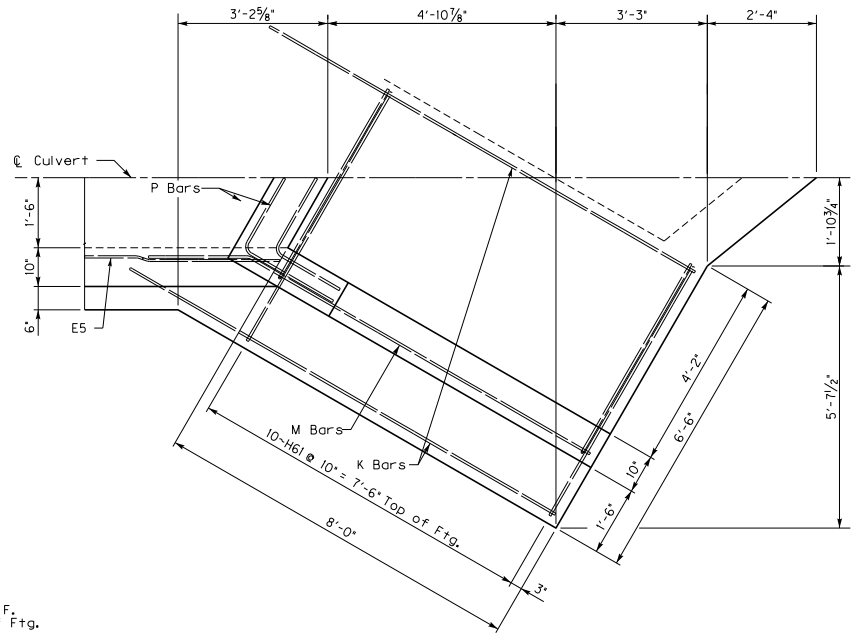
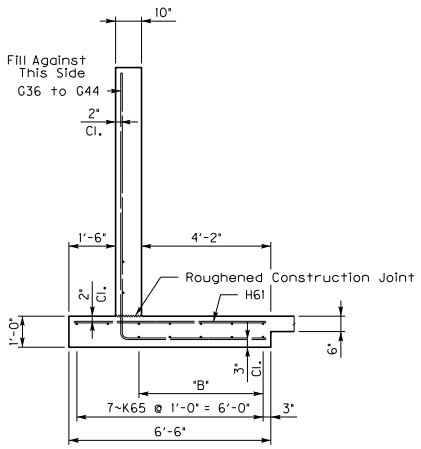


"A" 2~M70, 1~M71 @ 1'-0" = 2'-0" B.F.
"B" 5~K65 @ 1'-0" = 4'-0" Bot of Ftg.

PLAN
SCALE = 1:16



WING SECTION
SCALE = 1:24

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Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

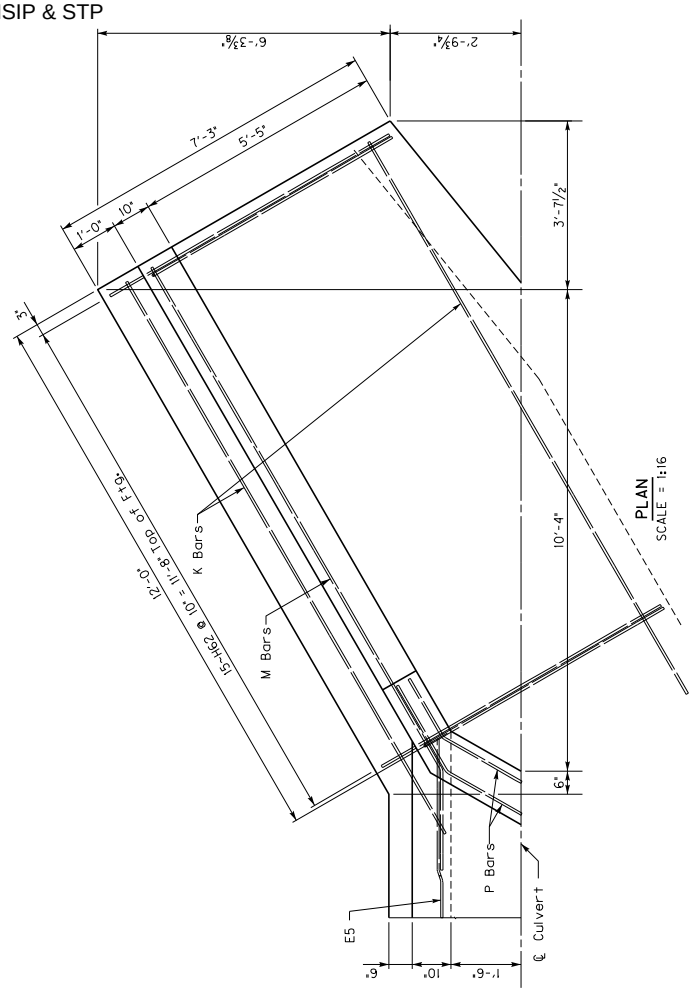
COUNTY
GRAYSON

ROUTE	CROSSING
KY 259	UNNAMED CREEK

Wing 3

ITEM NUMBER	PREPARED BY	SHEET NO.
4-9009.00	Division of Structural Design	S7
		DRAWING NO. 28341

FILE NAME: C:\Users\lizabeth.likins\Desktop\4-9009 Post Constructibility Review\28341.dgn
USER: Lizabeth.Likins
DATE PLOTTED: 18-FEB-2021
E-SHEET NAME:
MicroStation v8.11.9.832



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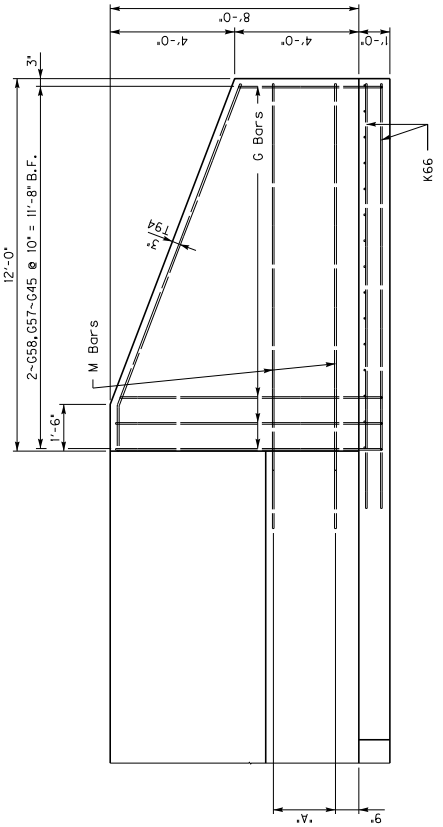
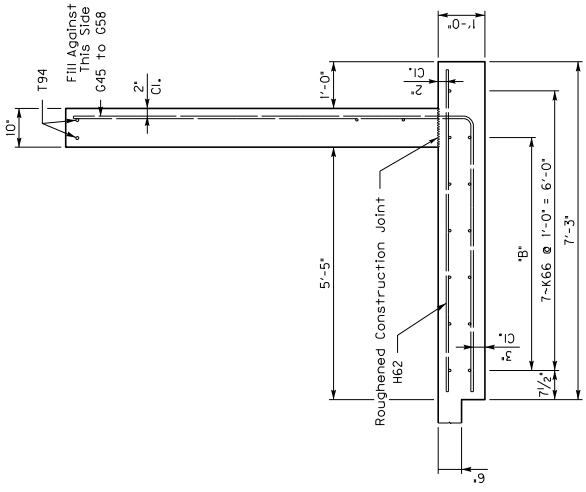


WING ELEVATION
SCALE = 1:24

"A" 3-M72 @ 1'-0" = 2'-0" B.F.
"B" 6-K66 @ 1'-0" = 5'-0" Bot of Ftg.



WING SECTION
SCALE = 1:16

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V. RAULJ	
L. LIKINS	

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: GRAYSON
CROSSING: UNNAMED CREEK
ROUTE: KY 259
Wing 4

PREPARED BY
Division of Structural Design

SHEET NO. S8
DRAWING NO. 28341

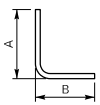
ITEM NUMBER
4-9009.00

BILL OF REINFORCEMENT

MARK	TYPE	NO.	SIZE	LENGTH	LOCATION	A/E	B/F	C/G	D/H
A1	1	12	5	5- 7	Top Slab	3-11	0-10	0- 5	4- 4
B2	1	12	5	6- 7	Bottom Slab	4-11	0-10	0- 5	5- 4
C3	Str.	16	5	4- 5	Sidewalls				
E4	Str.	20	5	5- 4	Top & Bottom Slabs				
E5	Str.	12	5	5- 4	Sidewalls				
G6	5	1	5	7- 3	B.F Wing 1	2- 8¼	4- 8		
G7	5	1	5	8- 0	B.F Wing 1	3- 5⅝	4- 8		
G8	5	1	5	8- 9	B.F Wing 1	4- 2⅞	4- 8		
G9	5	1	5	9- 7	B.F Wing 1	5- 0⅛	4- 8		
G10	5	1	5	10- 4	B.F Wing 1	5- 9½	4- 8		
G11	5	1	5	11- 1	B.F Wing 1	6- 6¾	4- 8		
G12	5	1	5	11-11	B.F Wing 1	7- 4⅛	4- 8		
G13	5	2	5	12- 7	B.F Wing 1	8- 1	4- 8		
G14	5	1	5	10- 5	B.F Wing 2	4- 7⅞	5-11		
G15	5	1	5	10- 7	B.F Wing 2	4- 9⅜	5-11		
G16	5	1	5	10- 9	B.F Wing 2	4-11⅜	5-11		
G17	5	1	5	10-11	B.F Wing 2	5- 1⅜	5-11		
G18	5	1	5	11- 1	B.F Wing 2	5- 3⅜	5-11		
G19	5	1	5	11- 3	B.F Wing 2	5- 5⅜	5-11		
G20	5	1	5	11- 5	B.F Wing 2	5- 7⅜	5-11		
G21	5	1	5	11- 7	B.F Wing 2	5- 9⅜	5-11		
G22	5	1	5	11- 9	B.F Wing 2	5-11⅜	5-11		
G23	5	1	5	11-11	B.F Wing 2	6- 1⅜	5-11		
G24	5	1	5	12- 1	B.F Wing 2	6- 3⅜	5-11		
G25	5	1	5	12- 3	B.F Wing 2	6- 5⅜	5-11		
G26	5	1	5	12- 5	B.F Wing 2	6- 7⅜	5-11		
G27	5	1	5	12- 7	B.F Wing 2	6- 9⅜	5-11		
G28	5	1	5	12- 9	B.F Wing 2	6-11⅜	5-11		
G29	5	1	5	12-11	B.F Wing 2	7- 1⅜	5-11		
G30	5	1	5	13- 1	B.F Wing 2	7- 3⅜	5-11		
G31	5	1	5	13- 3	B.F Wing 2	7- 5⅜	5-11		
G32	5	1	5	13- 5	B.F Wing 2	7- 7⅜	5-11		
G33	5	1	5	13- 7	B.F Wing 2	7- 9⅜	5-11		
G34	5	1	5	13- 9	B.F Wing 2	7-11⅜	5-11		
G35	5	3	5	13-10	B.F Wing 2	8- 1	5-11		
G36	5	1	5	7- 3	B.F Wing 3	2- 8⅜	4- 8		
G37	5	1	5	8- 0	B.F Wing 3	3- 5⅝	4- 8		
G38	5	1	5	8- 9	B.F Wing 3	4- 2⅞	4- 8		
G39	5	1	5	9- 6	B.F Wing 3	5- 0	4- 8		
G40	5	1	5	10- 4	B.F Wing 3	5- 9¼	4- 8		
G41	5	1	5	11- 1	B.F Wing 3	6- 6½	4- 8		
G42	5	1	5	11-10	B.F Wing 3	7- 3¾	4- 8		
G43	5	1	5	12- 7	B.F Wing 3	8- 1	4- 8		
G44	5	2	5	13- 1	B.F Wing 3	8- 7	4- 8		
G45	5	1	5	10- 5	B.F Wing 4	4- 7½	5-11		
G46	5	1	5	10- 9	B.F Wing 4	4-11¼	5-11		
G47	5	1	5	11- 1	B.F Wing 4	5- 3⅛	5-11		
G48	5	1	5	11- 4	B.F Wing 4	5- 6⅞	5-11		
G49	5	1	5	11- 8	B.F Wing 4	5-10¾	5-11		
G50	5	1	5	12- 0	B.F Wing 4	6- 2½	5-11		

BILL OF REINFORCEMENT

MARK	TYPE	NO.	SIZE	LENGTH	LOCATION	A/E	B/F	C/G	D/H
G51	5	1	5	12- 4	B.F Wing 4	6- 6⅜	5-11		
G52	5	1	5	12- 8	B.F Wing 4	6-10⅛	5-11		
G53	5	1	5	12-11	B.F Wing 4	7- 2	5-11		
G54	5	1	5	13- 3	B.F Wing 4	7- 5¾	5-11		
G55	5	1	5	13- 7	B.F Wing 4	7- 9⅝	5-11		
G56	5	1	5	13-11	B.F Wing 4	8- 1⅜	5-11		
G57	5	1	5	14- 3	B.F Wing 4	8- 5⅛	5-11		
G58	5	2	5	14- 4	B.F Wing 4	8- 7	5-11		
H59	Str.	9	5	6- 2	Top Ftg Wing 1				
H60	Str.	12	5	6-11	Top Ftg Wing 2				
H61	Str.	10	5	6- 2	Top Ftg Wing 3				
H62	Str.	15	5	6-11	Top Ftg Wing 4				
K63	Str.	12	5	10- 6	Ftg Wing 1				
K64	Str.	13	5	13- 8	Ftg Wing 2				
K65	Str.	12	5	10- 6	Ftg Wing 3				
K66	Str.	13	5	13- 8	Ftg Wing 4				
M67	8	2	5	10- 7	B.F. Wing 1	8- 5½	2- 2	1- 1	1-10½
M68	8	1	5	9- 7	B.F. Wing 1	7- 4⅛	2- 2	1- 1	1-10½
M69	8	3	5	14- 7	B.F. Wing 2	12- 5½	2- 2	1- 1	1-10½
M70	8	2	5	10- 7	B.F. Wing 3	8- 5½	2- 2	1- 1	1-10½
M71	8	1	5	9- 8	B.F. Wing 3	7- 6	2- 2	1- 1	1-10½
M72	8	3	5	14- 7	B.F. Wing 4	12- 5½	2- 2	1- 1	1-10½
P73	7	1	5	7-11	B.F. Parapet Lt. End	4- 0⅛	2- 2⅛	1-10¾	2- 2⅛
						0- 0⅛	0-11½	1- 7⅝	
P74	7	3	5	8- 0	B.F. Parapet Lt. End	3-10½	2- 3⅛	2- 0⅝	2- 3⅛
						0- 0⅛	1- 0⅜	1- 9¼	
P75	7	1	5	7-11	B.F. Parapet Lt. End	4- 0⅛	2- 2⅛	1-10¾	2- 2⅛
						0- 0⅛	0-11½	1- 7⅝	
P76	7	1	5	6-11	F.F. Parapet Lt. End	3- 7	1- 8⅞	1- 8½	1- 8⅞
						0- 0⅛	0-10¼	1- 5¾	
P77	7	3	5	6- 9	F.F. Parapet Lt. End	3- 8⅝	1- 8	1- 6⅝	1- 8
						0- 0⅛	0- 9⅜	1- 4⅛	
P78	7	1	5	6-11	F.F. Parapet Lt. End	3- 7	1- 8⅞	1- 8½	1- 8⅞
						0- 0⅛	0-10¼	1- 5¾	
P79	7	1	5	7-11	B.F. Parapet Rt. End	4- 0⅛	2- 2⅛	1-10¾	2- 2⅛
						0- 0⅛	0-11⅜	1- 7⅝	
P80	7	4	5	8- 0	B.F. Parapet Rt. End	3-10½	2- 3	2- 0⅝	2- 3
						0- 0⅛	1- 0⅜	1- 9¼	
P81	7	1	5	7-11	B.F. Parapet Rt. End	4- 0⅛	2- 2⅛	1-10¾	2- 2⅛
						0- 0⅛	0-11⅜	1- 7⅝	
P82	7	1	5	6-10	F.F. Parapet Rt. End	3- 7	1- 8⅞	1- 8¾	1- 8⅞
						0- 0⅛	0-10¼	1- 5⅝	
P83	7	4	5	6- 9	F.F. Parapet Rt. End	3- 8⅝	1- 7⅞	1- 6⅝	1- 7⅞
						0- 0⅛	0- 9⅜	1- 4	
P84	7	1	5	6-10	F.F. Parapet Rt. End	3- 7	1- 8⅞	1- 8⅞	1- 8⅞
						0- 0⅛	0-10¼	1- 5⅝	
P85	Str.	2	5	6- 2	Bottom Slab Lt. End				
P86	Str.	2	5	6- 2	Bottom Slab Rt. End				
Q87	7	1	5	20- 0	Appron Lt. End	7- 2⅛	6- 6	6- 5⅜	2- 4
						6- 0⅛	6- 4½	1- 0⅛	
Q88	7	1	5	20- 9	Appron Lt. End	7- 6¼	6- 6¾	6- 8⅛	2- 4¼
						6- 1½	6- 7⅛	1- 0⅝	
Q89	7	1	5	20- 0	Appron Rt. End	7- 2⅛	6- 6	6- 5⅜	2- 4
						6- 0⅛	6- 4½	1- 0⅛	
Q90	7	1	5	20- 9	Appron Rt. End	7- 6¼	6- 6¾	6- 8⅛	2- 4¼
						6- 1½	6- 7⅛	1- 0⅝	
R91	12s	3	5	10- 1	Parapet Wall (Left End)	4- 3½	0- 9		
R92	11s	3	5	10-11	Parapet Wall (Right End)	4- 9½	0- 9	0- 2½	4- 3
						0- 6½	0- 9¾		
T93	8	2	6	12- 5	Top of Wing 2	10-11⅛	1- 5⅜	0- 5½	1- 4⅝
T94	8	2	6	12- 7	Top of Wing 4	11- 1¼	1- 5½	0- 6¼	1- 4⅜
X95	Str.	28	6	3- 7	Grouted Dowel Bars				



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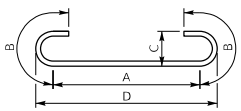
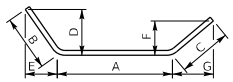


TYPE 1



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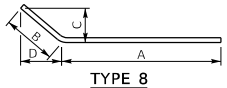

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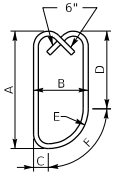
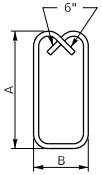


TYPE 11



TYPE 12

ITEM NUMBER
4-9009.00

REVISION	DATE

DATE: NOVEMBER 2020	CHECKED BY
DESIGNED BY: L. LIKINS	V. RAULJI
DETAILED BY: Computer	L. LIKINS

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: GRAYSON

ROUTE: KY 259 | CROSSING: UNNAMED CREEK

Bill of Reinforcement

PREPARED BY
Division of Structural Design

SHEET NO. S9
DRAWING NO. 28341

USER: Lizabeth.Likins
DATE PLOTTED: 18-FEB-2021
FILE NAME: C:\Users\lizabeth.likins\Desktop\4-9009 Post Constructibility Review\28341.dgn
E-SHEET NAME:
MicroStation v8.11.9.832

GRAYSON COUNTY
043GR23T004-HSIP & STP

LETTING DATE

CONSTRUCTION PROJECT NO.

FILE NAME: C:\Users\Lizabeth.Likins\Desktop\4-9009 Post Constructibility Review\28342.dgn
USER: Lizabeth.Likins
DATE PLOTTED: 18-FEB-2021
E-SHEET NAME:
MicroStation v8.11.9.832

TRANSPORTATION CABINET
DEPARTMENT OF HIGHWAYS

GRAYSON COUNTY
KY 259
KY 259 OVER UNNAMED CREEK
Station 593+50.27

ESTIMATE OF QUANTITIES

BID CODE	ITEM	QUANTITY	UNIT
8100	Class "A" Concrete	27.9	C.Y.
8150	Reinforcement	2933	Lb
8003	Foundation Preparation	1	L.S.
2403	Remove Concrete Masonry	1	C.Y.
8002	Structure Excavation Rock	13	C.Y.

GENERAL NOTES

SPECIFICATIONS: All references to the standard Specifications are to the current edition of the Kentucky Department of Highways Standard Specifications for Road and Bridge Construction with current Supplemental Specifications. All references to the AASHTO are to the current edition of the AASHTO LRFD Bridge Design Specifications, with interims.

DESIGN LOAD: This structure is designed for HL-93 live load increased by 25%. The 25% increase is arrived by increasing the design truck or tandem and the design lane load by 25%.

DESIGN METHOD: All reinforced concrete members are designed by the load and resistance factor method as specified in the current AASHTO Specifications.

MASONRY COATING: Masonry coating will not be required for this structure.

COMPLETION OF THE STRUCTURE: The Contractor is required to complete the structure in accordance with the plans and specifications. Material, labor or construction operations, not otherwise specified, are to be included in the bid item most appropiate to the work involved. This may include cofferdams, shoring, excavatuions, backfilling, removal of all or parts of existing structures, phase construction, incidental materials, labor, or anything else required to complete the structure.

REINFORCEMENT: Dimensions shown from the face of concrete to bars are to center of bars unless otherwise shown. Spacing of bars is from center to center of bars. Clear distance to face of concrete is 2" unless otherwise noted. Any reinforcing bars designated by suffix (e) in the Plans shall be epoxy coated in accordance with section 811.10 of the Standard Specifications. Any reinforcing bars designated by suffix (s) in a Bill of Reinforcement shall be considered a stirrup for purposes of bend diameters.

BEVELED EDGES: All exposed edges shall be beveled ¾" unless otherwise shown.

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

WEIGHT OF FILL MATERIAL: The assumed weight of fill material is 120 lbs per cubic foot.

CONCRETE: Class "A" concrete shall be used throughout.

CONSTRUCTION JOINTS: Vertical construction joints shall be located in the field, except that no construction joint shall be located in the barrel within six feet of the ends of the culvert.

FOOTING PRESSURE: Foundation materials for wing footings required to resist a maximum bearing pressure of 786 PSF.

FLOWLINE REINFORCEMENT: Reinforcement in the 6 in thick slab shall be Size 4 bars at 18 in centers in each direction or an equivalent area of welded deformed steel fabric. The bars shall extend a minimum of 12 in into wing footings and/or the bottom slab. The cost of this reinforcement shall be incidental to the unit price bid for Concrete, Class "A".

CULVERTS WITH UNKNOWN FOUNDATIONS: Construct the extension as the original box culvert, either entirely on compressible or non-compressible material. For non-compressible material, if solid rock is not encountered at the design footing elevation, soil must be excavated and backfilled with "Granular Embankment," non-erodible only, meeting the material requirements of Section 805 in the current edition of the Kentucky Standard Specifications with the exception that the maximum size is 4 inches. For compressible material, rock within 3ft of the design flowline must be excavated and backfilled with properly compacted soil to the base of the slab. Include all costs associated with this item of work including, but not limited to excavation (common or solid rock), rock, and backfilling in the lump sum bid for Foundation Preparation.

DAMAGE TO THE STRUCTURE: The Contractor is responsible for any damage to the structure during construction.

EXISTING HEADWALLS: Existing headwalls may remain in place where there is no conflict with proposed extension construction. Remove portions of wing walls as required for construction and/or as directed by the Engineer.

CHANNEL LINING: Place channel lining at inlet and outlet of culvert extension as shown in roadway plans and in accordance with Standard Drawing RDD-040-05 or as directed by the Engineer.

VARIATION IN DIMENSIONS: Variation in dimensions along the length of the existing culvert may be encountered. Construct culvert extensions to match existing dimensions.

DAMAGE TO THE STRUCTURE: The Contractor is responsible for any damage to the structure during construction.

CONSTRUCTION NOTE: Temporary sheeting, shoring, cofferdams, and/or a dewatering method may be required for construction of the culvert and footings. Include all costs in the price bid for Foundation Preparation.

BONDING TO EXISTING CONCRETE USING STRUCTURAL ADHESIVES: concrete to existing hardened concrete in all locations using a Type V Epoxy Resin or other approved Structural Adhesive as prescribed in section 826 of the specifications. Follow the manufacturer's recommended application instructions. This work and material is incidental to the unit price bid for concrete.

SAWCUTTING EXISTING CONCRETE: Prior to the removal of the existing concrete masonry, cut the surface with a concrete saw to a depth of one inch to facilitate a neat line. The cost of cutting concrete shall be included in the unit price bid for Remove Concrete Masonry.

DRILL AND EPOXY-GROUT REINFORCEMENT Where shown on the plans, drill and epoxy-grout new reinforcement into existing concrete using a Type IV epoxy resin adhesive conforming to section 826 of the standard specifications. Embedment length shall be sufficient to develop 100% of the yield strength of the reinforcing bar in no case shall the embedment length be less than the minimum embedment shown on the plans. Installation is to be in strict conformance with the manufacturer's recommendations for the epoxy-adhesive being used and section 511 of the standard specifications. The cost of this work, including all labor, tools and materials, is to be considered incidental to the unit price bid for Class "A" concrete.

INDEX OF SHEETS

Sheet No.	Description
1	Title
2	Layout
3 & 4	Barrel Details
5	Wing 1
6	Wing 2
7	Wing 3
8	Wing 4
9	Bill of Reinforcement

SPECIAL NOTES

SPECIAL PROVISIONS

STANDARD DRAWINGS

BGX-006-10	Stencils for Structures
BGX-012-02	Geotechnical Legend

SPECIFICATIONS

2019 Standard Specifications for Road and Bridge Construction

2017 AASHTO Standard Specifications for Highway Bridges

REVISION	DATE

DATE: NOVEMBER 2020	CHECKED BY
DESIGNED BY: L. LIKINS	V. RAULJI
DETAILED BY: L. LIKINS	V. RAULJI

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: **GRAYSON**

ROUTE: **KY 259** | CROSSING: **UNNAMED CREEK**

SINGLE 3.0 x 3.0 CULVERT

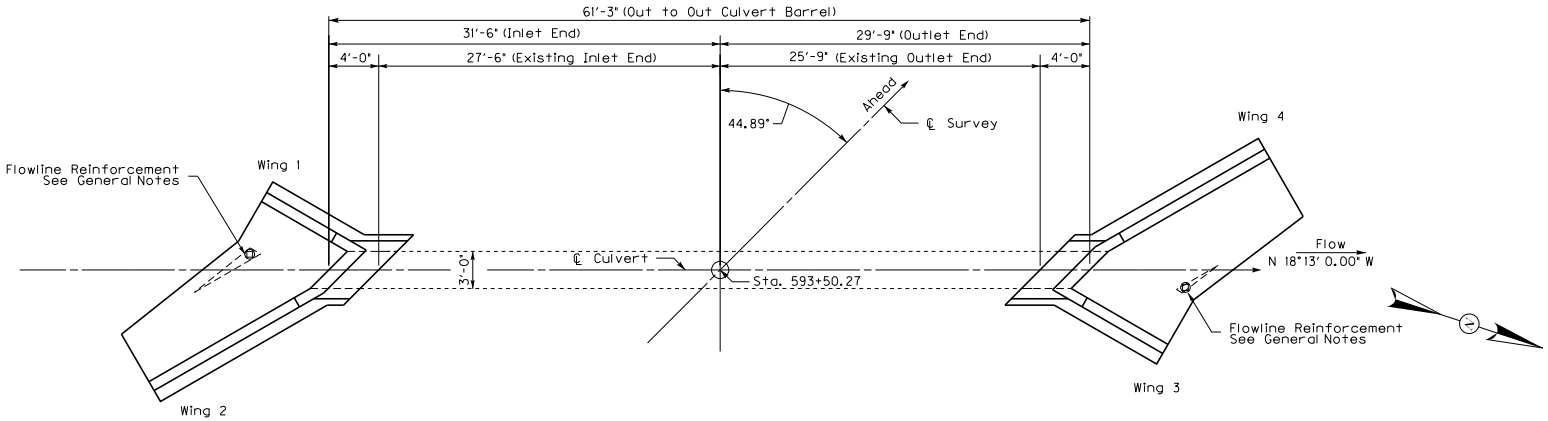
ITEM NUMBER: **4-9009.00**

PREPARED BY: **Division of Structural Design**

SHEET NO.: S1

DRAWING NO.: 28342

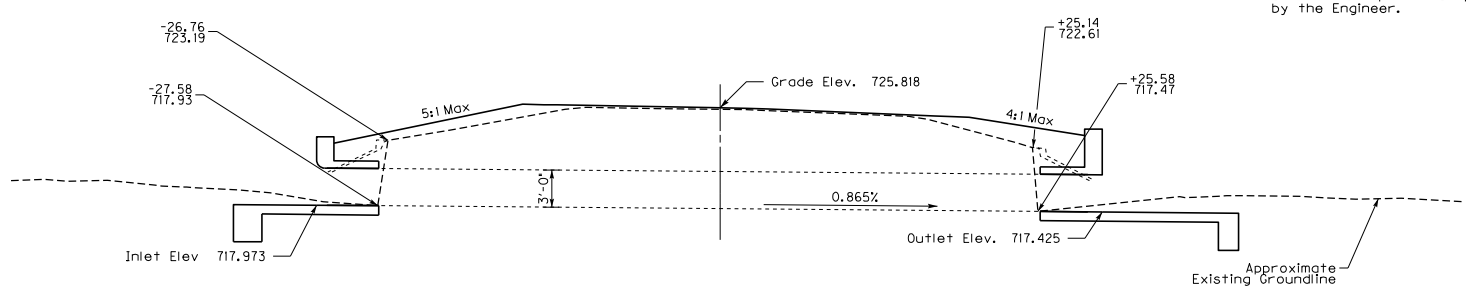
Contract ID: 234206
Page 472 of 928



PLAN
SCALE = 1:60

Note: Remove existing culvert wings and headwalls as needed for construction of extension or as directed by the Engineer.

NOTE: Field verify dimensions prior to ordering materials. All dimensions are taken from existing survey. Actual barrel lengths may vary from plans in the field. Extension lengths shall be built per these plans or as directed by the Engineer.



SECTION ON ℄
Single 3'-0" x 3'-0" x 63'-3" R.C.B.C.
31'-6" Inlet End Including 4'-0" Extension and 29'-9" Outlet End Including 4'-0" Extension
44.89° Lt. Skew ~ KYHL-93 Loading ~ Fill Slopes Vary
Unyielding Foundation

REVISION	DATE

DATE: NOVEMBER 2020	CHECKED BY
DESIGNED BY: L. LIKINS	V. RAULJI
DETAILED BY: L. LIKINS	V. RAULJI

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: **GRAYSON**

ROUTE: **KY 259** | CROSSING: **UNNAMED CREEK**

LAYOUT

ITEM NUMBER	PREPARED BY	SHEET NO.
4-9009.00	**Division of Structural Design**	S2
		DRAWING NO. 28342

FILE NAME: C:\Users\lizabeth.likins\Desktop\4-9009 Post Constructibility Review\28342.dgn
USER: Lizabeth.Likins
DATE PLOTTED: 18-FEB-2021
E-SHEET NAME:
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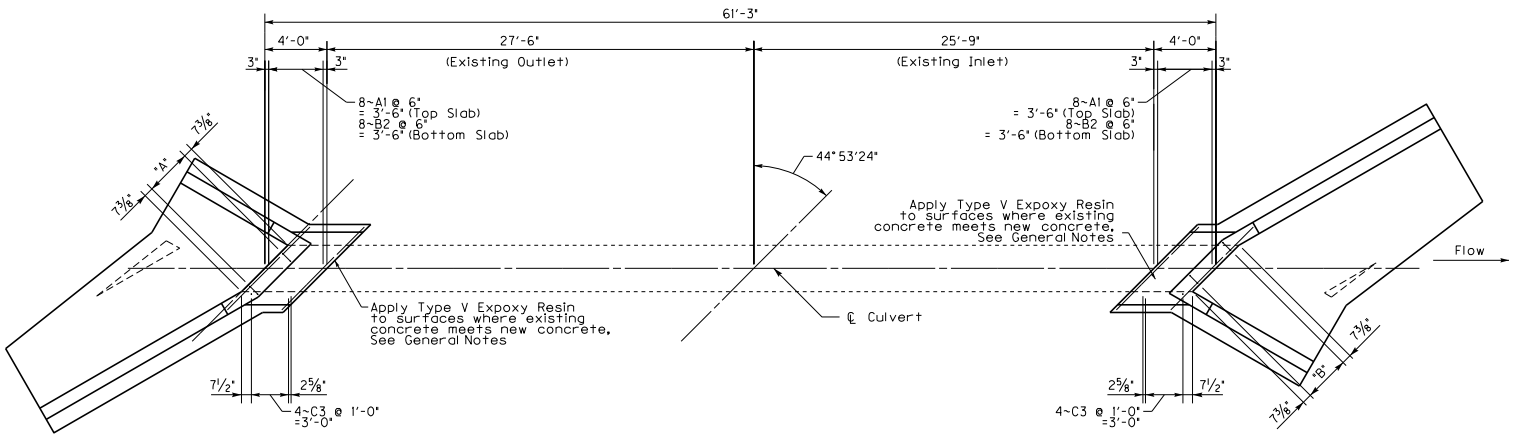
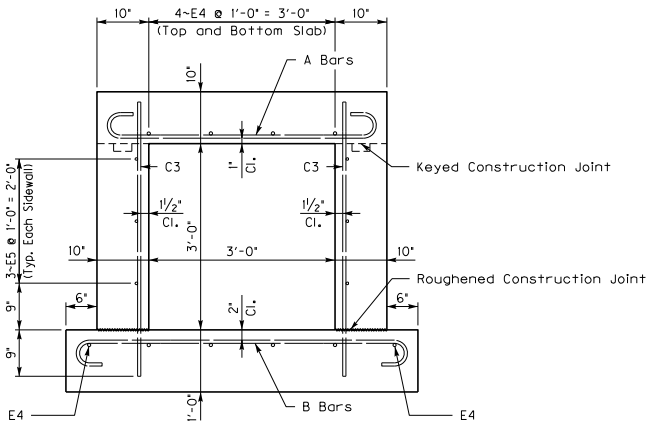
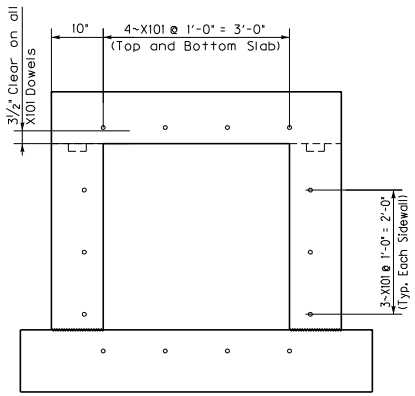


PLAN
SCALE = 1:48

NOTE: Order E bars long enough so they can be embedded into the headwall wings/parapet/flowline 1'-6" Min. to tie headwall to culvert barrel. Lap with existing culvert barrel reinforcement if possible.

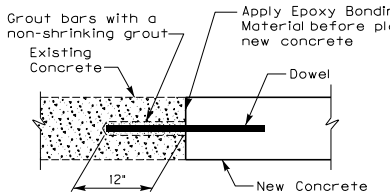


TYPICAL BARREL SECTION
SCALE = 1:12



TYPICAL BARREL SECTION
Showing grouted dowel placement
SCALE = 1:12

Note: Drill and epoxy X101 bars with minimum 1'-0" embedment into top slab, sidewalls, and footings of the existing culvert as shown. See General Notes.



DOWEL DETAILS

NOTE: The cost of drilling holes, grouting, and epoxy bonding material shall be incidental to the cost of Class "A" Concrete.

REVISION	DATE

DATE: NOVEMBER 2020	CHECKED BY
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DETAILED BY: L. LIKINS	V. RAULJI

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: GRAYSON

ROUTE: KY 259 | CROSSING: UNNAMED CREEK

BARREL

ITEM NUMBER	PREPARED BY	SHEET NO.
4-9009.00	Division of Structural Design	S3
		DRAWING NO. 28342

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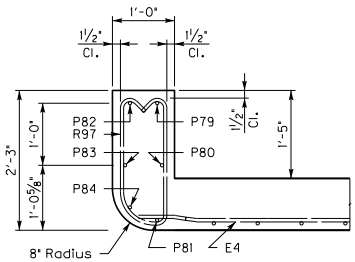

LEFT PARAPET
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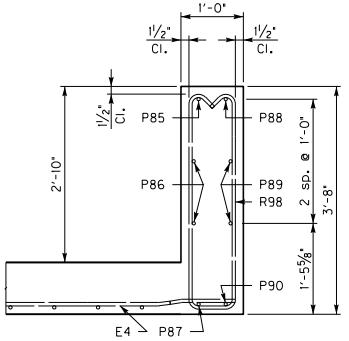
(Perpendicular to Parapet)



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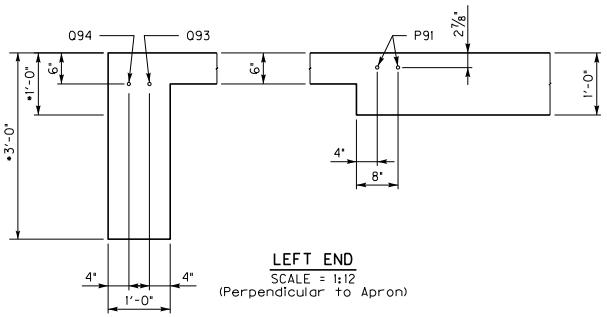
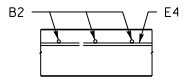
(Perpendicular to Parapet)



LEFT END
SCALE = 1:12
(Perpendicular to Apron)



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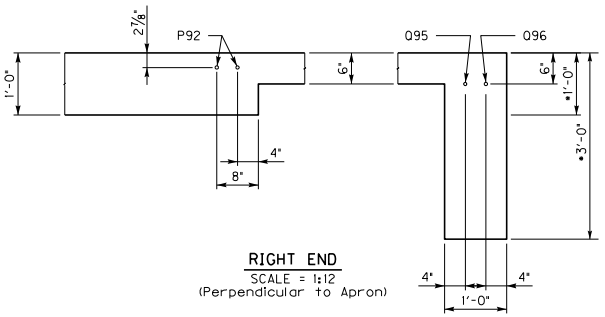

RIGHT END
SCALE = 1:12
(Perpendicular to Apron)

* Aprons shall be 3'-0" deep or extend a minimum of 1'-0" into solid bedrock.

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DETAILED BY: Computer	L. LIKINS

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
GRAYSON

ROUTE	CROSSING
KY 259	UNNAMED CREEK

BARREL

ITEM NUMBER	PREPARED BY	SHEET NO.
4-9009.00	Division of Structural Design	S4
		DRAWING NO. 28342

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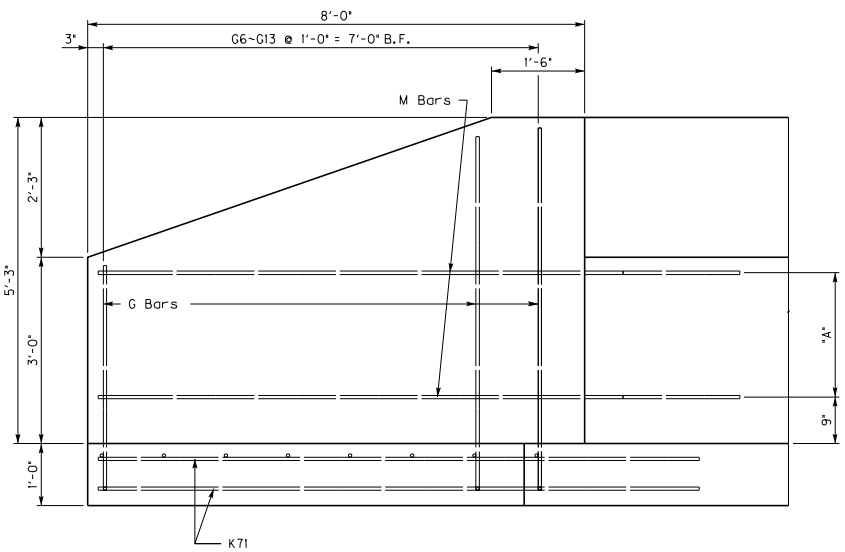

WING ELEVATION
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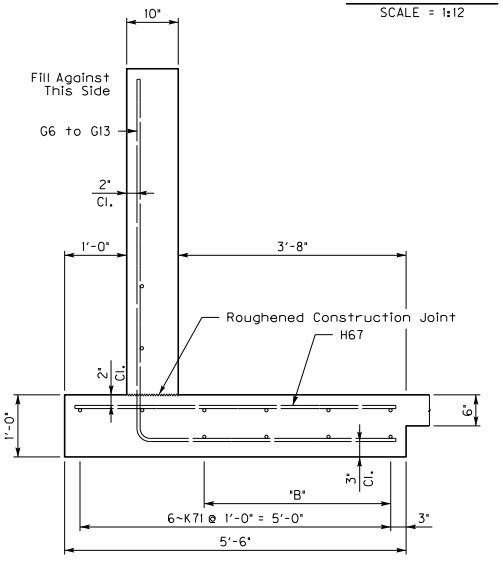

WING SECTION
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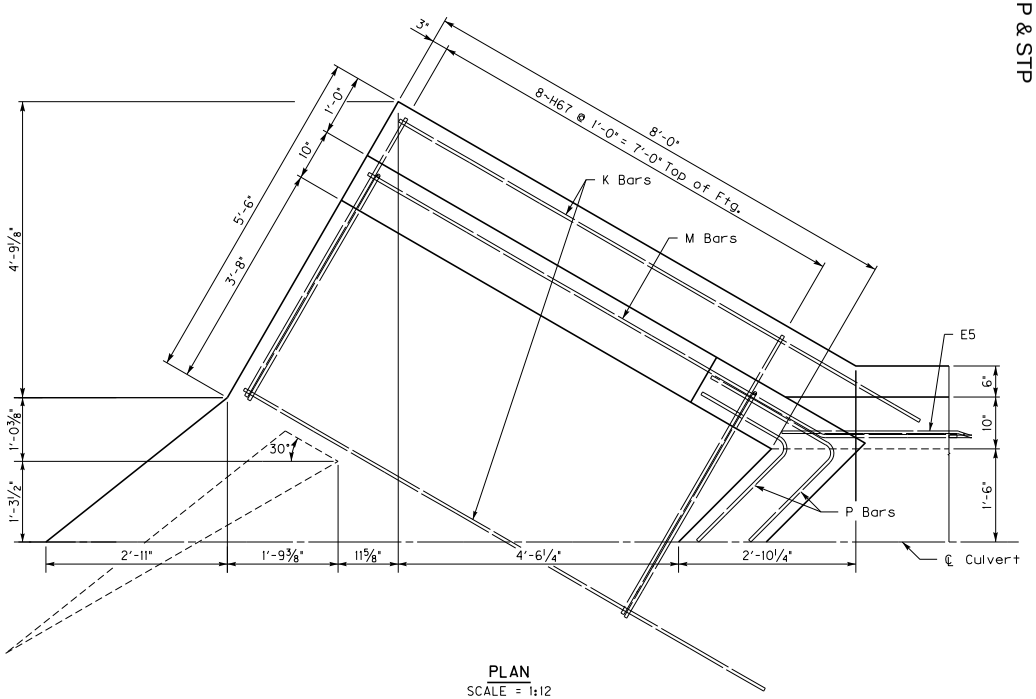

PLAN
SCALE = 1:12

"A" 3~M75 @ 1'-0" = 2'-0" B.F.
"B" 4~K71 @ 1'-0" = 3'-0" Bot of Ftg.

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DETAILED BY: Computer	L. LIKINS

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

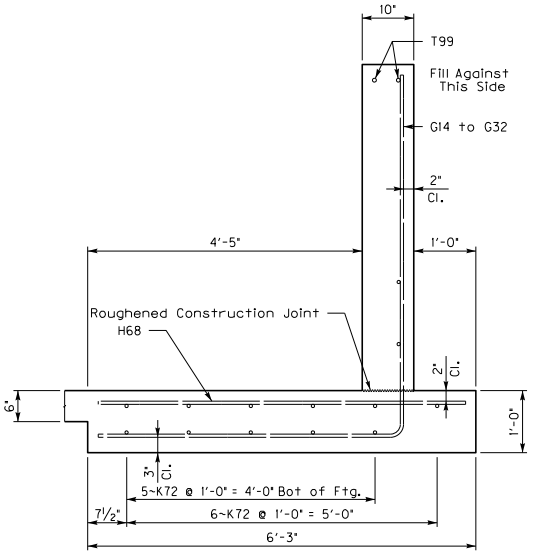
COUNTY: GRAYSON

ROUTE: KY 259 | CROSSING: UNNAMED CREEK

Wing 1

ITEM NUMBER	PREPARED BY	SHEET NO.
4-9009.00	Division of Structural Design	S5
		DRAWING NO. 28342

FILE NAME: C:\Users\lizabeth.likins\Desktop\4-9009 Post Constructibility Review\28342.dgn
USER: Lizabeth.Likins
DATE PLOTTED: 18-FEB-2021
E-SHEET NAME:
MicroStation v8.11.9.832



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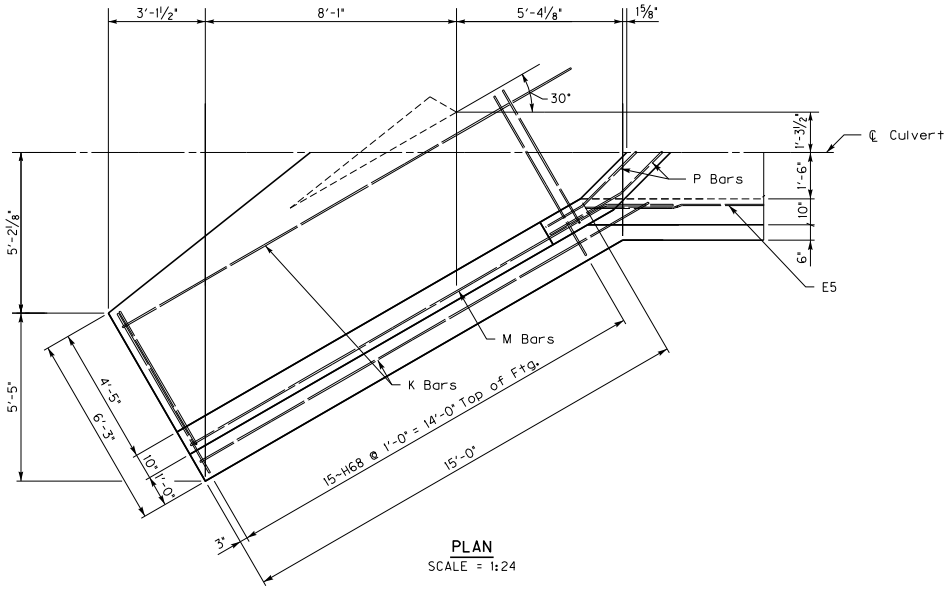

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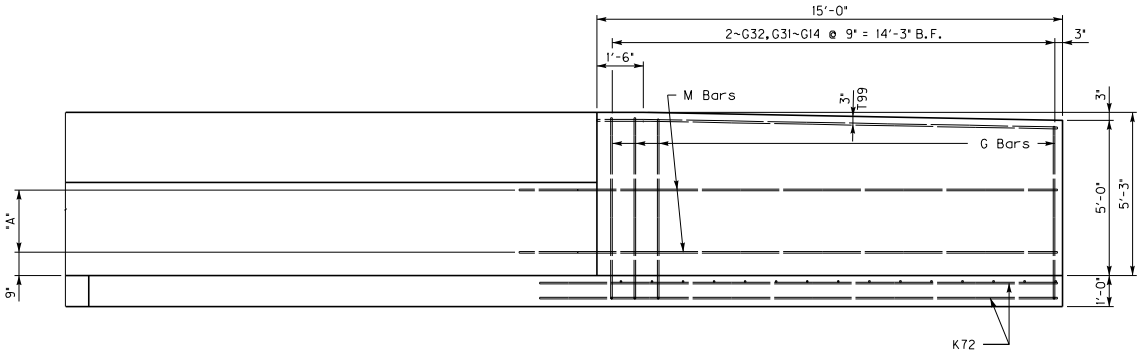


WING ELEVATION
SCALE = 1:24

"A" 3~M76 @ 1'-0" = 2'-0" B.F.

REVISION	DATE

DATE: NOVEMBER 2020	CHECKED BY
DESIGNED BY: L. LIKINS	V. RAULJI
DETAILED BY: Computer	L. LIKINS

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
GRAYSON

ROUTE	CROSSING
KY 259	UNNAMED CREEK

Wing 2

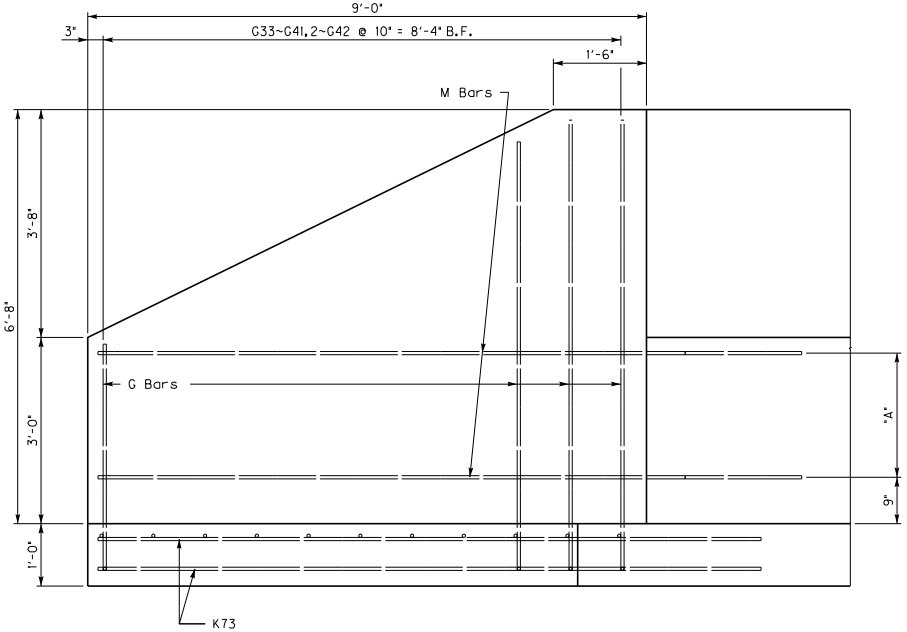
ITEM NUMBER	PREPARED BY	SHEET NO.
4-9009.00	**Division of Structural Design**	S6
		DRAWING NO. 28342

USER: Lizabeth.Likins
DATE PLOTTED: 18-FEB-2021

FILE NAME: C:\Users\lizabeth.likins\Desktop\4-9009 Post Constructibility Review\28342.dgn

E-SHEET NAME:

MicroStation v8.11.9.832



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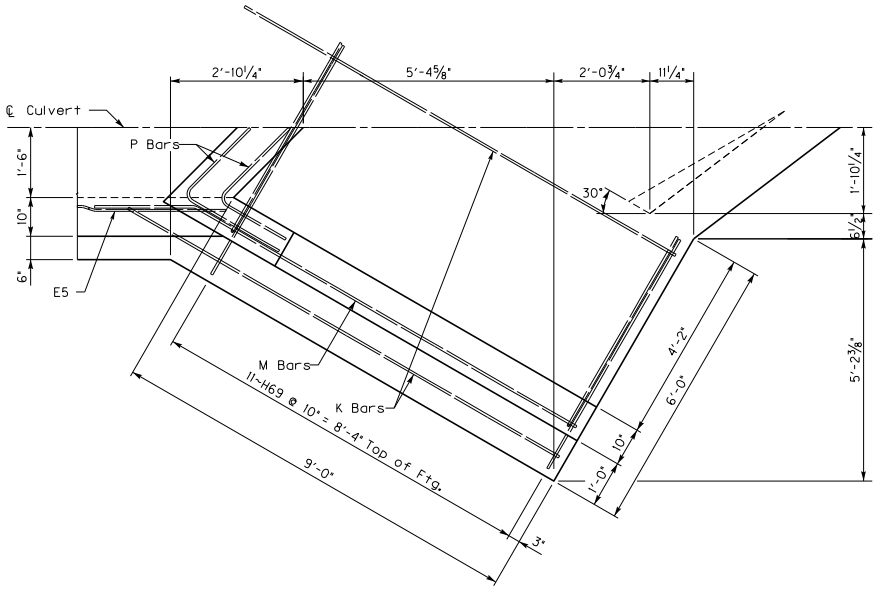

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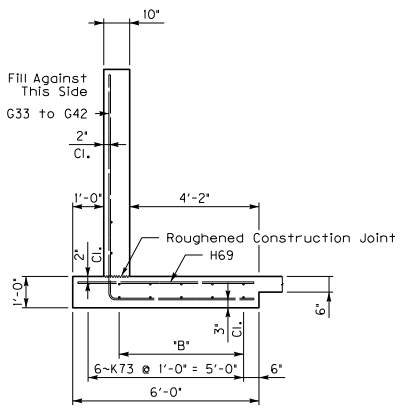
"A" 3~M77 @ 1'-0" = 2'-0" B.F.
"B" 5~K73 @ 1'-0" = 4'-0" Bot of Ftg.



WING SECTION
SCALE = 1:24

REVISION	DATE
DATE: NOVEMBER 2020	CHECKED BY
DESIGNED BY: L. LIKINS	V. RAULJI
DETAILED BY: Computer	L. LIKINS

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: GRAYSON

ROUTE: KY 259

CROSSING: UNNAMED CREEK

Wing 3

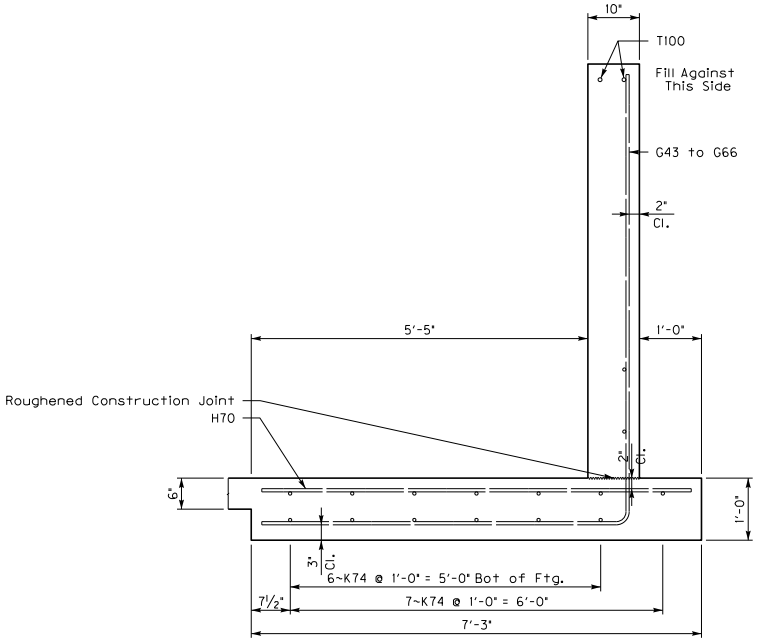
ITEM NUMBER	PREPARED BY	SHEET NO.
4-9009.00	Division of Structural Design	S7
		DRAWING NO. 28342

USER: Lizabeth.Likins
DATE PLOTTED: 18-FEB-2021

FILE NAME: C:\Users\lizabeth.likins\Desktop\4-9009 Post Constructibility Review\28342.dgn

E-SHEET NAME:

MicroStation v8.11.9.832



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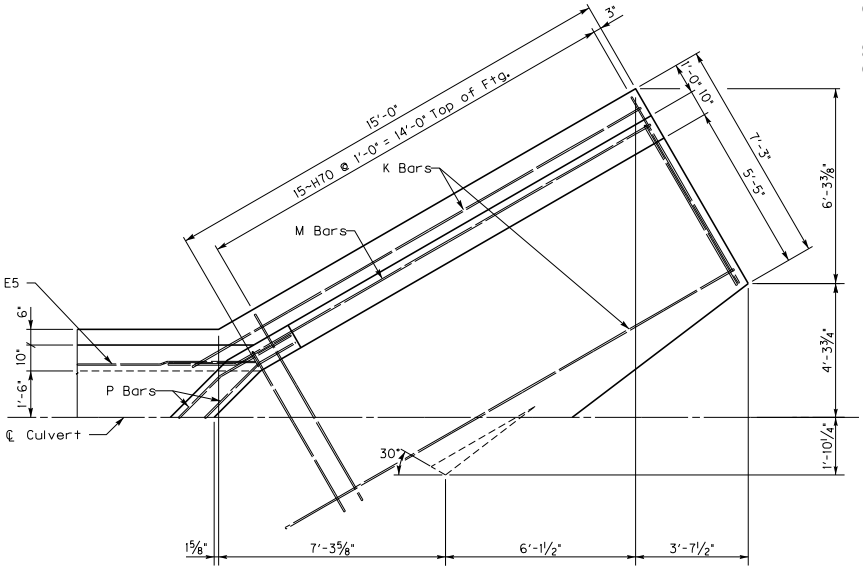

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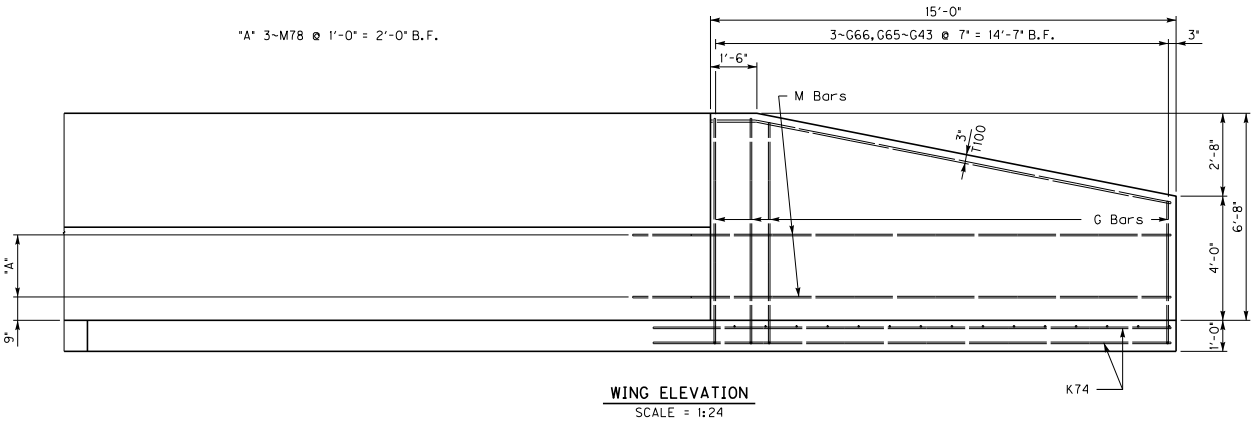


WING ELEVATION
SCALE = 1:24

REVISION	DATE

DATE: NOVEMBER 2020	CHECKED BY
DESIGNED BY: L. LIKINS	V. RAULJI
DETAILED BY: Computer	L. LIKINS

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
GRAYSON

ROUTE	CROSSING
KY 259	UNNAMED CREEK

Wing 4

ITEM NUMBER	PREPARED BY	SHEET NO.
4-9009.00	Division of Structural Design	S8
		DRAWING NO. 28342

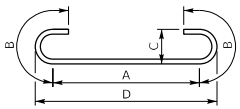
FILE NAME: C:\Users\lizabeth.likins\Desktop\4-9009 Post Constructibility Review\28342.dgn
USER: Lizabeth.Likins
DATE PLOTTED: 18-FEB-2021
E-SHEET NAME:
MicroStation v8.11.9.832

BILL OF REINFORCEMENT

MARK	TYPE	NO.	SIZE	LENGTH	LOCATION	A/E	B/F	C/G	D/H
A1	1	16	5	7- 4	Top Slab	5- 8 3/8	0-10	0- 5	6- 1 3/8
B2	1	16	5	8- 9	Bottom Slab	7- 1 3/8	0-10	0- 5	7- 6 3/8
C3	Str.	16	5	4- 5	Sidewalls				
E4	Str.	20	5	5- 4	Top & Bottom Slabs				
E5	Str.	12	5	5- 4	Sidewalls				
G6	5	1	5	7- 8	B.F Wing 1	3- 7 3/8	4- 2		
G7	5	1	5	8- 0	B.F Wing 1	3-11 1/2	4- 2		
G8	5	1	5	8- 4	B.F Wing 1	4- 3 3/4	4- 2		
G9	5	1	5	8- 8	B.F Wing 1	4- 7 7/8	4- 2		
G10	5	1	5	9- 0	B.F Wing 1	5- 0	4- 2		
G11	5	1	5	9- 5	B.F Wing 1	5- 4 1/8	4- 2		
G12	5	1	5	9- 9	B.F Wing 1	5- 8 3/8	4- 2		
G13	5	1	5	9-10	B.F Wing 1	5-10	4- 2		
G14	5	1	5	10- 4	B.F Wing 2	5- 6 1/2	4-11		
G15	5	1	5	10- 4	B.F Wing 2	5- 6 3/4	4-11		
G16	5	1	5	10- 4	B.F Wing 2	5- 6 7/8	4-11		
G17	5	1	5	10- 4	B.F Wing 2	5- 7	4-11		
G18	5	1	5	10- 5	B.F Wing 2	5- 7 1/4	4-11		
G19	5	1	5	10- 5	B.F Wing 2	5- 7 3/8	4-11		
G20	5	1	5	10- 5	B.F Wing 2	5- 7 1/2	4-11		
G21	5	1	5	10- 5	B.F Wing 2	5- 7 3/4	4-11		
G22	5	1	5	10- 5	B.F Wing 2	5- 7 7/8	4-11		
G23	5	1	5	10- 5	B.F Wing 2	5- 8	4-11		
G24	5	1	5	10- 6	B.F Wing 2	5- 8 1/4	4-11		
G25	5	1	5	10- 6	B.F Wing 2	5- 8 3/8	4-11		
G26	5	1	5	10- 6	B.F Wing 2	5- 8 1/2	4-11		
G27	5	1	5	10- 6	B.F Wing 2	5- 8 3/4	4-11		
G28	5	1	5	10- 6	B.F Wing 2	5- 8 7/8	4-11		
G29	5	1	5	10- 6	B.F Wing 2	5- 9	4-11		
G30	5	1	5	10- 7	B.F Wing 2	5- 9 1/4	4-11		
G31	5	1	5	10- 7	B.F Wing 2	5- 9 3/8	4-11		
G32	5	2	5	10- 7	B.F Wing 2	5-10	4-11		
G33	5	1	5	8- 2	B.F Wing 3	3- 7 5/8	4- 8		
G34	5	1	5	8- 7	B.F Wing 3	4- 0 5/8	4- 8		
G35	5	1	5	9- 0	B.F Wing 3	4- 5 1/2	4- 8		
G36	5	1	5	9- 5	B.F Wing 3	4-10 3/8	4- 8		
G37	5	1	5	9-10	B.F Wing 3	5- 3 1/4	4- 8		
G38	5	1	5	10- 3	B.F Wing 3	5- 8 1/8	4- 8		
G39	5	1	5	10- 7	B.F Wing 3	6- 1	4- 8		
G40	5	1	5	11- 0	B.F Wing 3	6- 5 7/8	4- 8		
G41	5	1	5	11- 5	B.F Wing 3	6-10 3/4	4- 8		
G42	5	2	5	11- 9	B.F Wing 3	7- 3	4- 8		
G43	5	1	5	10- 4	B.F Wing 4	4- 7	5-11		
G44	5	1	5	10- 6	B.F Wing 4	4- 8 3/8	5-11		
G45	5	1	5	10- 7	B.F Wing 4	4- 9 3/4	5-11		
G46	5	1	5	10- 9	B.F Wing 4	4-11 1/4	5-11		
G47	5	1	5	10-10	B.F Wing 4	5- 0 5/8	5-11		
G48	5	1	5	10-11	B.F Wing 4	5- 2	5-11		
G49	5	1	5	11- 1	B.F Wing 4	5- 3 3/8	5-11		
G50	5	1	5	11- 2	B.F Wing 4	5- 4 3/4	5-11		
G51	5	1	5	11- 4	B.F Wing 4	5- 6 1/8	5-11		
G52	5	1	5	11- 5	B.F Wing 4	5- 7 1/2	5-11		
G53	5	1	5	11- 6	B.F Wing 4	5- 8 7/8	5-11		
G54	5	1	5	11- 8	B.F Wing 4	5-10 1/4	5-11		
G55	5	1	5	11- 9	B.F Wing 4	5-11 5/8	5-11		
G56	5	1	5	11-10	B.F Wing 4	6- 1	5-11		

BILL OF REINFORCEMENT

MARK	TYPE	NO.	SIZE	LENGTH	LOCATION	A/E	B/F	C/G	D/H
G57	5	1	5	12- 0	B.F Wing 4	6- 2 3/8	5-11		
G58	5	1	5	12- 1	B.F Wing 4	6- 3 3/4	5-11		
G59	5	1	5	12- 3	B.F Wing 4	6- 5 1/8	5-11		
G60	5	1	5	12- 4	B.F Wing 4	6- 6 1/2	5-11		
G61	5	1	5	12- 5	B.F Wing 4	6- 7 1/8	5-11		
G62	5	1	5	12- 7	B.F Wing 4	6- 9 3/8	5-11		
G63	5	1	5	12- 8	B.F Wing 4	6-10 3/4	5-11		
G64	5	1	5	12-10	B.F Wing 4	7- 0 1/8	5-11		
G65	5	1	5	12-11	B.F Wing 4	7- 1 1/2	5-11		
G66	5	3	5	13- 0	B.F Wing 4	7- 3	5-11		
H67	Str.	8	5	5- 2	Top Ftg Wing 1				
H68	Str.	15	5	5-11	Top Ftg Wing 2				
H69	Str.	11	5	5- 8	Top Ftg Wing 3				
H70	Str.	15	5	6-11	Top Ftg Wing 4				
K71	Str.	10	5	9- 8	Ftg Wing 1				
K72	Str.	11	5	16- 8	Ftg Wing 2				
K73	Str.	11	5	10- 8	Ftg Wing 3				
K74	Str.	13	5	16- 8	Ftg Wing 4				
M75	8	3	5	10- 7	B.F. Wing 1	8- 5 1/2	2- 2	1- 1	1-10 1/2
M76	8	3	5	17- 7	B.F. Wing 2	15- 5 1/2	2- 2	1- 1	1-10 1/2
M77	8	3	5	11- 7	B.F. Wing 3	9- 5 1/2	2- 2	1- 1	1-10 1/2
M78	8	3	5	17- 7	B.F. Wing 4	15- 5 1/2	2- 2	1- 1	1-10 1/2
P79	7	1	5	9- 3	B.F. Parapet Lt. End	4- 8	2- 4 7/8	2- 1	2- 3 7/8
						0--7	0- 6 1/2	2- 0 1/8	
P80	7	1	5	9- 4	B.F. Parapet Lt. End	4- 4 3/4	2- 5 1/8	2- 4 1/2	2- 4 7/8
						0--7	0- 7 1/2	2- 3 1/2	
P81	7	1	5	9- 3	B.F. Parapet Lt. End	4- 8	2- 4 7/8	2- 1	2- 3 7/8
						0--7	0- 6 1/2	2- 0 1/8	
P82	7	1	5	8- 0	F.F. Parapet Lt. End	4- 2 7/8	1-10 1/8	1-10 3/8	1- 9 7/8
						0--5	0- 5 7/8	1- 9 5/8	
P83	7	1	5	7-11	F.F. Parapet Lt. End	4- 6 1/8	1- 9 1/8	1- 6 3/4	1- 8 1/2
						0--5	0- 4 7/8	1- 6 1/8	
P84	7	1	5	8- 0	F.F. Parapet Lt. End	4- 2 7/8	1-10 1/8	1-10 3/8	1- 9 7/8
						0--5	0- 5 7/8	1- 9 5/8	
P85	7	1	5	9- 2	B.F. Parapet Rt. End	4- 8	2- 4 3/4	2- 0 3/4	2- 3 3/4
						0--7	0- 6 1/2	1-11 7/8	
P86	7	2	5	9- 4	B.F. Parapet Rt. End	4- 4 3/4	2- 5 1/8	2- 4 3/8	2- 4 3/4
						0--7	0- 7 7/8	2- 3 3/8	
P87	7	1	5	9- 2	B.F. Parapet Rt. End	4- 8	2- 4 3/4	2- 0 3/4	2- 3 3/4
						0--7	0- 6 1/2	1-11 7/8	
P88	7	1	5	8- 0	F.F. Parapet Rt. End	4- 2 7/8	1-10	1-10 1/4	1- 9 1/4
						0--5	0- 5 3/4	1- 9 1/2	
P89	7	2	5	7-11	F.F. Parapet Rt. End	4- 6 1/8	1- 9	1- 6 5/8	1- 8 3/8
						0--5	0- 4 7/8	1- 6	
P90	7	1	5	8- 0	F.F. Parapet Rt. End	4- 2 7/8	1-10	1-10 1/4	1- 9 1/4
						0--5	0- 5 3/4	1- 9 1/2	
P91	Str.	2	5	7- 6	Bottom Slab Lt. End				
P92	Str.	2	5	7- 6	Bottom Slab Rt. End				
Q93	7	1	5	22- 7	Appron Lt. End	11- 9	5- 6 1/8	5- 5 3/8	2- 0 1/4
						5- 1 1/2	5- 4 5/8	0- 9 5/8	
Q94	7	1	5	23- 4	Appron Lt. End	12- 1 1/4	5- 6 7/8	5- 8 1/8	2- 0 1/2
						5- 2 1/4	5- 8 1/8	0-10 1/8	
Q95	7	1	5	23- 1	Appron Rt. End	10- 9 3/8	6- 0 1/4	6- 5 1/4	2- 4
						5- 6 5/8	6- 4 5/8	0- 9 3/4	
Q96	7	1	5	23-10	Appron Rt. End	11- 1 5/8	6- 1 1/8	6- 8 1/4	2- 4 1/4
						5- 7 3/8	6- 8 1/8	0-10 1/4	
R97	11s	4	5	5- 5	Parapet Wall (Left End)	2- 0 1/2	0- 9	0- 2 1/2	1- 6
						0- 6 1/2	0- 9 3/4		
R98	12s	4	5	8- 5	Parapet Wall (Right End)	3- 5 1/2	0- 9		
T99	8	2	6	14-10	Top of Wing 2	13- 4	1- 6	0- 0 3/8	1- 6
T100	8	2	6	15- 1	Top of Wing 4	13- 7 3/8	1- 5 3/4	0- 3 1/2	1- 5 3/8
X101	Str.	28	6	3- 7	Grouted Dowel Bars				



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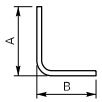

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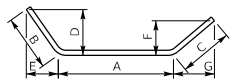

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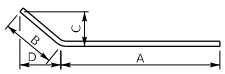

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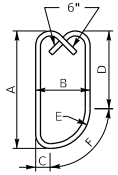

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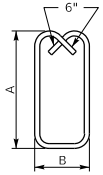


TYPE 12

ITEM NUMBER
4-9009.00

REVISION	DATE

DATE: NOVEMBER 2020	CHECKED BY
DESIGNED BY: L. LIKINS	V. RAULJI
DETAILED BY: Computer	L. LIKINS

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: GRAYSON

ROUTE: KY 259 | CROSSING: UNNAMED CREEK

Bill of Reinforcement

PREPARED BY
Division of Structural Design

SHEET NO. S9
DRAWING NO. 28342

MicroStation v8.11.9.832 | E-SHEET NAME: | USER: Lizabeth.Likins DATE PLOTTED: 18-FEB-2021 | FILE NAME: C:\Users\lizabeth.likins\Desktop\4-9009 Post Constructibility Review\28342.dgn

GRAYSON COUNTY
043GR23T004-HSIP & STP

TRANSPORTATION CABINET
DEPARTMENT OF HIGHWAYS

GRAYSON COUNTY
KY 259
ANNETA ROAD OVER A DITCH
Station 607+59.30

LETTING DATE

CONSTRUCTION PROJECT NO.

FILE NAME: C:\Users\Lizabeth.Likins\Desktop\4-9009 Post Constructibility Review\28343.dgn

USER: Lizabeth.Likins
DATE PLOTTED: 18-FEB-2021

E-SHEET NAME:

MicroStation v8.11.9.832

ESTIMATE OF QUANTITIES			
BID CODE	ITEM	QUANTITY	UNIT
8100	Class "A" Concrete	21.7	C.Y.
8150	Reinforcement	2009	Lb
8003	Foundation Preparation	1	L.S.
2403	Remove Concrete Masonry	1	C.Y.
8002	Structure Excavation Rock	13	C.Y.

GENERAL NOTES

SPECIFICATIONS: All references to the standard Specifications are to the current edition of the Kentucky Department of Highways Standard Specifications for Road and Bridge Construction with current Supplemental Specifications. All references to the AASHTO are to the current edition of the AASHTO LRFD Bridge Design Specifications, with interims.

DESIGN LOAD: This structure is designed for HL-93 live load increased by 25%. The 25% increase is arrived by increasing the design truck or tandem and the design lane load by 25%.

DESIGN METHOD: All reinforced concrete members are designed by the load and resistance factor method as specified in the current AASHTO Specifications.

MASONRY COATING: Masonry coating will not be required for this structure.

COMPLETION OF THE STRUCTURE: The Contractor is required to complete the structure in accordance with the plans and specifications. Material, labor or construction operations, not otherwise specified, are to be included in the bid item most appropiate to the work involved. This may include cofferdams, shoring, excavatuions, backfilling, removal of all or parts of existing structures, phase construction, incidental materials, labor, or anything else required to complete the structure.

REINFORCEMENT: Dimensions shown from the face of concrete to bars are to center of bars unless otherwise shown. Spacing of bars is from center to center of bars. Clear distance to face of concrete is 2" unless otherwise noted. Any reinforcing bars designated by suffix (e) in the Plans shall be epoxy coated in accordance with section 811.10 of the Standard Specifications. Any reinforcing bars designated by suffix (s) in a Bill of Reinforcement shall be considered a stirrup for purposes of bend diameters.

BEVELED EDGES: All exposed edges shall be beveled ¾" unless otherwise shown.

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

WEIGHT OF FILL MATERIAL: The assumed weight of fill material is 120 lbs per cubic foot.

CONCRETE: Class "A" concrete shall be used throughout.

CONSTRUCTION JOINTS: Vertical construction joints shall be located in the field, except that no construction joint shall be located in the barrel within six feet of the ends of the culvert.

FOOTING PRESSURE: Foundation materials for wing footings required to resist a maximum bearing pressure of 779 PSF.

FLOWLINE REINFORCEMENT: Reinforcement in the 6 in thick slab shall be Size 4 bars at 18 in centers in each direction or an equivalent area of welded deformed steel fabric. The bars shall extend a minimum of 12 in into wing footings and/or the bottom slab. The cost of this reinforcement shall be incidental to the unit price bid for Concrete, Class "A".

CULVERTS WITH UNKNOWN FOUNDATIONS: Construct the extension as the original box culvert, either entirely on compressible or non-compressible material. For non-compressible material, if solid rock is not encountered at the design footing elevation, soil must be excavated and backfilled with "Granular Embankment," non-erodible only, meeting the material requirements of Section 805 in the current edition of the Kentucky Standard Specifications with the exception that the maximum size is 4 inches. For compressible material, rock within 3ft of the design flowline must be excavated and backfilled with properly compacted soil to the base of the slab. Include all costs associated with this item of work including, but not limited to excavation (common or solid rock), rock, and backfilling in the lump sum bid for Foundation Preparation.

DAMAGE TO THE STRUCTURE: The Contractor is responsible for any damage to the structure during construction.

EXISTING HEADWALLS: Existing headwalls may remain in place where there is no conflict with proposed extension construction. Remove portions of wing walls as required for construction and/or as directed by the Engineer.

CHANNEL LINING: Place channel lining at inlet and outlet of culvert extension as shown in roadway plans and in accordance with Standard Drawing RDD-040-05 or as directed by the Engineer.

VARIATION IN DIMENSIONS: Variation in dimensions along the length of the existing culvert may be encountered. Construct culvert extensions to match existing dimensions.

DAMAGE TO THE STRUCTURE: The Contractor is responsible for any damage to the structure during construction.

CONSTRUCTION NOTE: Temporary sheeting, shoring, cofferdams, and/or a dewatering method may be required for construction of the culvert and footings. Include all costs in the price bid for Foundation Preparation.

BONDING TO EXISTING CONCRETE USING STRUCTURAL ADHESIVES: concrete to existing hardened concrete in all locations using a Type V Epoxy Resin or other approved Structural Adhesive as prescribed in section 826 of the specifications. Follow the manufacturer's recommended application instructions. This work and material is incidental to the unit price bid for concrete.

SAWCUTTING EXISTING CONCRETE: Prior to the removal of the existing concrete masonry, cut the surface with a concrete saw to a depth of one inch to facilitate a neat line. The cost of cutting concrete shall be included in the unit price bid for Remove Concrete Masonry.

DRILL AND EPOXY-GROUT REINFORCEMENT Where shown on the plans, drill and epoxy-grout new reinforcement into existing concrete using a Type IV epoxy resin adhesive conforming to section 826 of the standard specifications. Embedment length shall be sufficient to develop 100% of the yield strength of the reinforcing bar in no case shall the embedment length be less than the minimum embedment shown on the plans. Installation is to be in strict conformance with the manufacturer's recommendations for the epoxy-adhesive being used and section 511 of the standard specifications. The cost of this work, including all labor, tools and materials, is to be considered incidental to the unit price bid for Class "A" concrete.

ITEM NUMBER
4-9009.00

INDEX OF SHEETS

Sheet No.	Description
1	Title
2	Layout
3 & 4	Barrel Details
5	Wing 1
6	Wing 2
7	Wing 3
8	Wing 4
9	Bill of Reinforcement

SPECIAL NOTES

SPECIAL PROVISIONS

STANDARD DRAWINGS

BGX-006-10	Stencils for Structures
BGX-012-02	Geotechnical Legend

SPECIFICATIONS

2019 Standard Specifications for Road and Bridge Construction

2017 AASHTO Standard Specifications for Highway Bridges

REVISION	DATE

DATE: NOVEMBER 2020	CHECKED BY
DESIGNED BY: L. LIKINS	V. RAULJI
DETAILED BY: L. LIKINS	V. RAULJI

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: GRAYSON

ROUTE: KY 259

CROSSING: Unnamed Creek

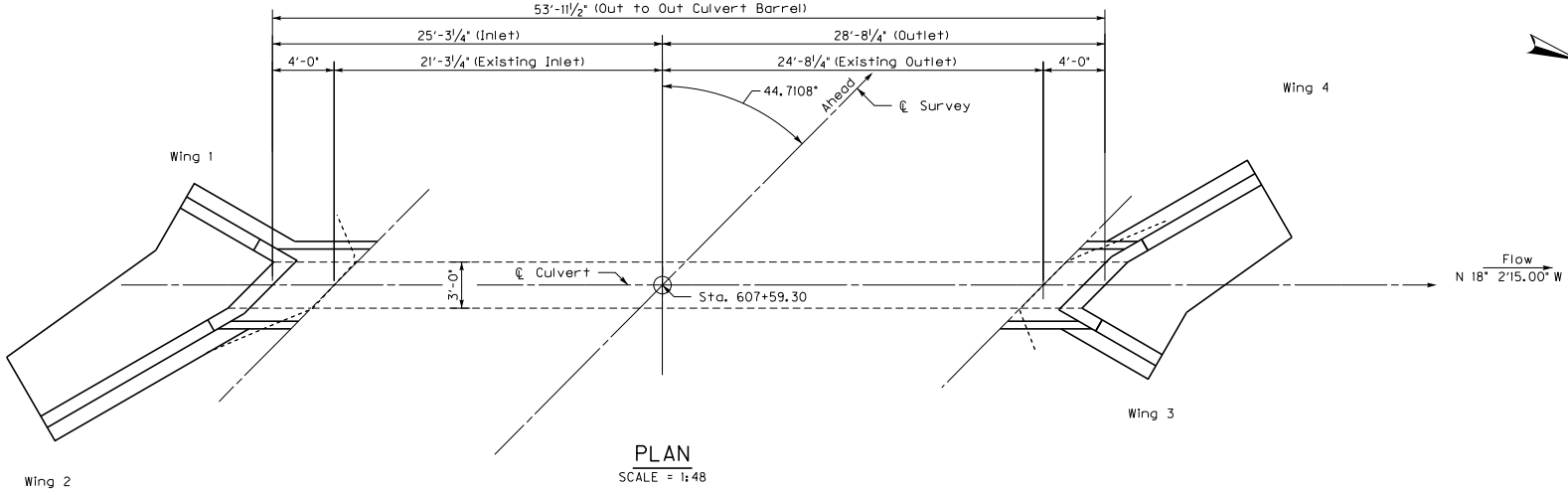
SINGLE 3.0 x 3.0 CULVERT

PREPARED BY
Division of Structural Design

SHEET NO. S1

DRAWING NO. 28343

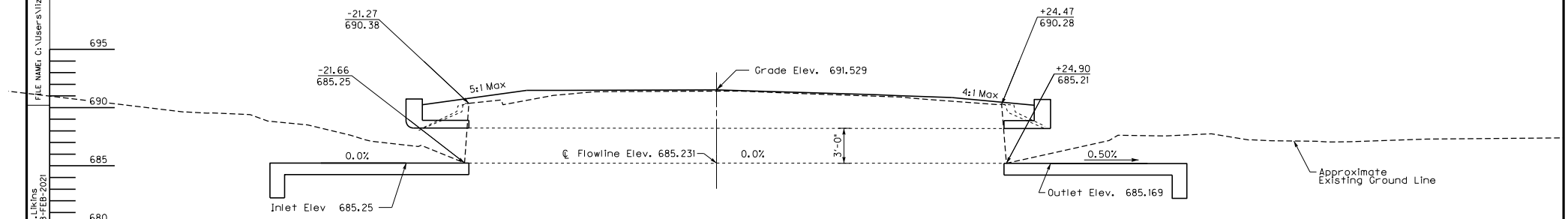
Contract ID: 234206
Page 481 of 928



PLAN
SCALE = 1:48

Note: Remove existing culvert wings and headwalls as needed for construction of extension or as directed by the Engineer.

NOTE: Field verify dimensions prior to ordering materials. All dimensions are taken from existing survey. Actual barrel lengths may vary from plans in the field. Extension lengths shall be built per these plans or as directed by the Engineer.



SECTION ON ℄

Single 3'-0" x 3'-0" x 53'-11½" R.C.B.C.
25'-3¼" Inlet End Including 4'-0" Extension and 28'-8¼" Outlet End Including 4'-0" Extension
44.7108° Lt. Skew ~ KYHL-93 Loading ~ Fill Slopes Vary
Unyielding Foundation

REVISION	DATE

DATE: NOVEMBER 2020	CHECKED BY
DESIGNED BY: L. LIKINS	V. RAULJI
DETAILED BY: L. LIKINS	V. RAULJI

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: **GRAYSON**

ROUTE: **KY 259** | CROSSING: **UNNAMED CREEK**

LAYOUT

ITEM NUMBER	PREPARED BY	SHEET NO.
4-9009.00	**Division of Structural Design**	S2
		DRAWING NO. 28343

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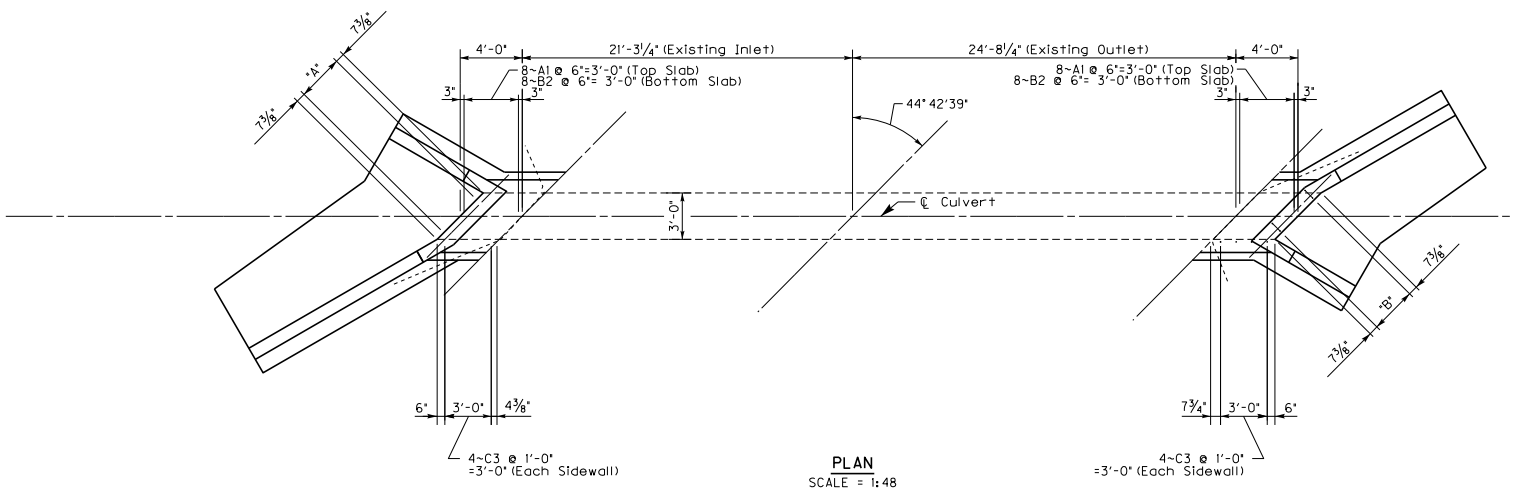
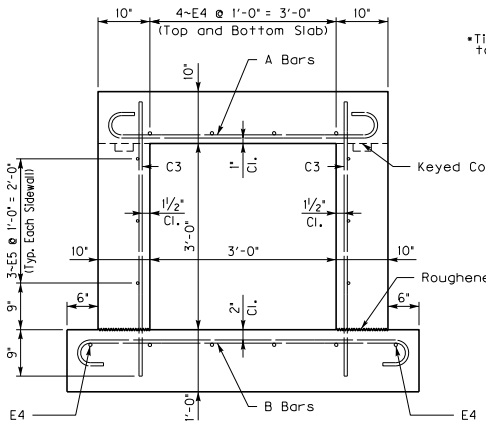


PLAN
SCALE = 1:48

"A" 4~R80 @ 1'-0" = 3'-0"
"B" 4~R81 @ 1'-0" = 3'-0"

"A" 4~R55 @ 1'-0" = 3'-0"
"B" 4~R56 @ 1'-0" = 3'-0"

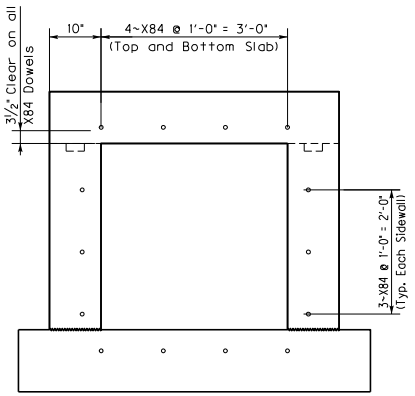


*Tilt A Bars to Provide 2" Clearance to Top of Top Slab

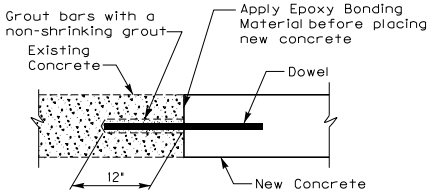
NOTE: Order E bars long enough so they can be bent and embedded into the headwall wings/parapet/flowline 1'-6" Min. to tie headwall to culvert barrel. Lap with existing culvert barrel reinforcement if possible.

**Tilt B Bars to Provide 3" Clearance to Bottom of Bottom Slab

TYPICAL BARREL SECTION
SCALE = 1:12



Note: Drill and epoxy X84 bars with minimum 1'-0" embedment into top slab, sidewalls, and footings of the existing culvert as shown. See General Notes.



DOWEL DETAILS

NOTE: The cost of drilling holes, grouting, and epoxy bonding material shall be incidental to the cost of Class "A" Concrete.

REVISION	DATE

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DETAILED BY: L. LIKINS	V. RAULJI

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: GRAYSON

ROUTE: KY 259 | CROSSING: UNNAMED CREEK

BARREL

ITEM NUMBER	PREPARED BY	SHEET NO.
4-9009.00	Division of Structural Design	S3
		DRAWING NO. 28343

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USER: Lizabeth.Likins
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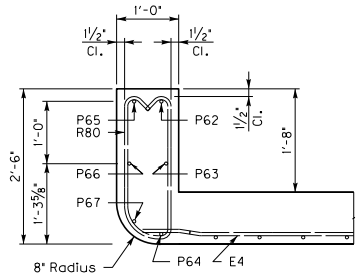

LEFT PARAPET
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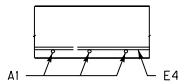
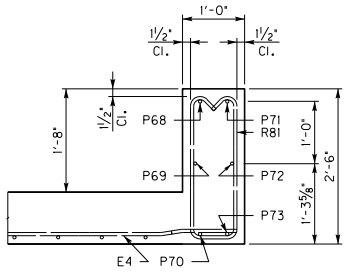
(Perpendicular to Parapet)





RIGHT PARAPET
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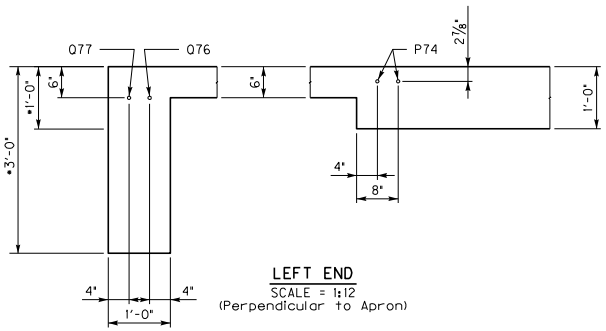
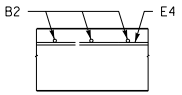
(Perpendicular to Parapet)



LEFT END
SCALE = 1:12
(Perpendicular to Apron)



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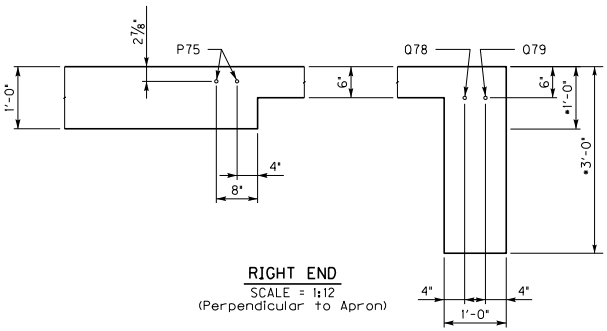

RIGHT END
SCALE = 1:12
(Perpendicular to Apron)

* Aprons shall be 3'-0" deep or extend a minimum of 1'-0" into solid bedrock.

REVISION	DATE

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Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: **GRAYSON**

ROUTE	CROSSING
KY 259	UNNAMED CREEK

BARREL

ITEM NUMBER	PREPARED BY	SHEET NO.
4-9009.00	Division of Structural Design	S4
		DRAWING NO. 28343

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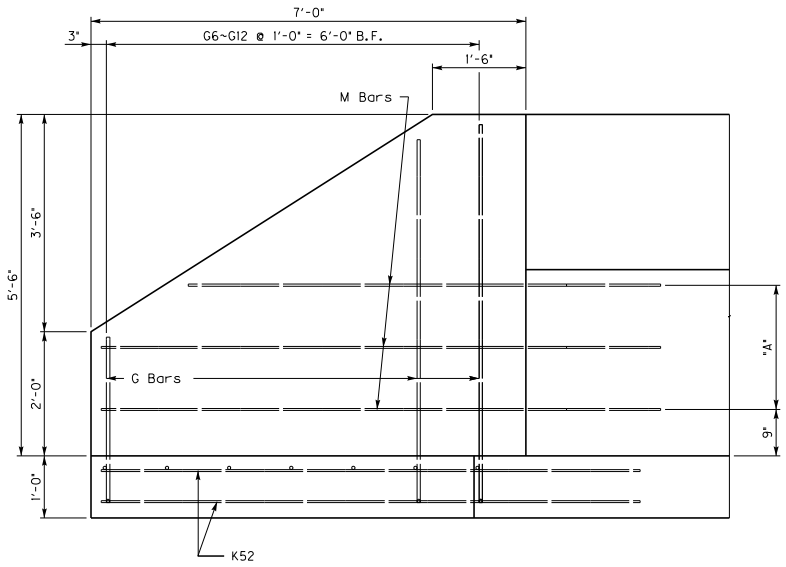
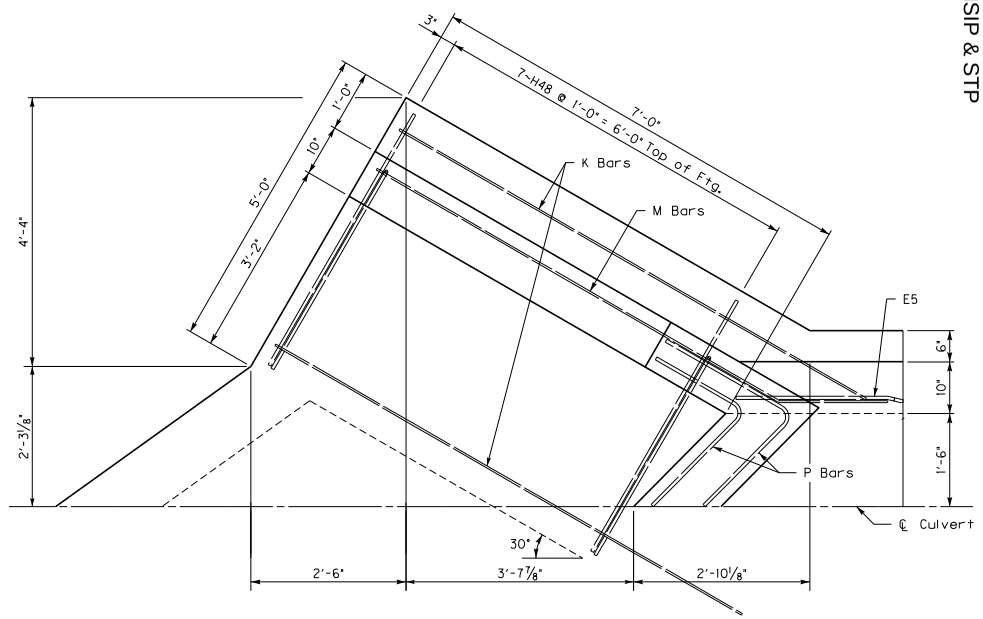
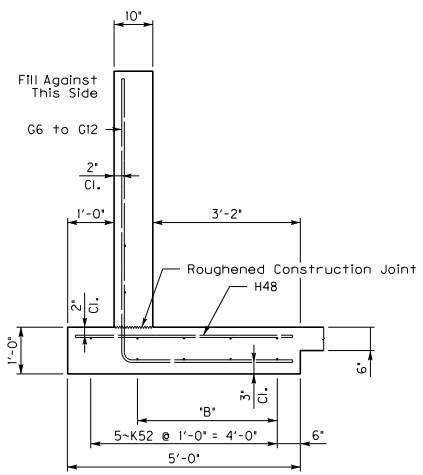


WING ELEVATION
SCALE = 1:12



PLAN
SCALE = 1:12

"A" 2~M56,1~M57 @ 1'-0" = 2'-0" B.F.
"B" 4~K52 @ 1'-0" = 3'-0" Bot of Ftg.



WING SECTION
SCALE = 1:16

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Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: GRAYSON

ROUTE: KY 259 | CROSSING: UNNAMED CREEK

Wing 1

ITEM NUMBER	PREPARED BY	SHEET NO.
4-9009.00	Division of Structural Design	S5
		DRAWING NO. 28343

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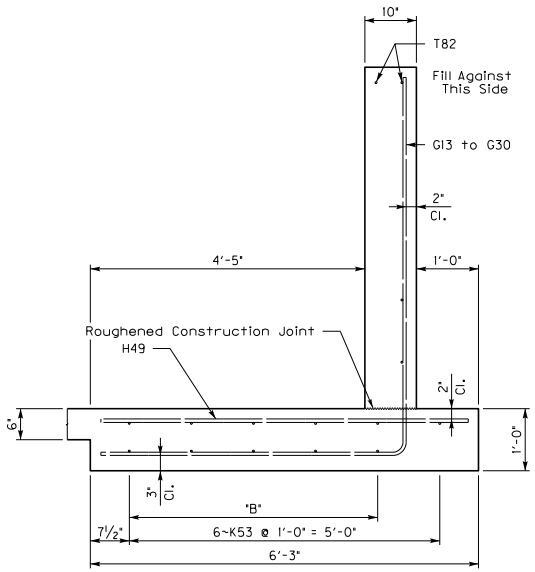

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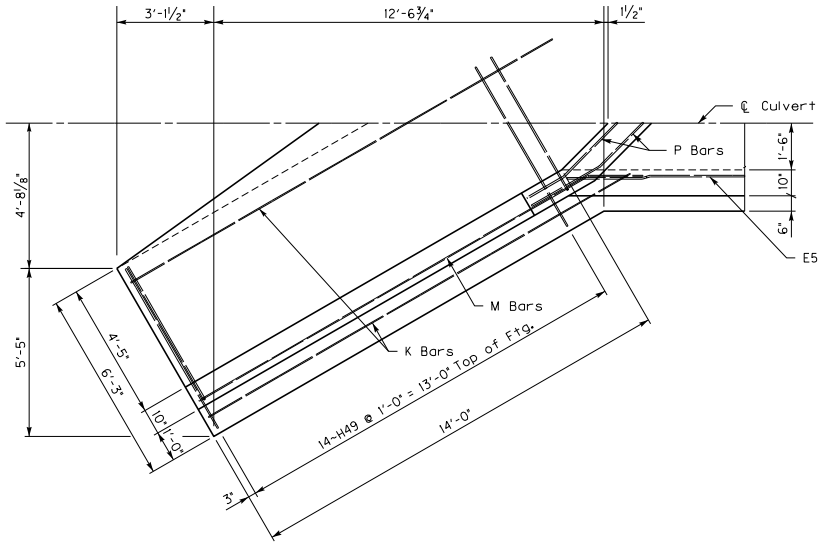
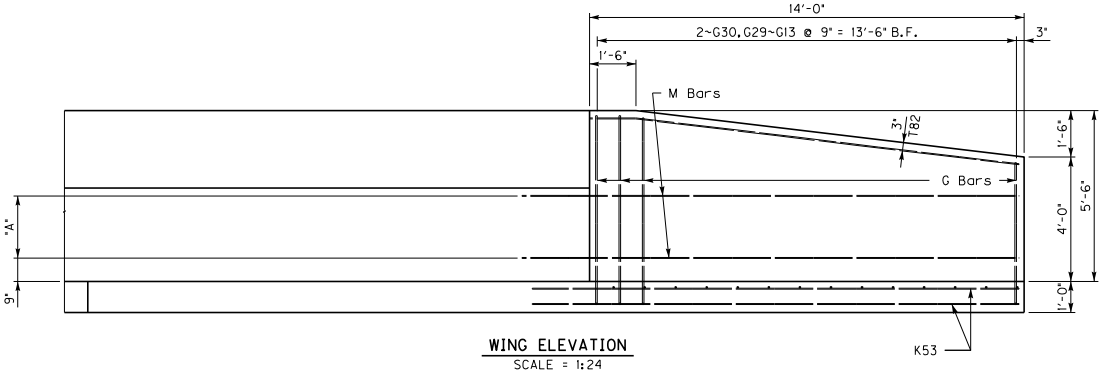


"A" 3~M58 @ 1'-0" = 2'-0" B.F.
"B" 5~K53 @ 1'-0" = 4'-0" Bot of Ftg.

PLAN
SCALE = 1:24



WING ELEVATION
SCALE = 1:24

REVISION	DATE

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Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
GRAYSON

ROUTE	CROSSING
KY 259	UNNAMED CREEK

Wing 2

ITEM NUMBER	PREPARED BY	SHEET NO.
4-9009.00	Division of Structural Design	S6
		DRAWING NO. 28343

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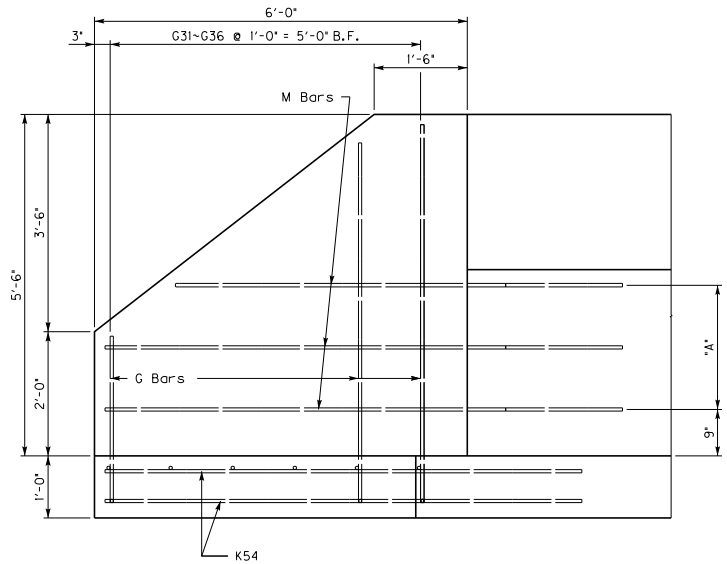

WING ELEVATION
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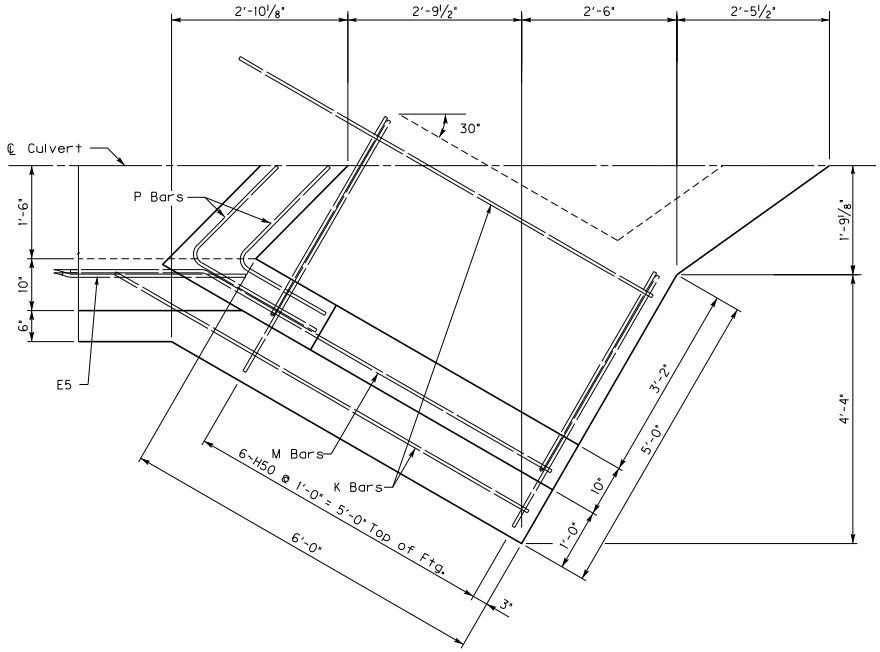
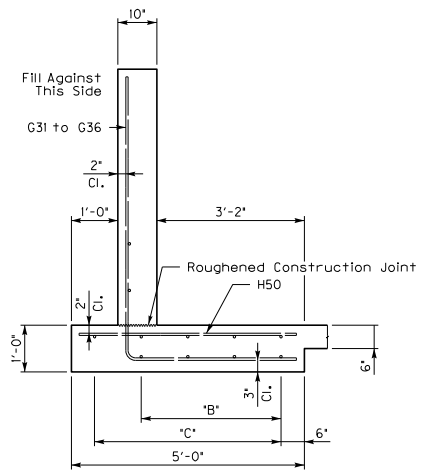


PLAN
SCALE = 1:12

"A" 2~M59.1~M60 @ 1'-0" = 2'-0" B.F.
"B" 4~K54 @ 1'-0" = 3'-0" Bot of Ftg.
"C" 5~K54 @ 1'-0" = 4'-0"



WING SECTION
SCALE = 1:16

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Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: GRAYSON

ROUTE: KY 259 | CROSSING: UNNAMED CREEK

Wing 3

ITEM NUMBER	PREPARED BY	SHEET NO.
4-9009.00	Division of Structural Design	S7
		DRAWING NO. 28343

FILE NAME: C:\Users\lizabeth.likins\Desktop\4-9009 Post Constructibility Review\28343.dgn
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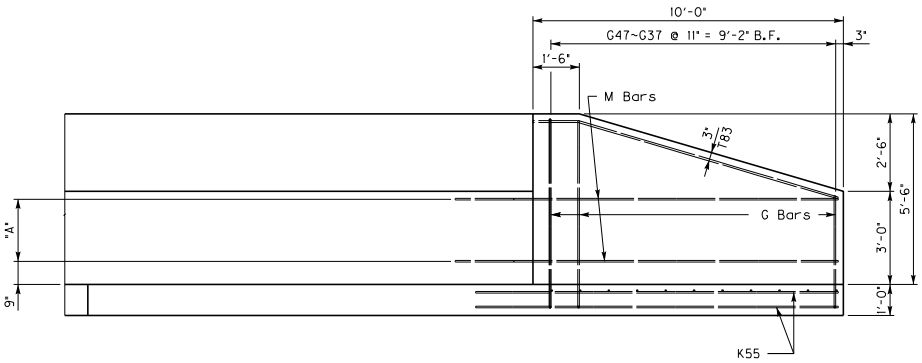

WING ELEVATION
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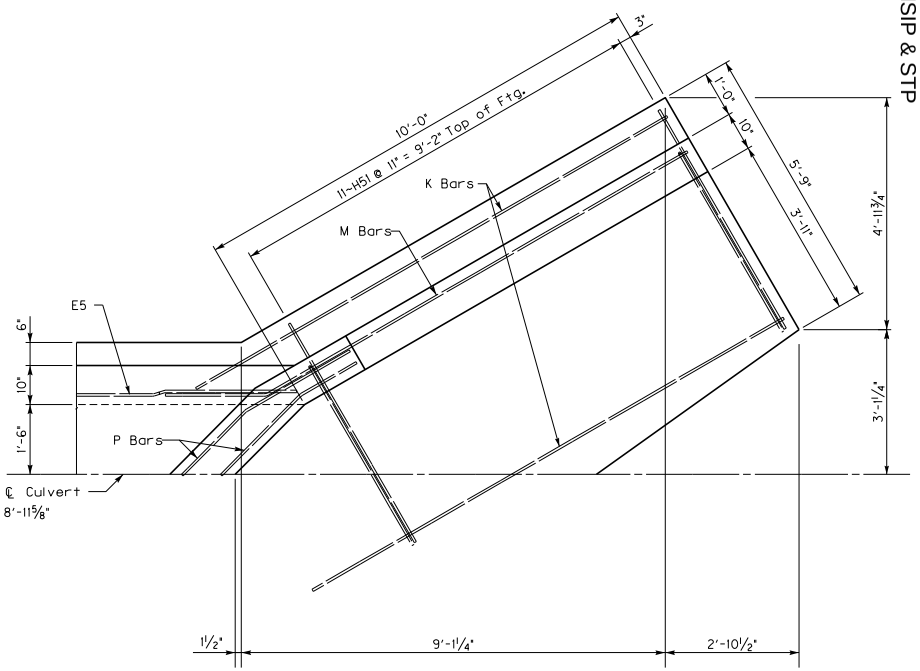

"A" 3~M61 @ 1'-0" = 2'-0" B.F.
"B" 5~K55 @ 1'-0" = 4'-0" Bot of Ftg.

PLAN
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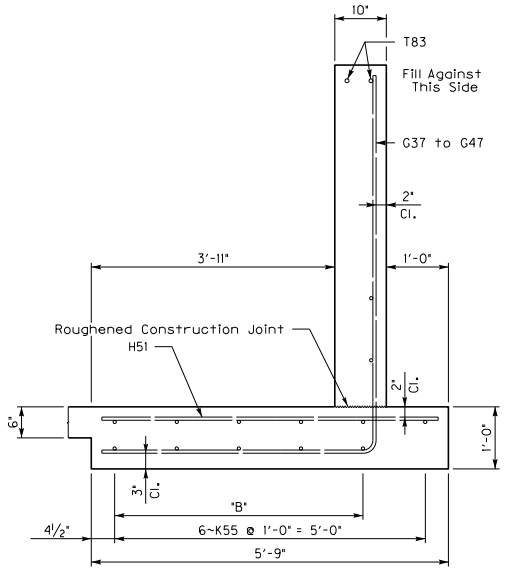

WING SECTION
SCALE = 1:12

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COUNTY
GRAYSON

ROUTE	CROSSING
KY 259	UNNAMED CREEK

Wing 4

ITEM NUMBER	PREPARED BY	SHEET NO.
4-9009.00	Division of Structural Design	S8
		DRAWING NO. 28343

FILE NAME: C:\Users\lizabeth.likins\Desktop\4-9009 Post Constructibility Review\28343.dgn
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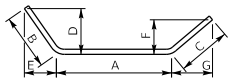
DATE PLOTTED: 18-FEB-2021
E-SHEET NAME:
MicroStation v8.11.9.832

BILL OF REINFORCEMENT

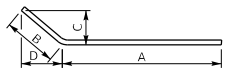
MARK	TYPE	NO.	SIZE	LENGTH	LOCATION	A/E	B/F	C/G	D/H
A1	1	16	5	5- 7	Top Slab	3-11	0-10	0- 5	4- 4
B2	1	16	5	6- 7	Bottom Slab	4-11	0-10	0- 5	5- 4
C3	Str.	16	5	4- 5	Sidewalls				
E4	Str.	20	5	5- 4	Top & Bottom Slabs				
E5	Str.	12	5	5- 4	Sidewalls				
G6	5	1	5	6- 2	B.F Wing 1	2- 8	3- 8		
G7	5	1	5	6-10	B.F Wing 1	3- 3⅝	3- 8		
G8	5	1	5	7- 6	B.F Wing 1	3-11¼	3- 8		
G9	5	1	5	8- 1	B.F Wing 1	4- 6⅞	3- 8		
G10	5	1	5	8- 9	B.F Wing 1	5- 2½	3- 8		
G11	5	1	5	9- 5	B.F Wing 1	5-10⅛	3- 8		
G12	5	1	5	9- 7	B.F Wing 1	6- 1	3- 8		
G13	5	1	5	9- 4	B.F Wing 2	4- 6⅞	4-11		
G14	5	1	5	9- 5	B.F Wing 2	4- 7⅞	4-11		
G15	5	1	5	9- 6	B.F Wing 2	4- 9	4-11		
G16	5	1	5	9- 8	B.F Wing 2	4-10⅛	4-11		
G17	5	1	5	9- 9	B.F Wing 2	4-11⅛	4-11		
G18	5	1	5	9-10	B.F Wing 2	5- 0¼	4-11		
G19	5	1	5	9-11	B.F Wing 2	5- 1⅜	4-11		
G20	5	1	5	10- 0	B.F Wing 2	5- 2⅜	4-11		
G21	5	1	5	10- 1	B.F Wing 2	5- 3½	4-11		
G22	5	1	5	10- 2	B.F Wing 2	5- 4½	4-11		
G23	5	1	5	10- 3	B.F Wing 2	5- 5⅝	4-11		
G24	5	1	5	10- 4	B.F Wing 2	5- 6¾	4-11		
G25	5	1	5	10- 5	B.F Wing 2	5- 7¾	4-11		
G26	5	1	5	10- 6	B.F Wing 2	5- 8⅞	4-11		
G27	5	1	5	10- 7	B.F Wing 2	5-10	4-11		
G28	5	1	5	10- 8	B.F Wing 2	5-11	4-11		
G29	5	1	5	10-10	B.F Wing 2	6- 0⅛	4-11		
G30	5	2	5	10-10	B.F Wing 2	6- 1	4-11		
G31	5	1	5	6- 3	B.F Wing 3	2- 8⅛	3- 8		
G32	5	1	5	7- 0	B.F Wing 3	3- 5½	3- 8		
G33	5	1	5	7- 9	B.F Wing 3	4- 2⅞	3- 8		
G34	5	1	5	8- 7	B.F Wing 3	5- 0⅛	3- 8		
G35	5	1	5	9- 4	B.F Wing 3	5- 9½	3- 8		
G36	5	1	5	9- 7	B.F Wing 3	6- 1	3- 8		
G37	5	1	5	7-11	B.F Wing 4	3- 7¼	4- 5		
G38	5	1	5	8- 2	B.F Wing 4	3-10½	4- 5		
G39	5	1	5	8- 5	B.F Wing 4	4- 1¾	4- 5		

BILL OF REINFORCEMENT

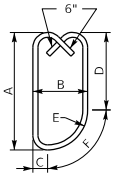
MARK	TYPE	NO.	SIZE	LENGTH	LOCATION	A/E	B/F	C/G	D/H
G40	5	1	5	8- 8	B.F Wing 4	4- 5	4- 5		
G41	5	1	5	9- 0	B.F Wing 4	4- 8¼	4- 5		
G42	5	1	5	9- 3	B.F Wing 4	4-11½	4- 5		
G43	5	1	5	9- 6	B.F Wing 4	5- 2¾	4- 5		
G44	5	1	5	9- 9	B.F Wing 4	5- 5⅞	4- 5		
G45	5	1	5	10- 1	B.F Wing 4	5- 9⅛	4- 5		
G46	5	1	5	10- 4	B.F Wing 4	6- 0⅜	4- 5		
G47	5	1	5	10- 4	B.F Wing 4	6- 1	4- 5		
H48	Str.	7	5	4- 8	Top Ftg Wing 1				
H49	Str.	14	5	5-11	Top Ftg Wing 2				
H50	Str.	6	5	4- 8	Top Ftg Wing 3				
H51	Str.	11	5	5- 5	Top Ftg Wing 4				
K52	Str.	9	3	8- 8	Ftg Wing 1				
K53	Str.	11	3	15- 8	Ftg Wing 2				
K54	Str.	9	5	7- 8	Ftg Wing 3				
K55	Str.	11	5	11- 8	Ftg Wing 4				
M56	8	2	3	9- 3	B.F. Wing 1	7- 5⅛	1- 9	0-10½	1- 6⅛
M57	8	1	3	7-10	B.F. Wing 1	6- 1⅛	1- 9	0-10½	1- 6⅛
M58	8	3	3	16- 3	B.F. Wing 2	14- 5⅛	1- 9	0-10½	1- 6⅛
M59	8	2	5	8- 7	B.F. Wing 3	6- 5½	2- 2	1- 1	1-10½
M60	8	1	5	7- 6	B.F. Wing 3	5- 3¾	2- 2	1- 1	1-10½
M61	8	3	5	12- 7	B.F. Wing 4	10- 5½	2- 2	1- 1	1-10½
P62	7	1	5	9- 2	B.F. Parapet Lt. End	4- 7⅛	2- 4½	2- 0¾	2- 3⅝
						0--7	0- 6½	1-11⅞	
P63	7	1	5	9- 3	B.F. Parapet Lt. End	4- 4¾	2- 5½	2- 4⅛	2- 4½
						0--7	0- 7½	2- 3⅜	
P64	7	1	5	9- 2	B.F. Parapet Lt. End	4- 7⅛	2- 4½	2- 0¾	2- 3⅝
						0--7	0- 6½	1-11⅞	
P65	7	1	5	8- 0	F.F. Parapet Lt. End	4- 2¾	1- 9⅞	1-10¼	1- 9⅛
						0--5	0- 5⅞	1- 9½	
P66	7	1	5	7-10	F.F. Parapet Lt. End	4- 6	1- 8⅞	1- 6¾	1- 8¼
						0--5	0- 4⅞	1- 6	
P67	7	1	5	8- 0	F.F. Parapet Lt. End	4- 2¾	1- 9⅞	1-10¼	1- 9⅛
						0--5	0- 5⅞	1- 9½	
P68	7	1	5	9- 2	B.F. Parapet Rt. End	4- 7⅛	2- 4½	2- 0⅝	2- 3½
						0--7	0- 6½	1-11¾	
P69	7	1	5	9- 3	B.F. Parapet Rt. End	4- 4¾	2- 5⅞	2- 4⅛	2- 4½
						0--7	0- 7⅞	2- 3⅛	
P70	7	1	5	9- 2	B.F. Parapet Rt. End	4- 7⅞	2- 4½	2- 0⅝	2- 3½
						0--7	0- 6½	1-11¾	
P71	7	1	5	8- 0	F.F. Parapet Rt. End	4- 2¾	1- 9¾	1-10⅛	1- 9
						0--5	0- 5⅞	1- 9¼	
P72	7	1	5	7-10	F.F. Parapet Rt. End	4- 6	1- 8¾	1- 6½	1- 8⅛
						0--5	0- 4⅞	1- 5⅞	
P73	7	1	5	8- 0	F.F. Parapet Rt. End	4- 2¾	1- 9¾	1-10⅛	1- 9
						0--5	0- 5⅞	1- 9¼	
P74	Str.	2	5	7- 6	Bottom Slab Lt. End				
P75	Str.	2	5	7- 6	Bottom Slab Rt. End				
Q76	7	1	5	21-11	Appron Lt. End	11- 7¼	5- 0½	5- 5	2- 0⅞
						4- 7⅛	5- 4¾	0- 6⅜	
Q77	7	1	5	22- 8	Appron Lt. End	11-11¾	5- 1⅜	5- 8⅝	2- 1¼
						4- 7⅞	5- 8⅜	0- 6¾	
Q78	7	1	5	17-11	Appron Rt. End	8- 1	5- 0½	4-11	2- 1
						4- 7⅛	4-10¾	0- 5¾	
Q79	7	1	5	18- 8	Appron Rt. End	8- 5½	5- 1⅞	5- 2⅝	2- 1⅜
						4- 7⅞	5- 2⅜	0- 6	
R80	11s	4	5	5-11	Parapet Wall (Left End)	2- 3½	0- 9	0- 2½	1- 9
						0- 6½	0- 9¾		
R81	12s	4	5	6- 1	Parapet Wall (Right End)	2- 3½	0- 9		
T82	8	2	3	13-11	Top of Wing 2	12- 5¼	1- 5⅞	0- 2⅛	1- 5¾
T83	8	2	6	10- 2	Top of Wing 4	8- 8⅝	1- 5⅝	0- 5	1- 4⅞
X84	Str.	28	6	3- 7	Grouted Dowel Bars				



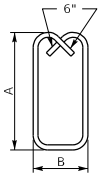
TYPE 7



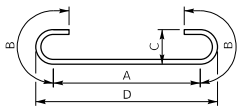
TYPE 8



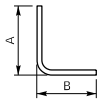
TYPE 11



TYPE 12



TYPE 1



TYPE 5

REVISION	DATE

DATE: NOVEMBER 2020	CHECKED BY
DESIGNED BY: L. LIKINS	V. RAULJI
DETAILED BY: Computer	L. LIKINS

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

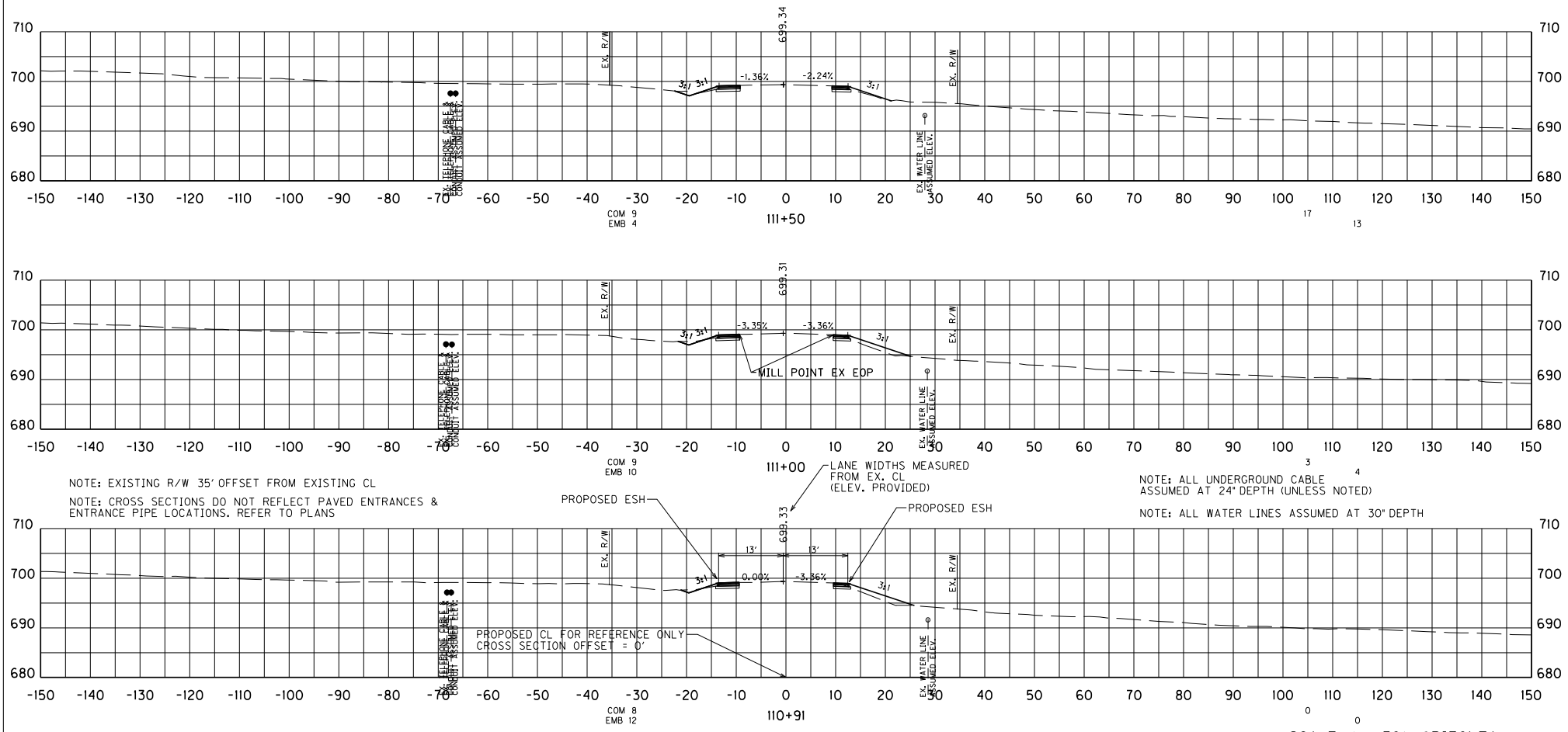
COUNTY: **GRAYSON**

ROUTE: KY 259 | CROSSING: UNNAMED CREEK

Bill of Reinforcement

ITEM NUMBER	PREPARED BY	SHEET NO.
4-9009.00	**Division of Structural Design**	S9
		DRAWING NO. 28343

FILE NAME: C:\Users\lizabeth.likins\Desktop\4-9009 Post Constructibility Review\28343.dgn
USER: Lizabeth.Likins
DATE PLOTTED: 18-FEB-2021
E-SHEET NAME:
MicroStation v8.11.9.832



NOTE: EXISTING R/W 35' OFFSET FROM EXISTING CL

NOTE: CROSS SECTIONS DO NOT REFLECT PAVED ENTRANCES & ENTRANCE PIPE LOCATIONS. REFER TO PLANS

NOTE: ALL UNDERGROUND CABLE ASSUMED AT 24" DEPTH (UNLESS NOTED)

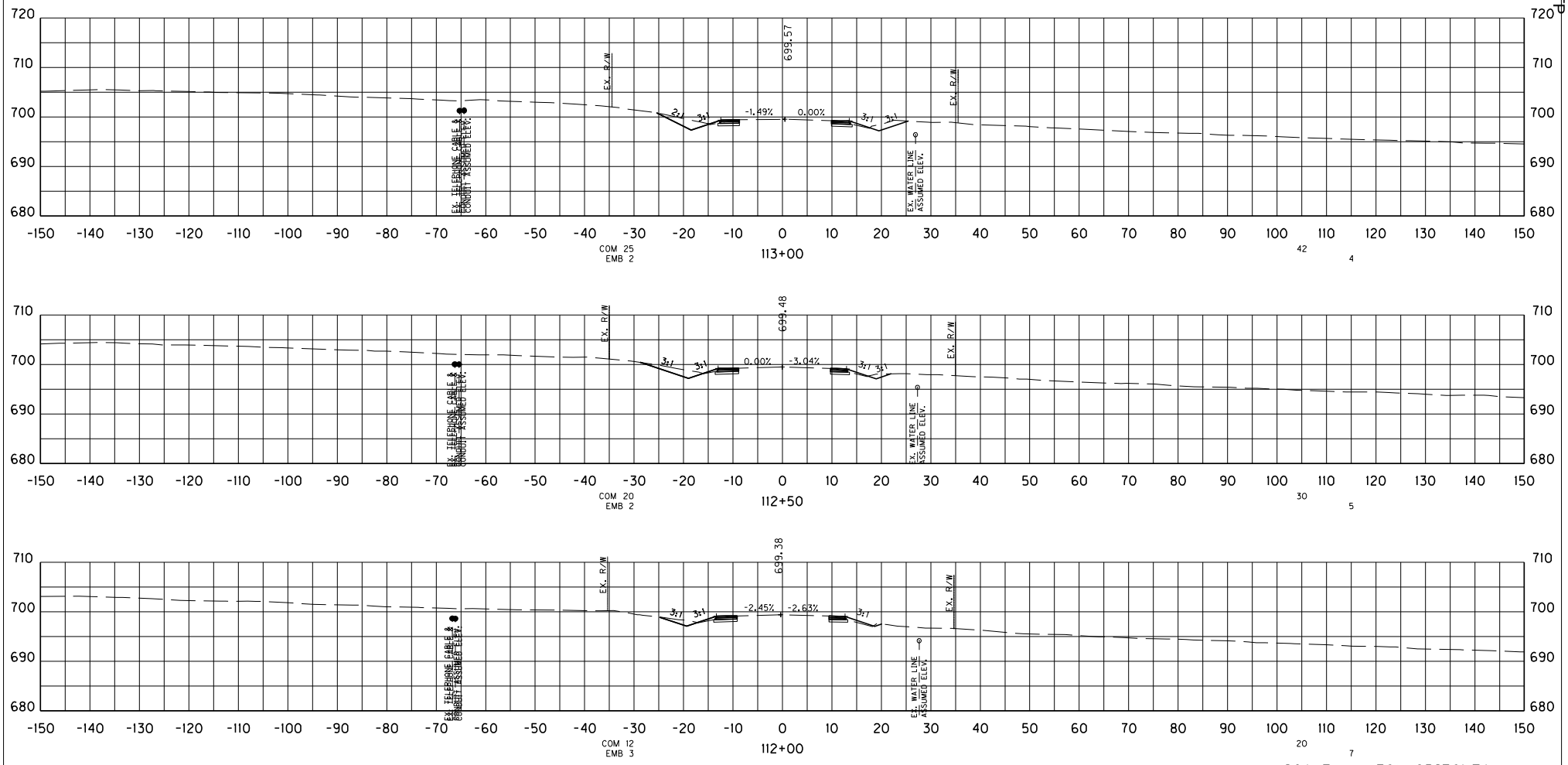
NOTE: ALL WATER LINES ASSUMED AT 30" DEPTH

SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X1

KY HWY 259 ANNETA RD CROSS SECTIONS SHEET

STA.110+91 TO STA.111+50

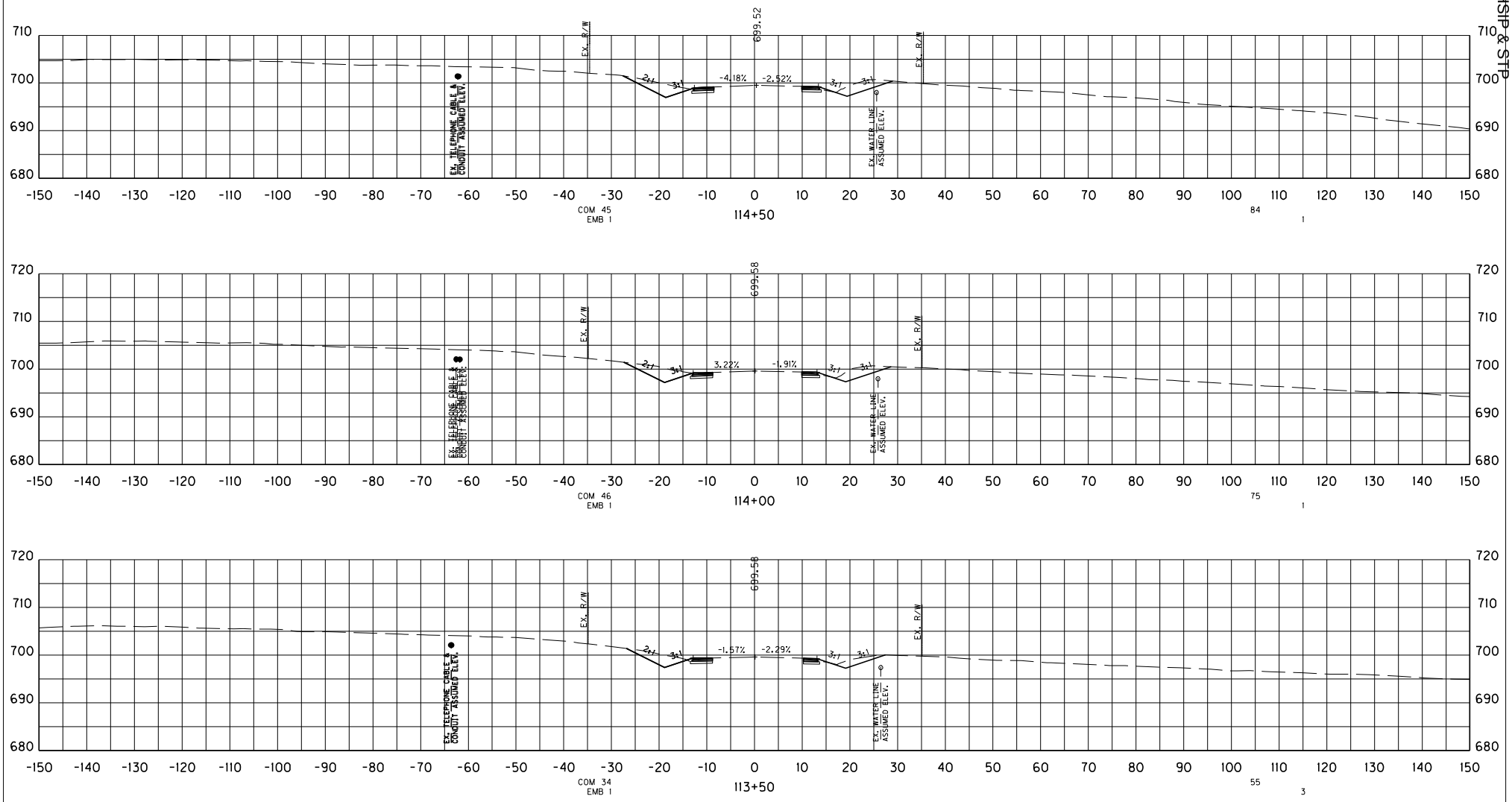


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X2

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.112+00 TO STA.113+00

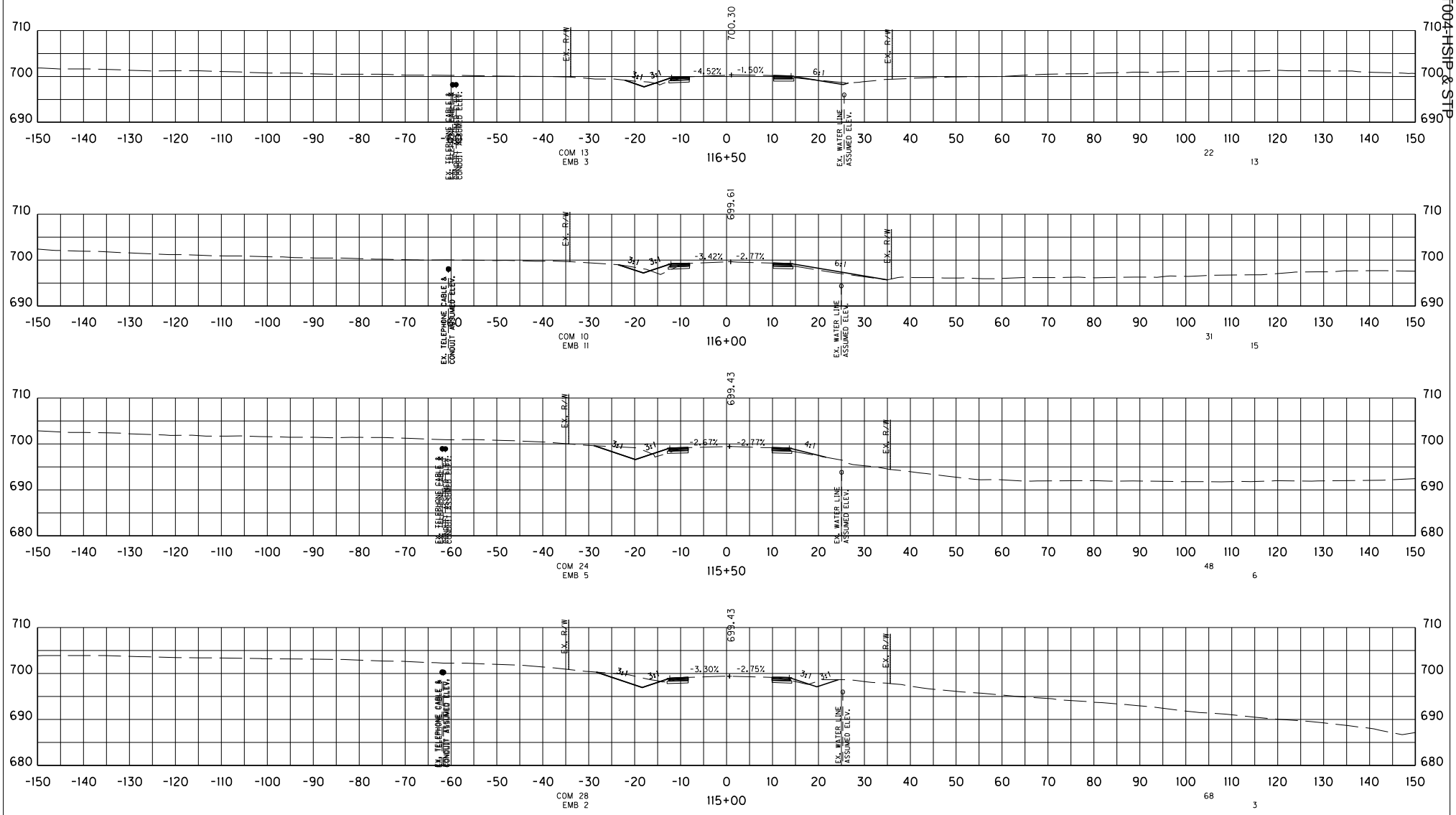


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X3

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.113+50 TO STA.114+50

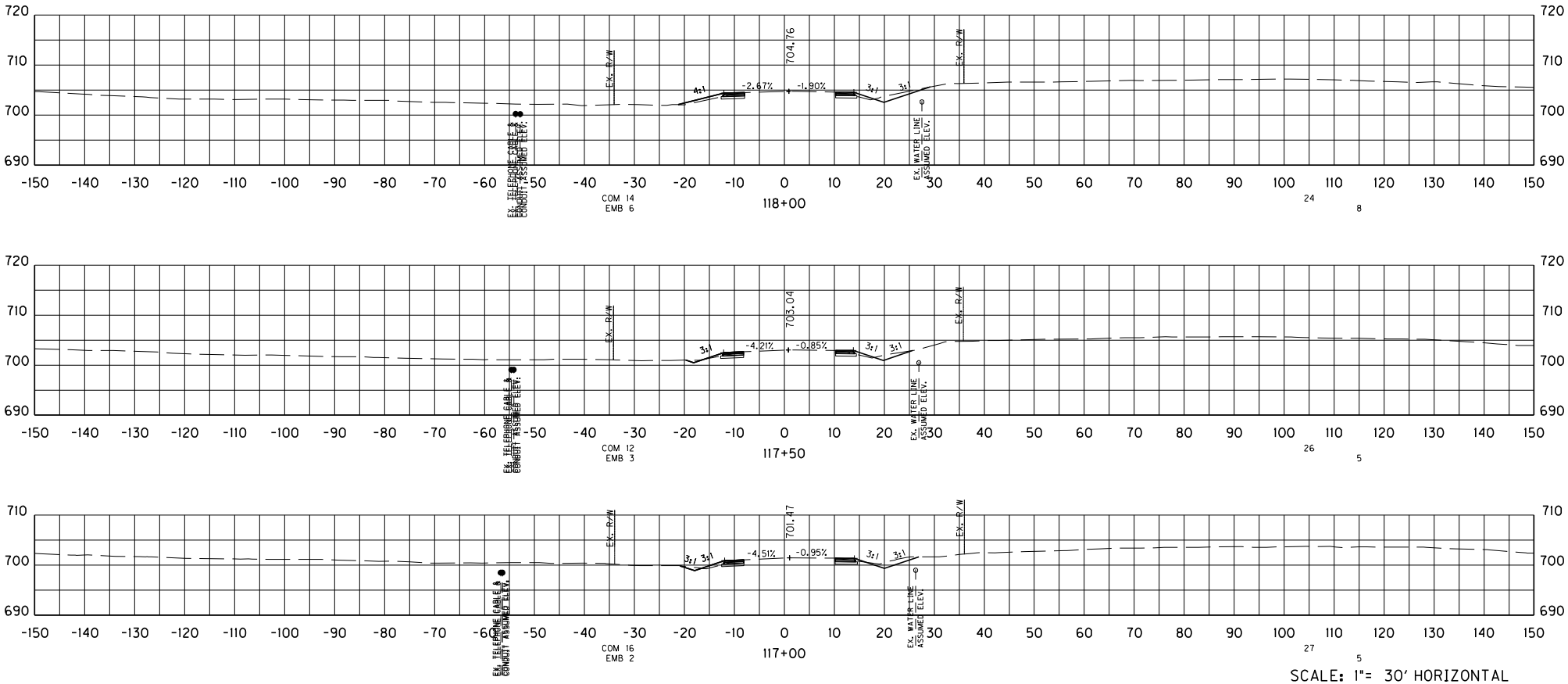


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X4

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.115+00 TO STA.116+50

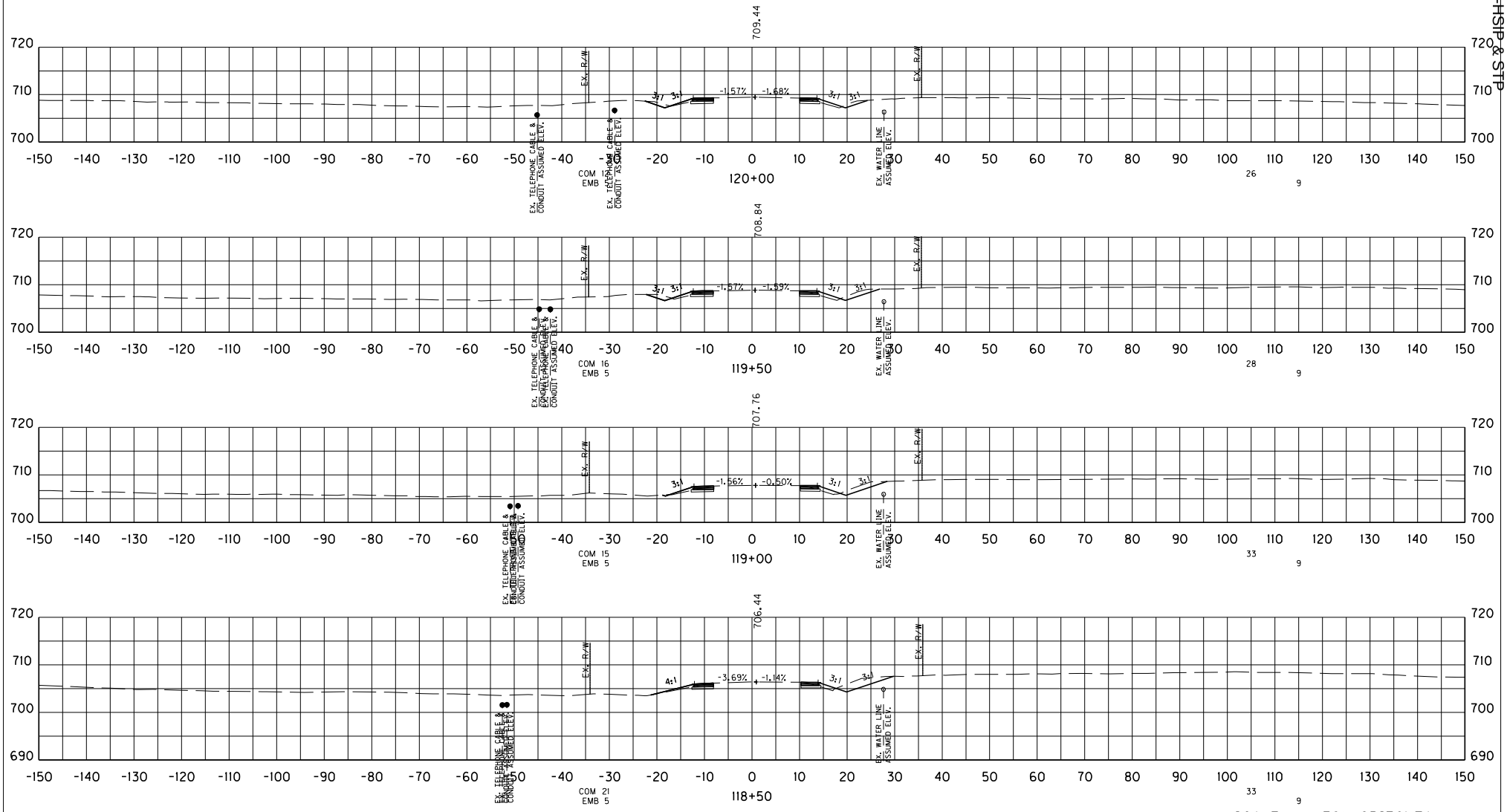


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X5

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.117+00 TO STA.118+00

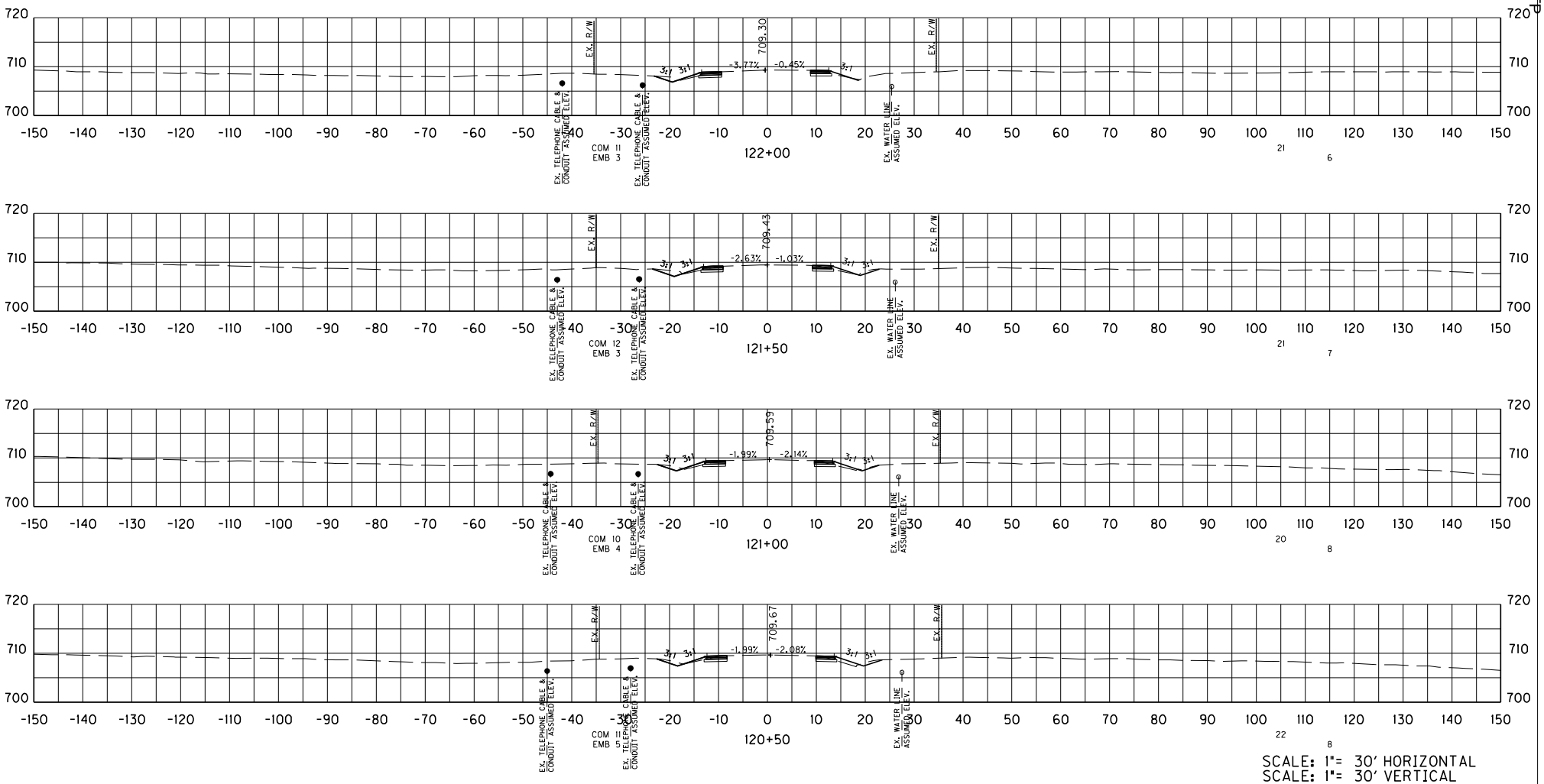


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X6

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.118+50 TO STA.120+00

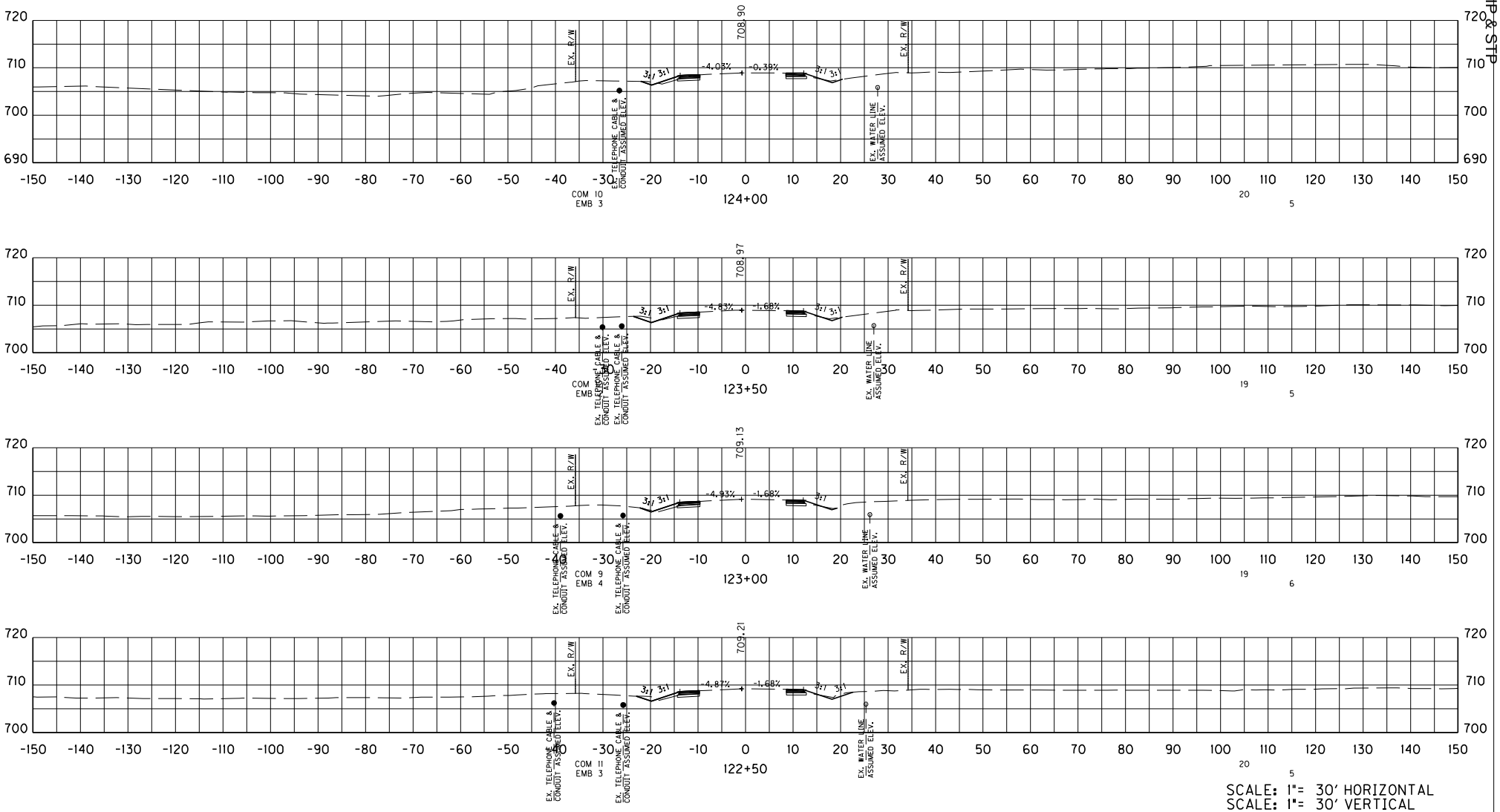


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X7

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.120+50 TO STA.122+00

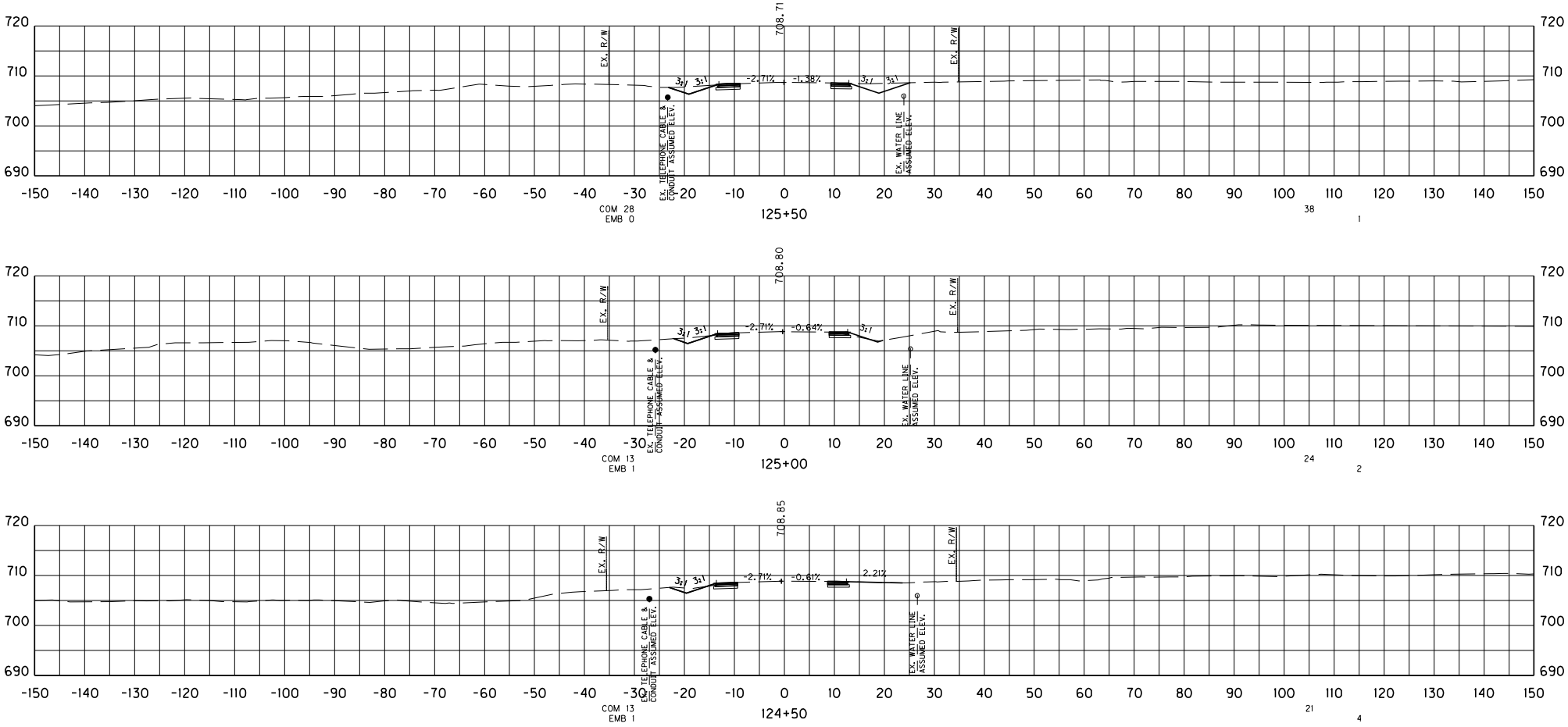


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X8

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.122+50 TO STA.124+00

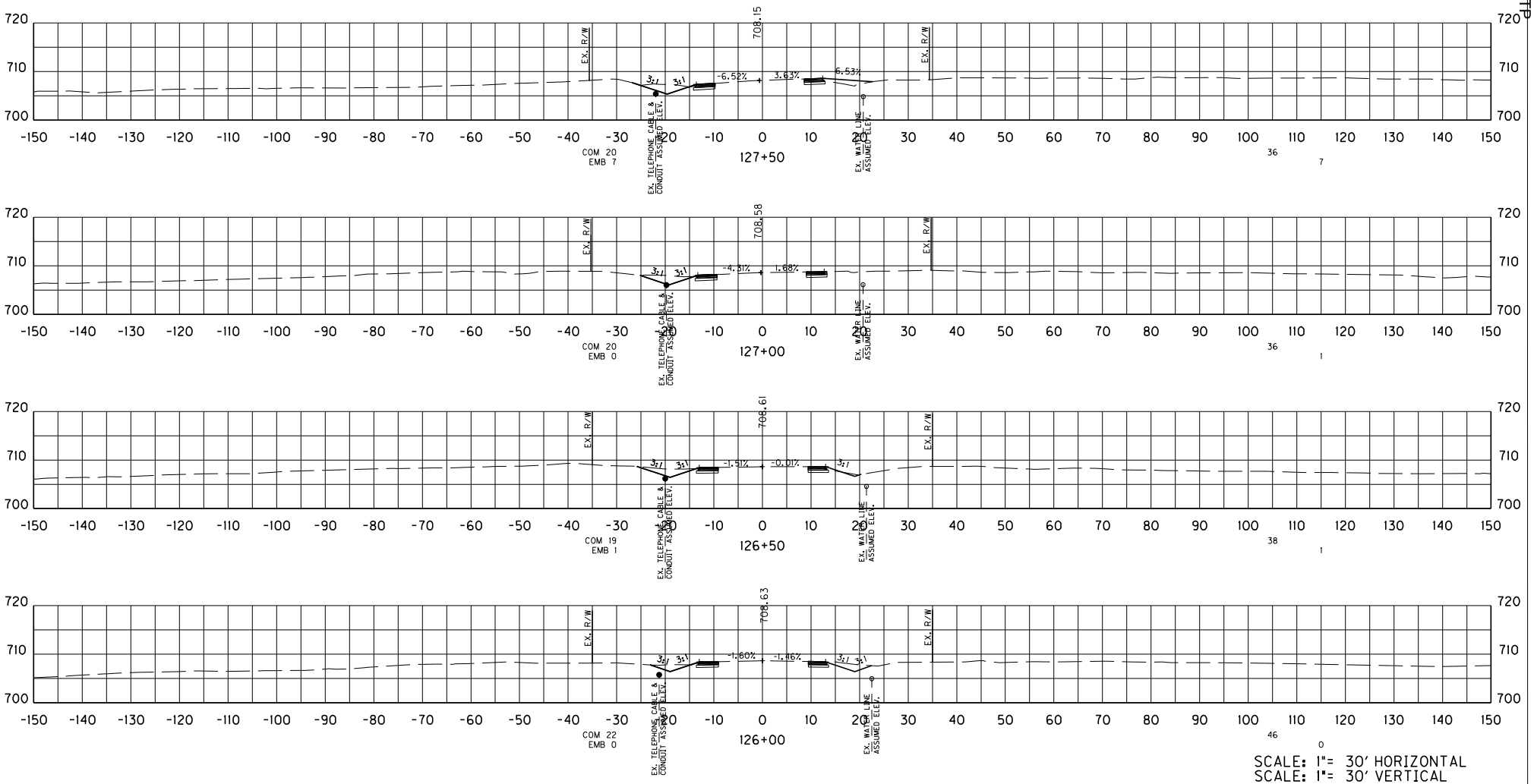


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X9

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.124+50 TO STA.125+50

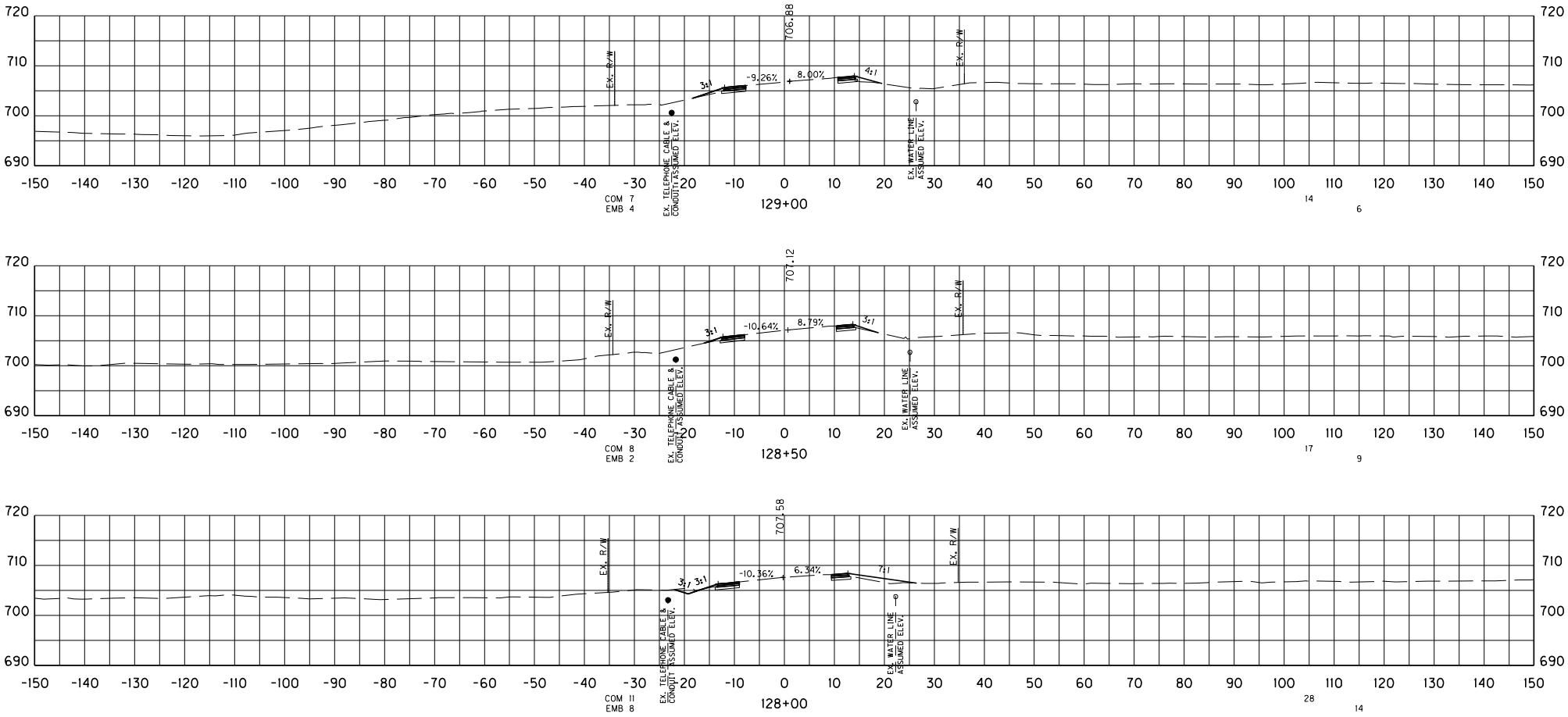


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X10

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.126+00 TO STA.127+50

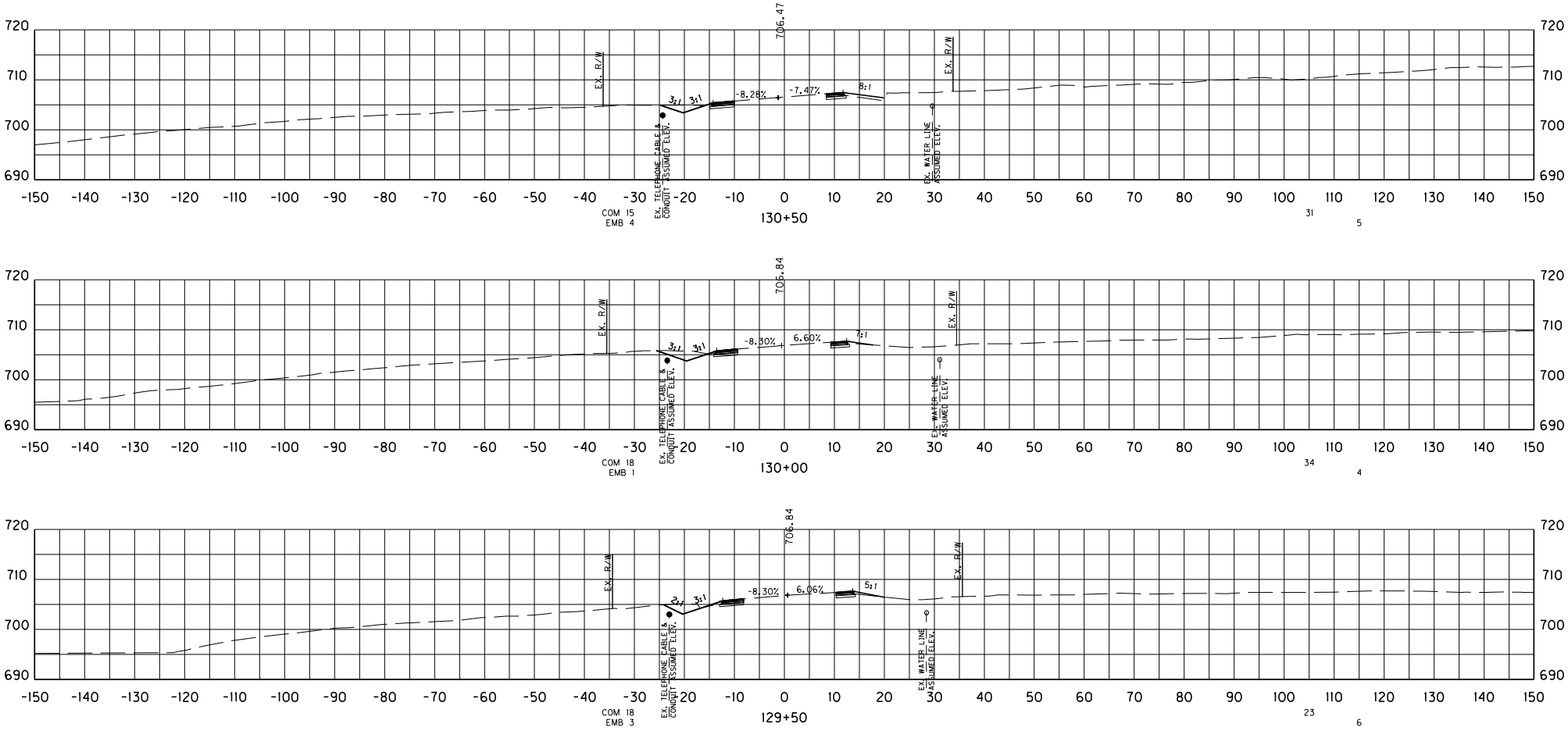


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X11

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.128+00 TO STA.129+00

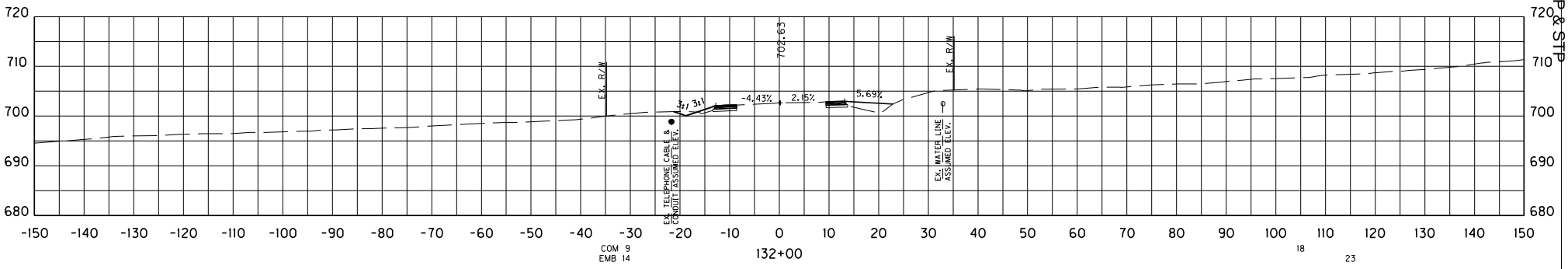


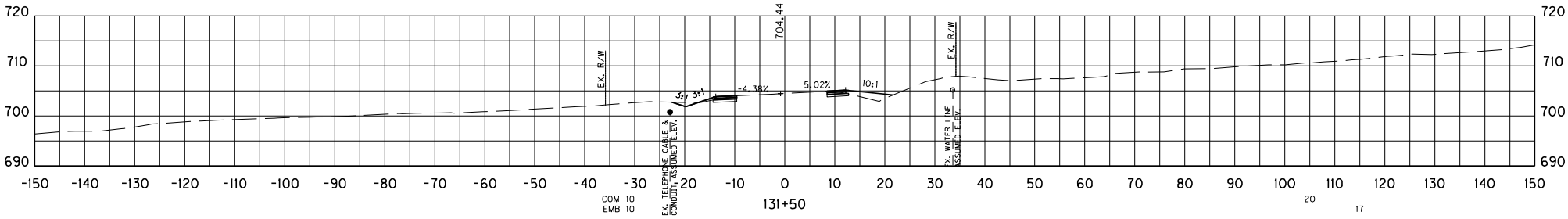
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

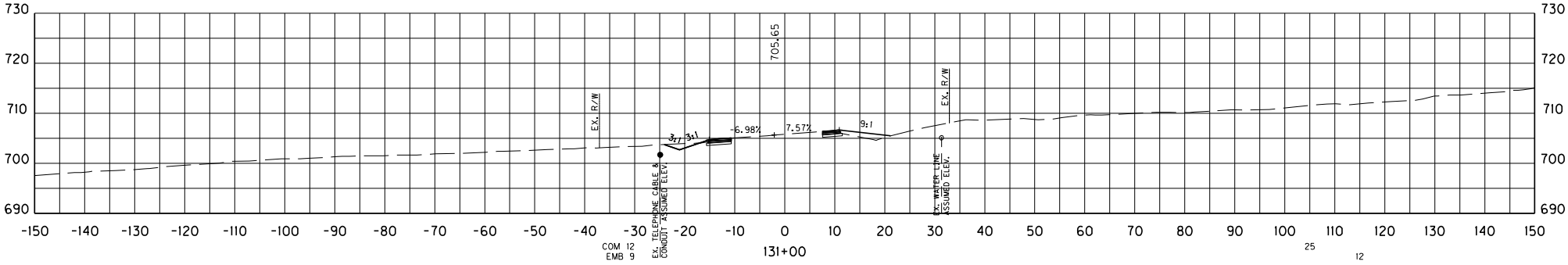
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X12

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.129+50 TO STA.130+50





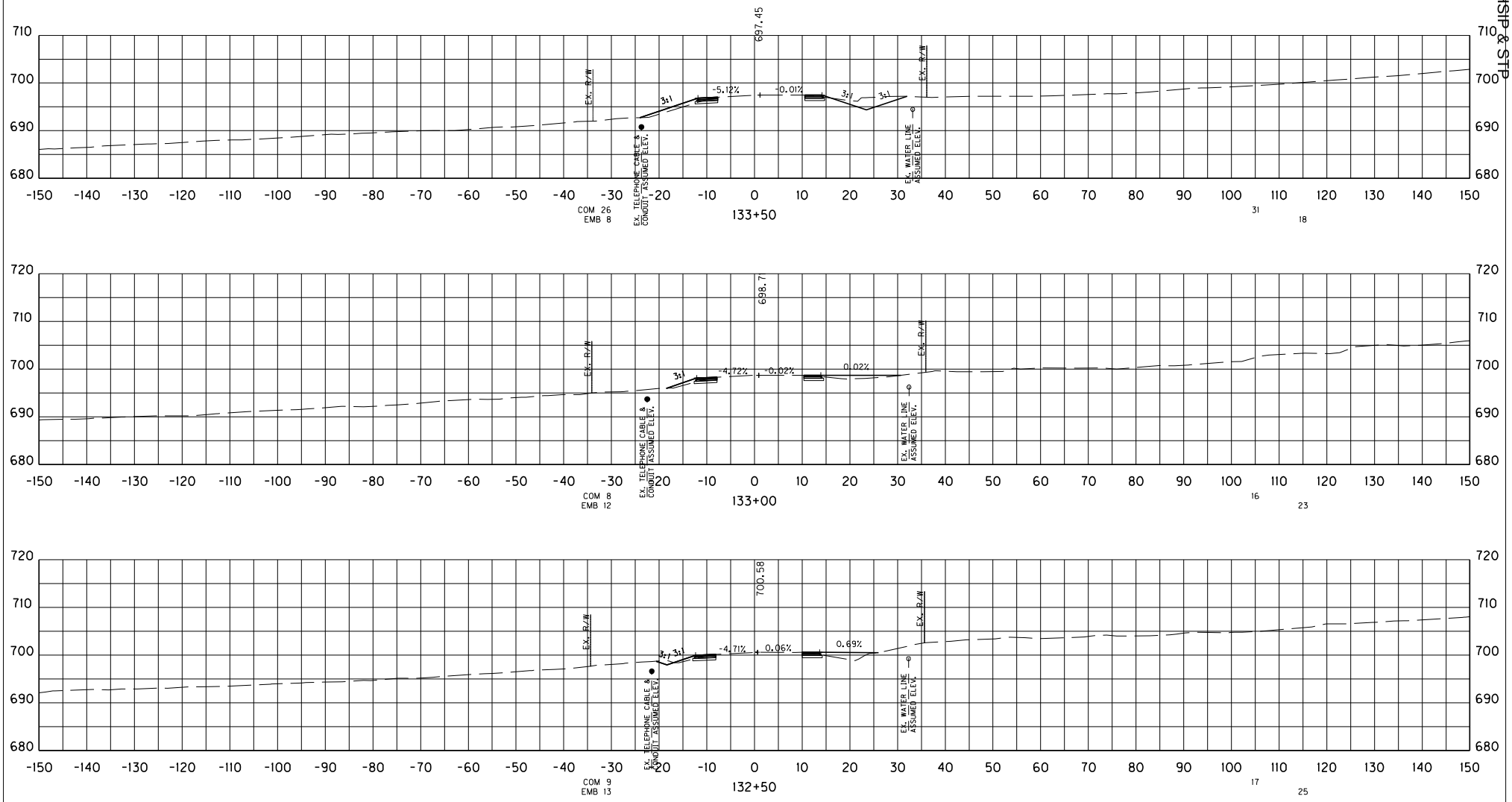


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X13

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.131+00 TO STA.132+00

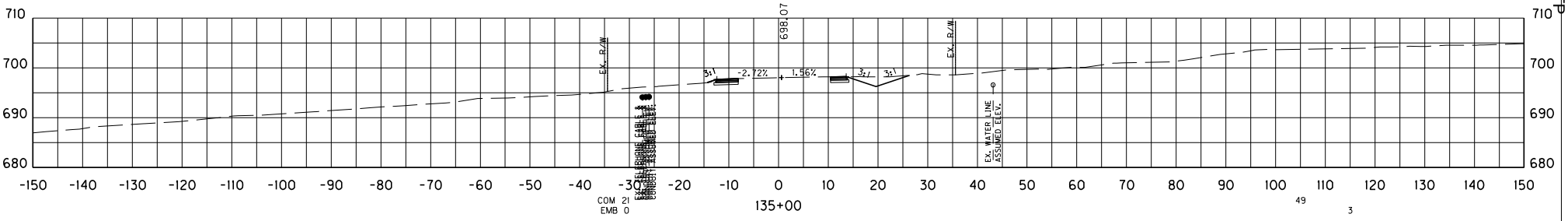


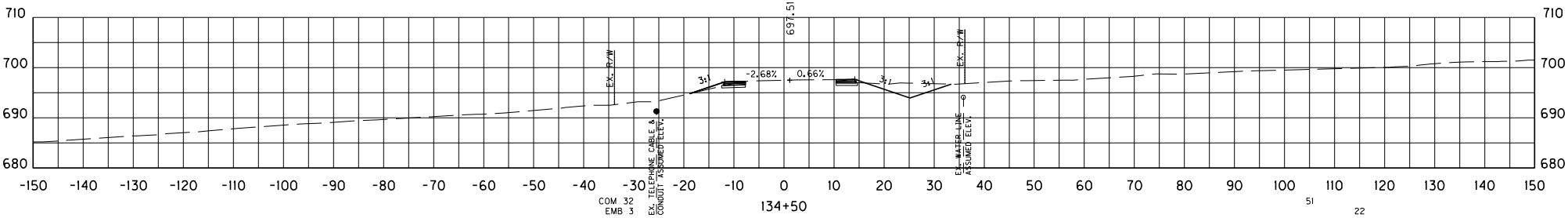
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

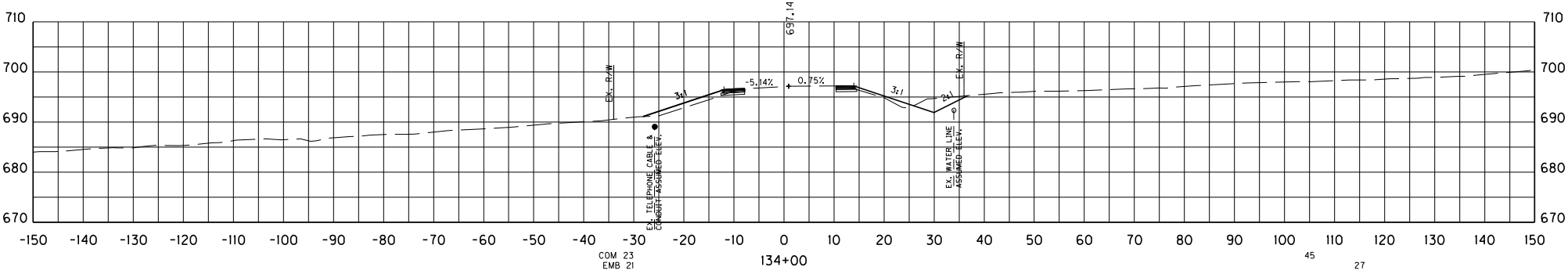
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X14

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.132+50 TO STA.133+50





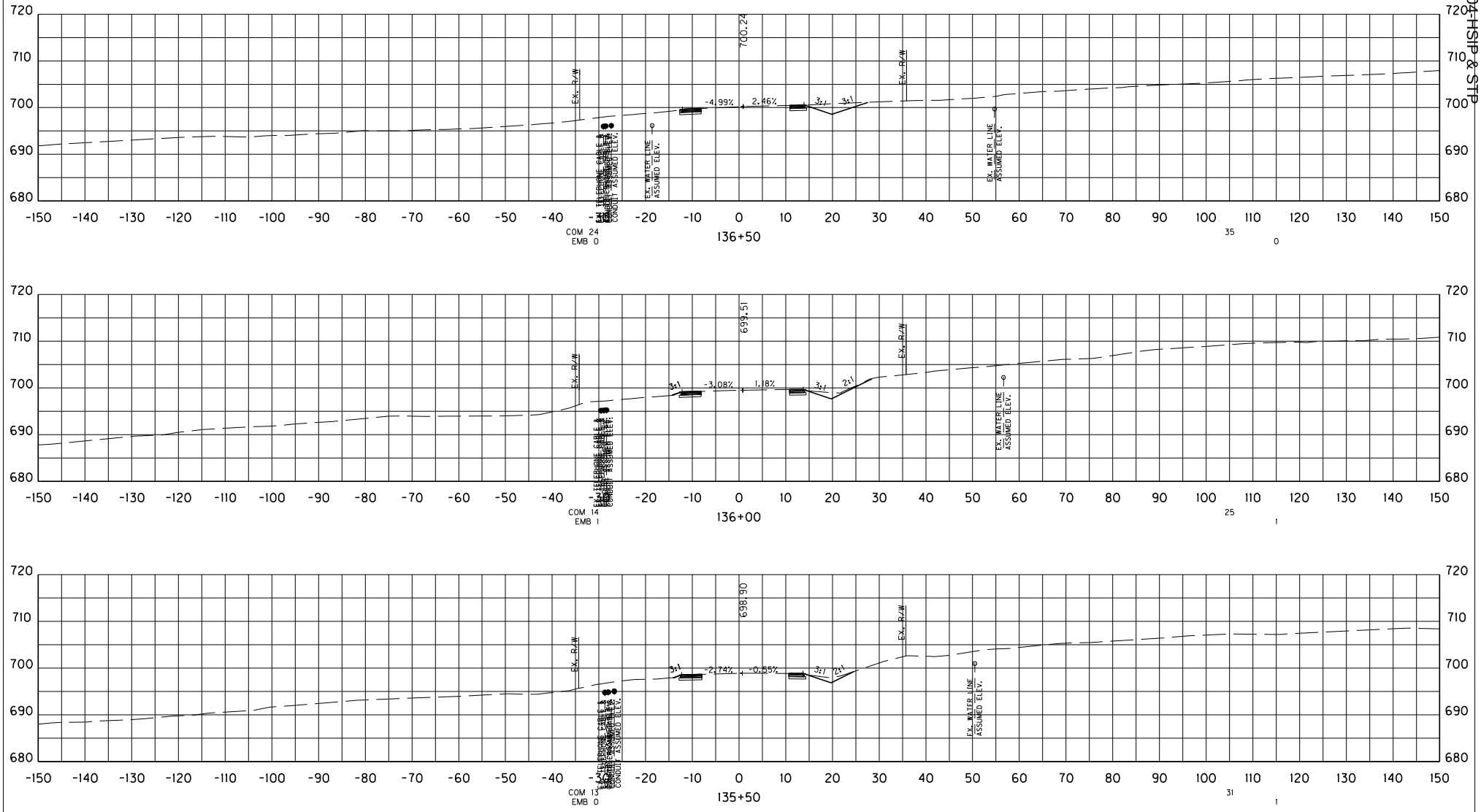


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X15

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.134+00 TO STA.135+00

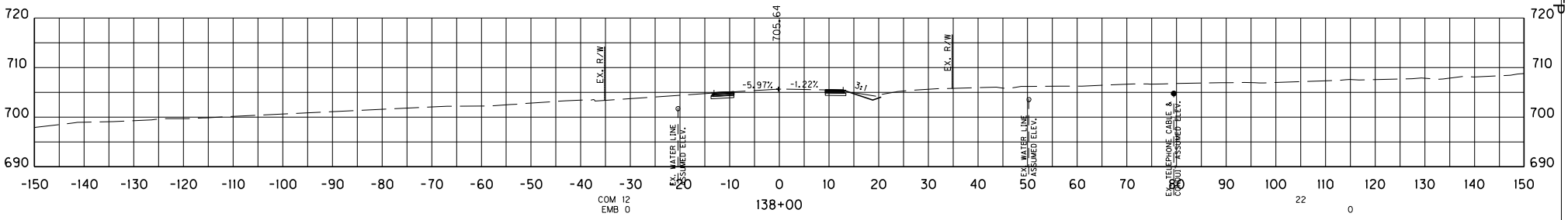


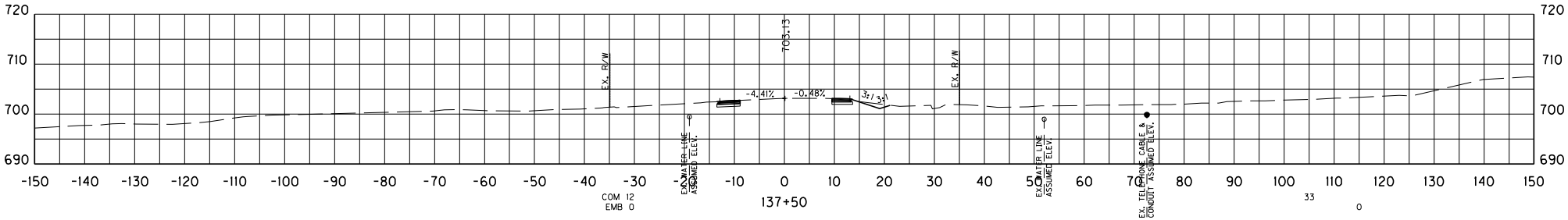
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

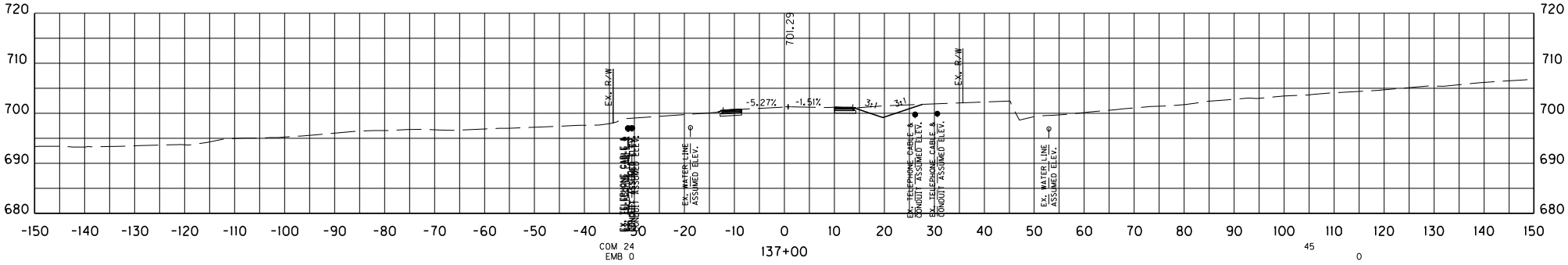
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X16

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.135+50 TO STA.136+50





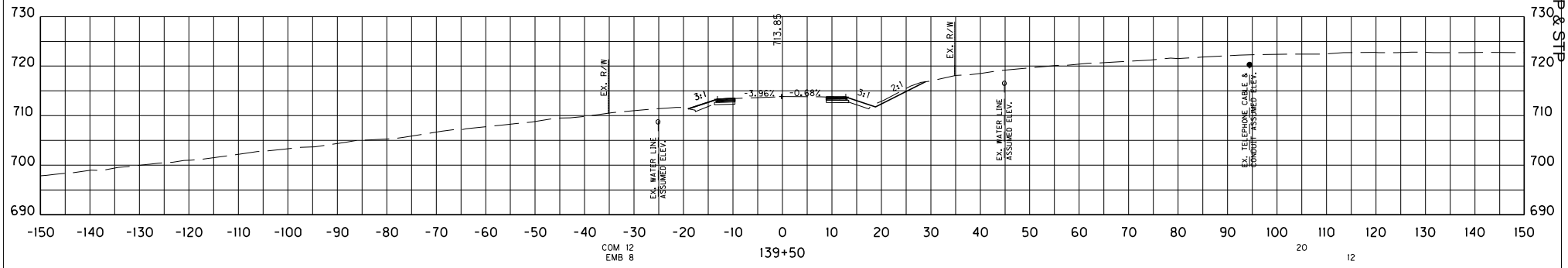


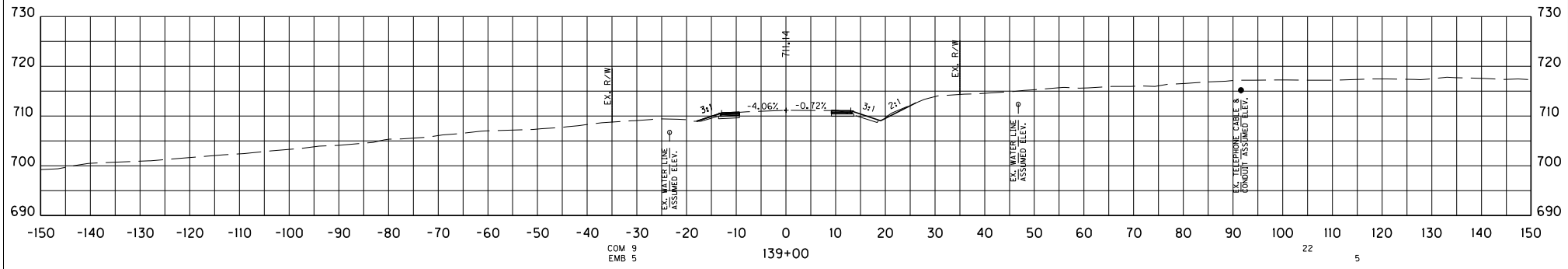
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

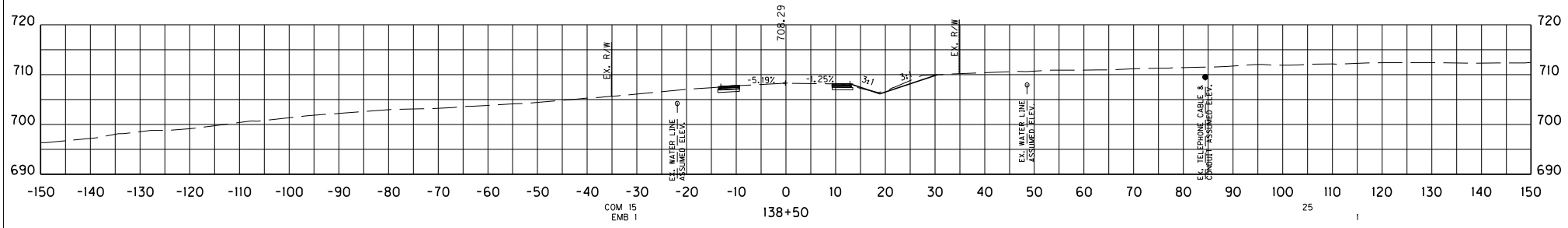
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X17

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.137+00 TO STA.138+00





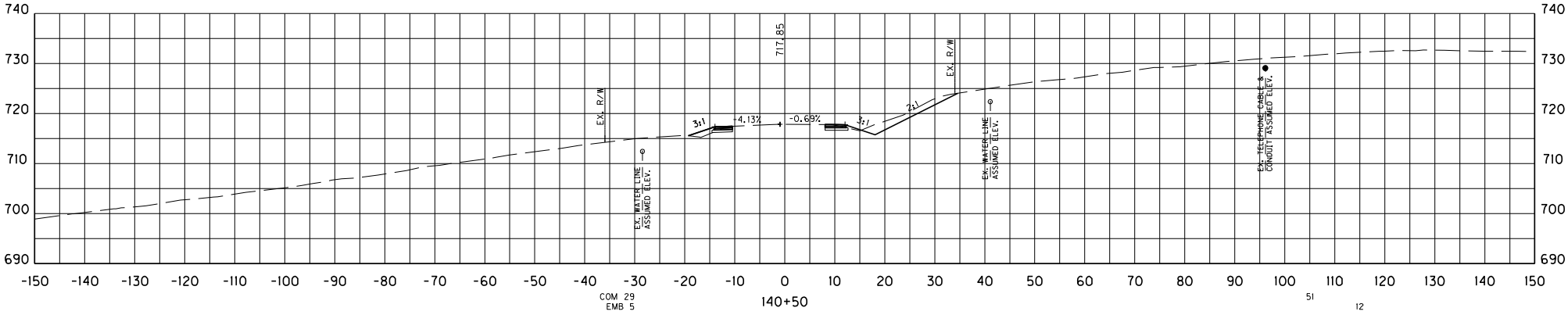


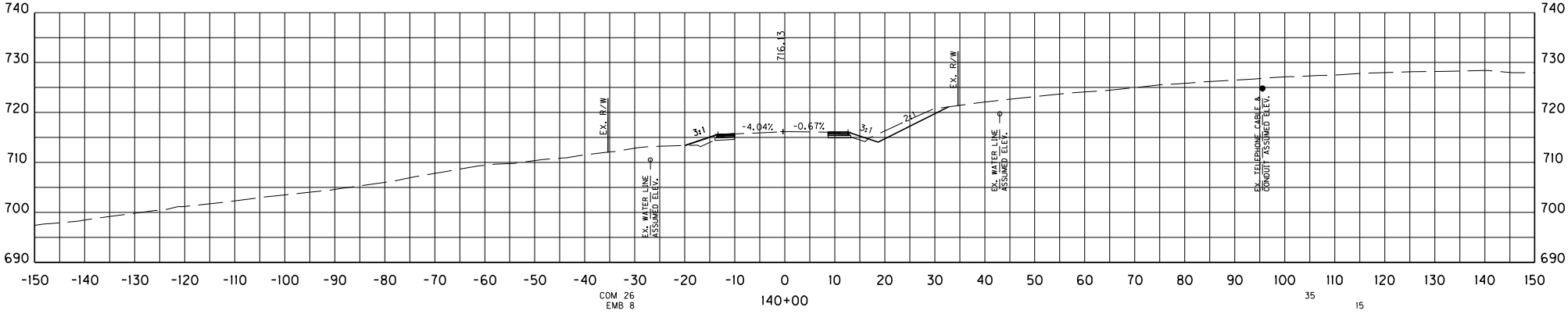
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X18

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.138+50 TO STA.139+50



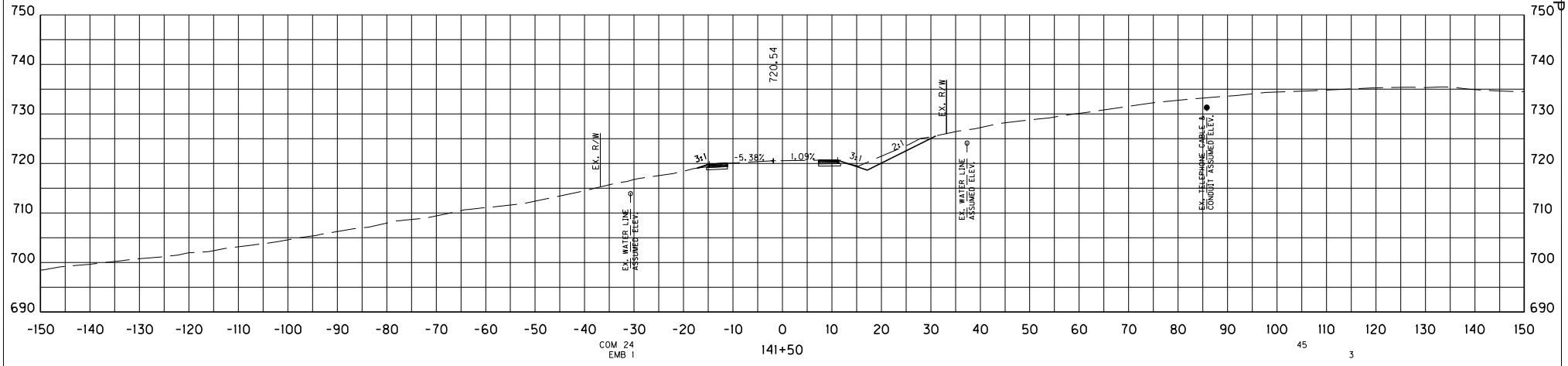


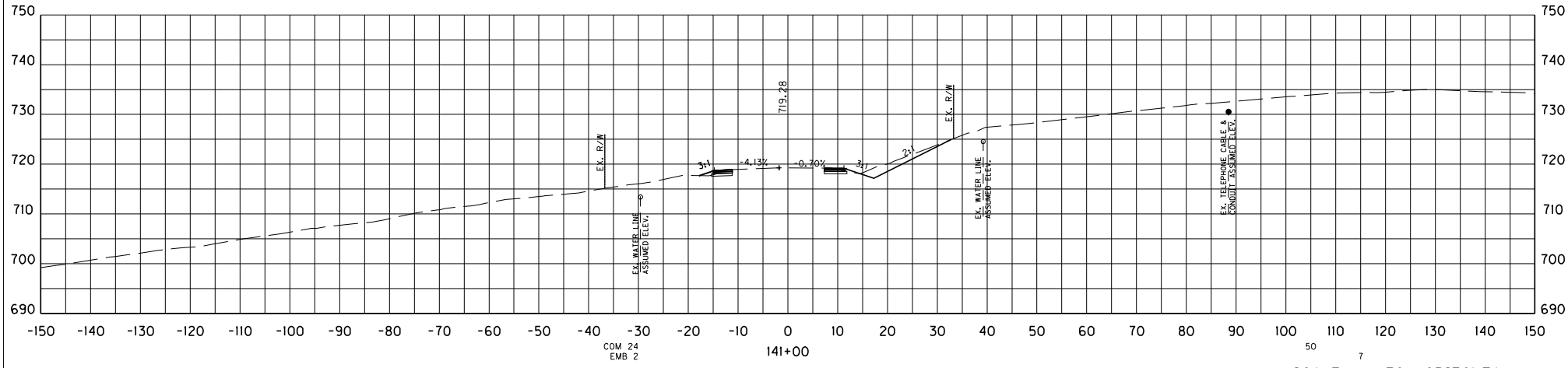
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X19

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.140+00 TO STA.140+50



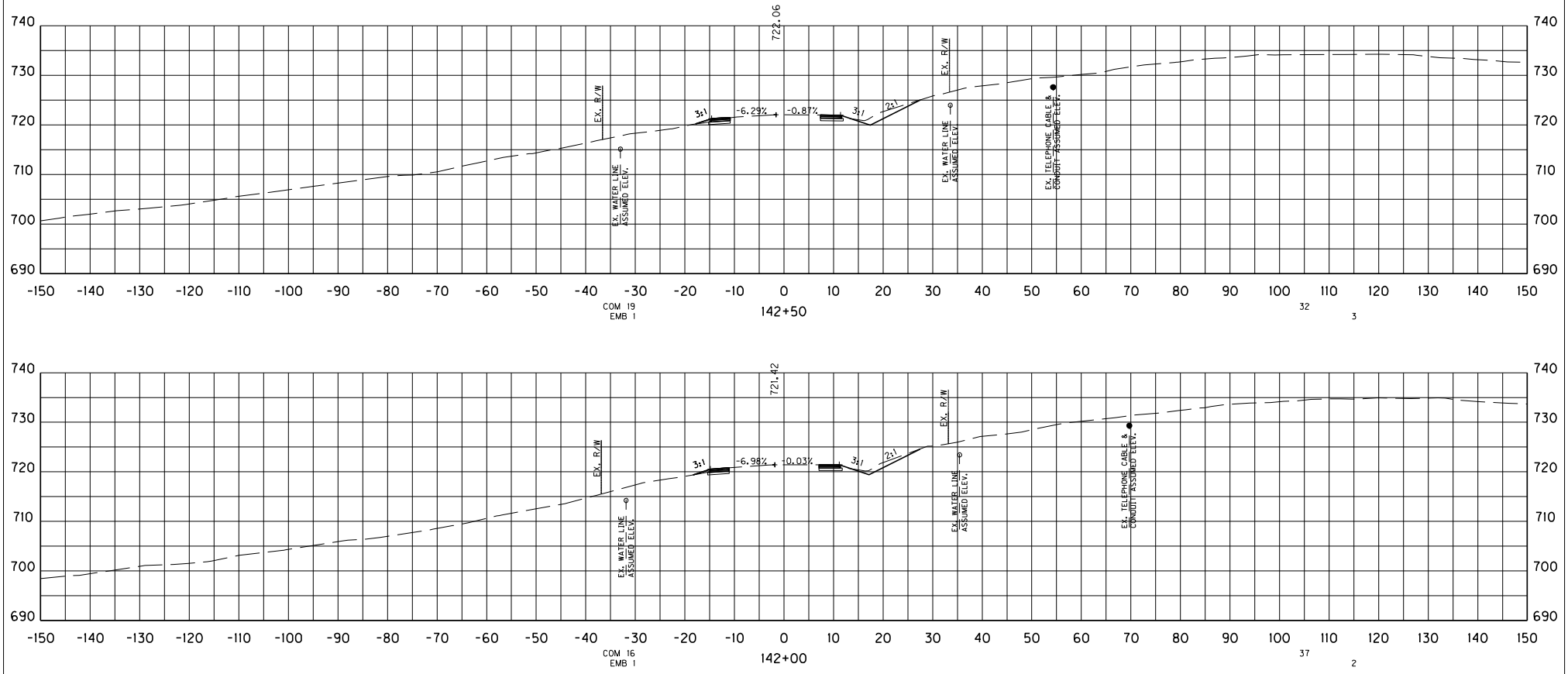


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X20

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.141+00 TO STA.141+50

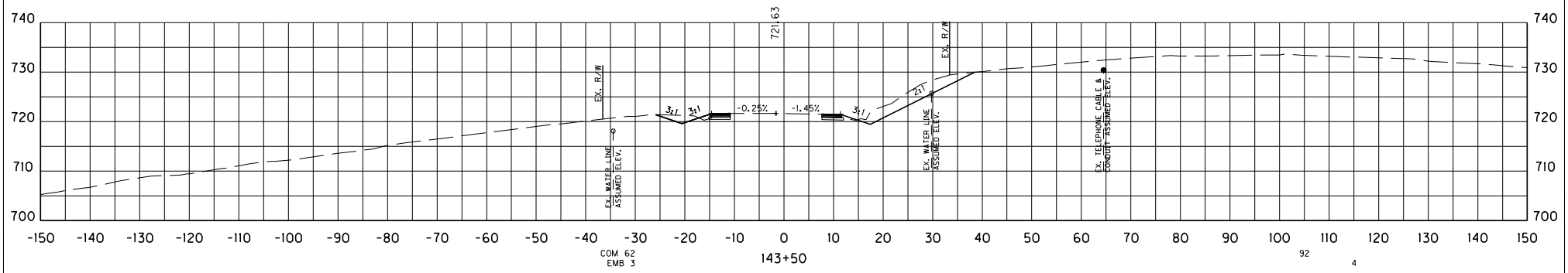


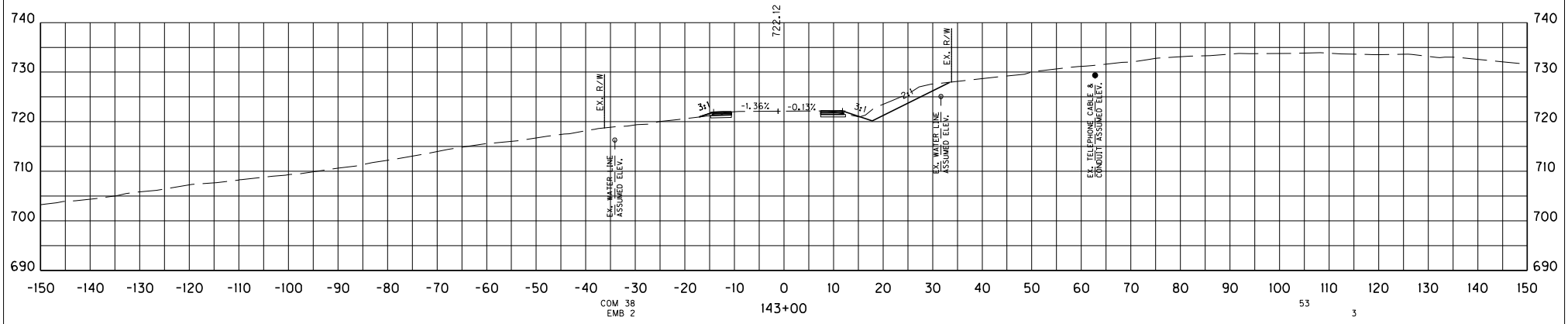
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X21

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.142+00 TO STA.142+50



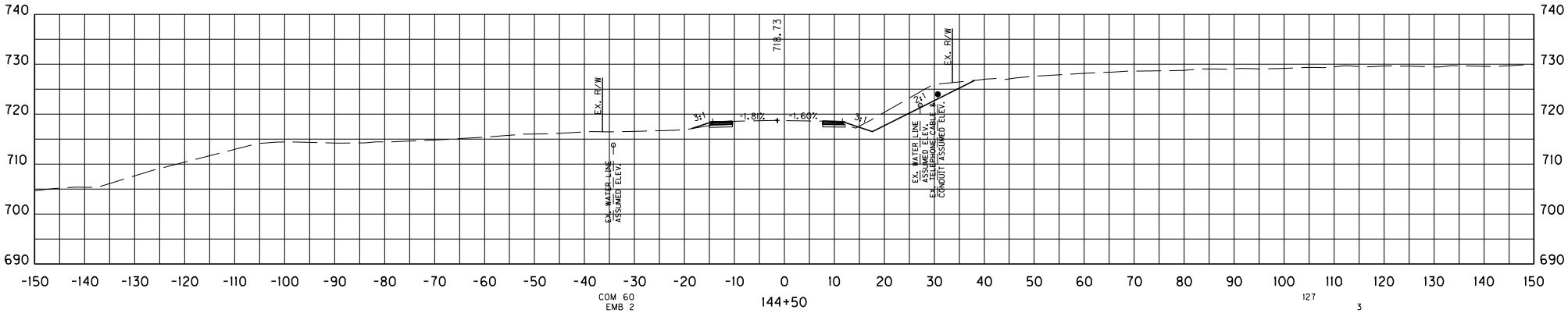


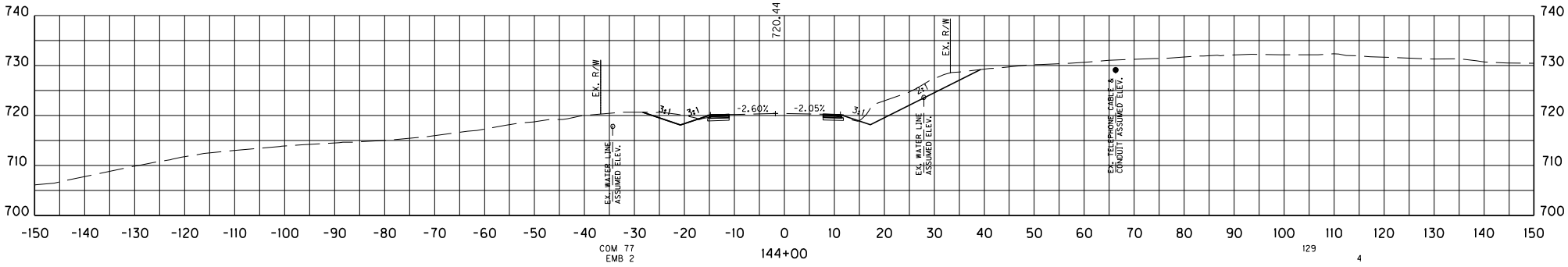
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X22

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.143+00 TO STA.143+50



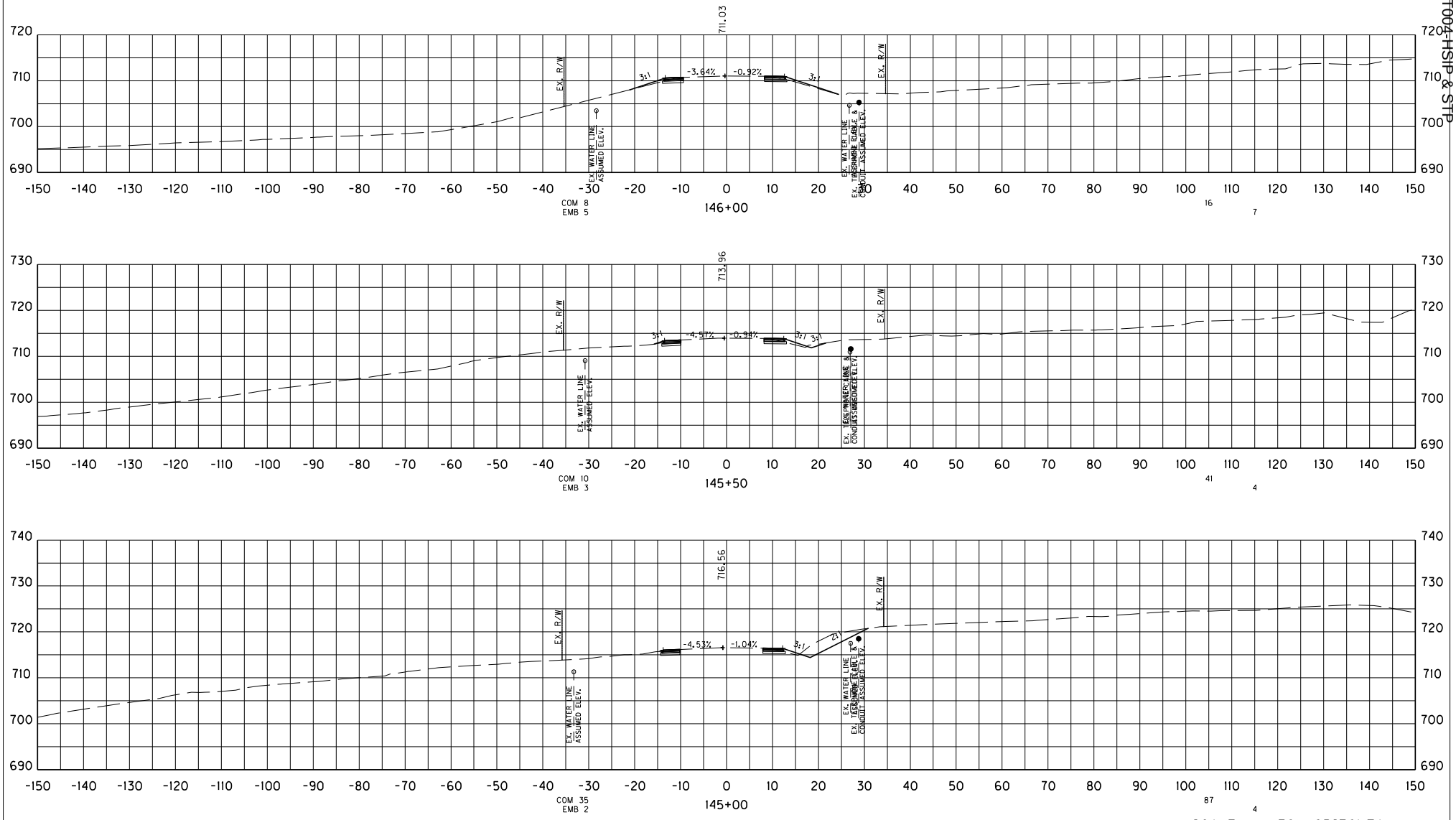


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X23

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.144+00 TO STA.144+50

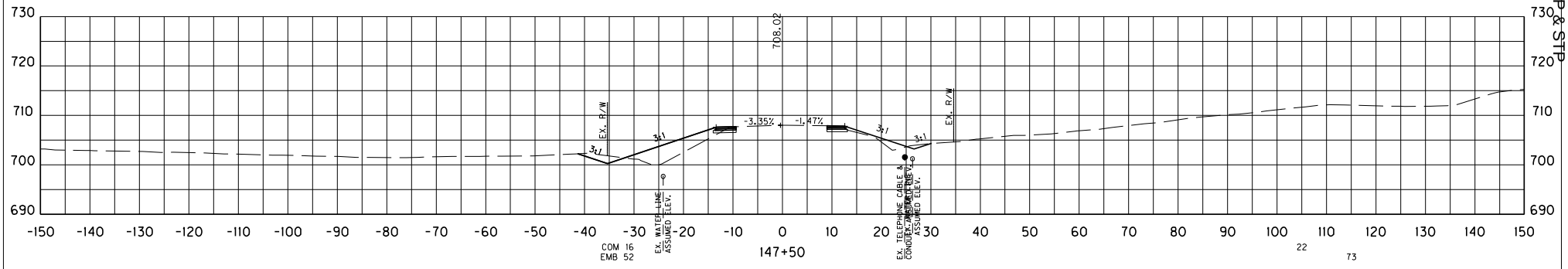


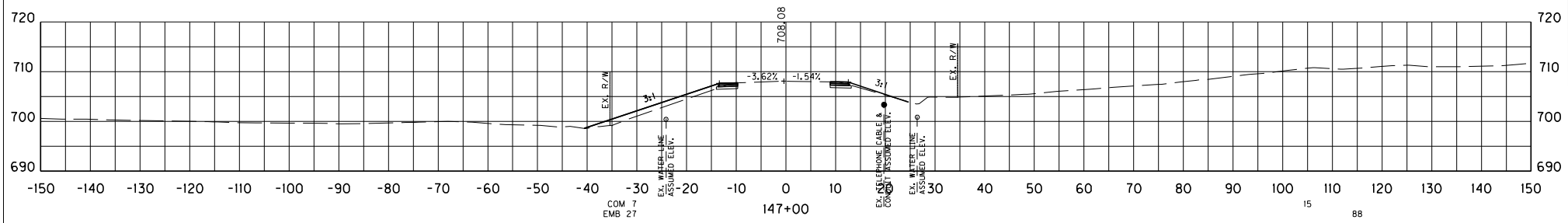
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

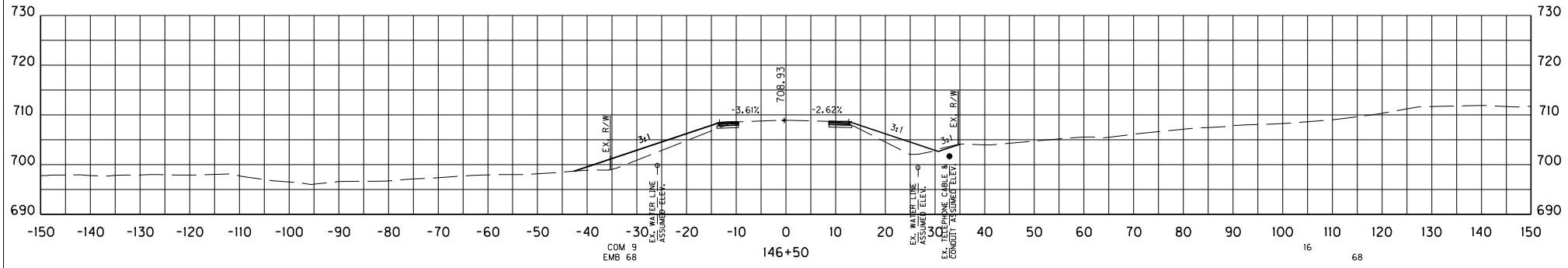
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X24

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.145+00 TO STA.146+00





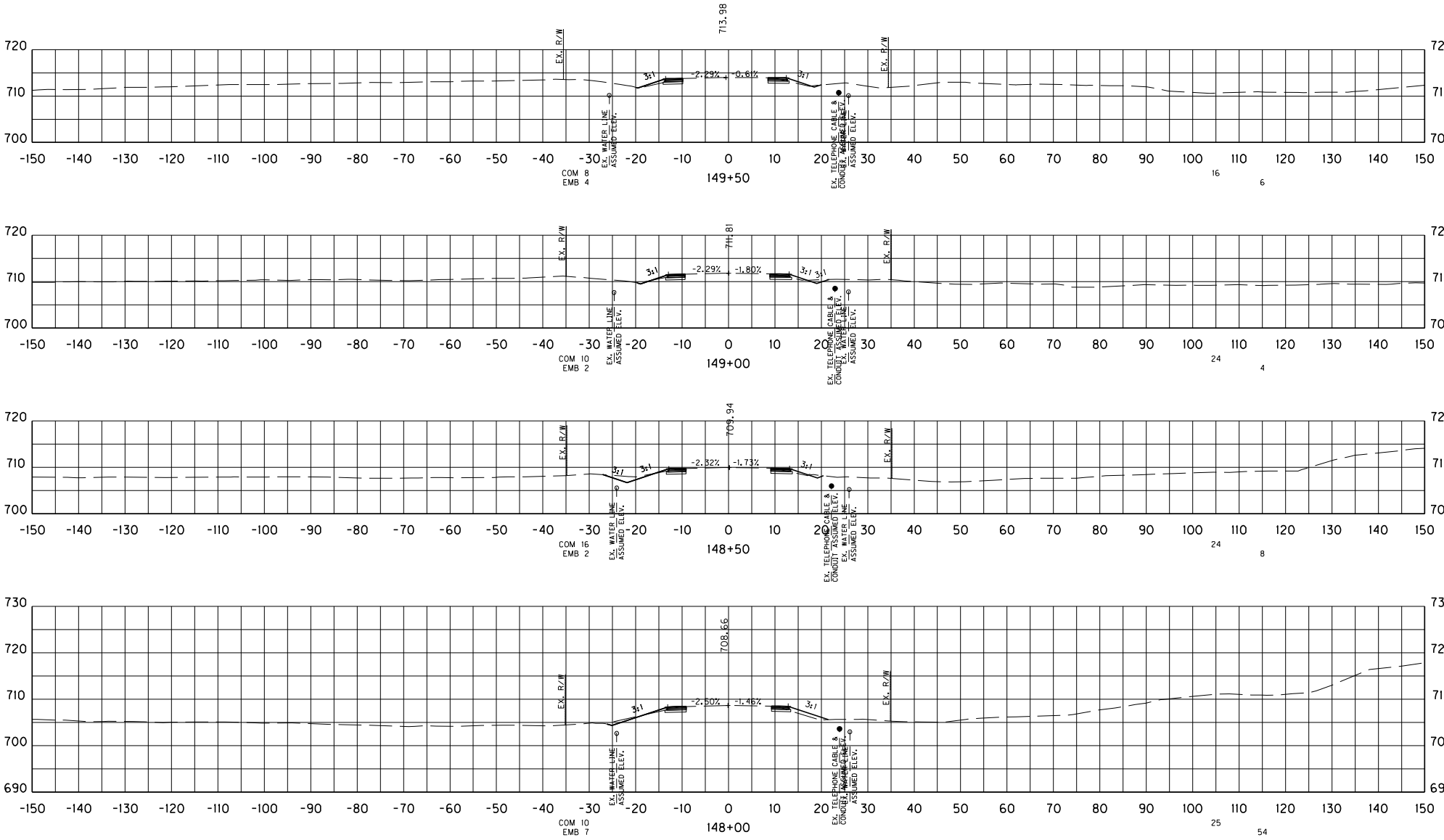


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X25

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.146+50 TO STA.147+50

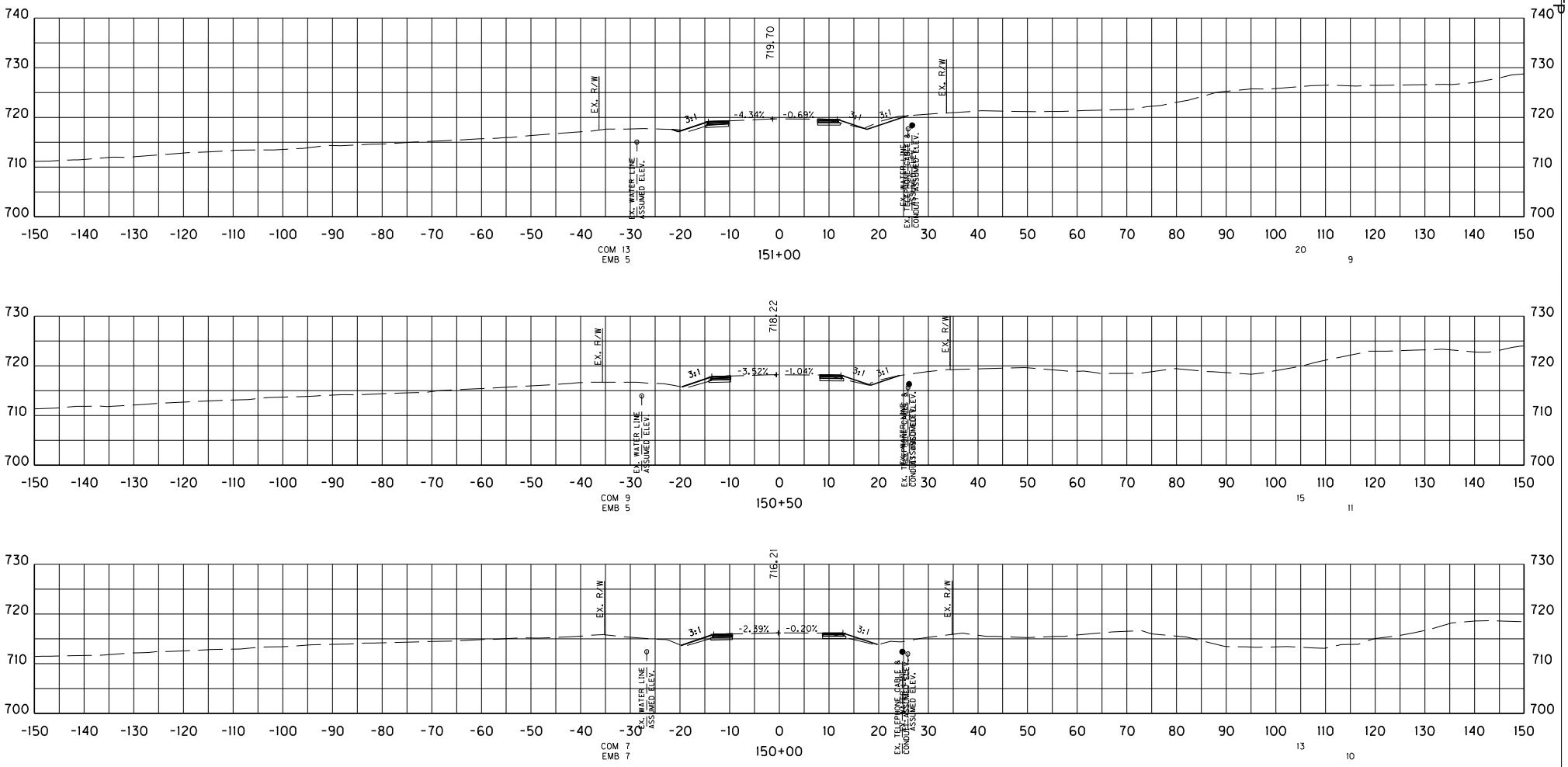


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X26

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.148+00 TO STA.149+50

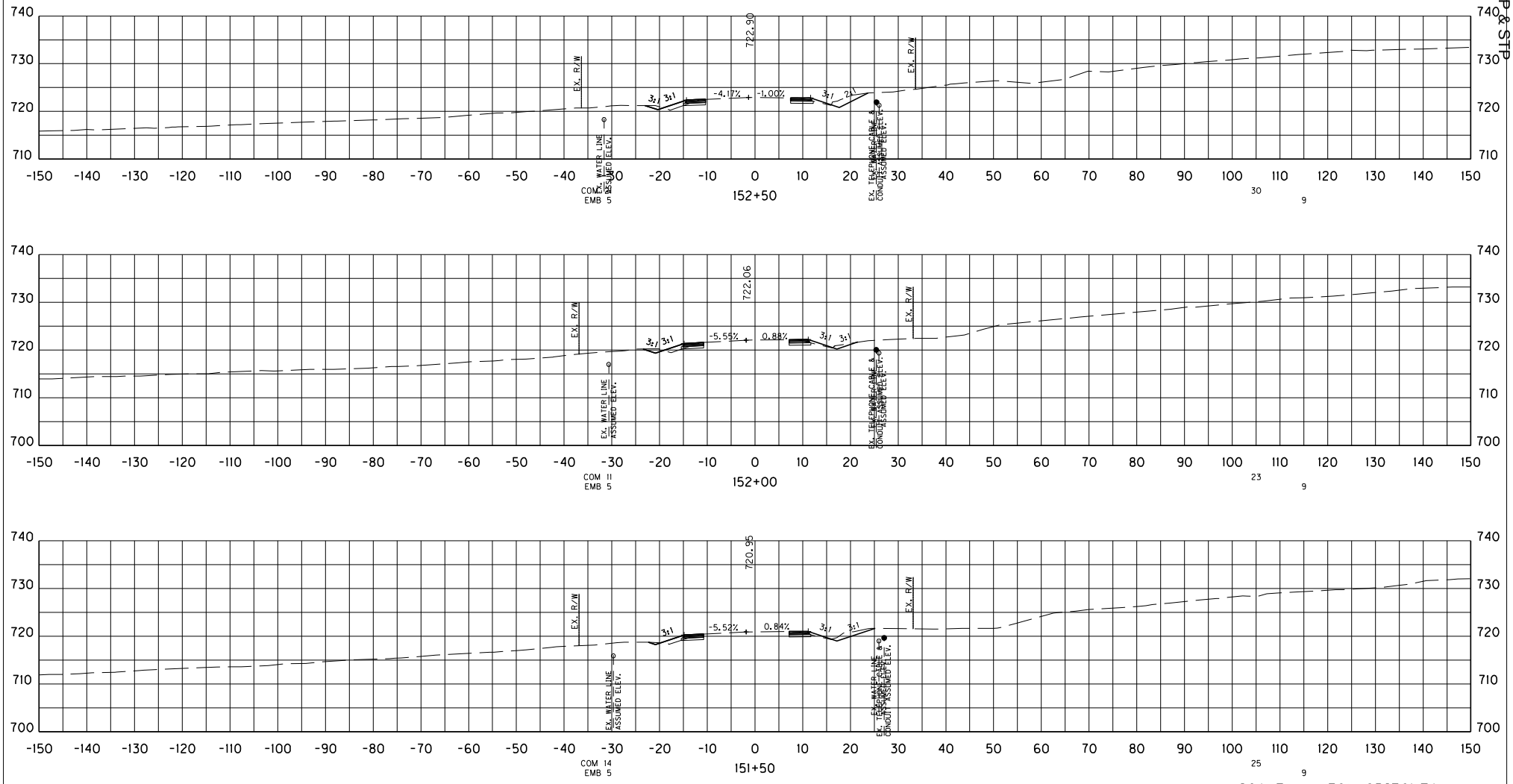


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X27

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.150+00 TO STA.151+00

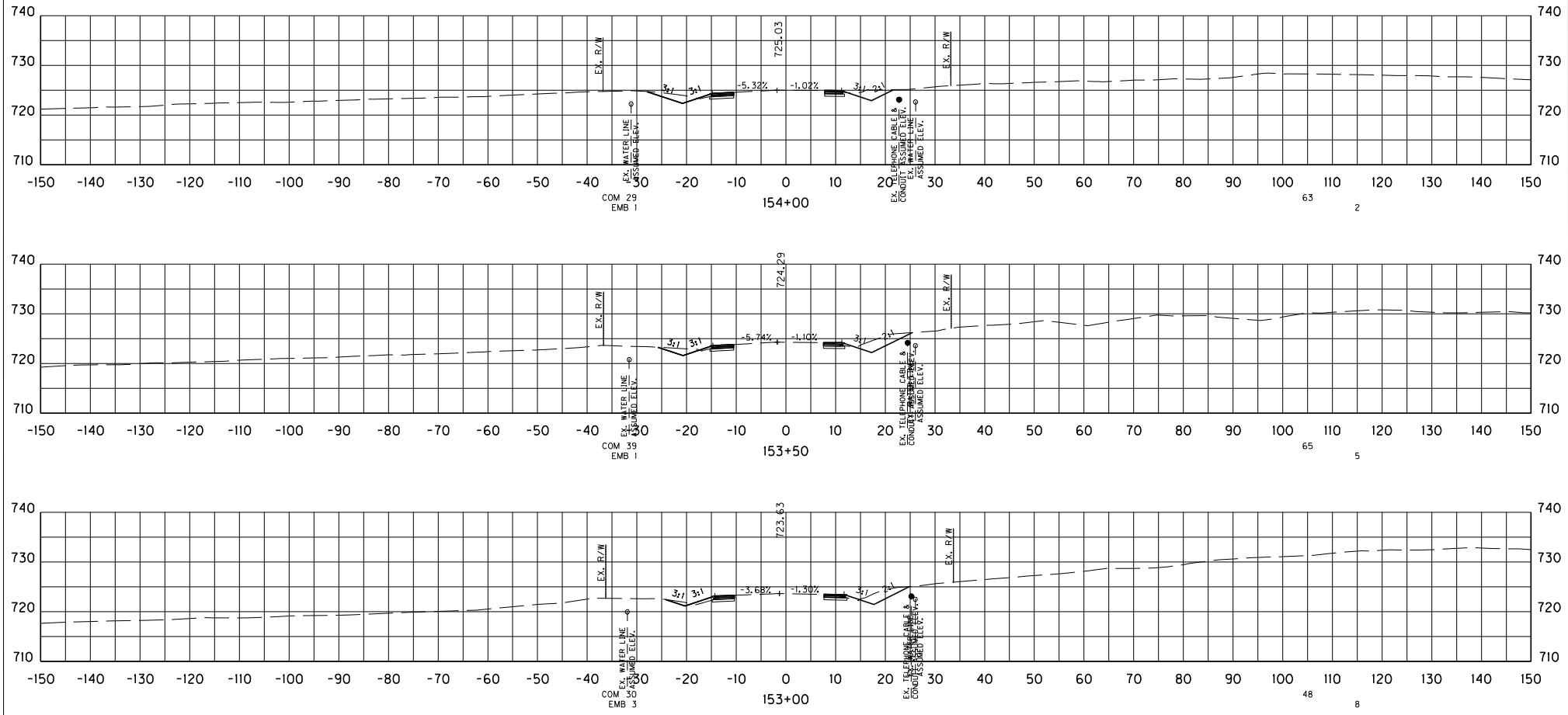


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X28

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.151+50 TO STA.152+50

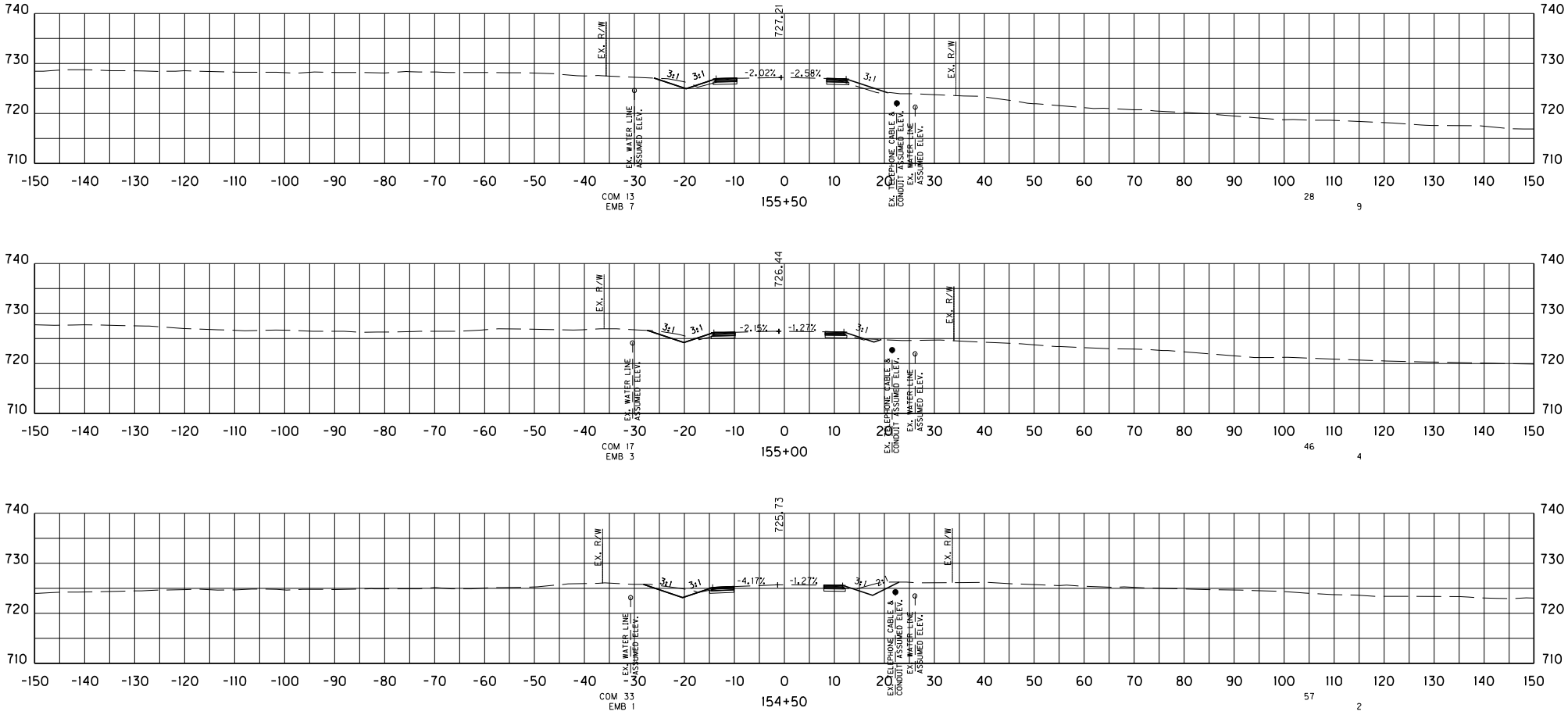


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X29

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.153+00 TO STA.154+00

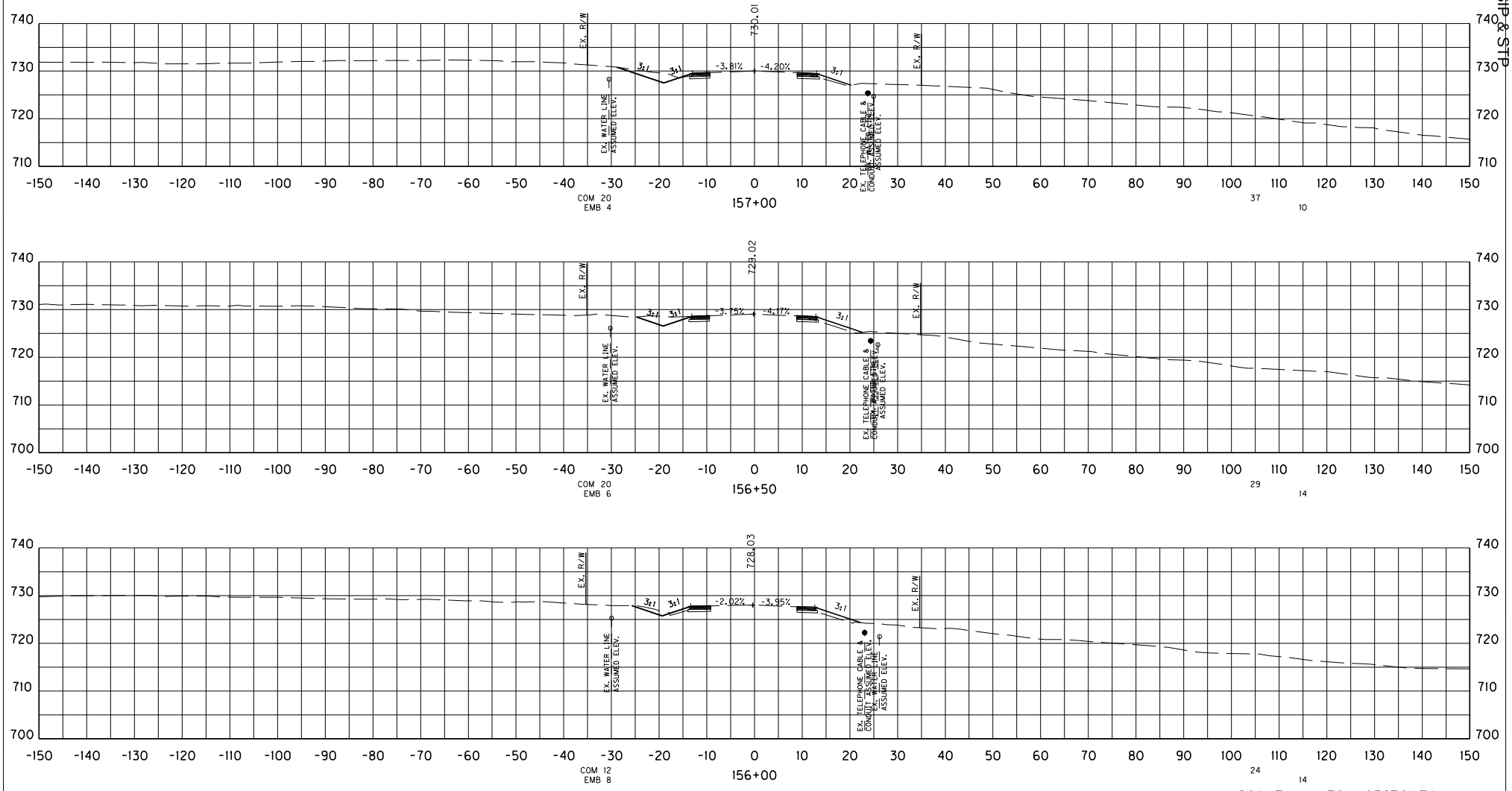


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X30

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.154+50 TO STA.155+50

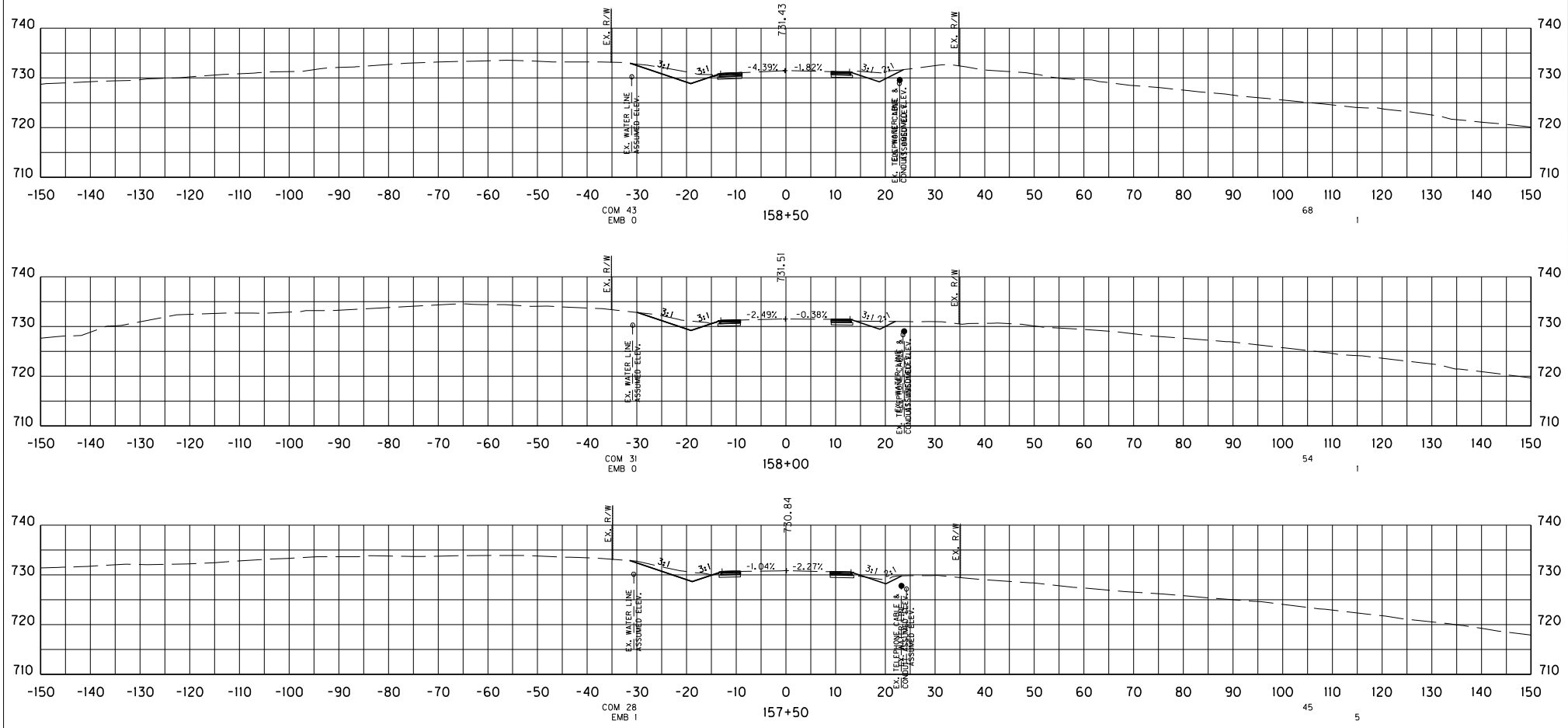


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X31

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.156+00 TO STA.157+00

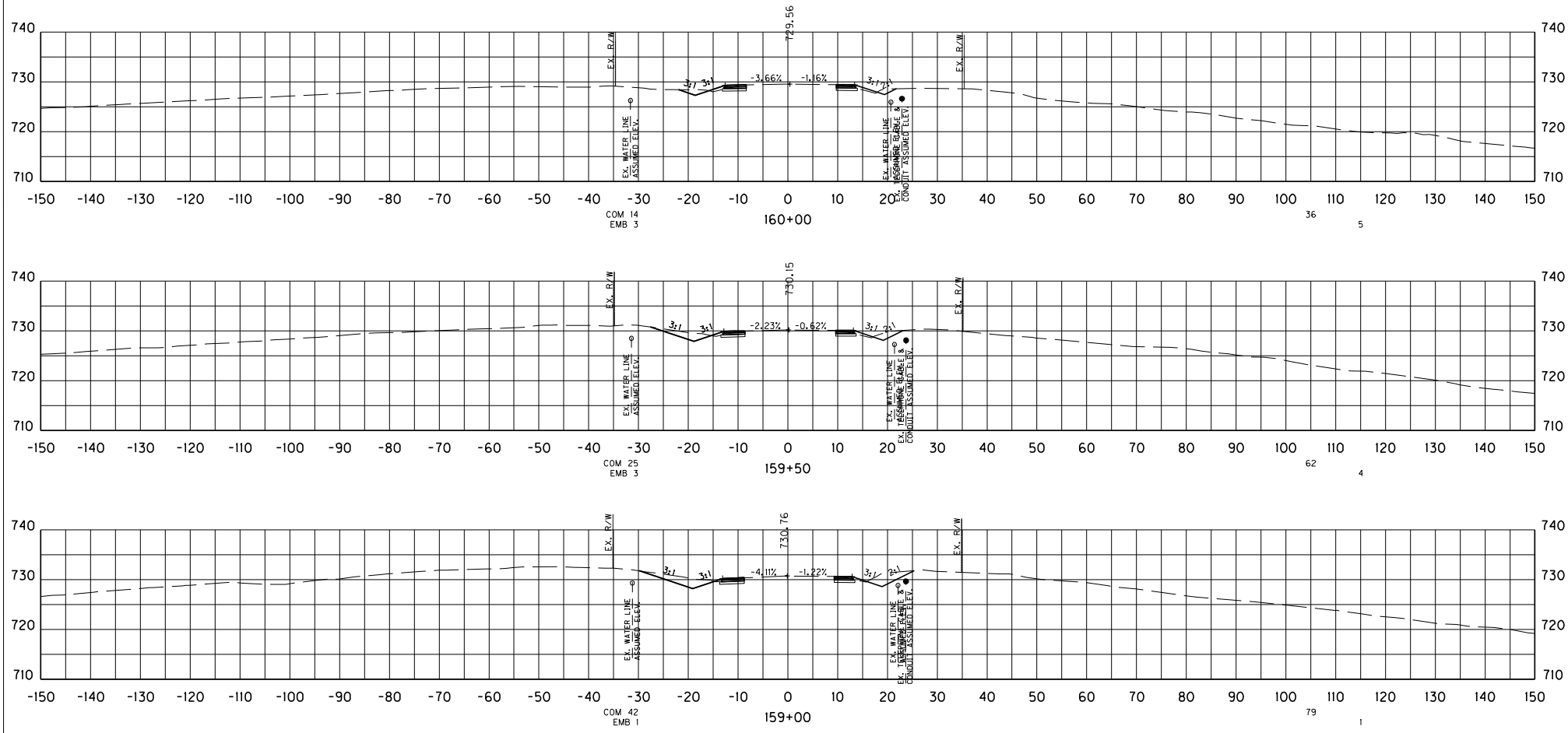


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X32

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.157+50 TO STA.158+50

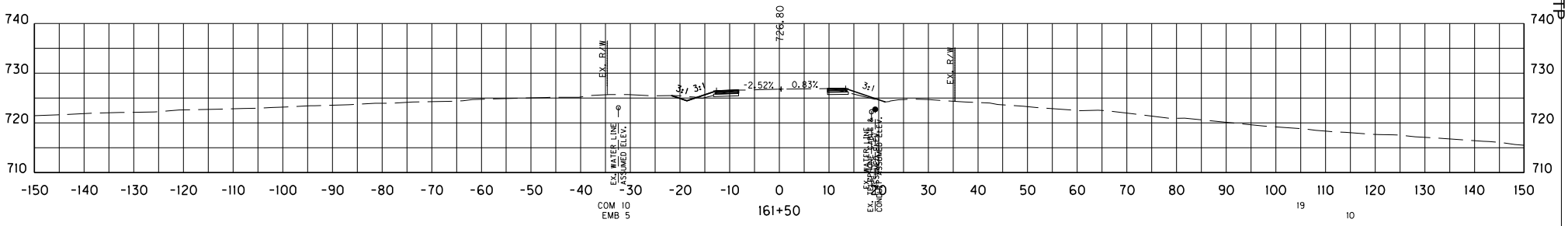


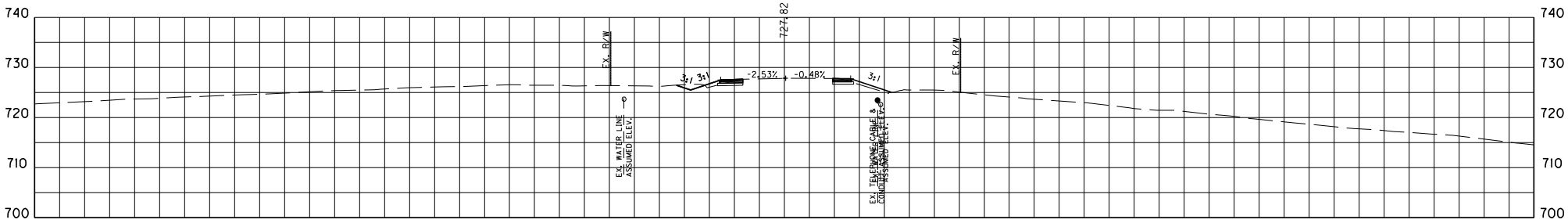
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

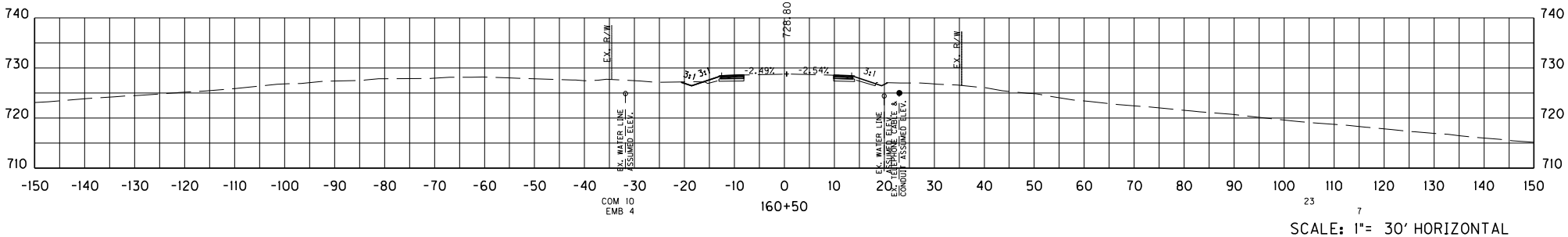
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X33

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.159+00 TO STA.160+00





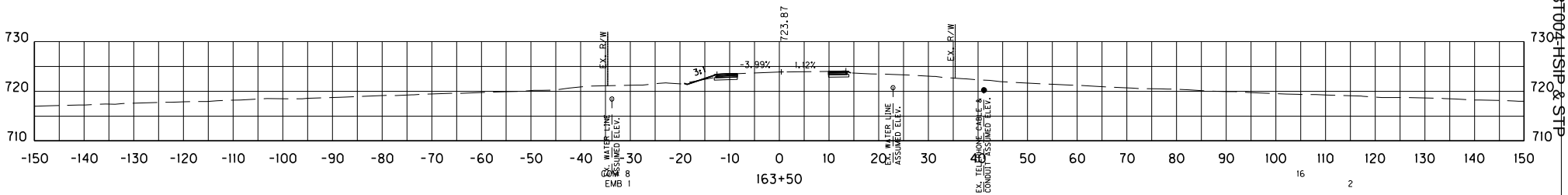


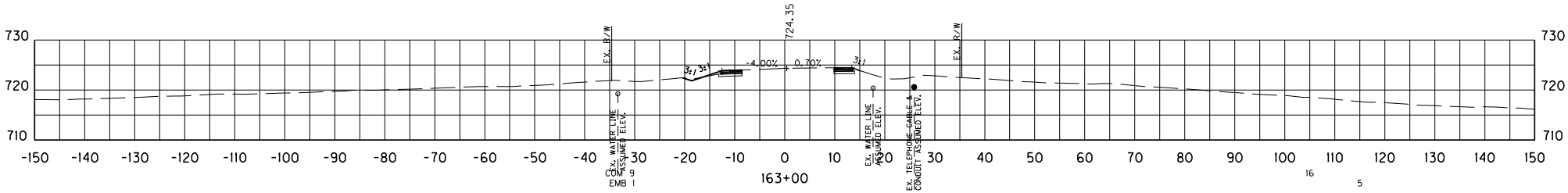
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

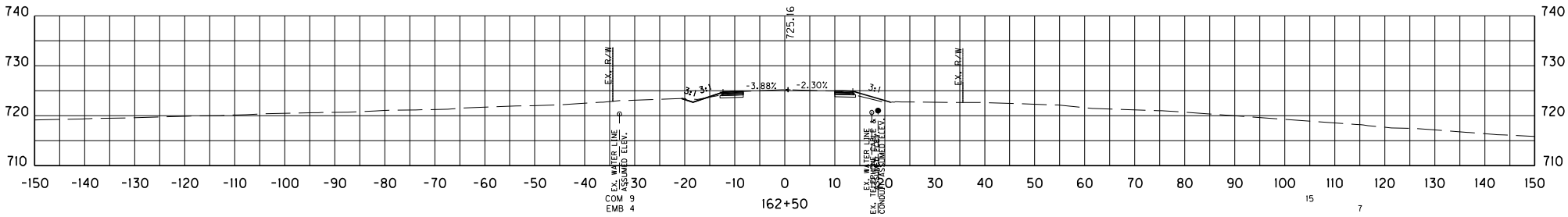
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X34

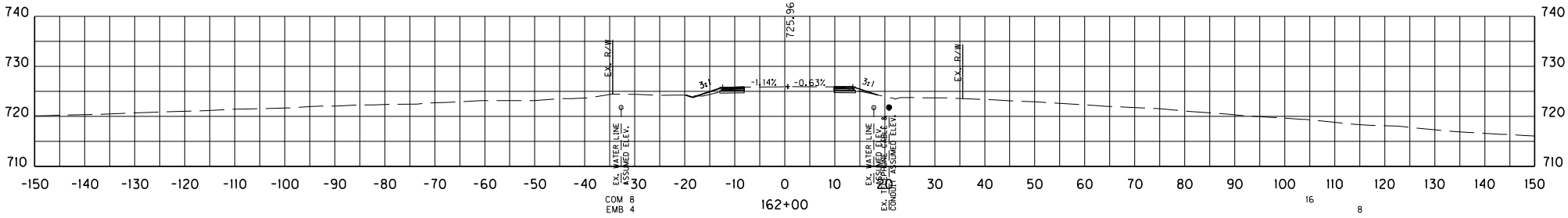
KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.160+50 TO STA.161+50







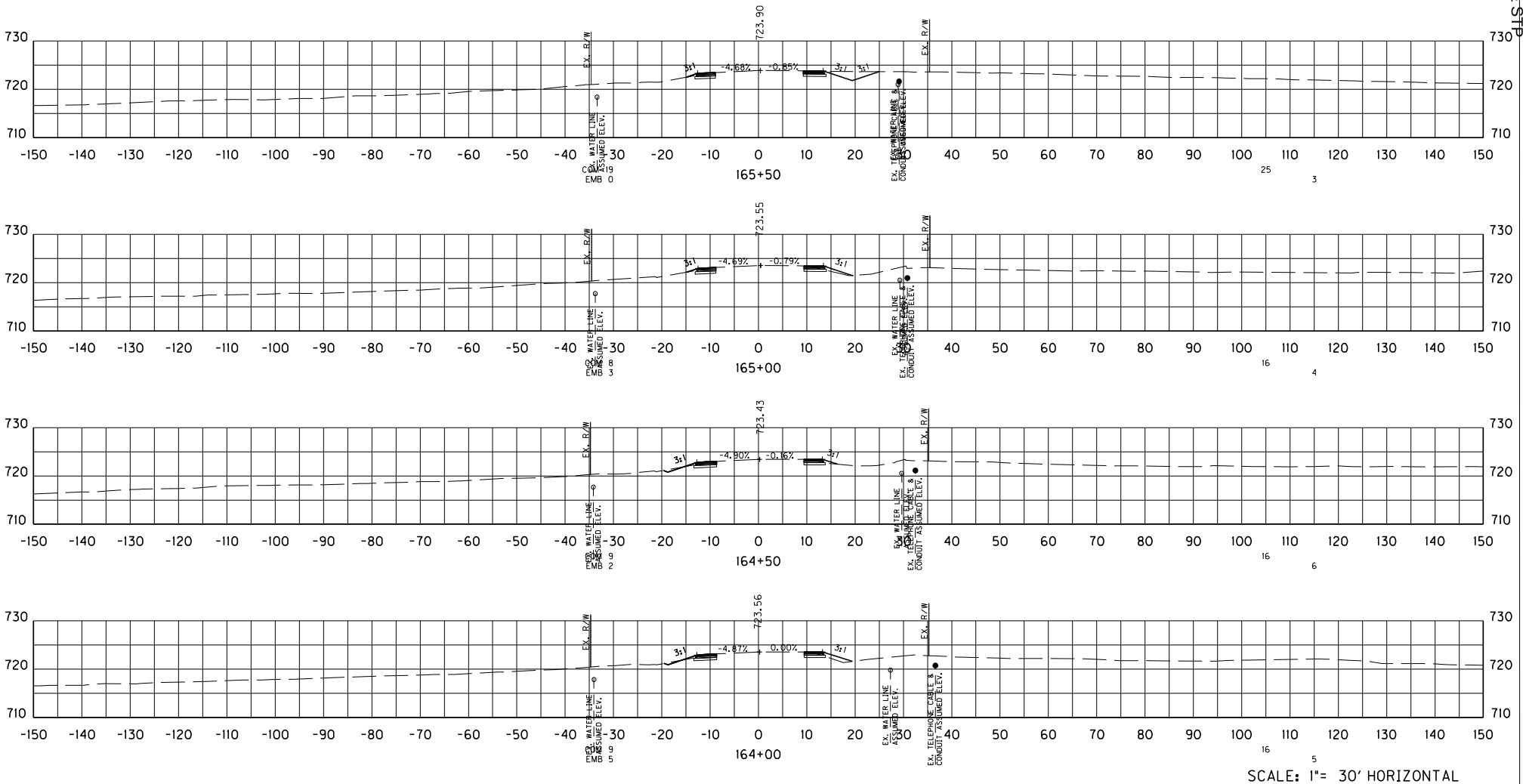


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X35

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.162+00 TO STA.163+50

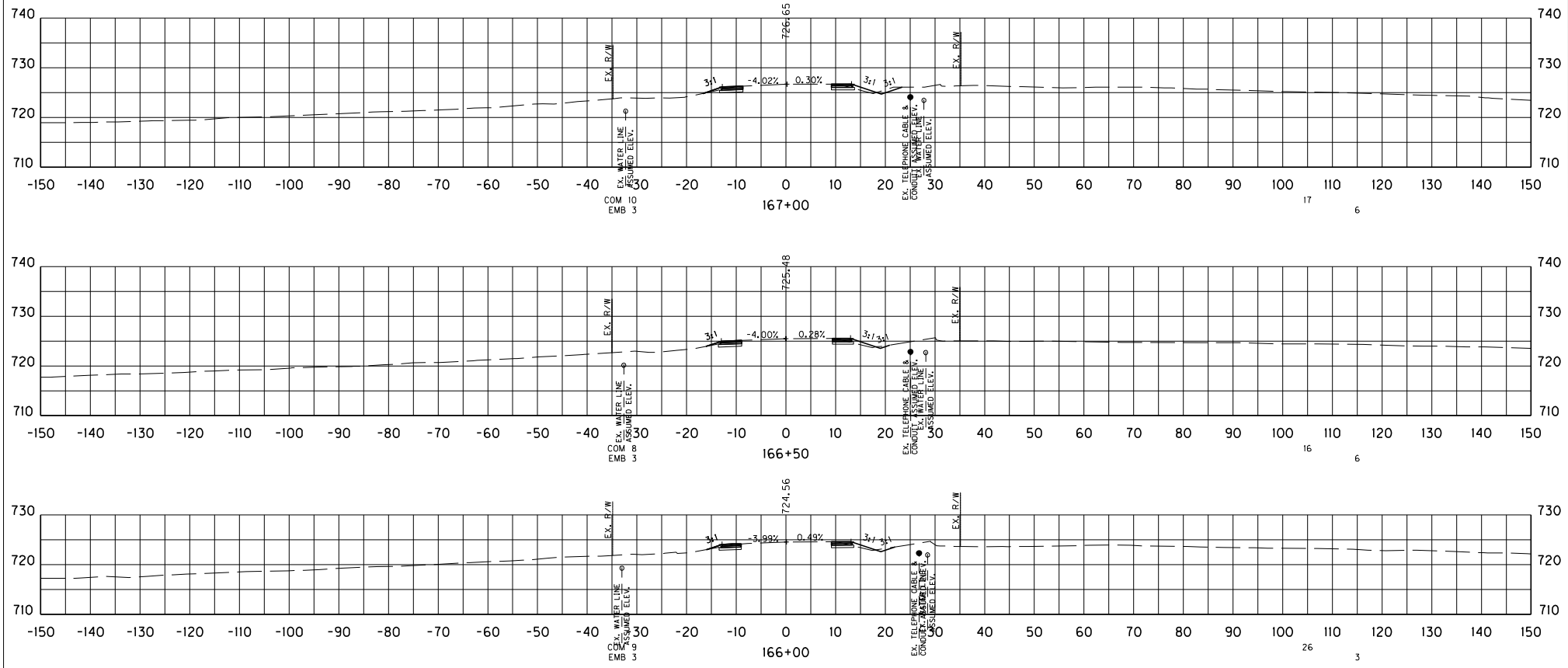


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X36

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.164+00 TO STA.165+50

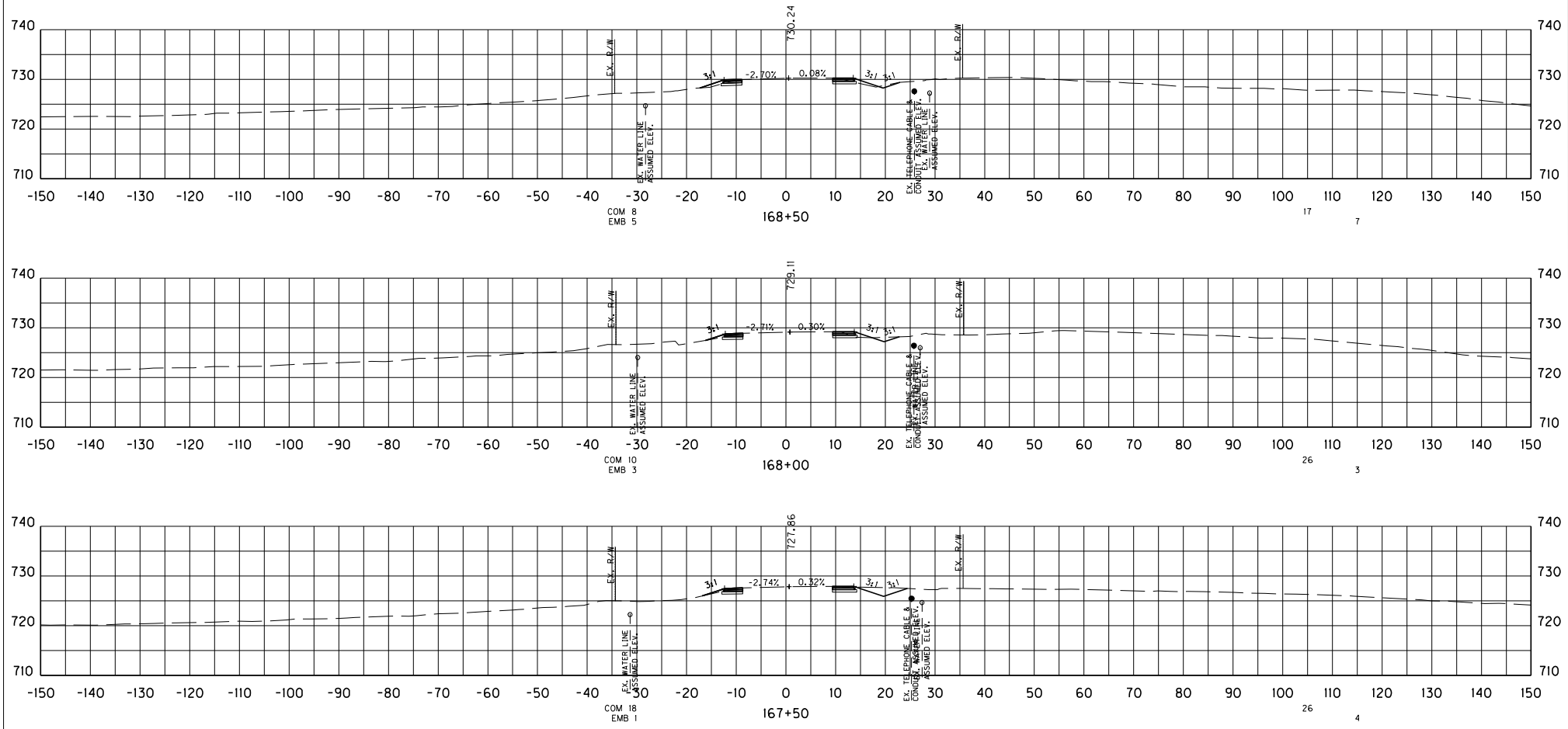


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X37

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.166+00 TO STA.167+00

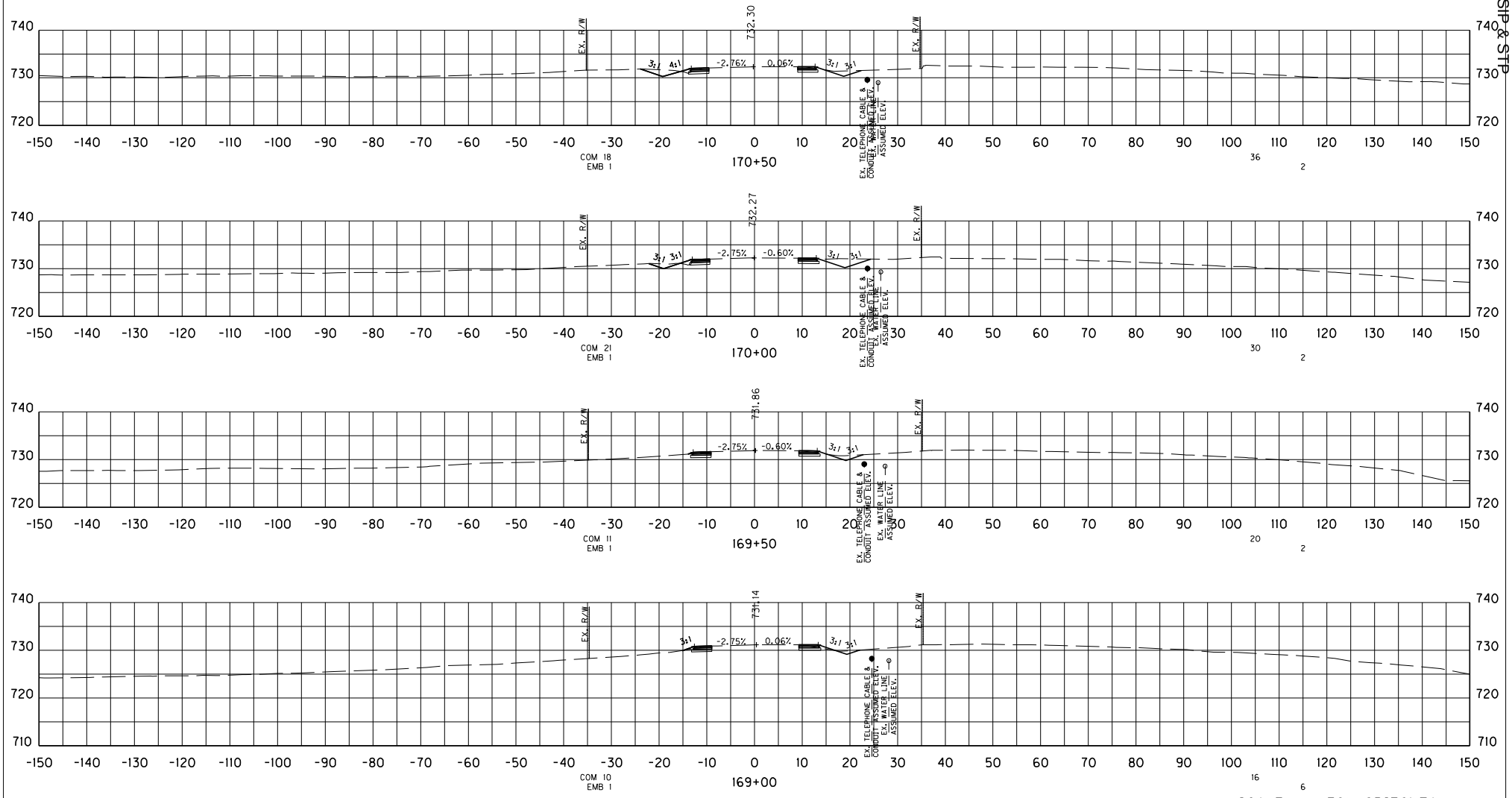


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X38

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.167+50 TO STA.168+50

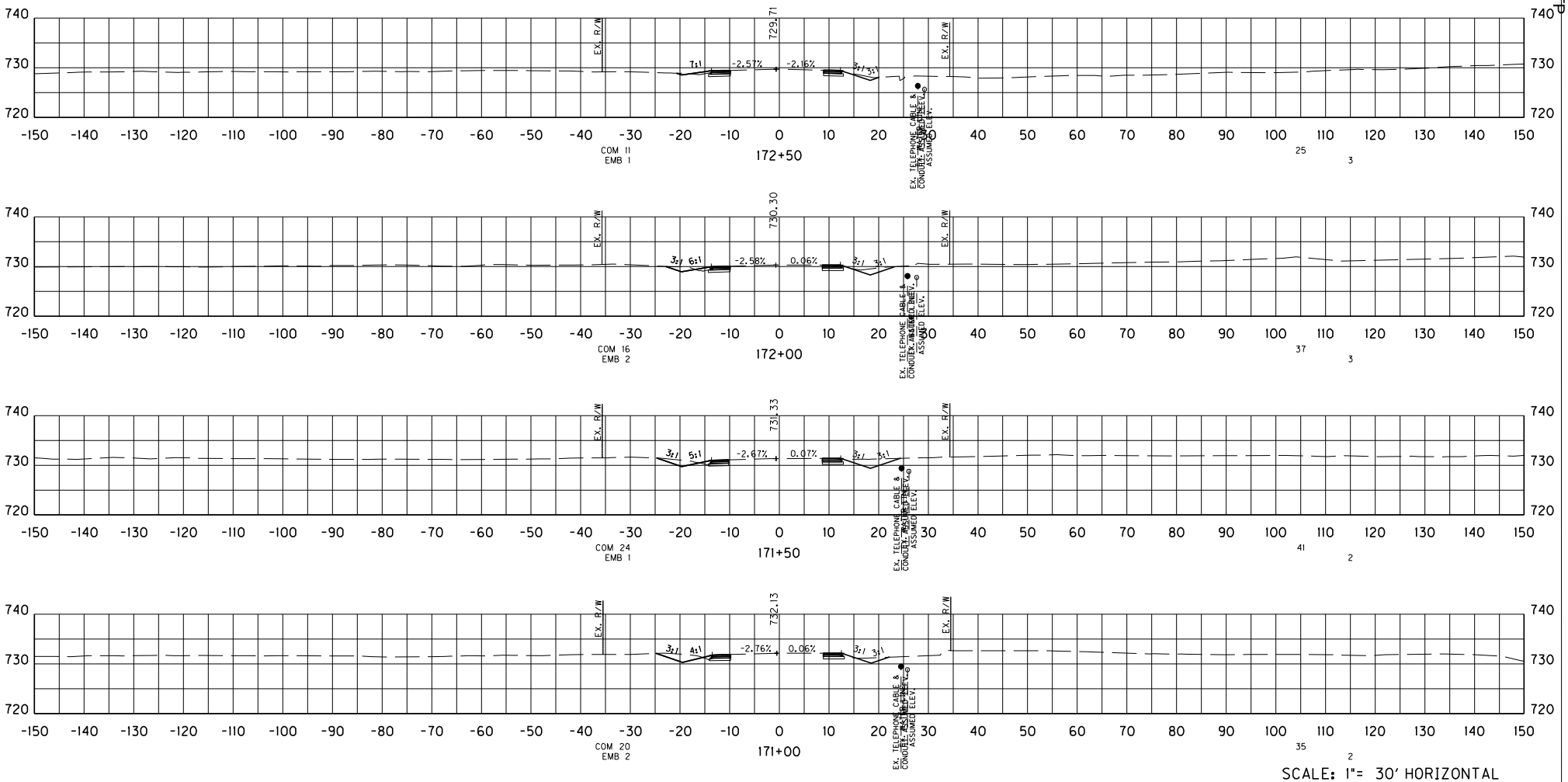


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X39

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.169+00 TO STA.170+50

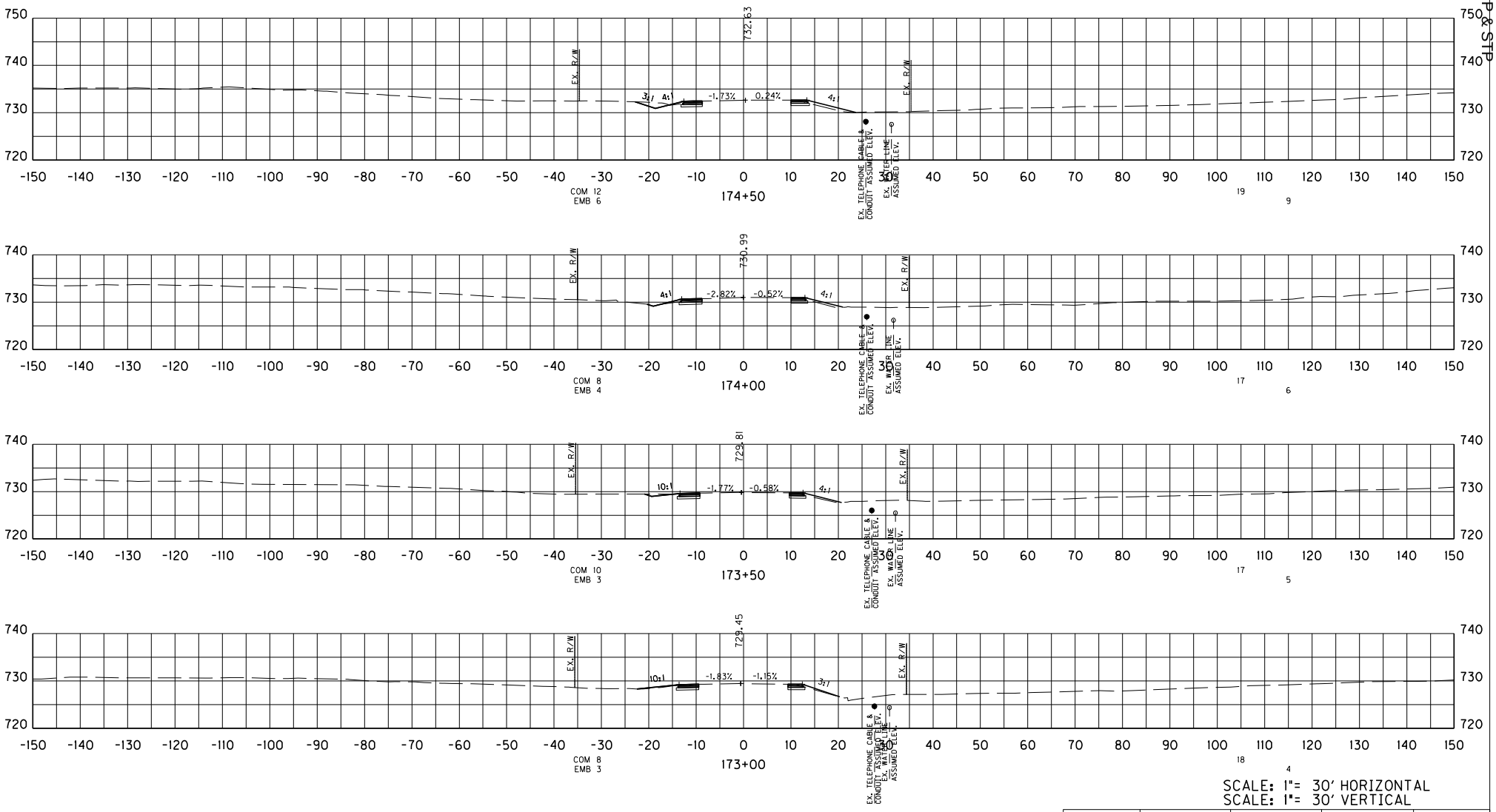


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X40

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.171+00 TO STA.172+50

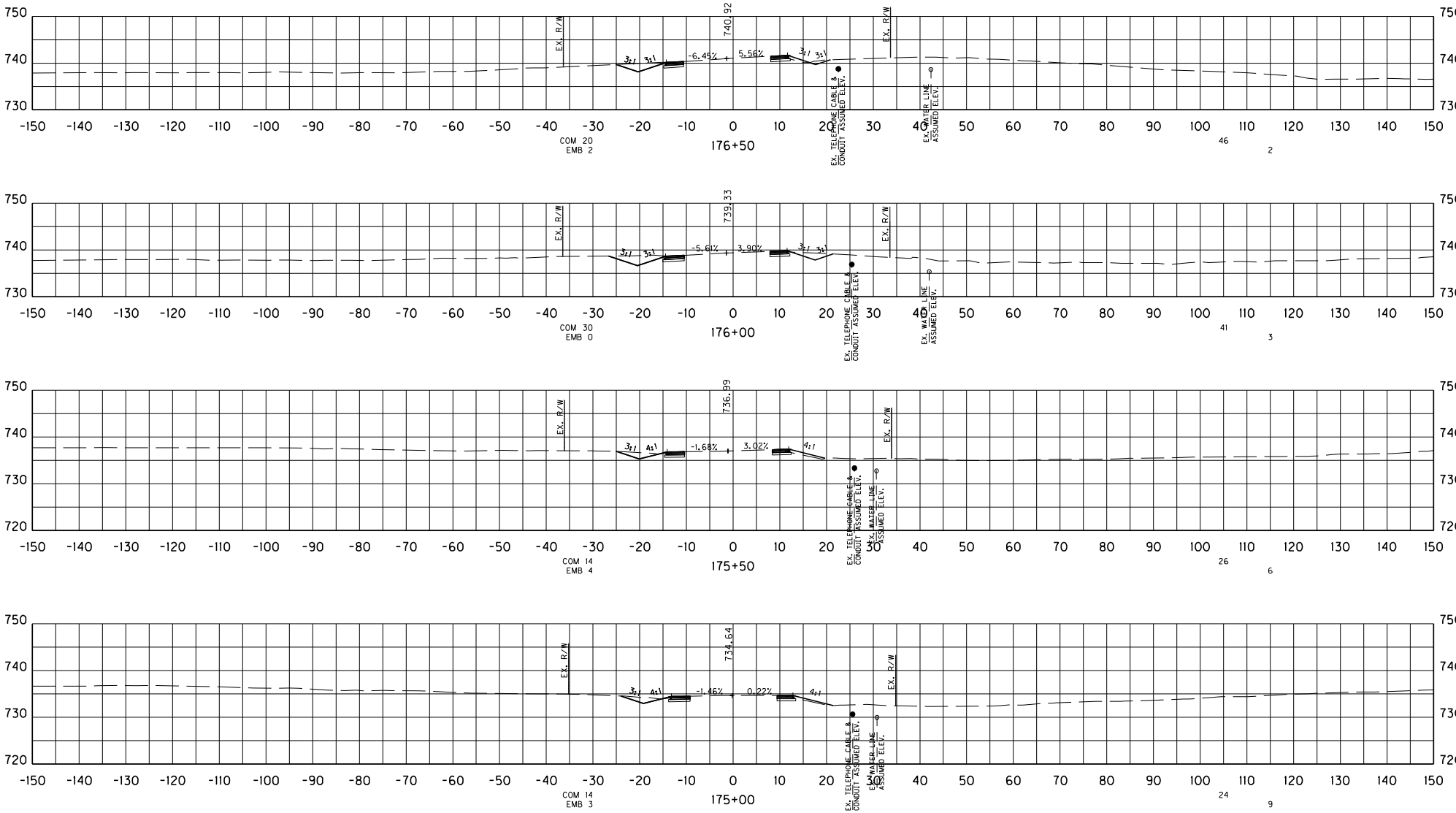


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X41

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.173+00 TO STA.174+50

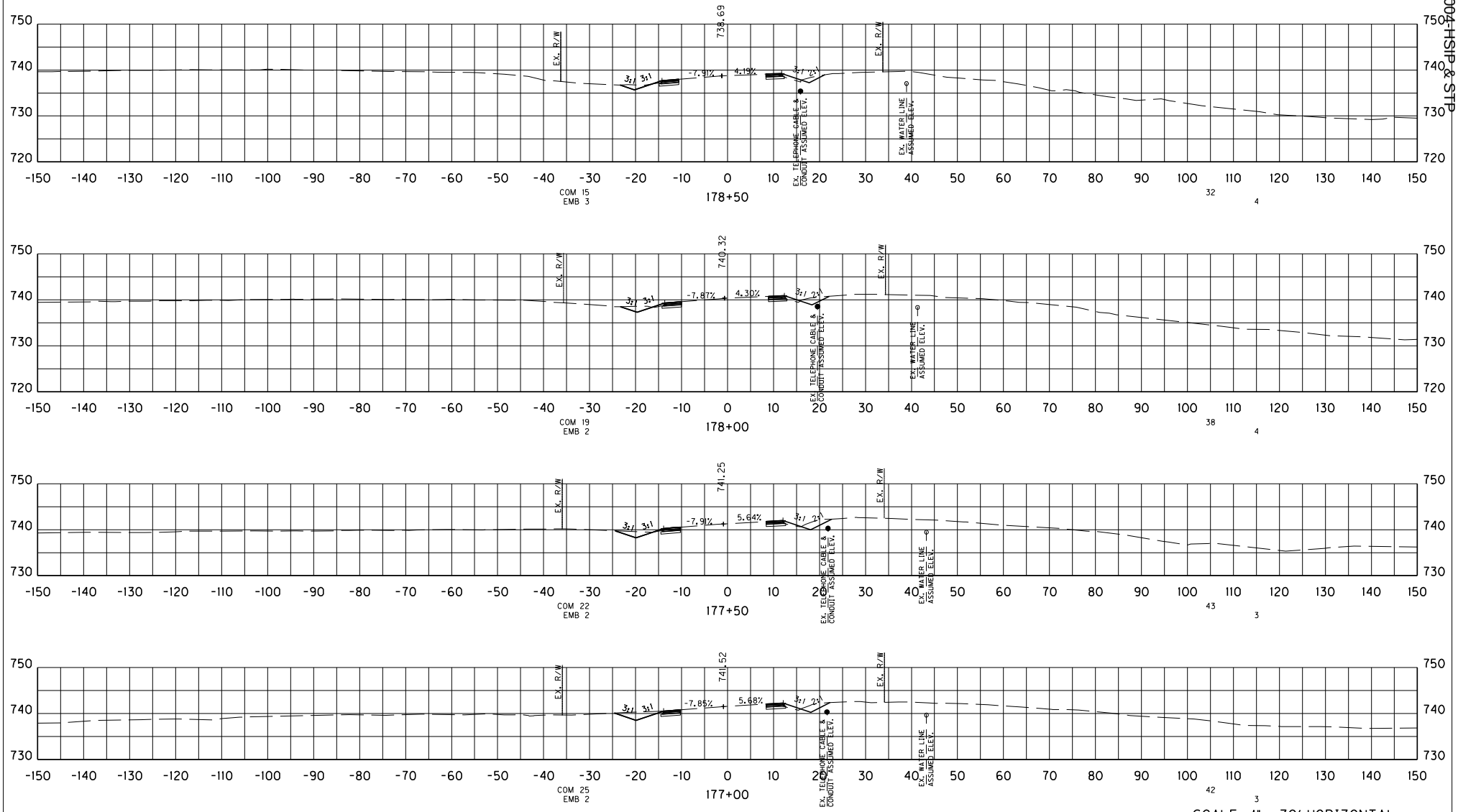


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X42

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.175+00 TO STA.176+50

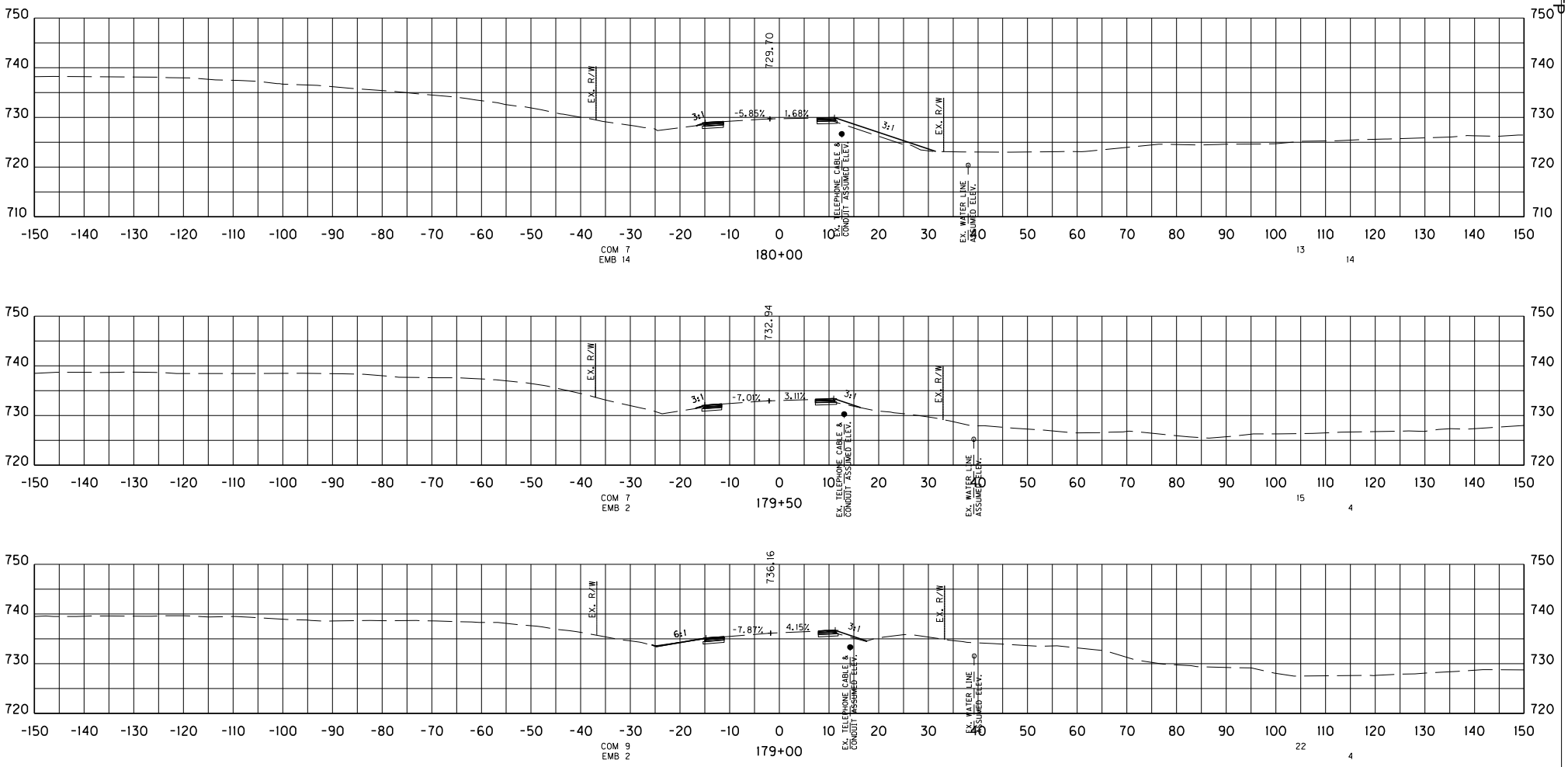


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X43

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.177+00 TO STA.178+50

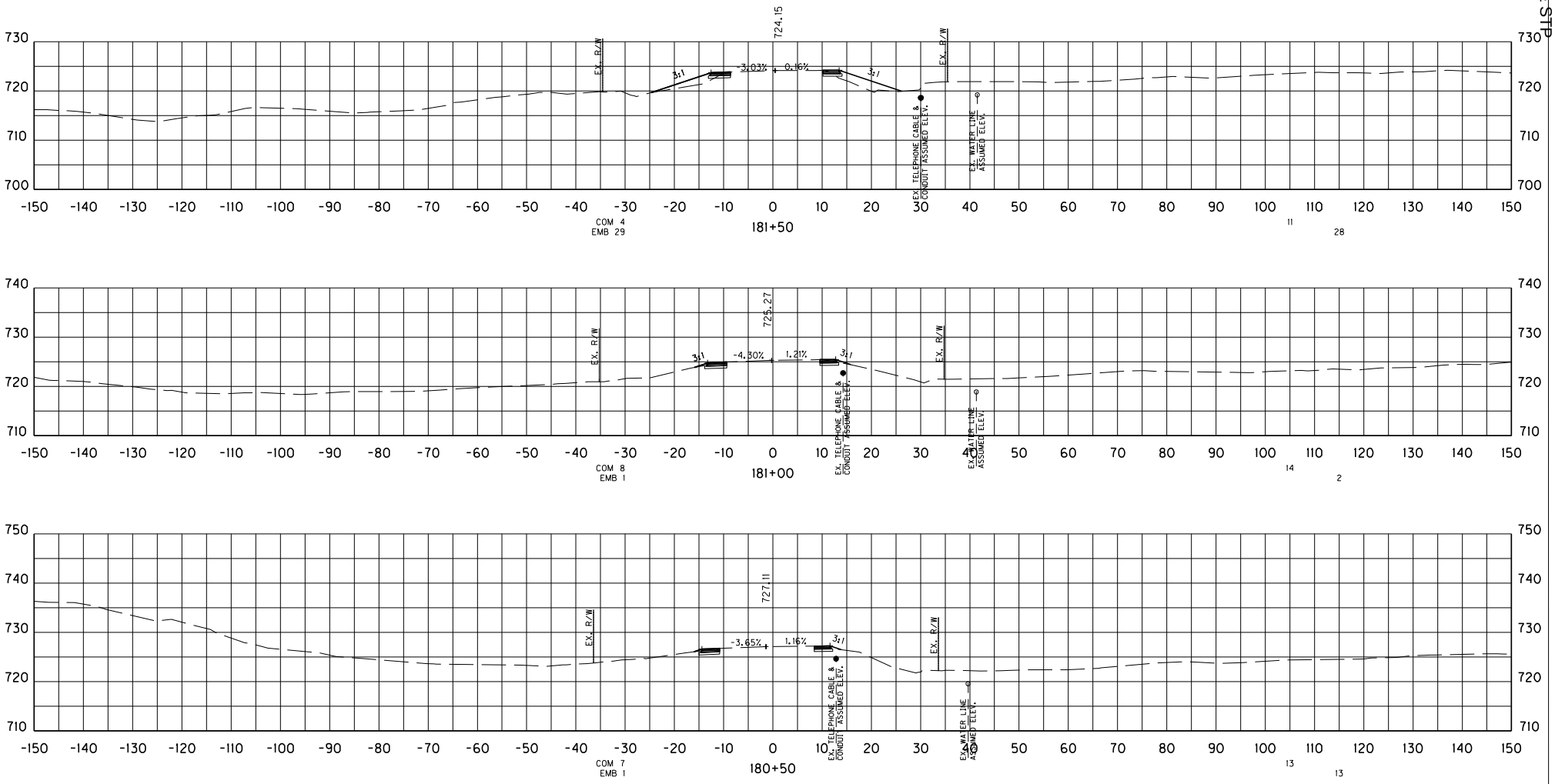


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X44

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.179+00 TO STA.180+00

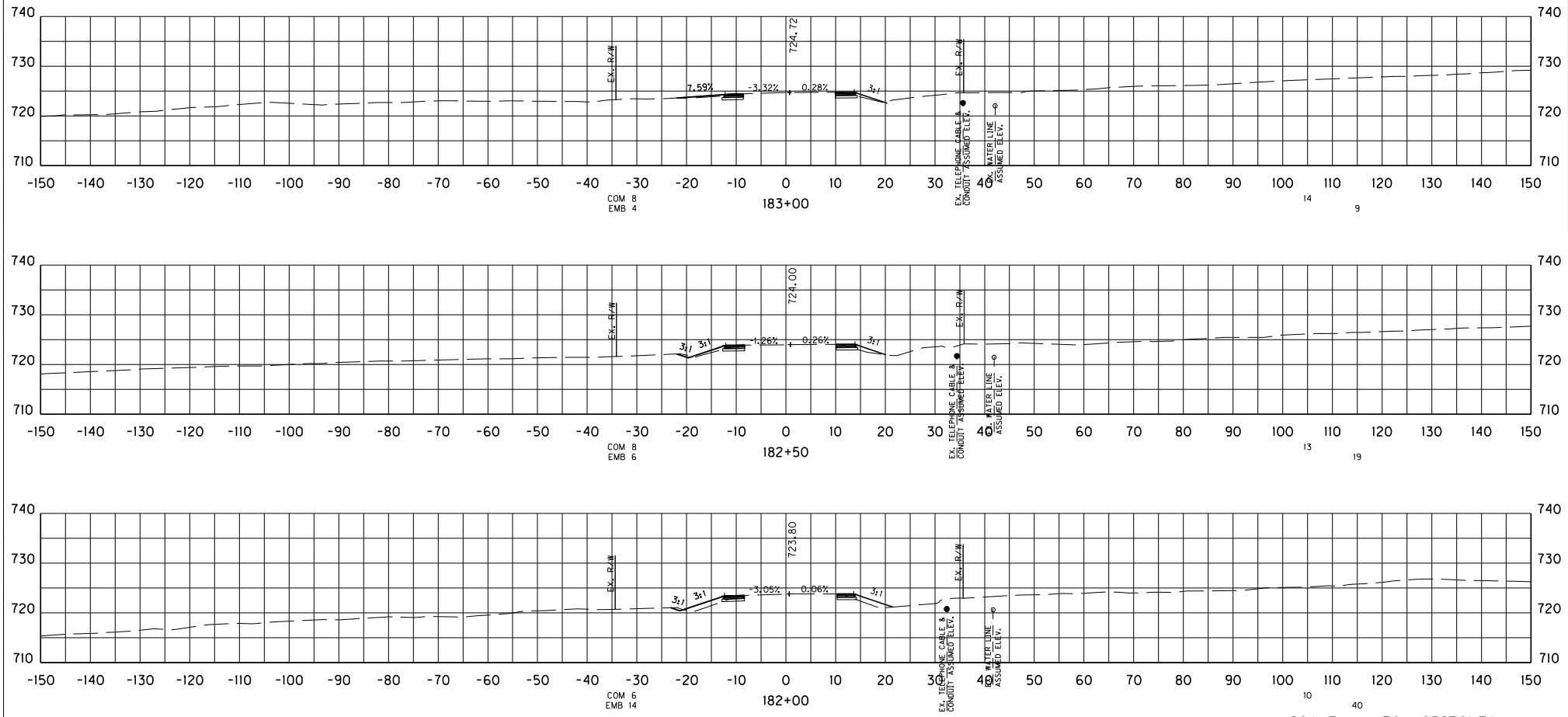


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X45

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.180+50 TO STA.181+50

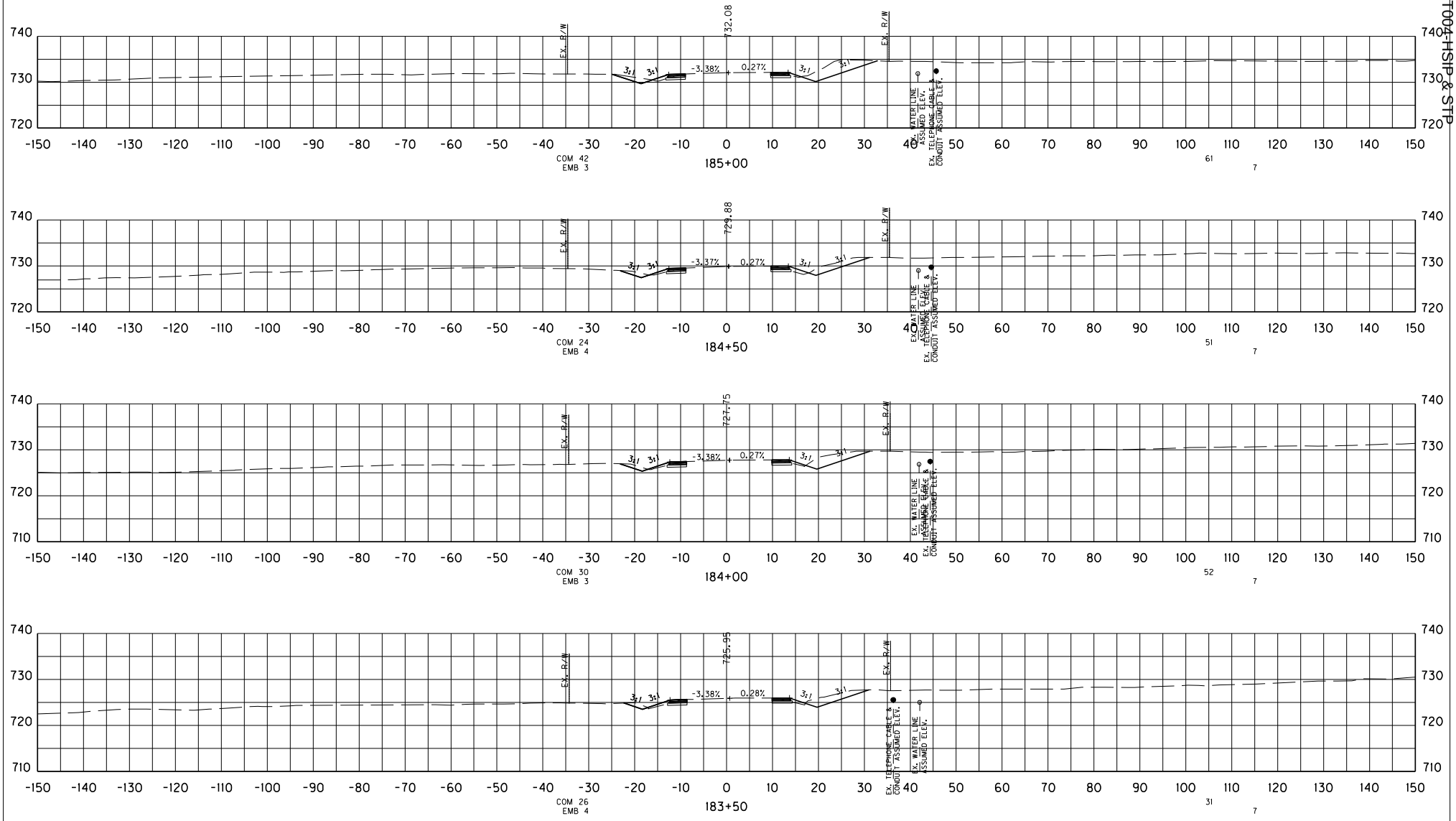


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X46

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.182+00 TO STA.183+00

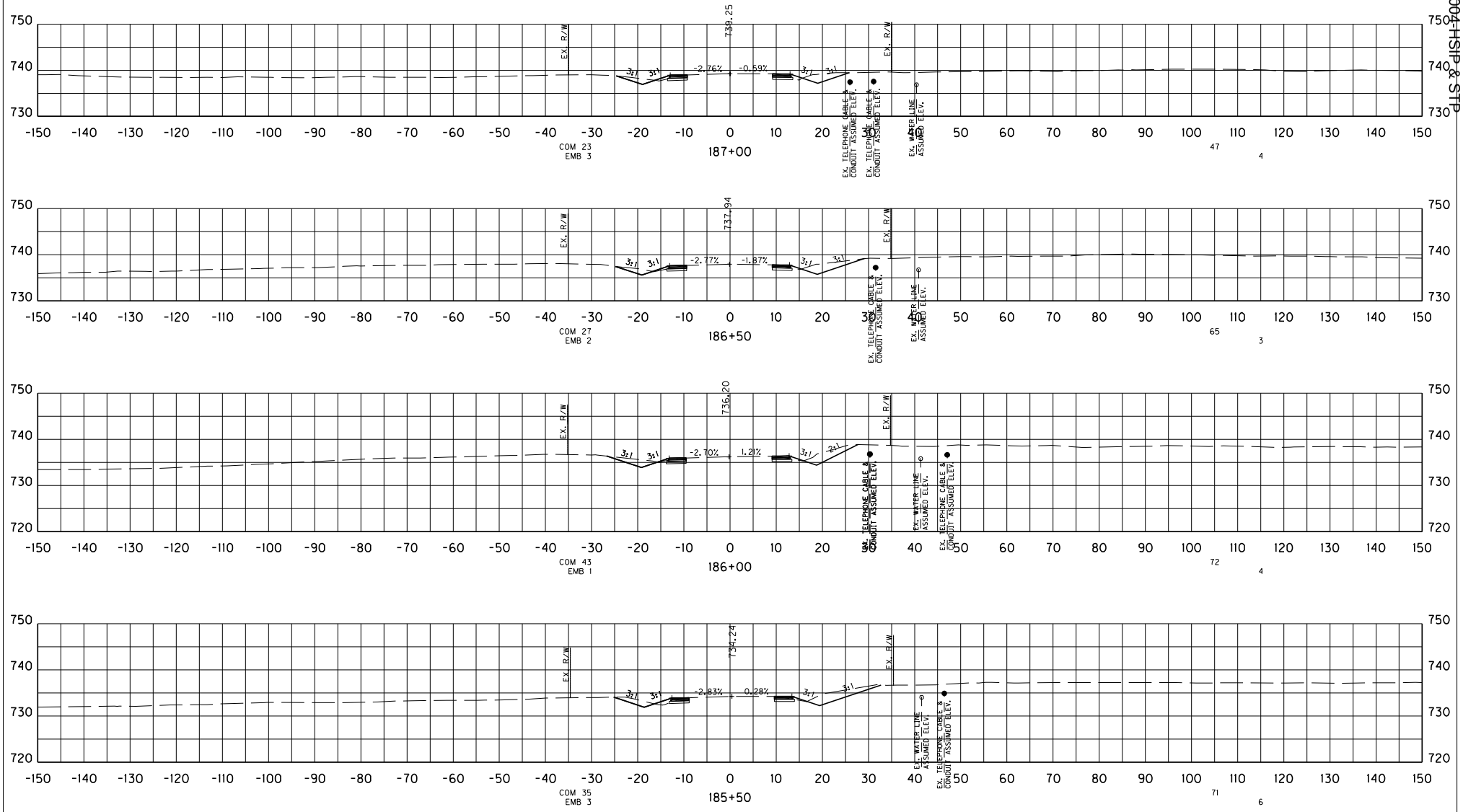


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X47

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.183+50 TO STA.185+00

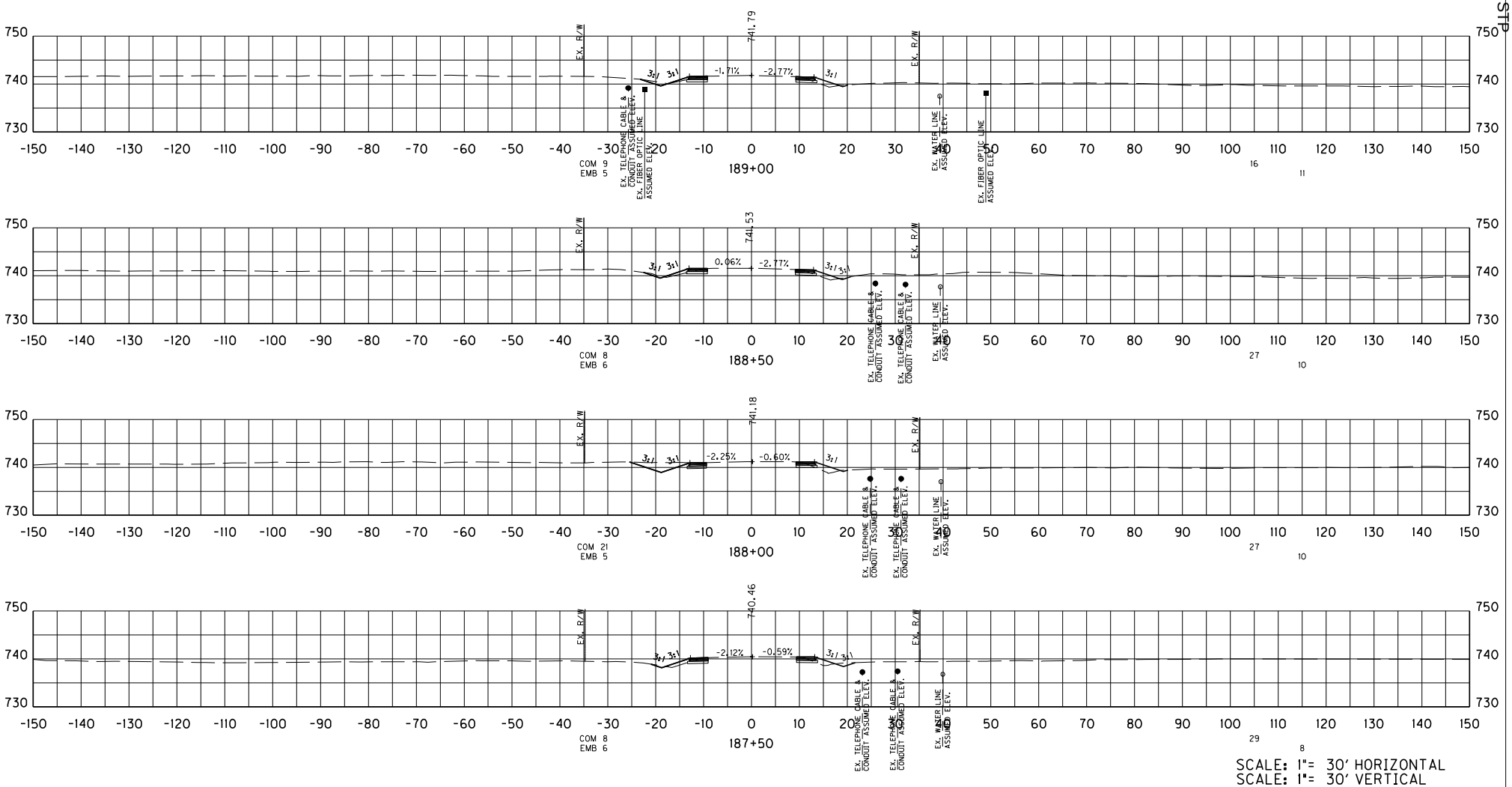


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X48

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.185+50 TO STA.187+00

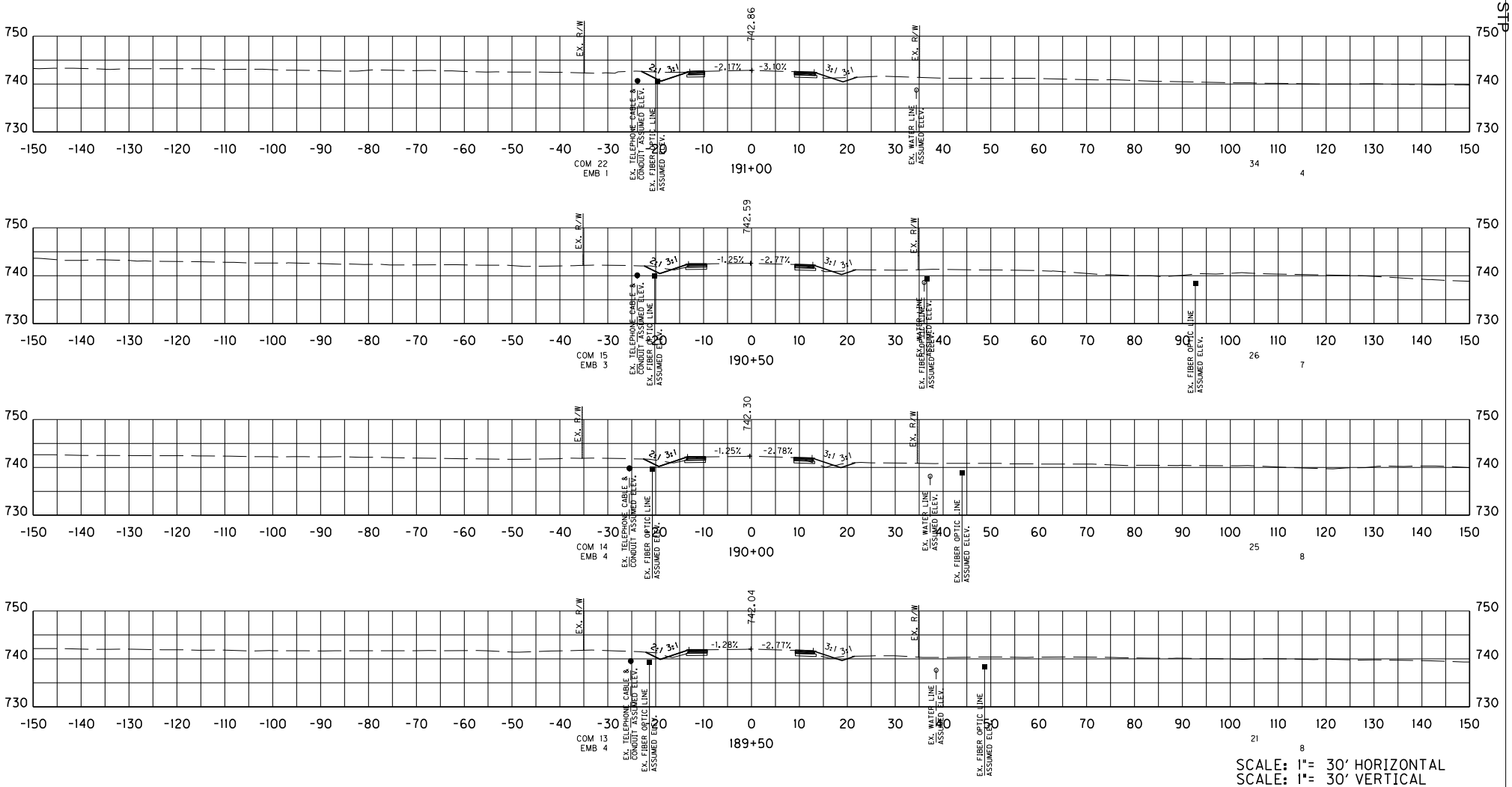


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X49

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.187+50 TO STA.189+00

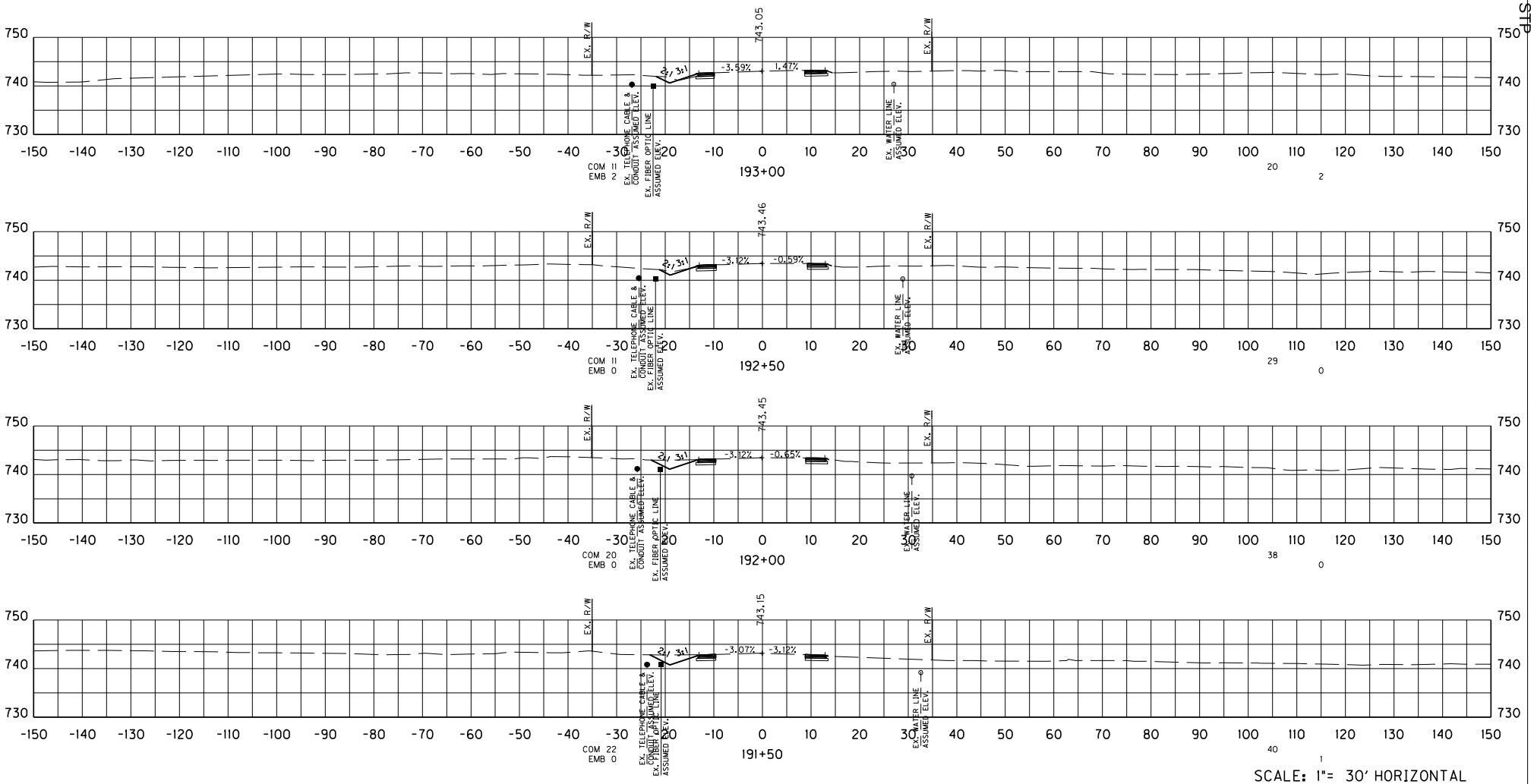


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X50

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.189+50 TO STA.191+00

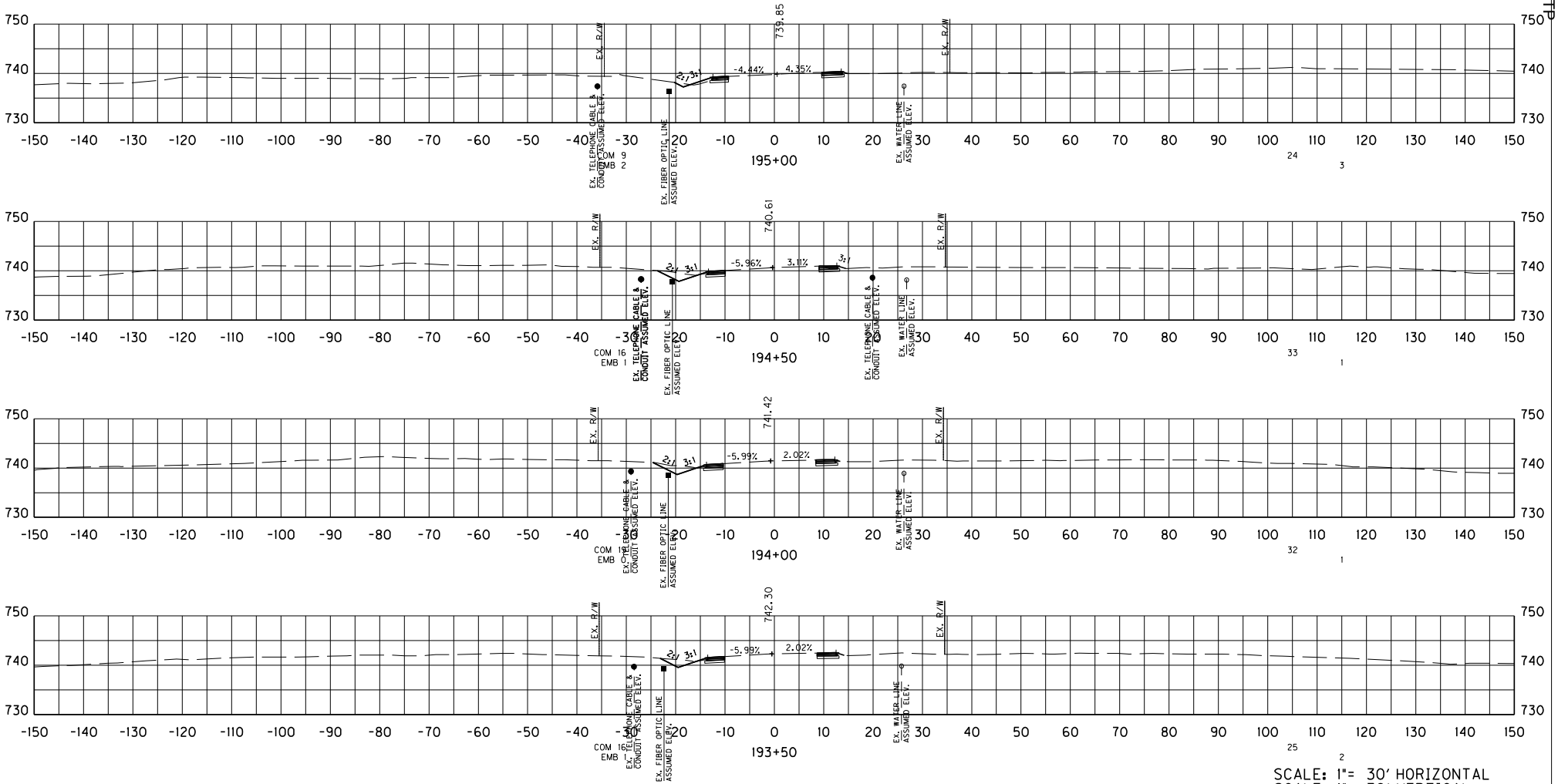


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X51

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.191+50 TO STA.193+00

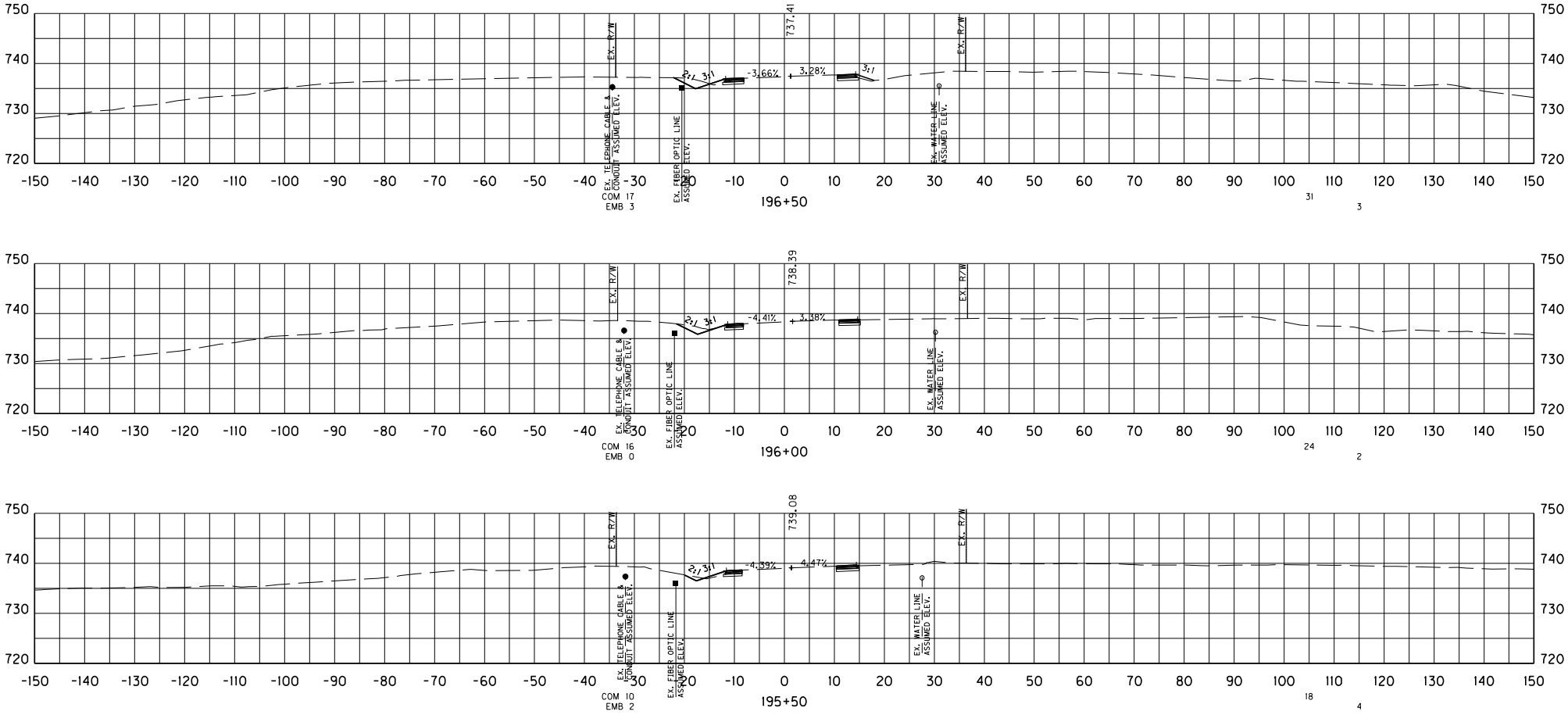


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X52

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.193+50 TO STA.195+00

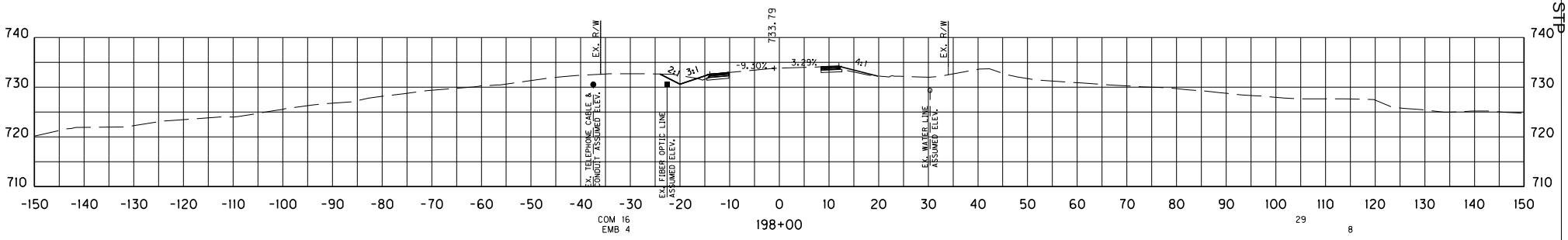


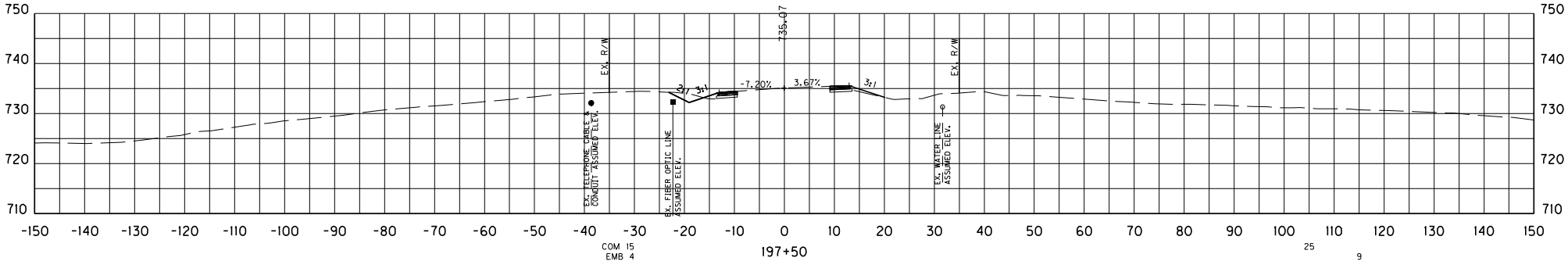
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

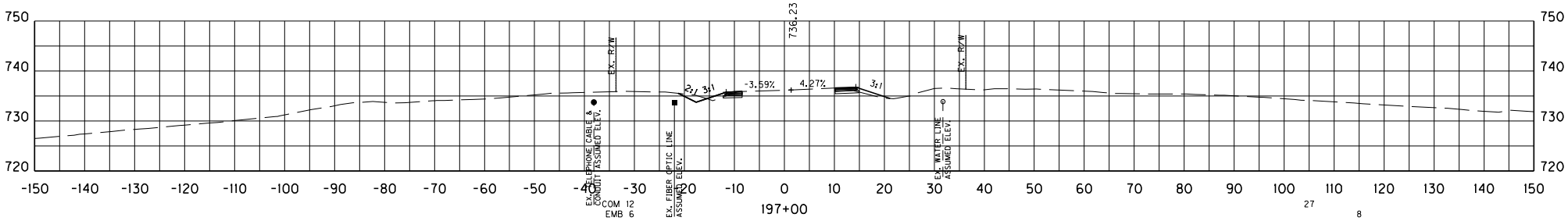
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X53

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.195+50 TO STA.196+50





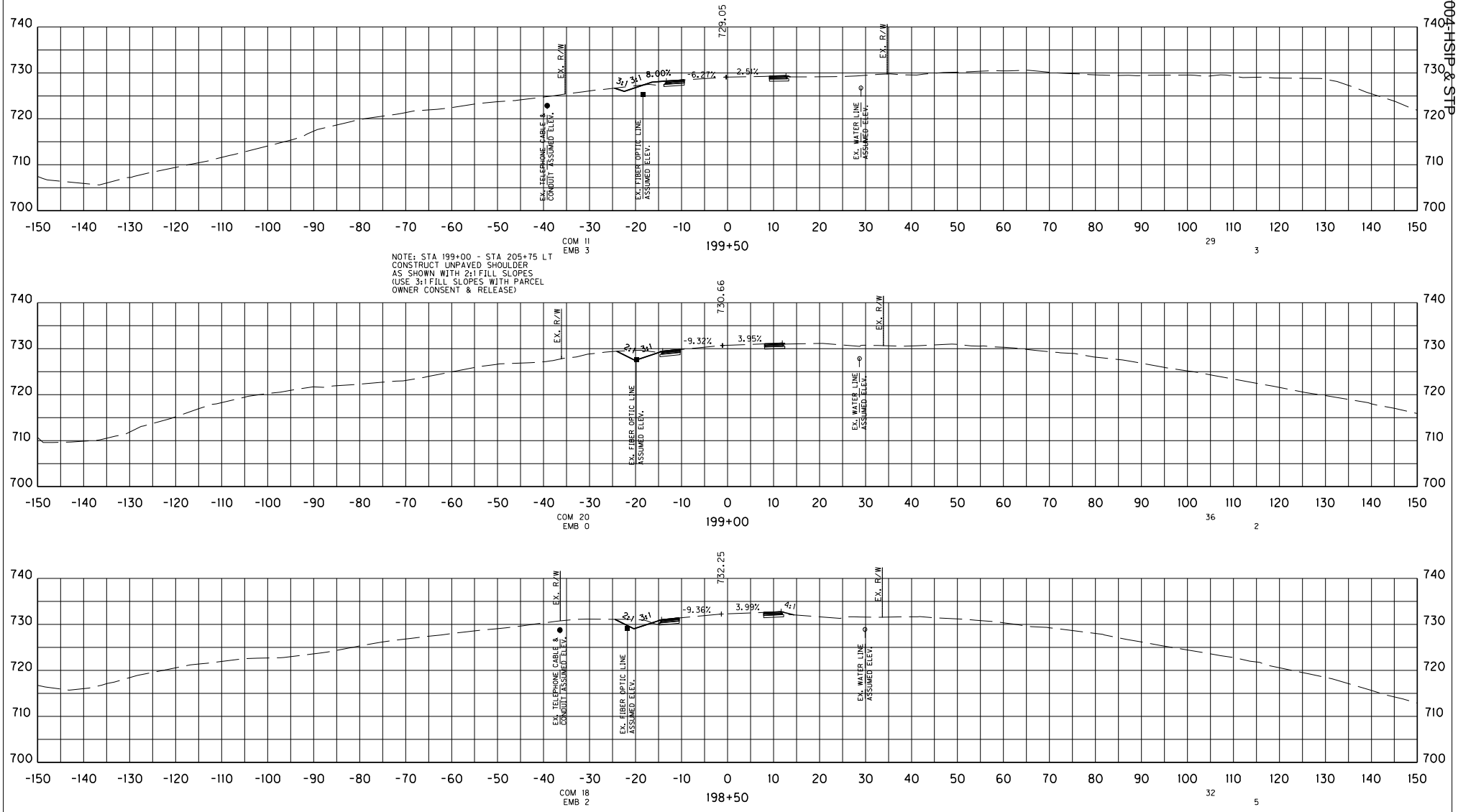


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X54

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.197+00 TO STA.198+00



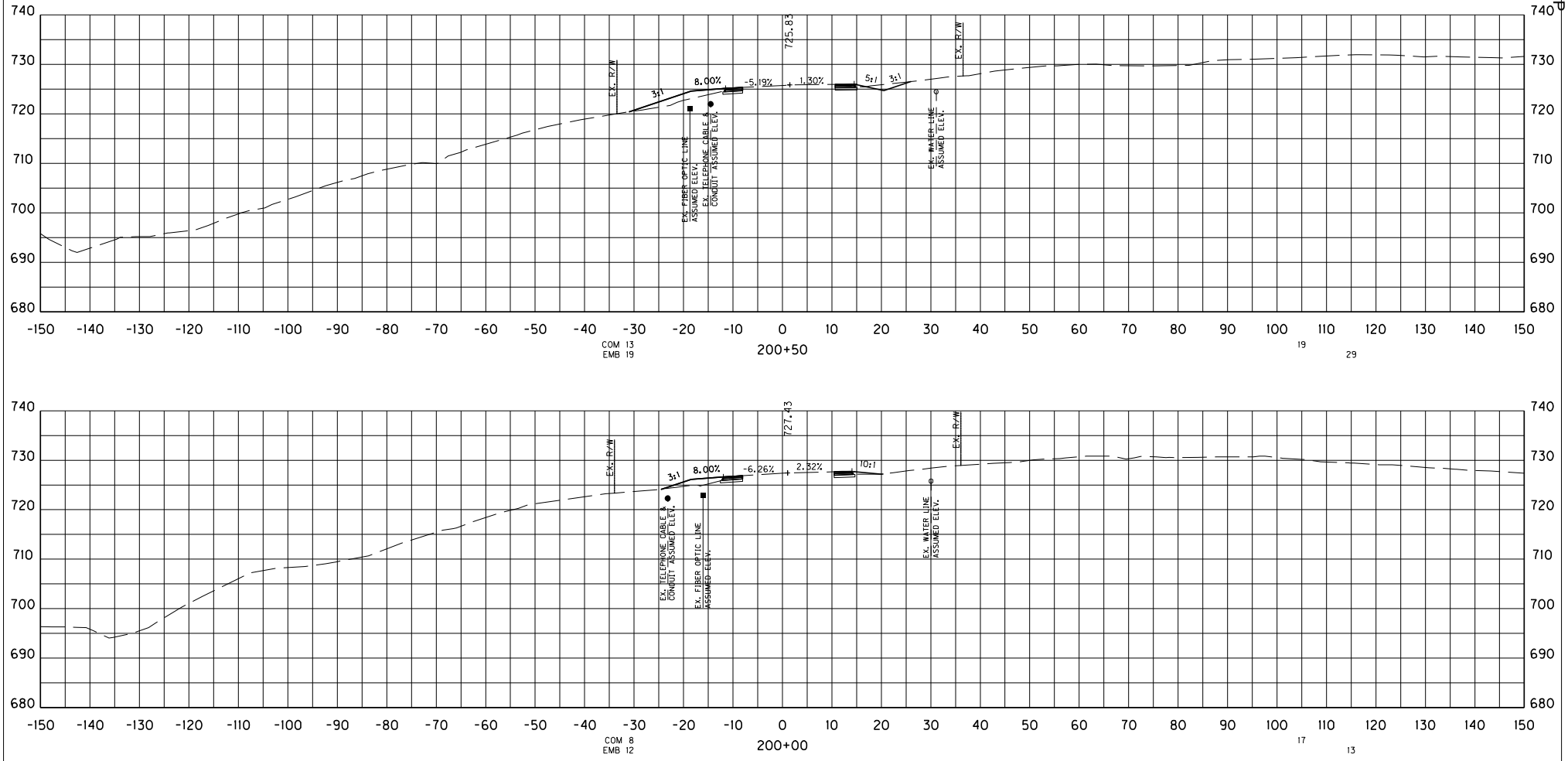
NOTE: STA 199+00 - STA 205+75 LT
CONSTRUCT UNPAVED SHOULDER
AS SHOWN WITH 2:1 FILL SLOPES
(USE 3:1 FILL SLOPES WITH PARCEL
OWNER CONSENT & RELEASE)

SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X55

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.198+50 TO STA.199+50

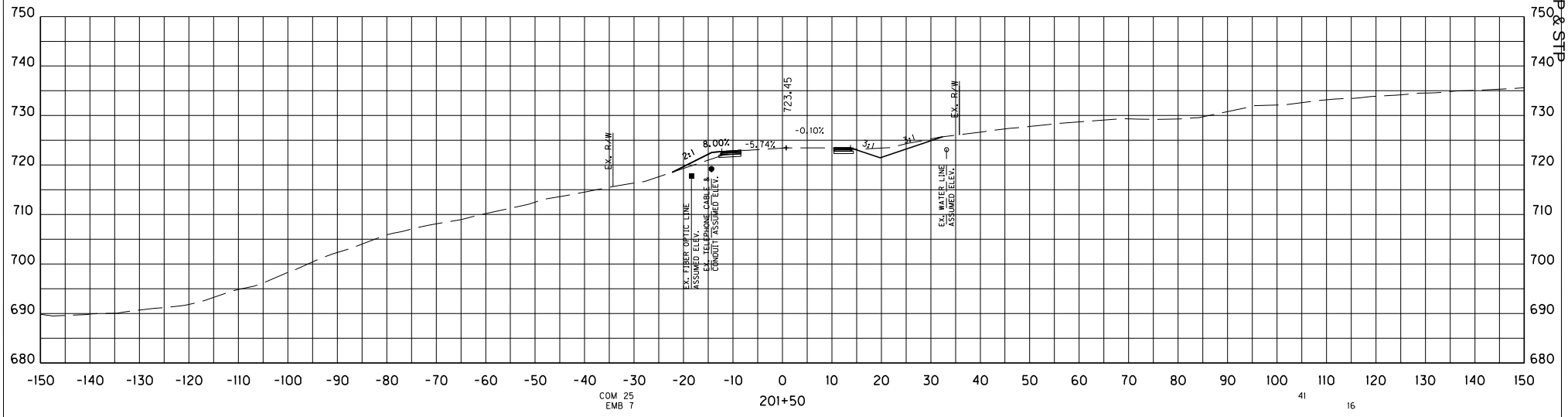


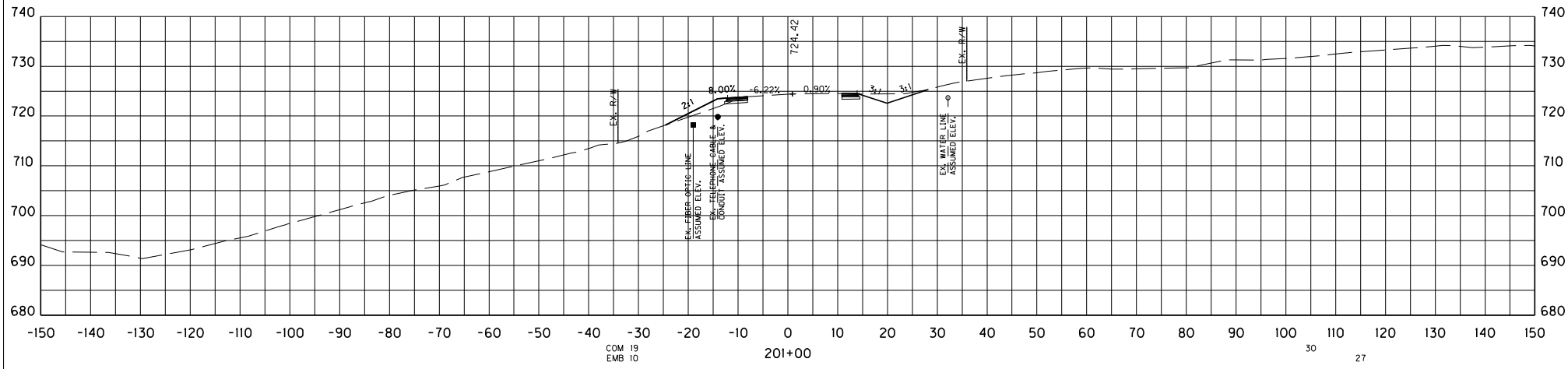
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X56

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.200+00 TO STA.200+50



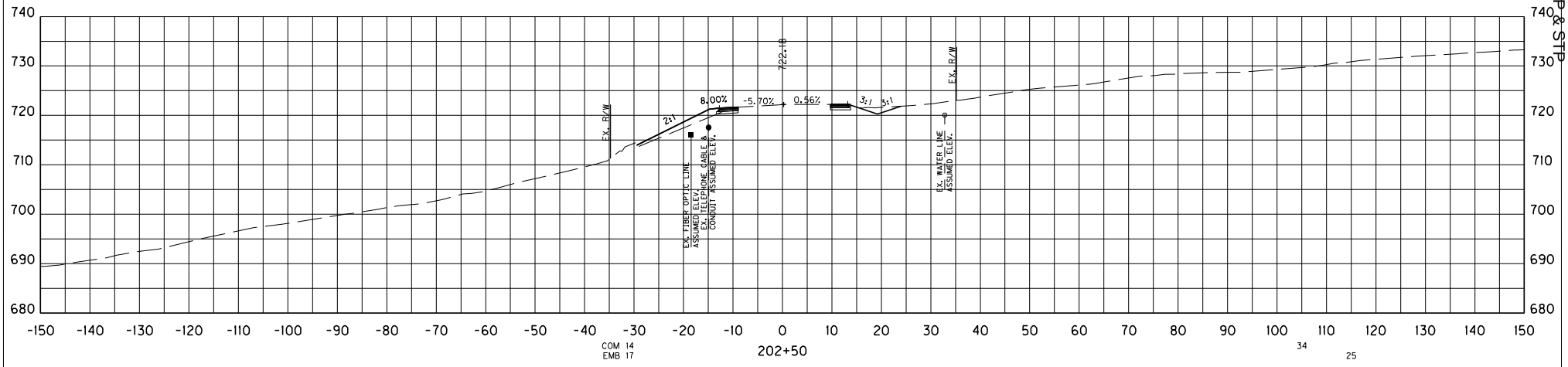


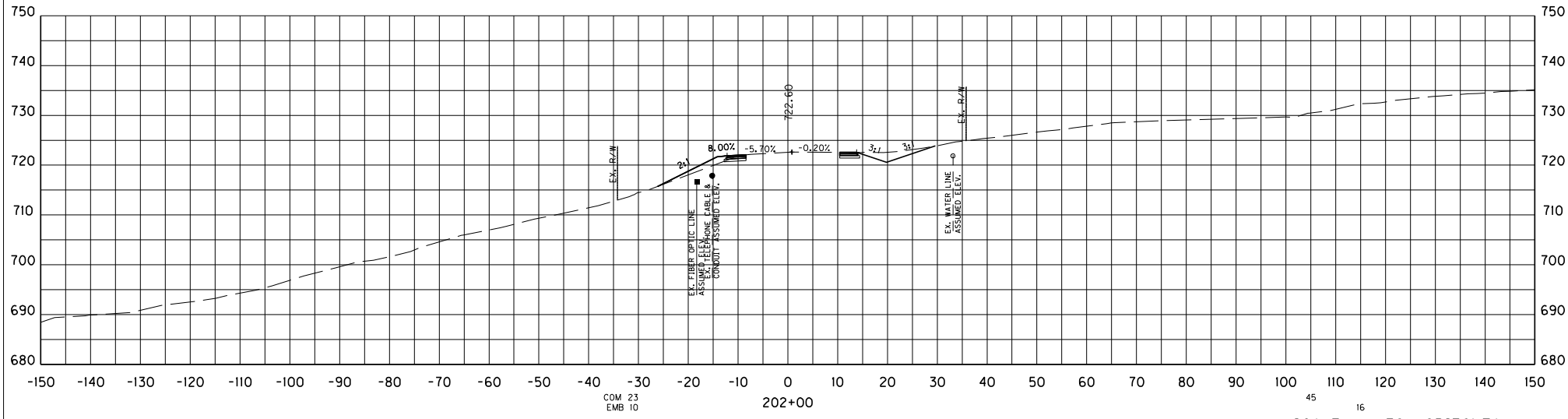
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X57

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.201+00 TO STA.201+50



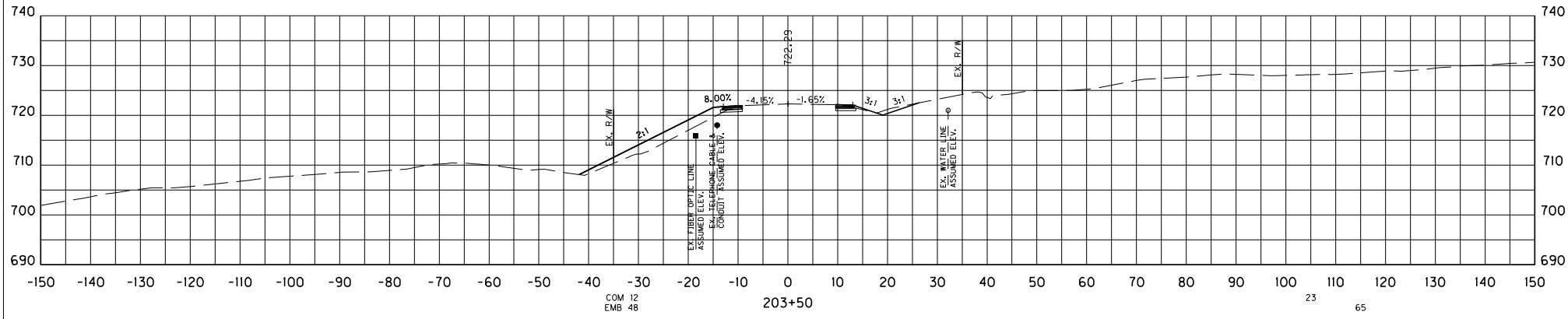


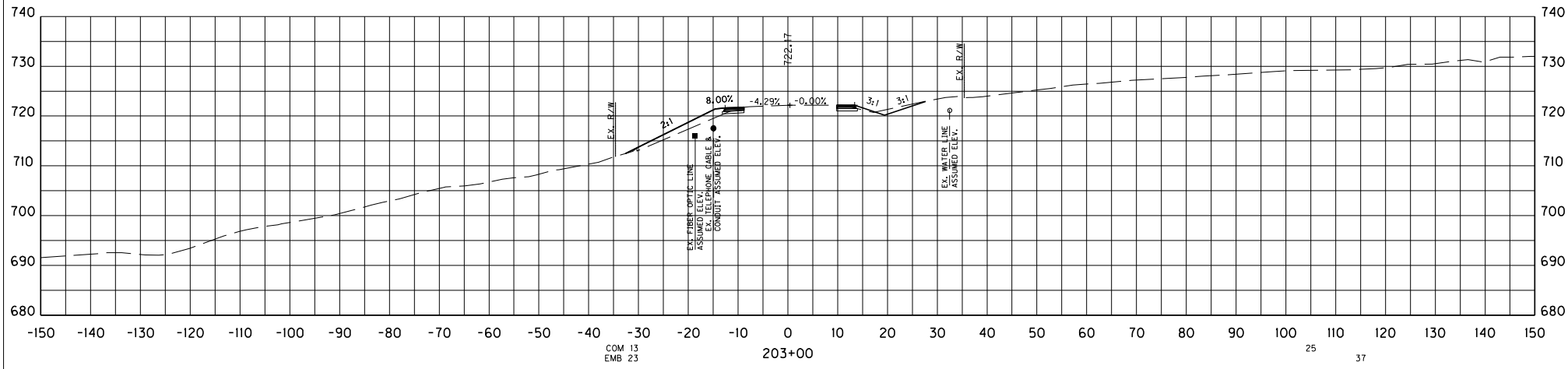
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X58

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.202+00 TO STA.202+50



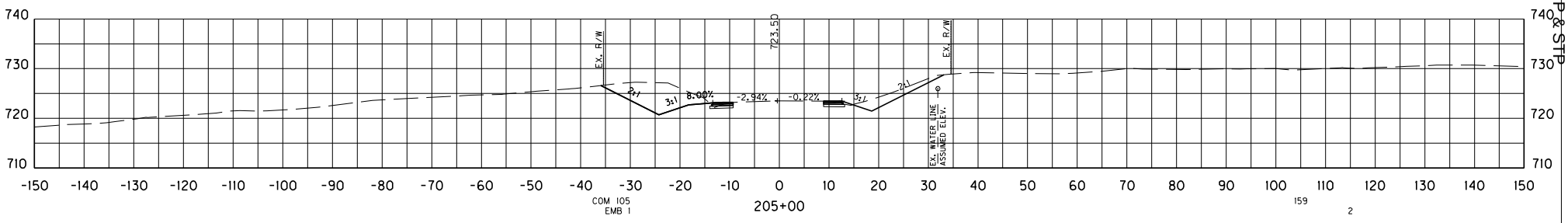


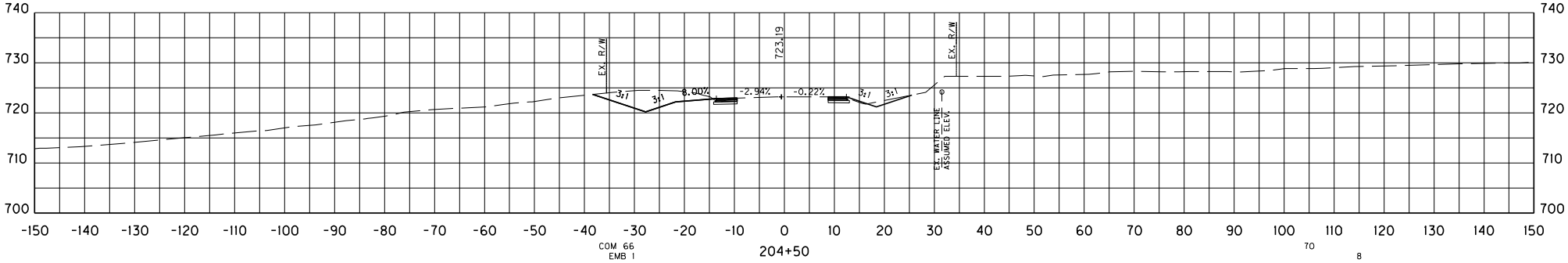
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

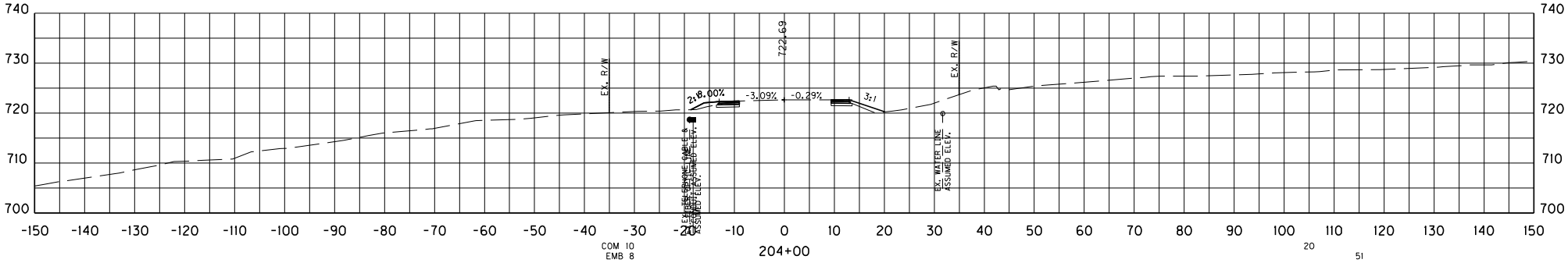
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X59

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.203+00 TO STA.203+50





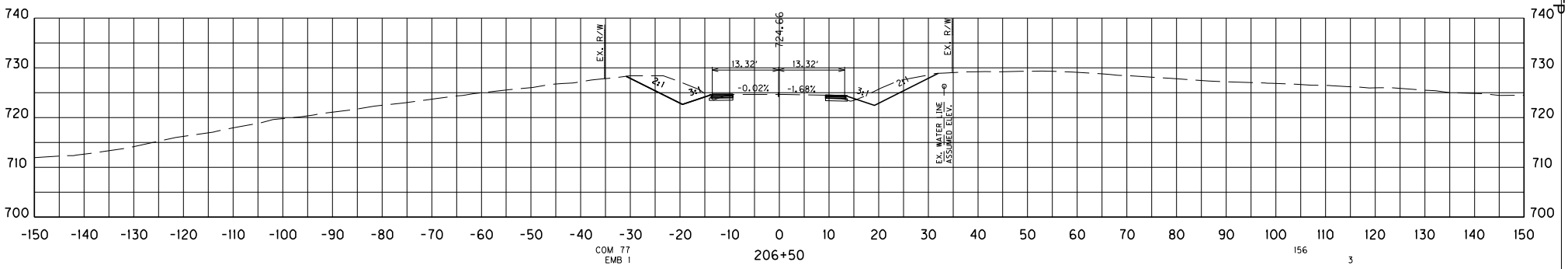


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

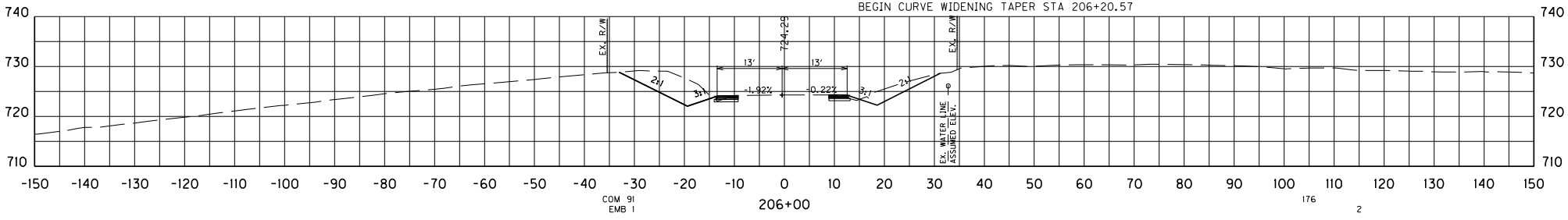
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X60

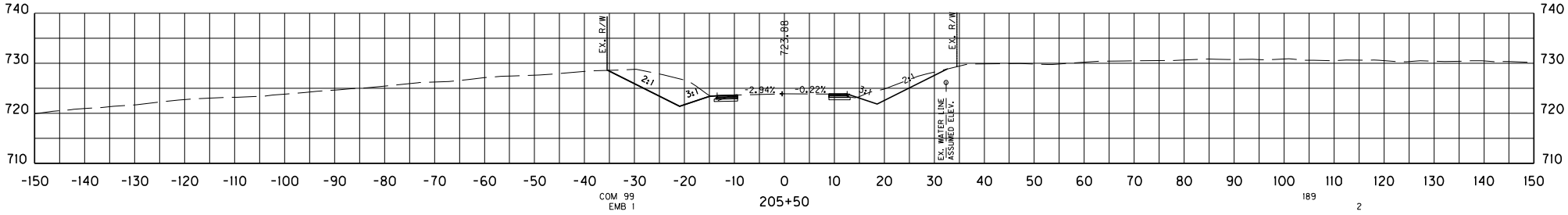
KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.204+00 TO STA.205+00



BEGIN CURVE WIDENING TAPER STA 206+20.57



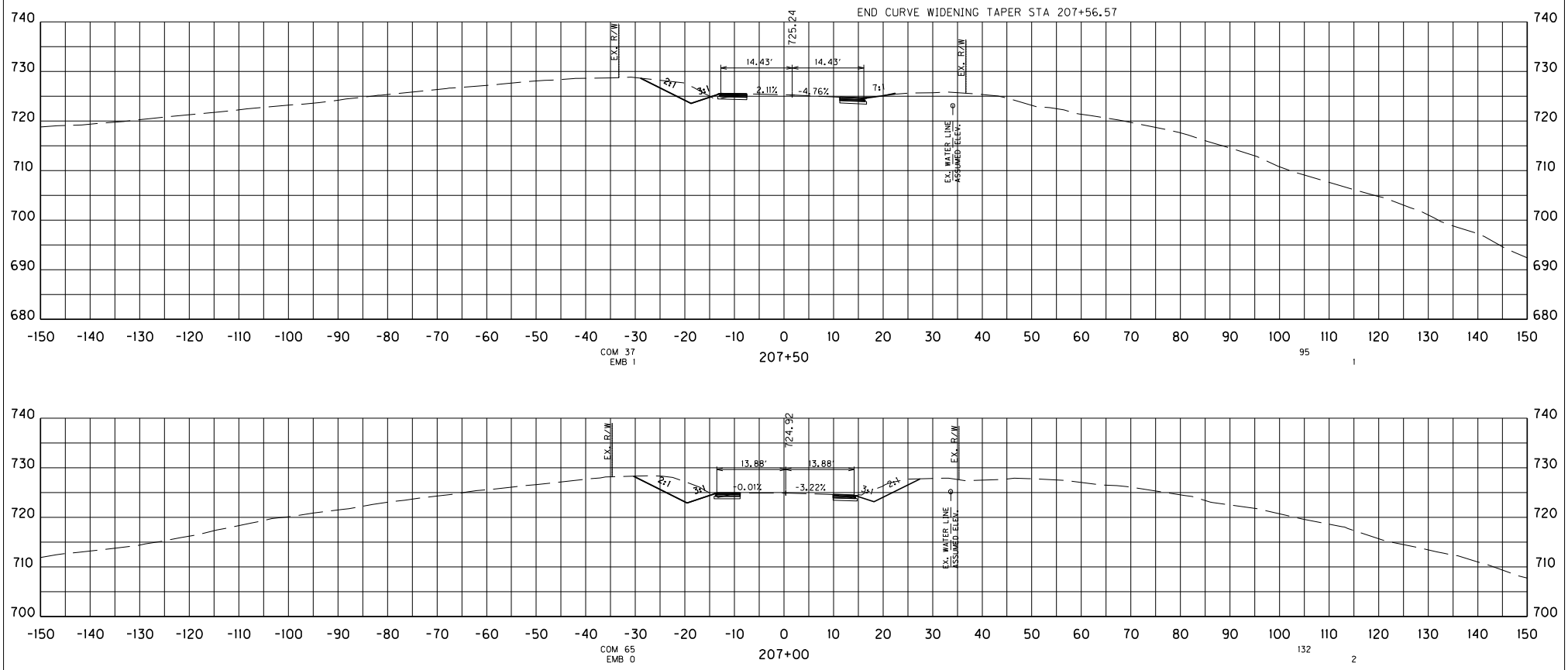


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X61

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.205+50 TO STA.206+50

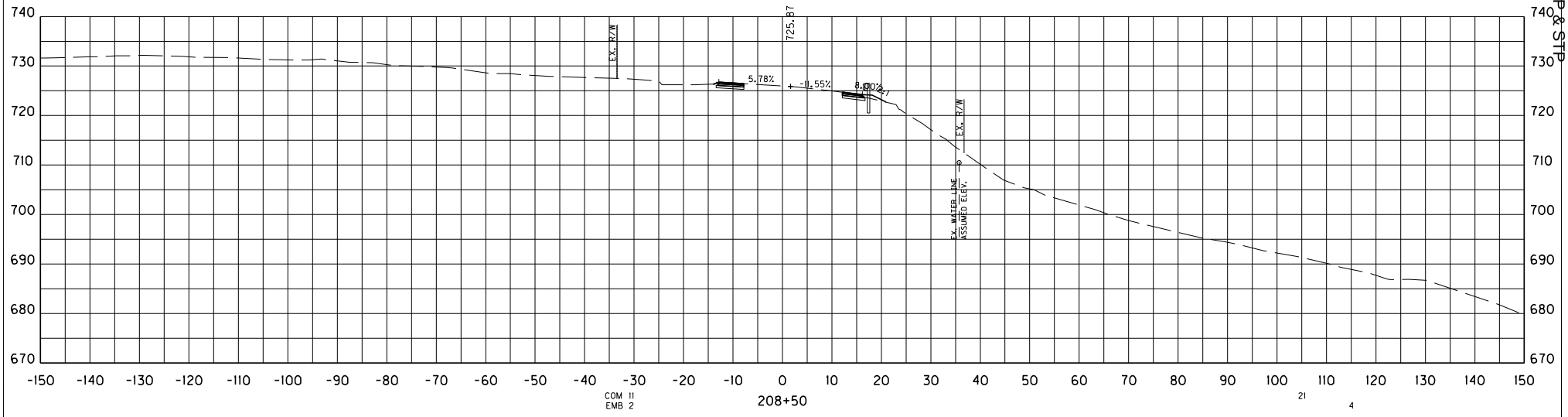


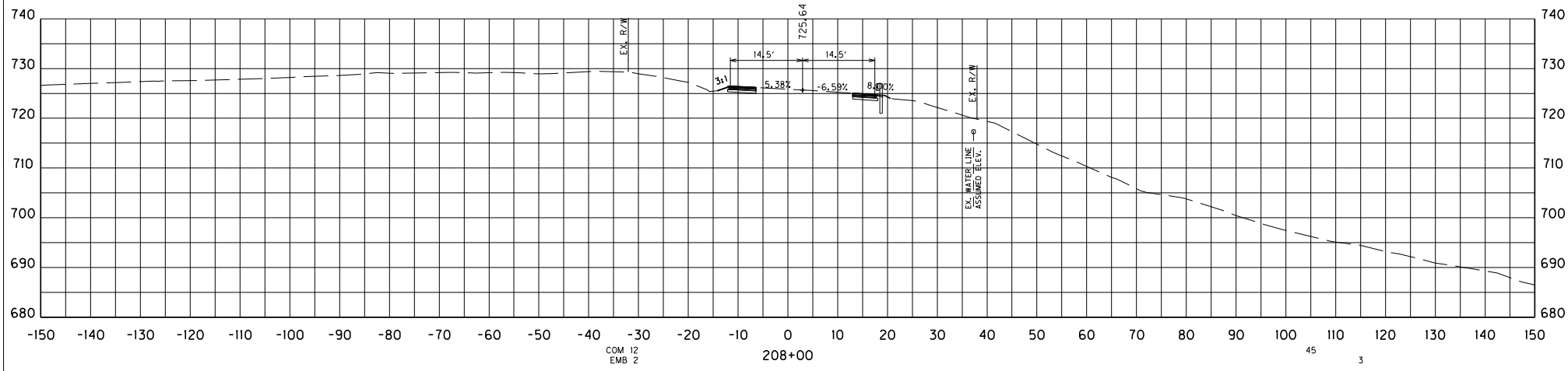
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X62

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.207+00 TO STA.207+50



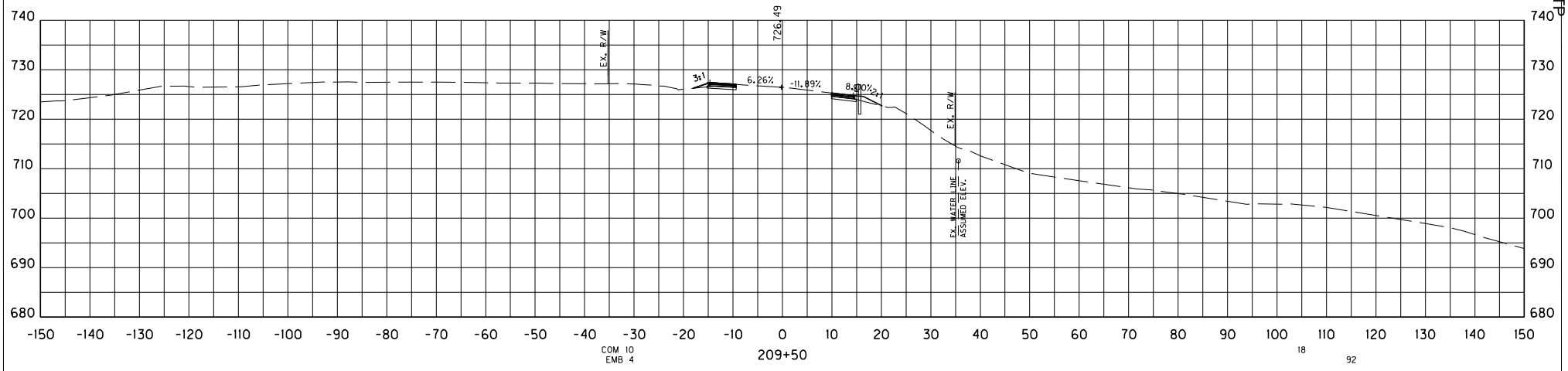


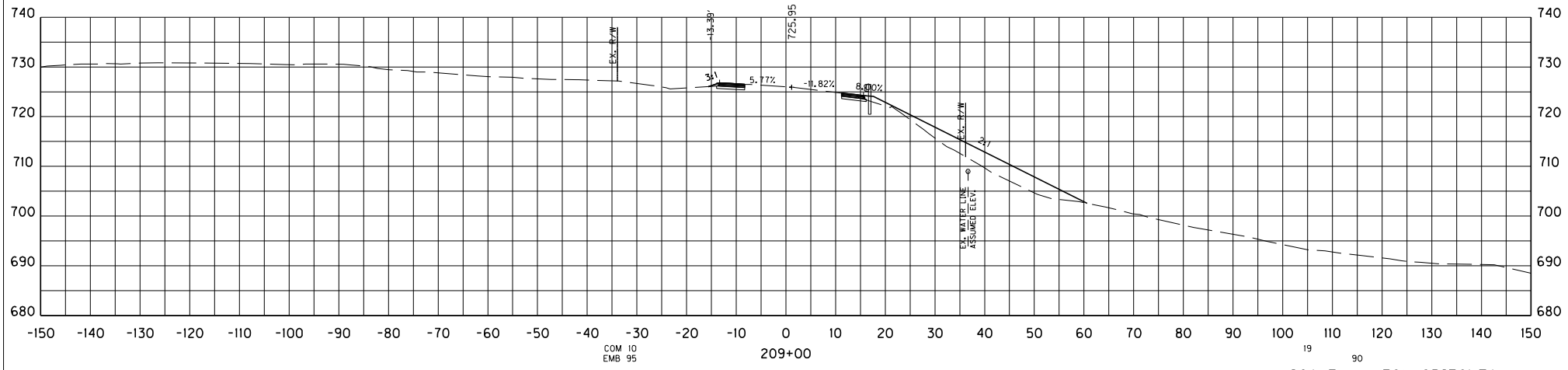
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X63

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.208+00 TO STA.208+50



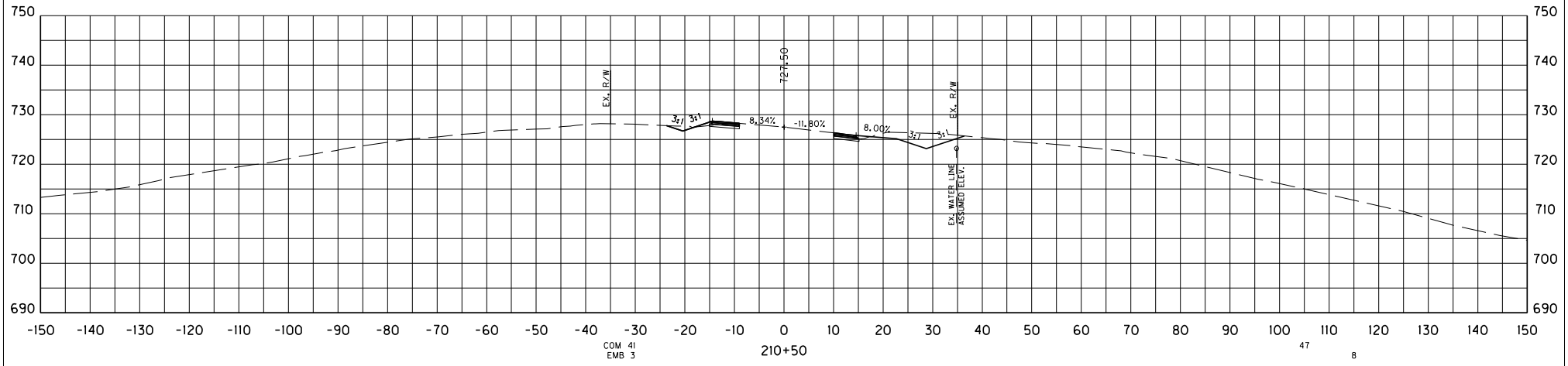


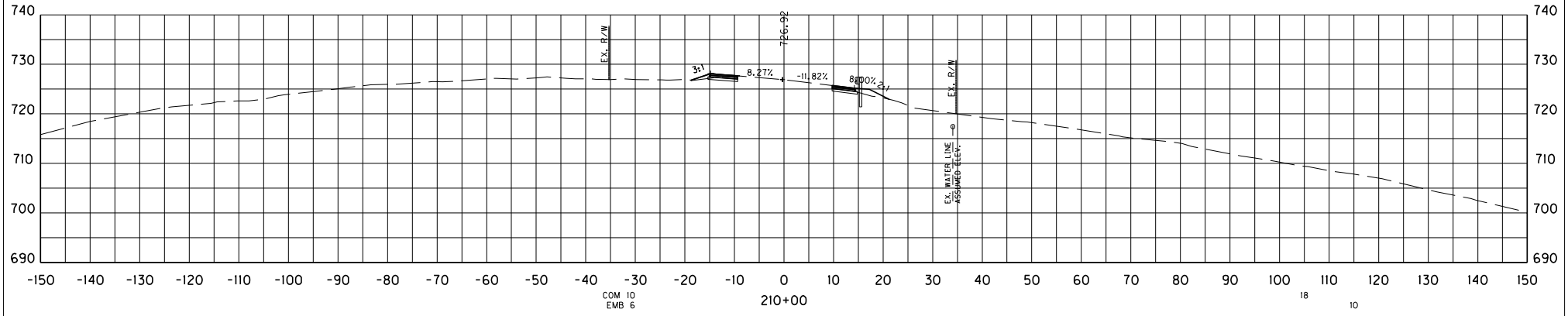
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X64

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.209+00 TO STA.209+50



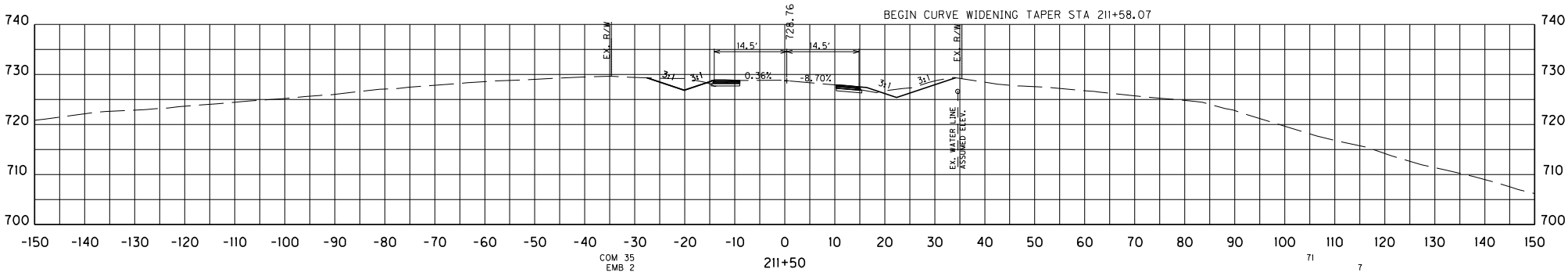


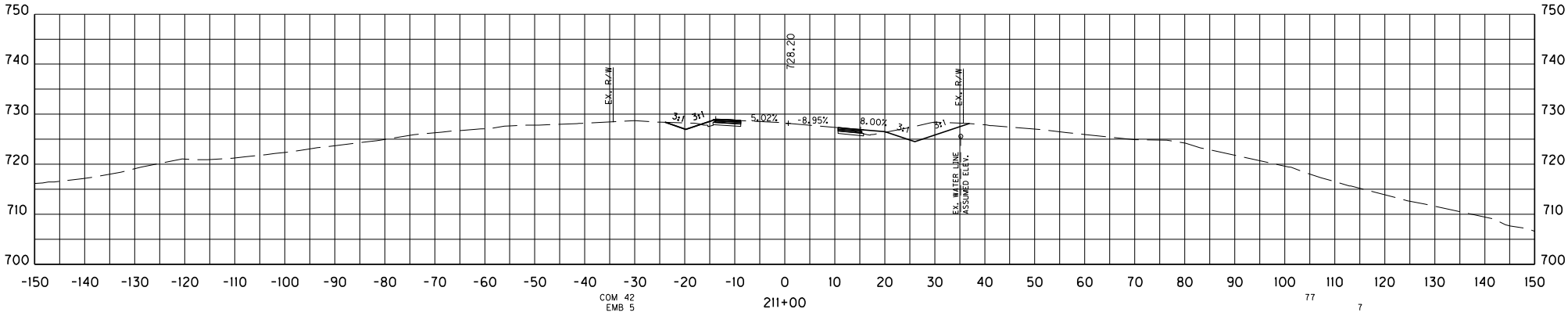
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X65

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.210+00 TO STA.210+50



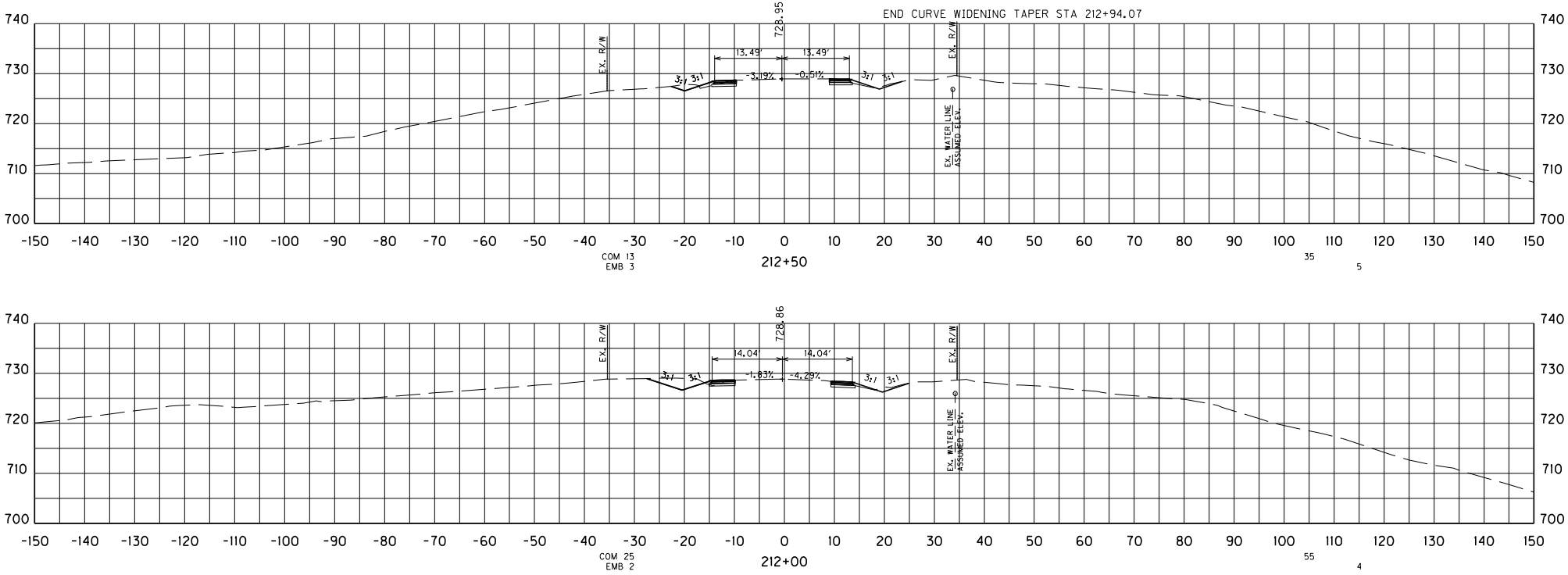


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X66

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.211+00 TO STA.211+50

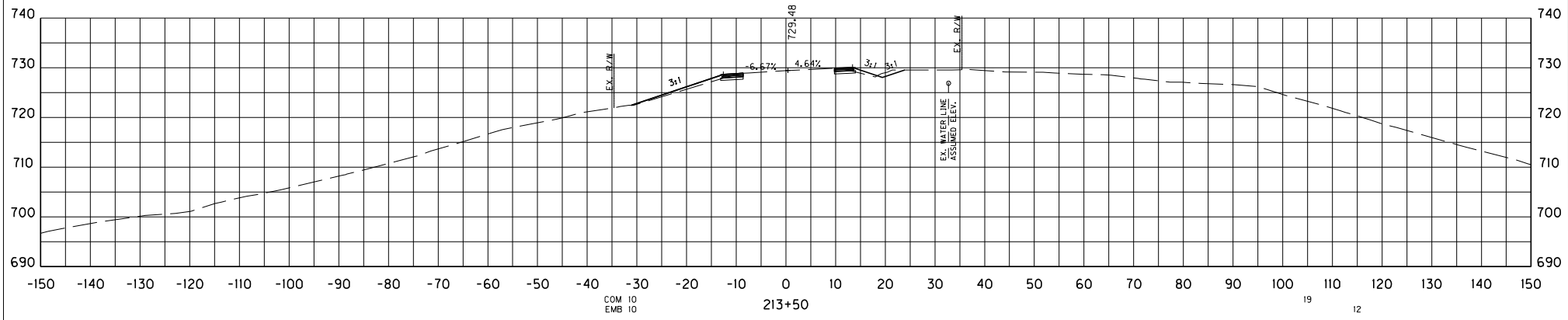


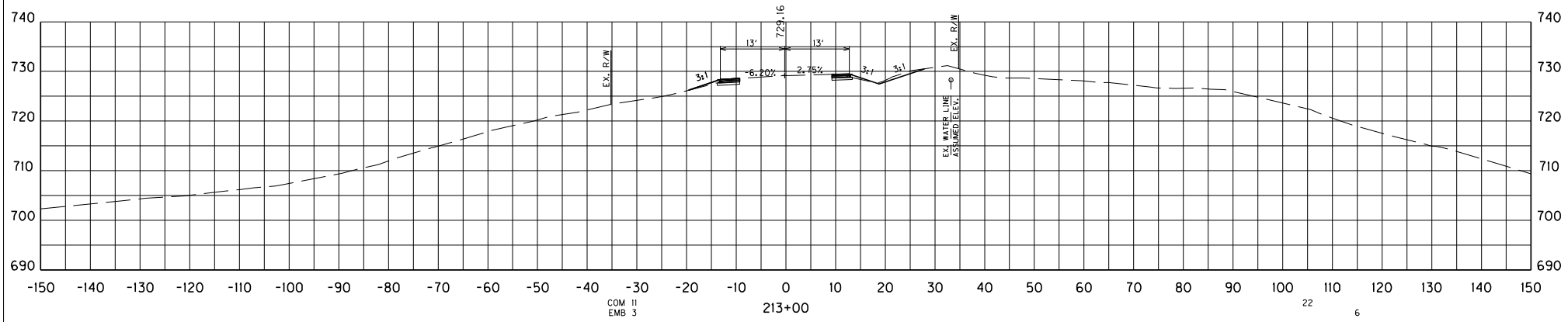
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X67

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.212+00 TO STA.212+50



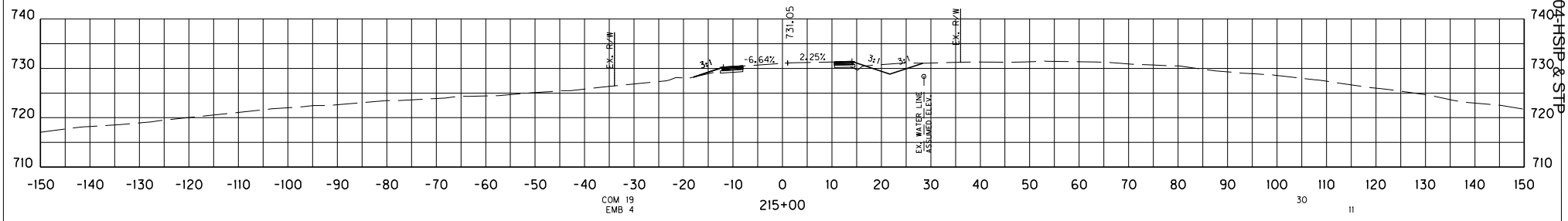


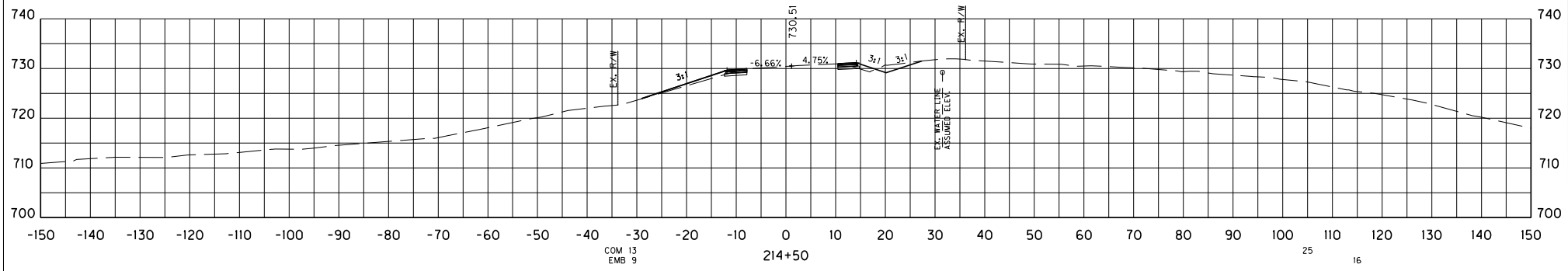
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

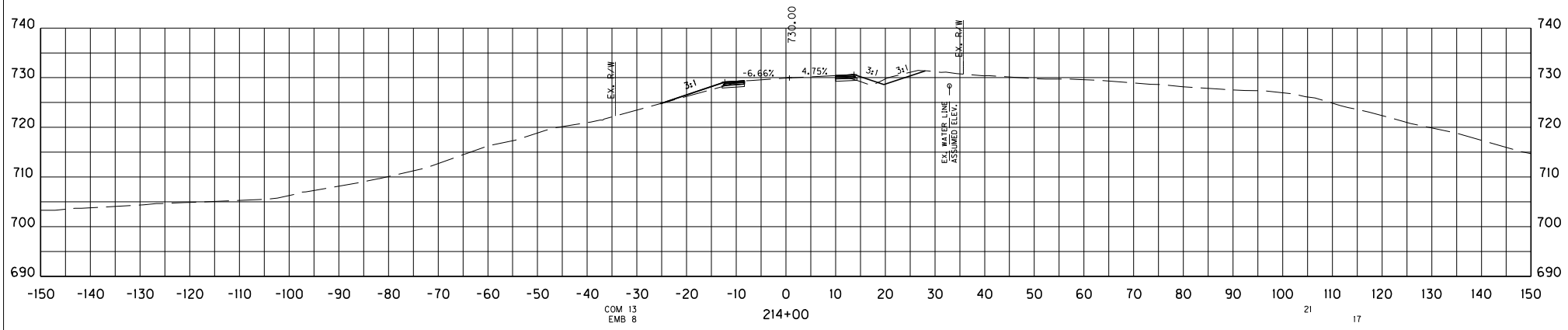
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X68

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.213+00 TO STA.213+50





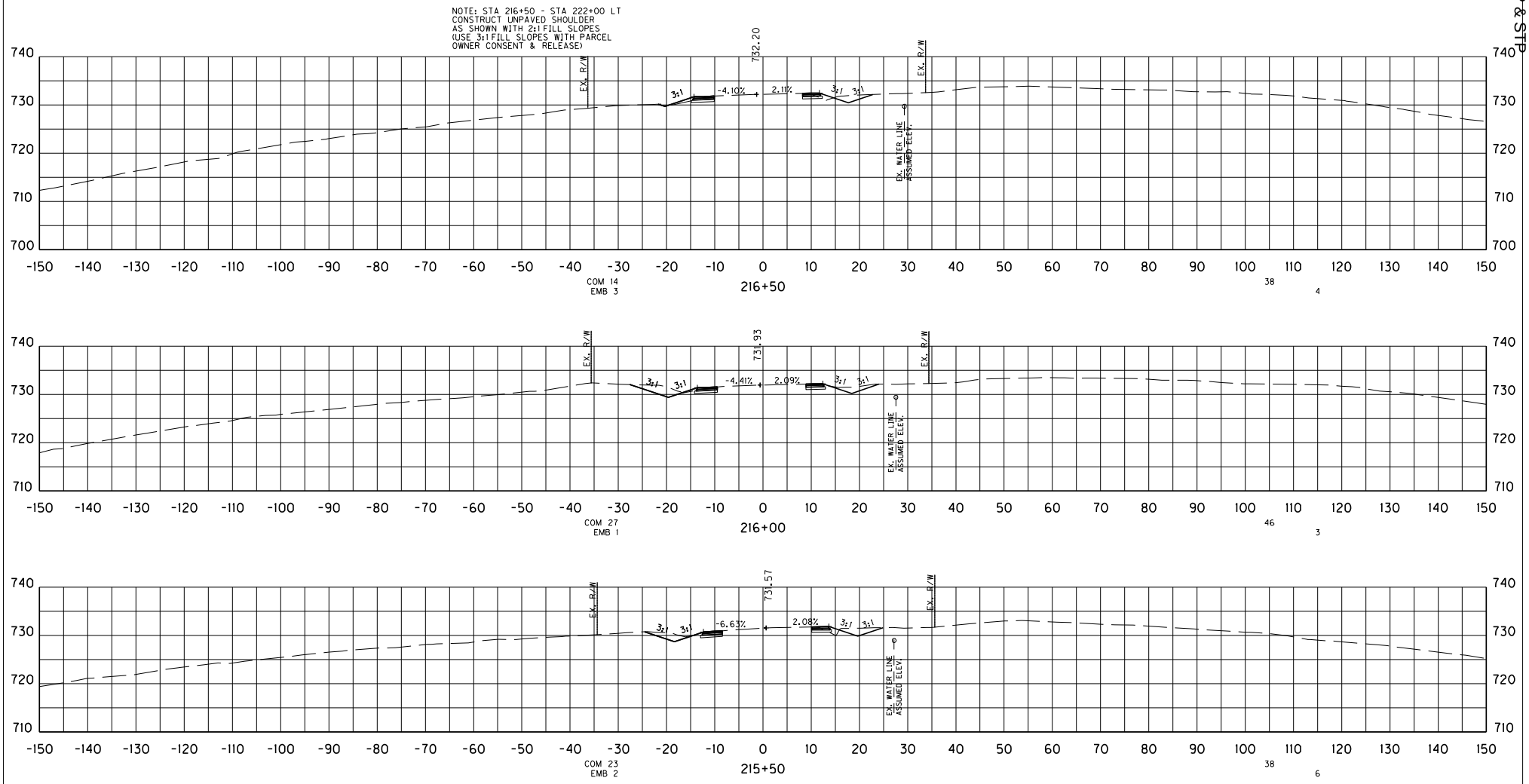


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X69

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.214+00 TO STA.215+00

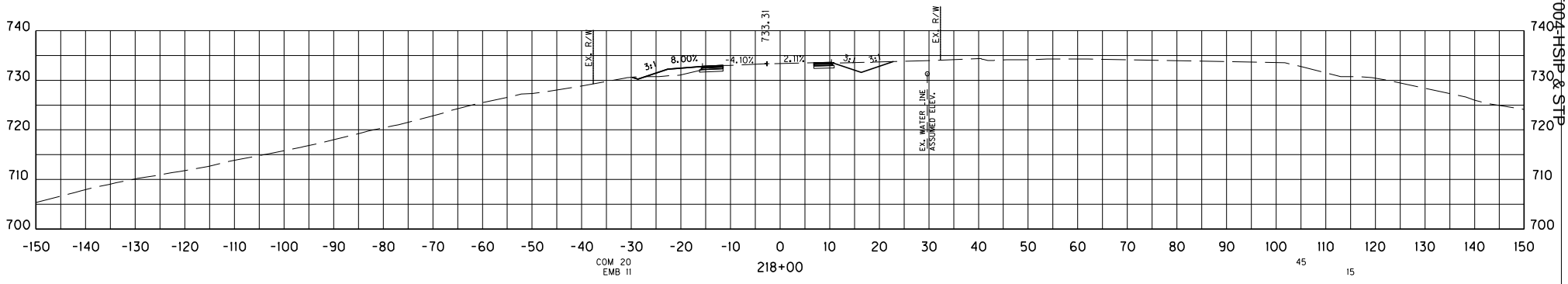


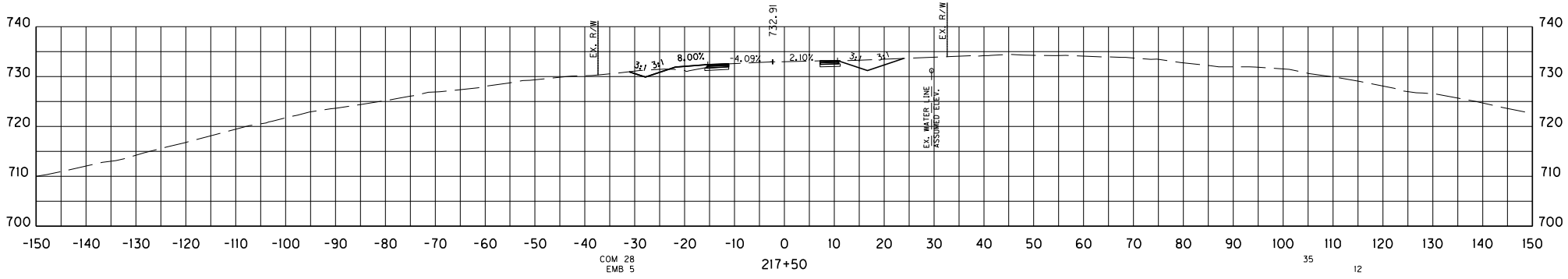
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

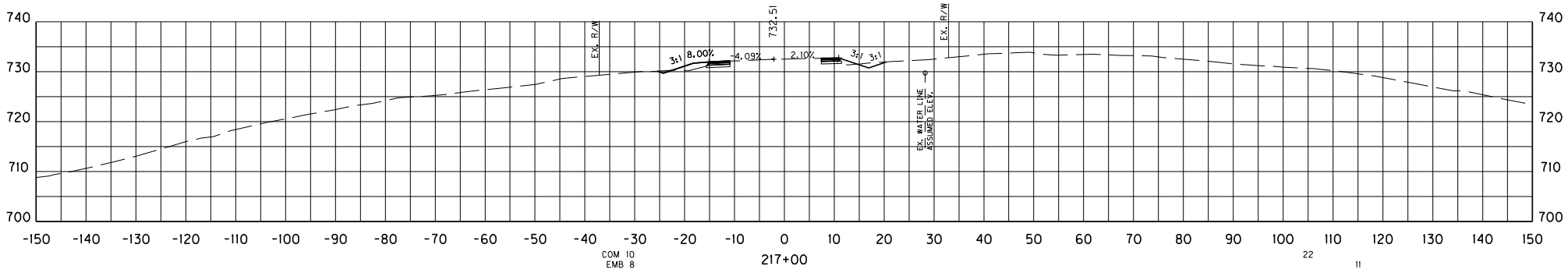
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X70

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.215+50 TO STA.216+50





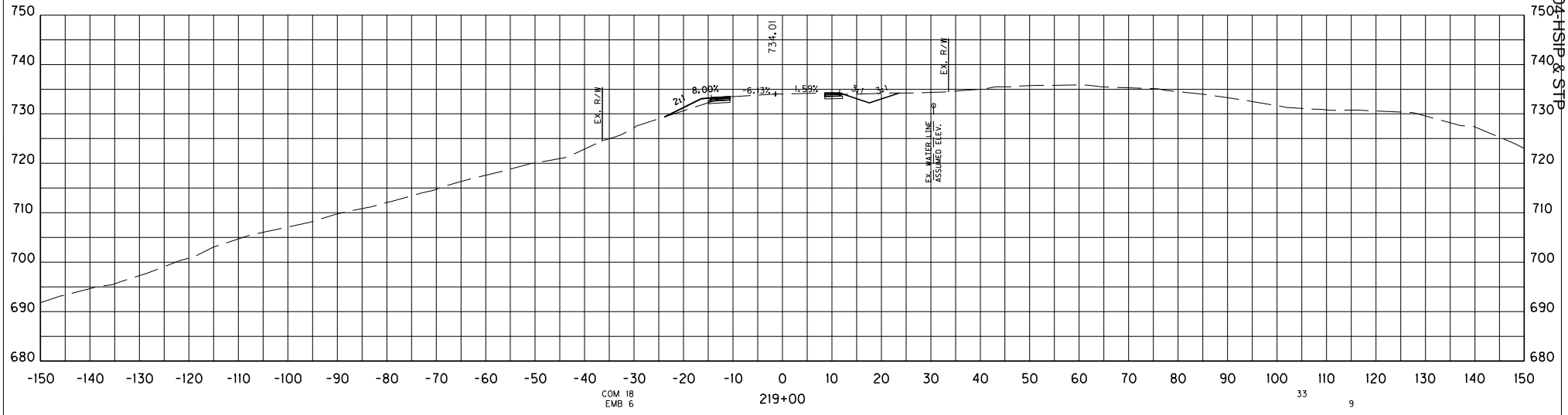


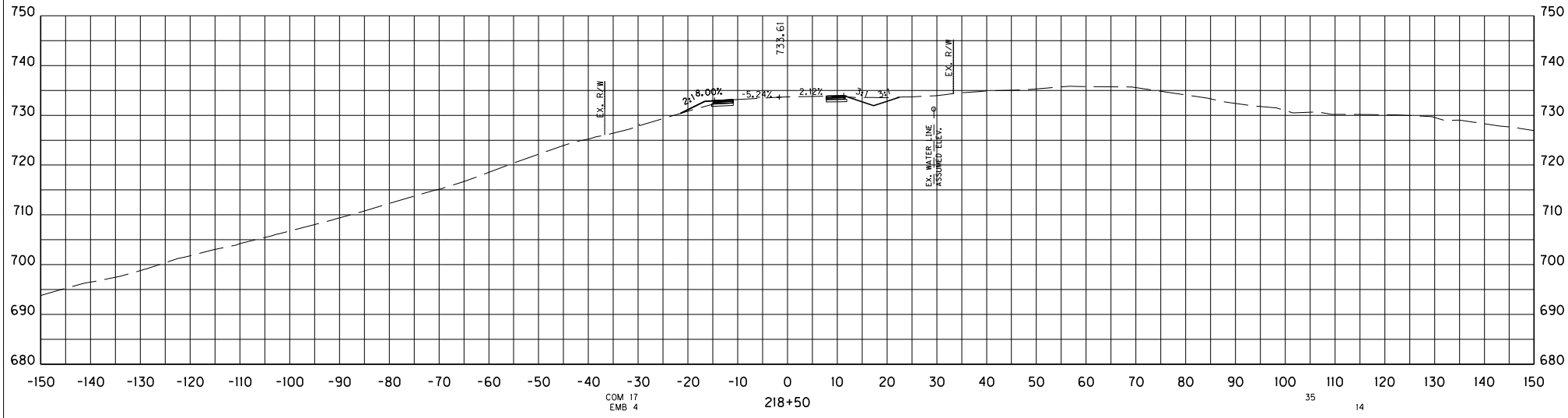
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X71

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.217+00 TO STA.218+00



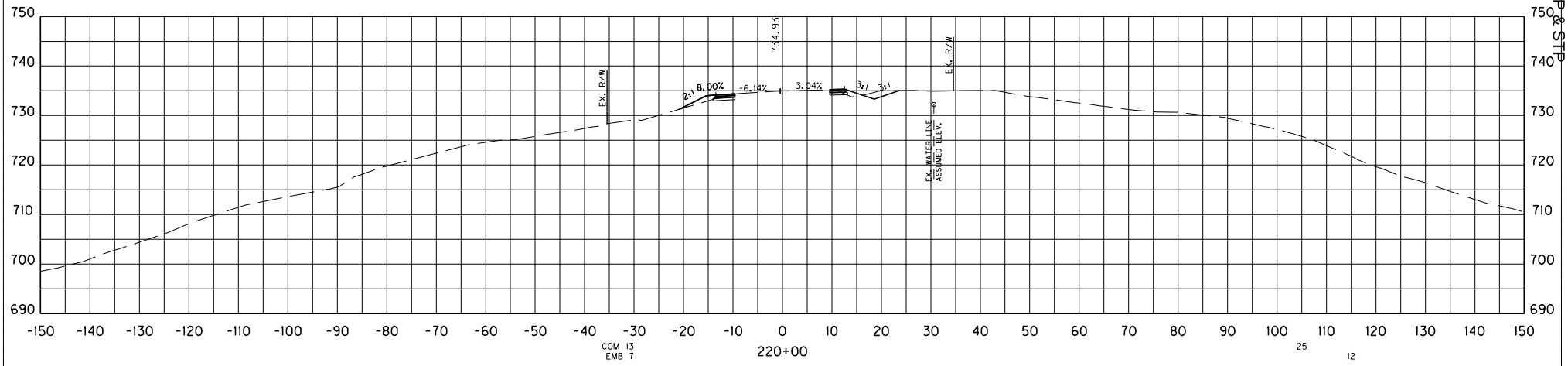


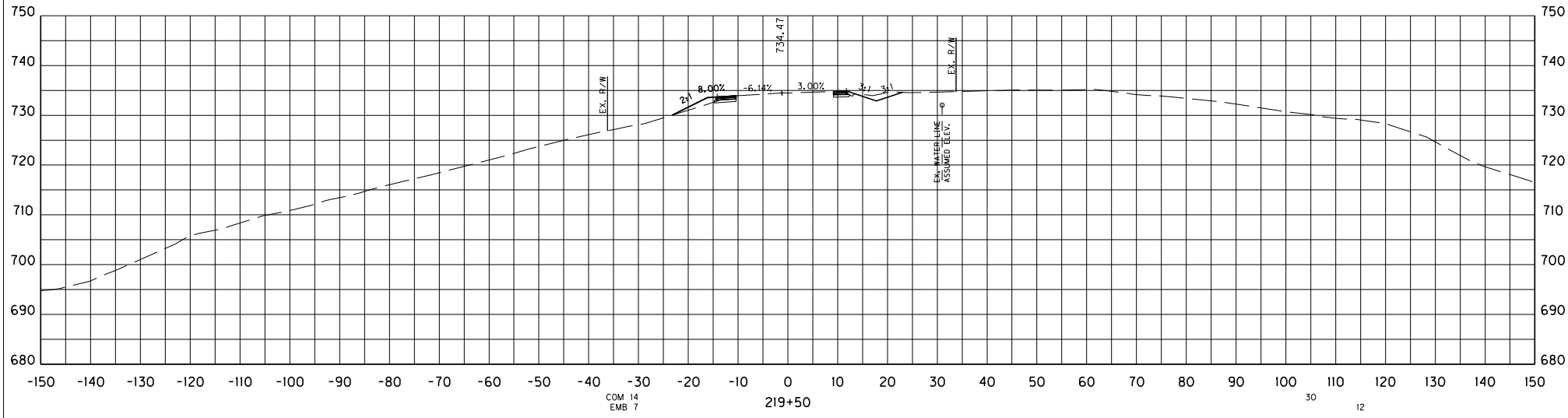
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X72

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.218+50 TO STA.219+00



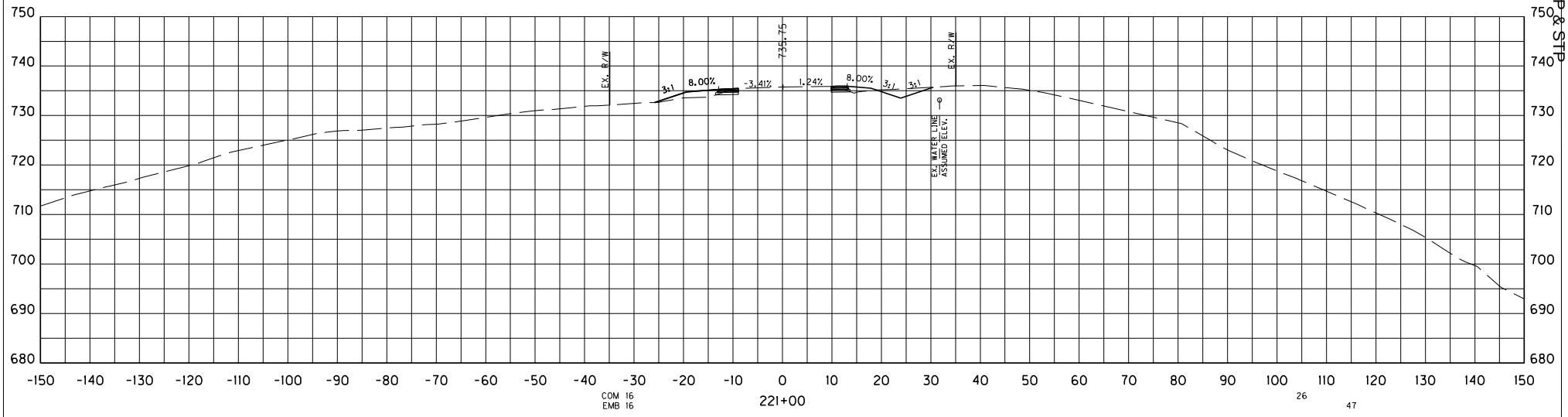


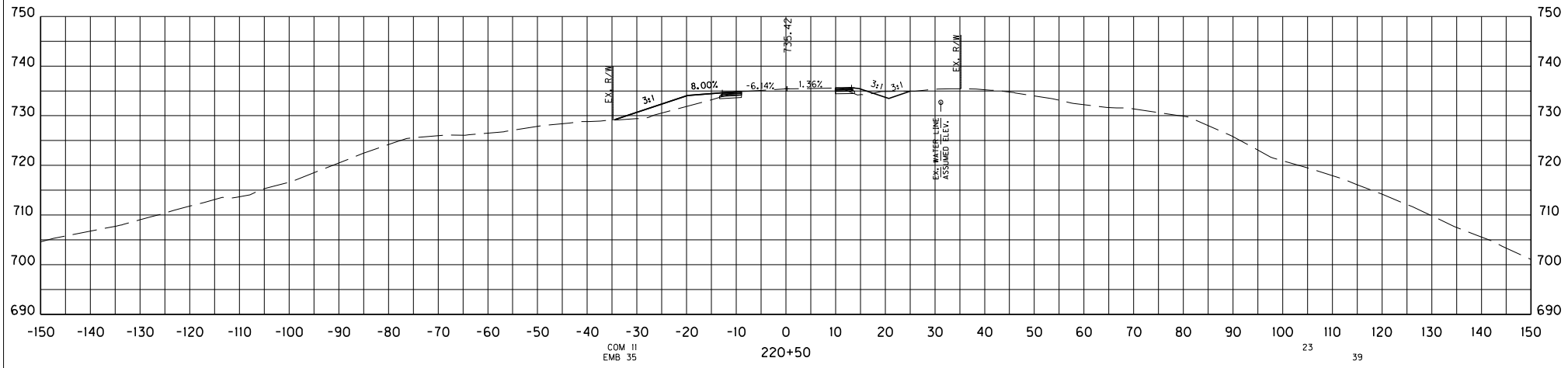
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X73

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.219+50 TO STA.220+00



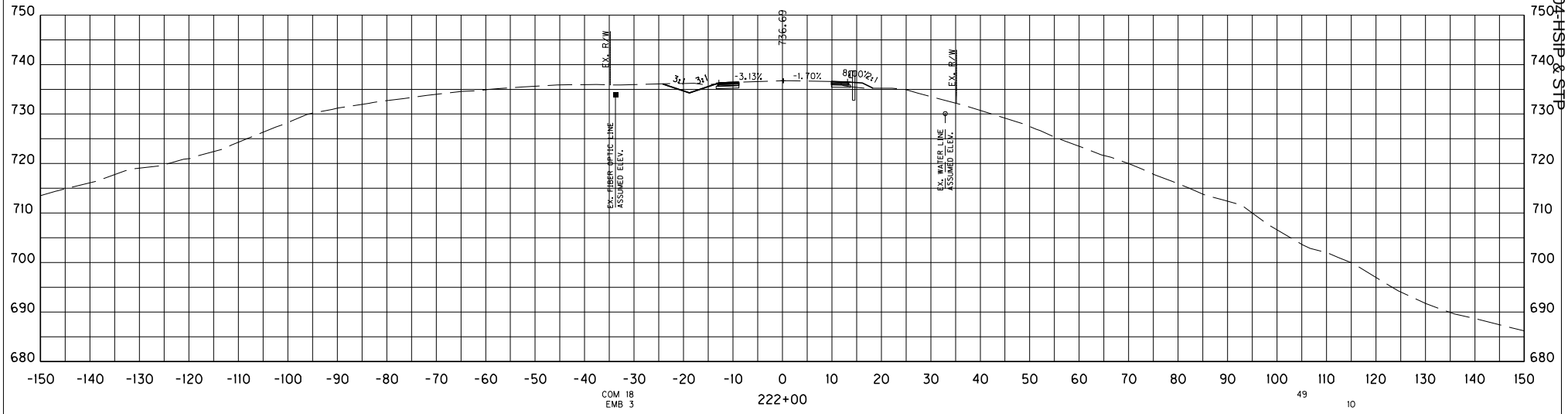


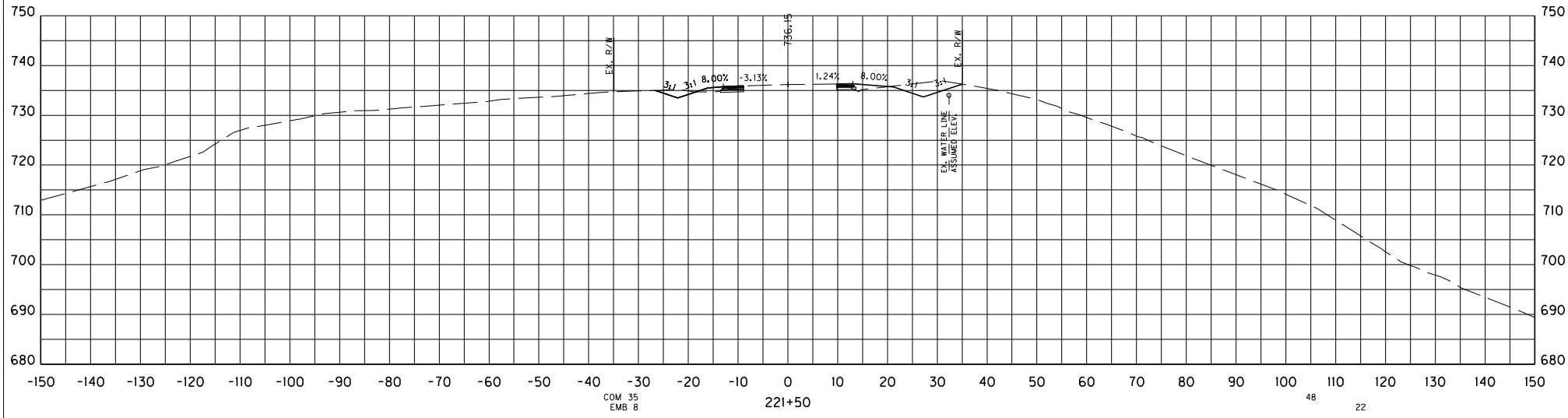
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X74

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.220+50 TO STA.221+00



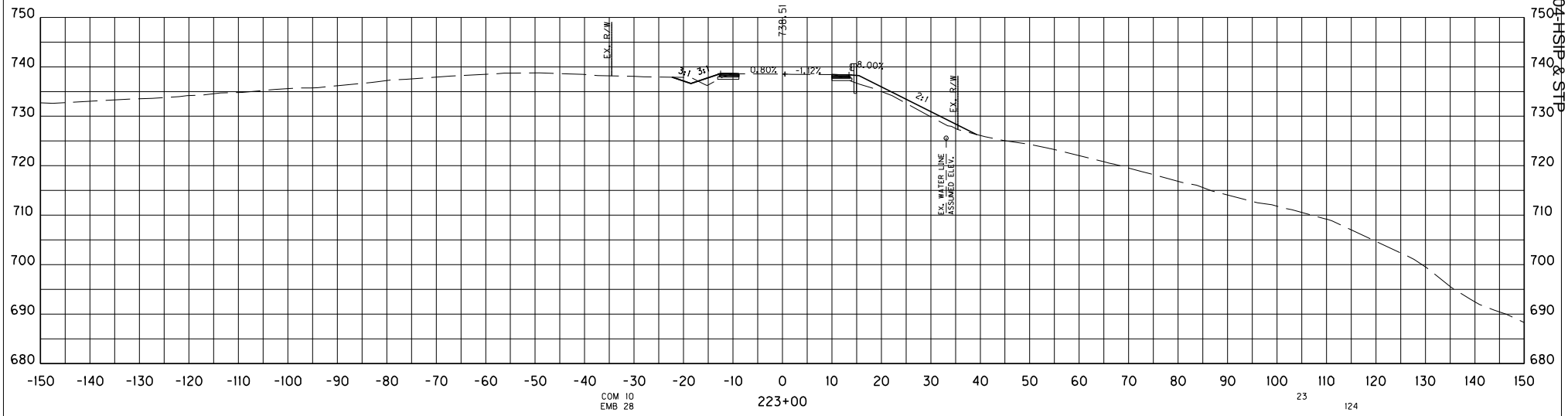


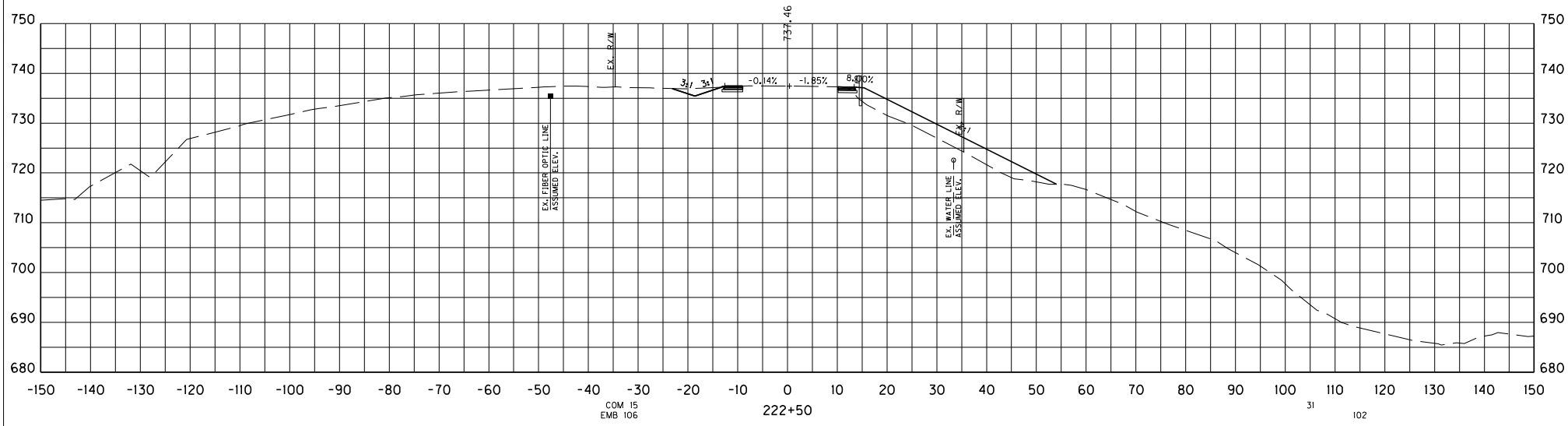
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X75

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.221+50 TO STA.222+00



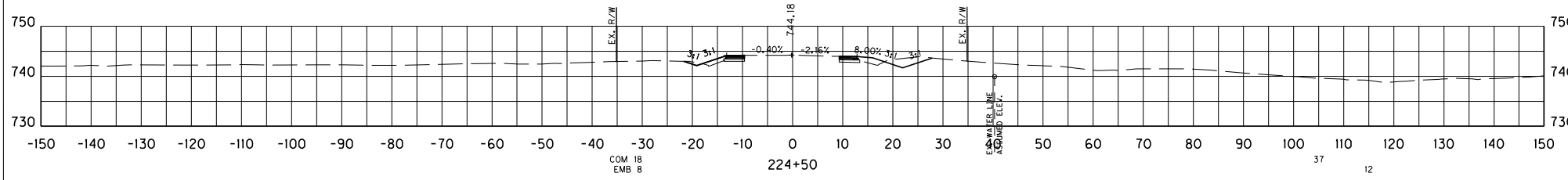


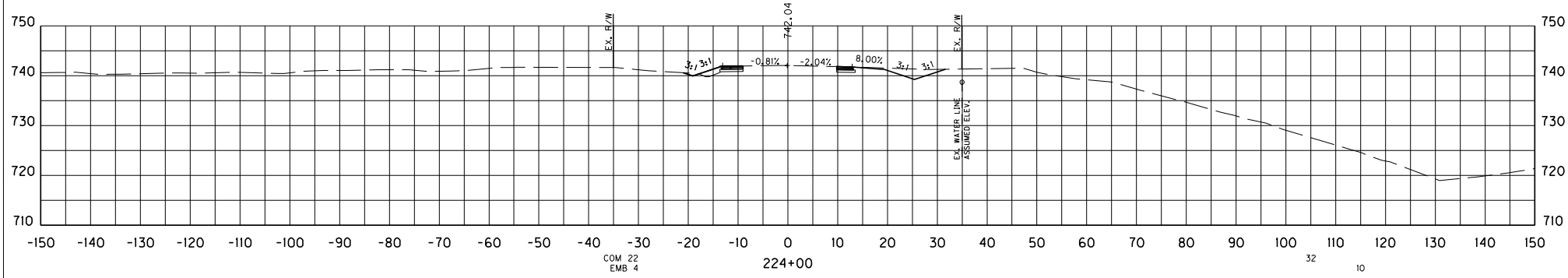
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

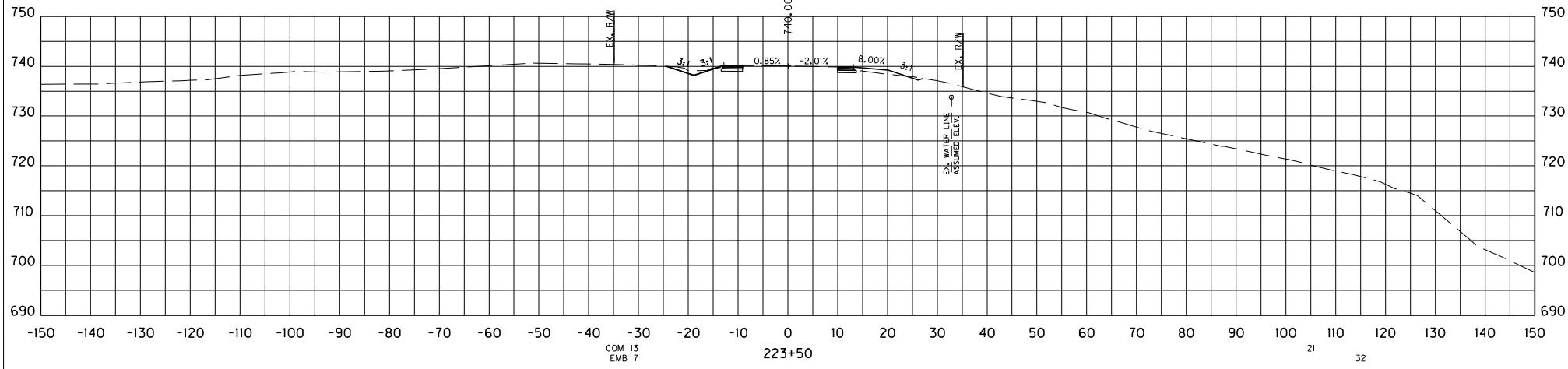
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X76

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.222+50 TO STA.223+00





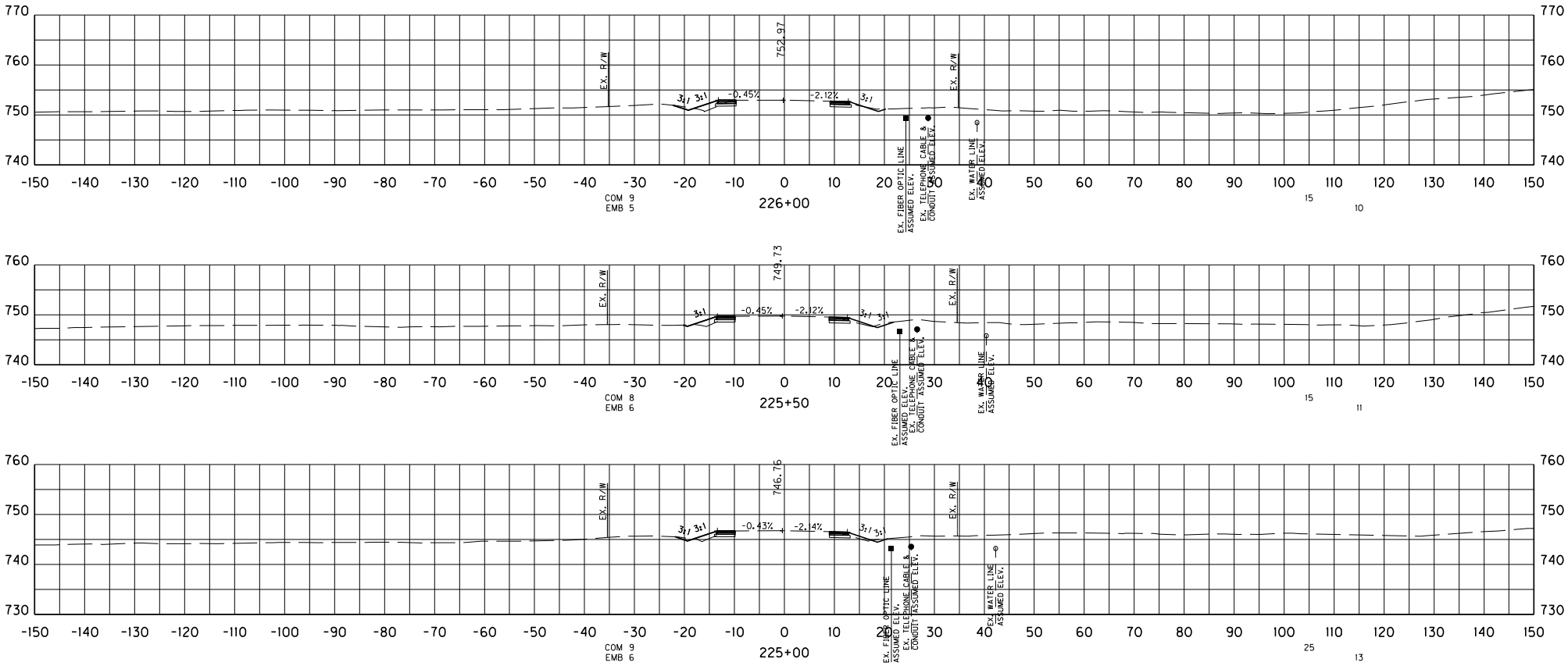


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X77

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.223+50 TO STA.224+50

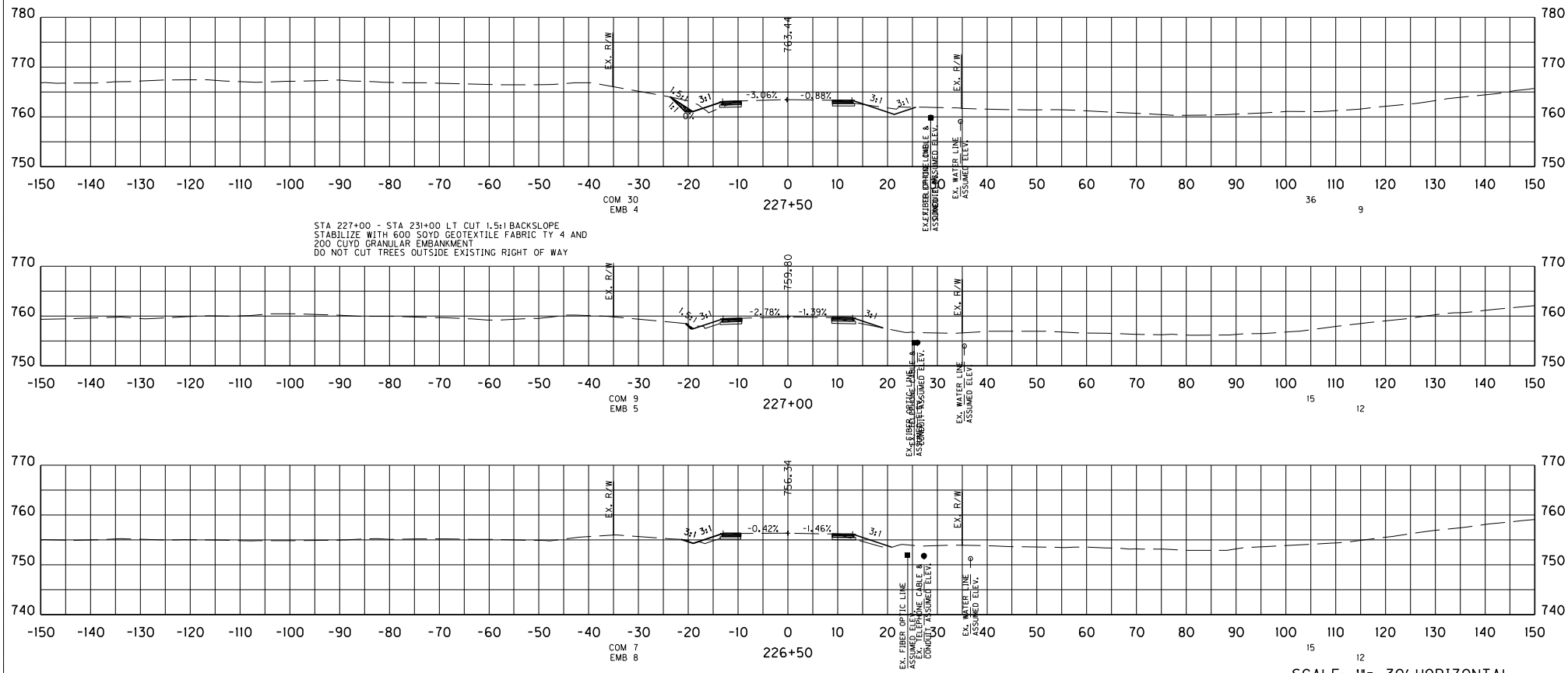


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X78

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.225+00 TO STA.226+00



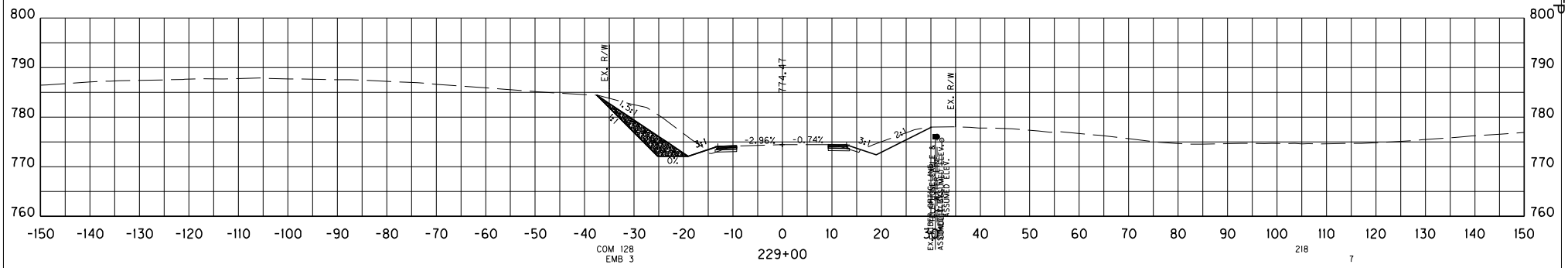
STA 227+00 - STA 231+00 LT CUT 1.5:1 BACKSLOPE
STABILIZE WITH 600 SQYD GEOTEXTILE FABRIC TY 4 AND
200 CUYD GRANULAR EMBANKMENT
DO NOT CUT TREES OUTSIDE EXISTING RIGHT OF WAY

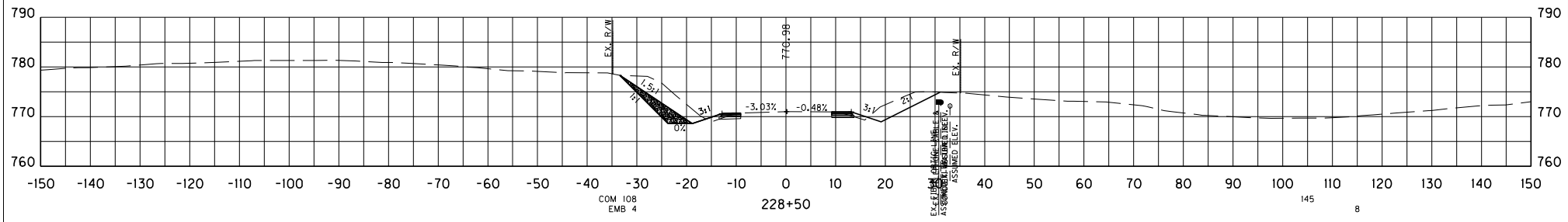
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

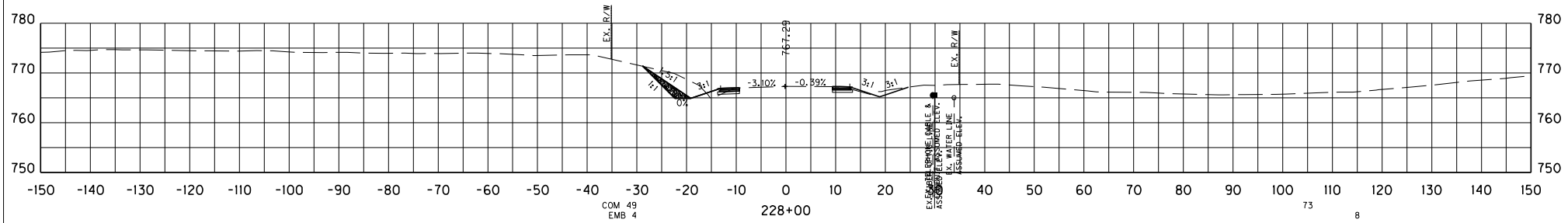
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X79

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.226+50 TO STA.227+50





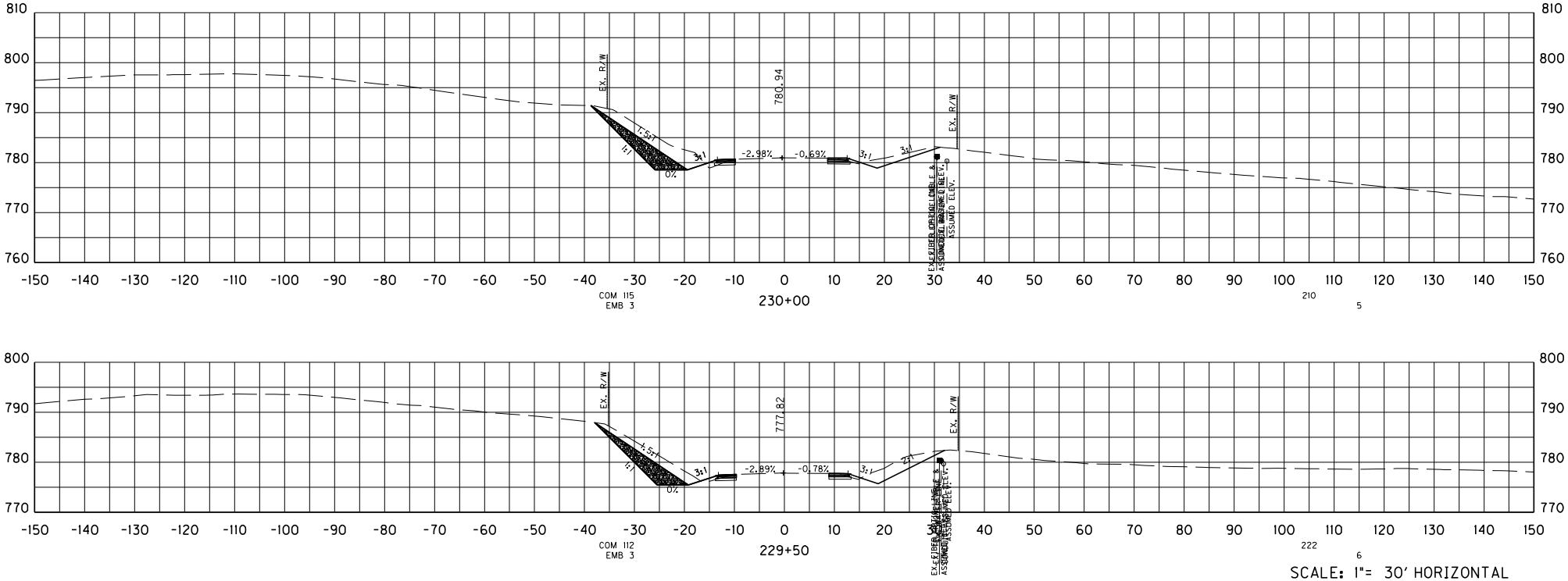


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X80

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.228+00 TO STA.229+00

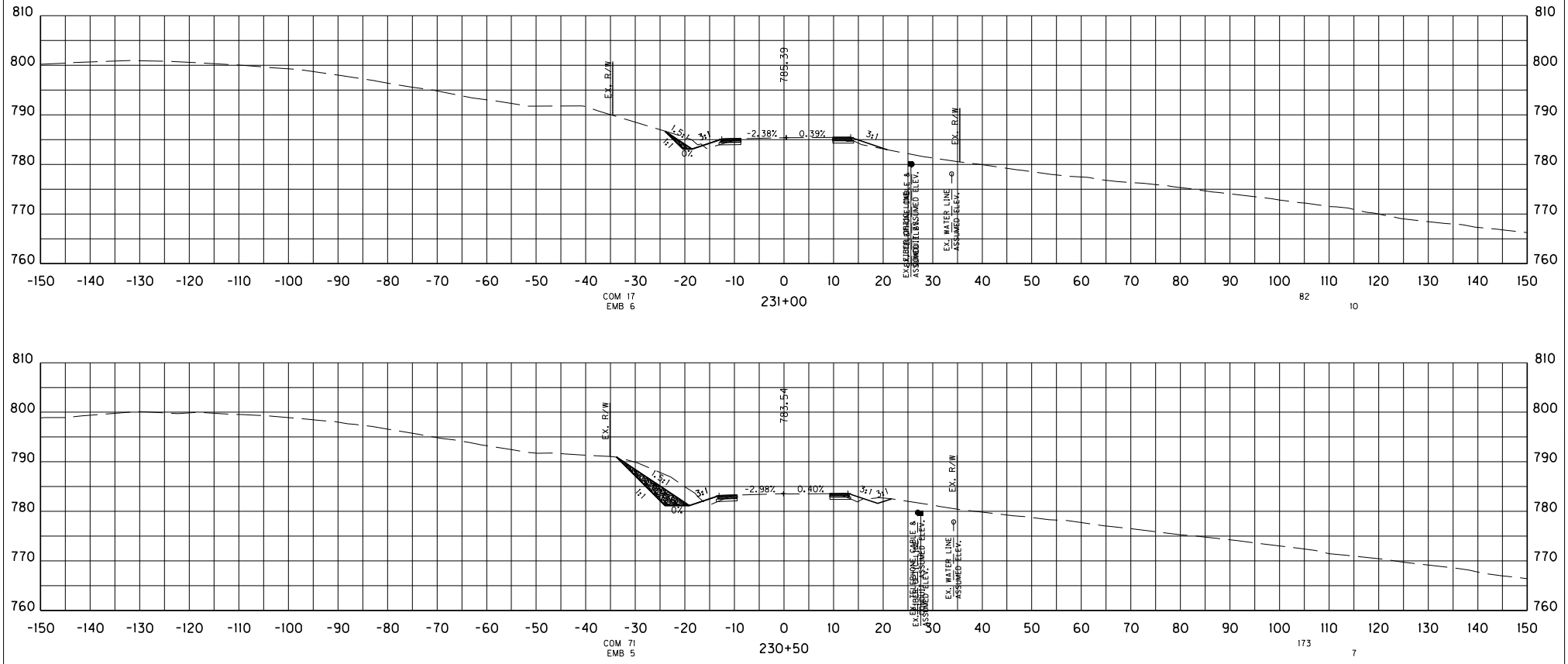


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X81

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.229+50 TO STA.230+00

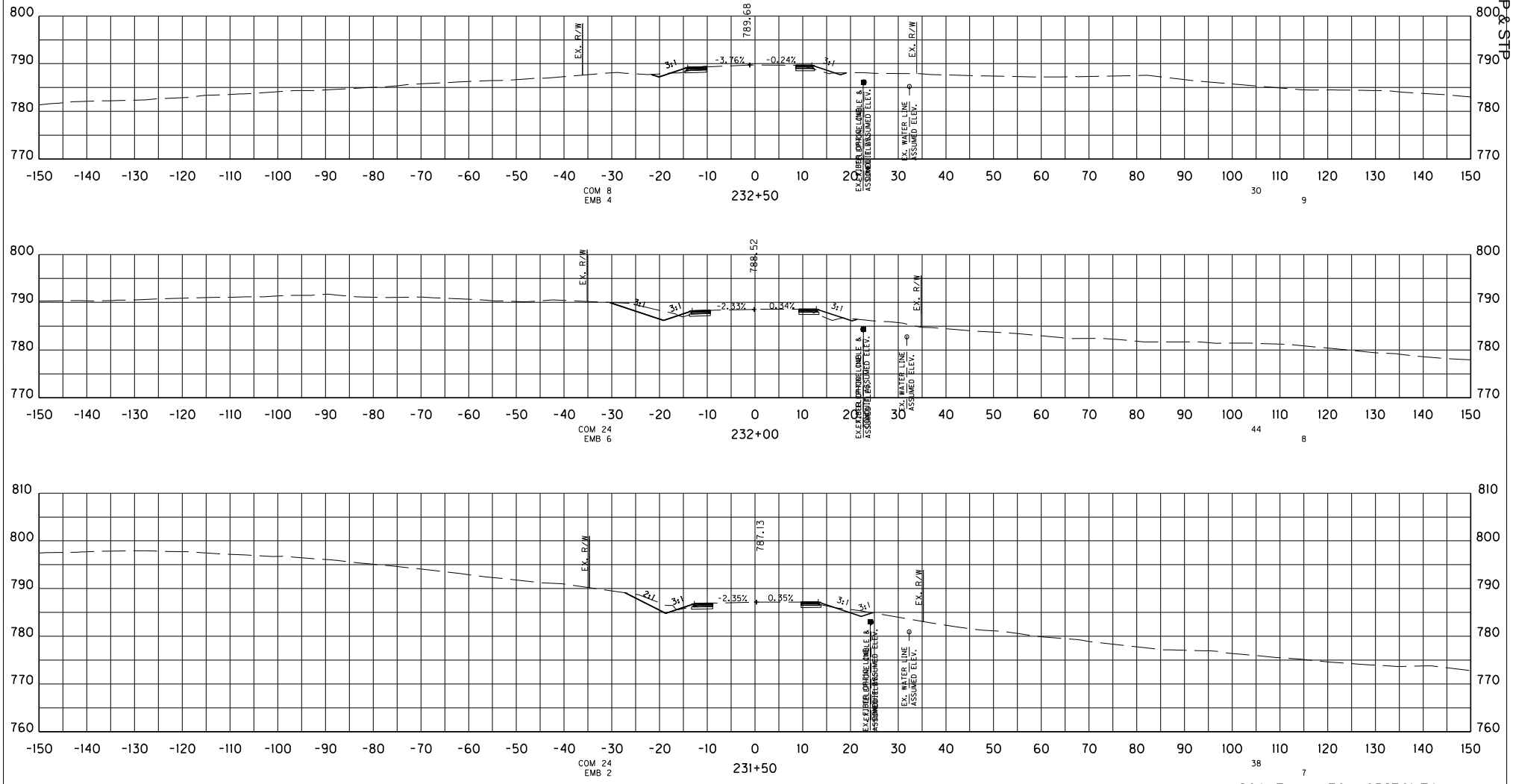


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X82

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.230+50 TO STA.231+00

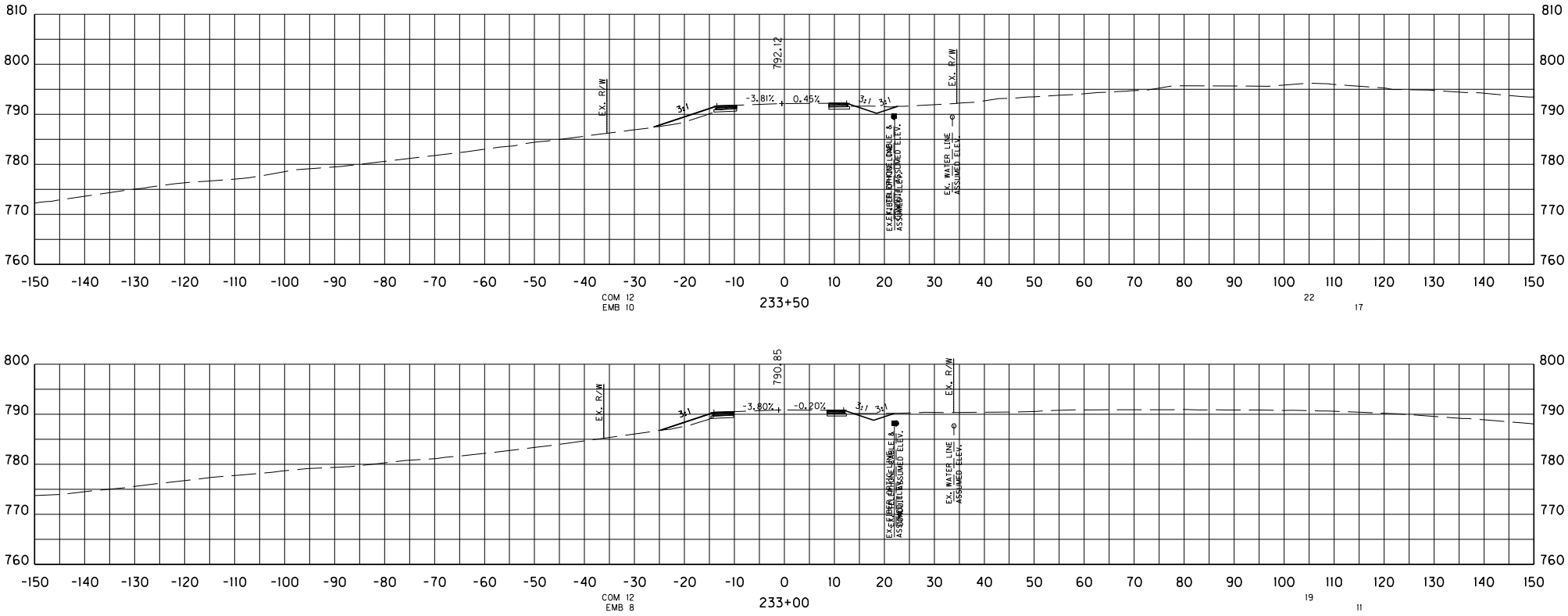


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X83

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.231+50 TO STA.232+50

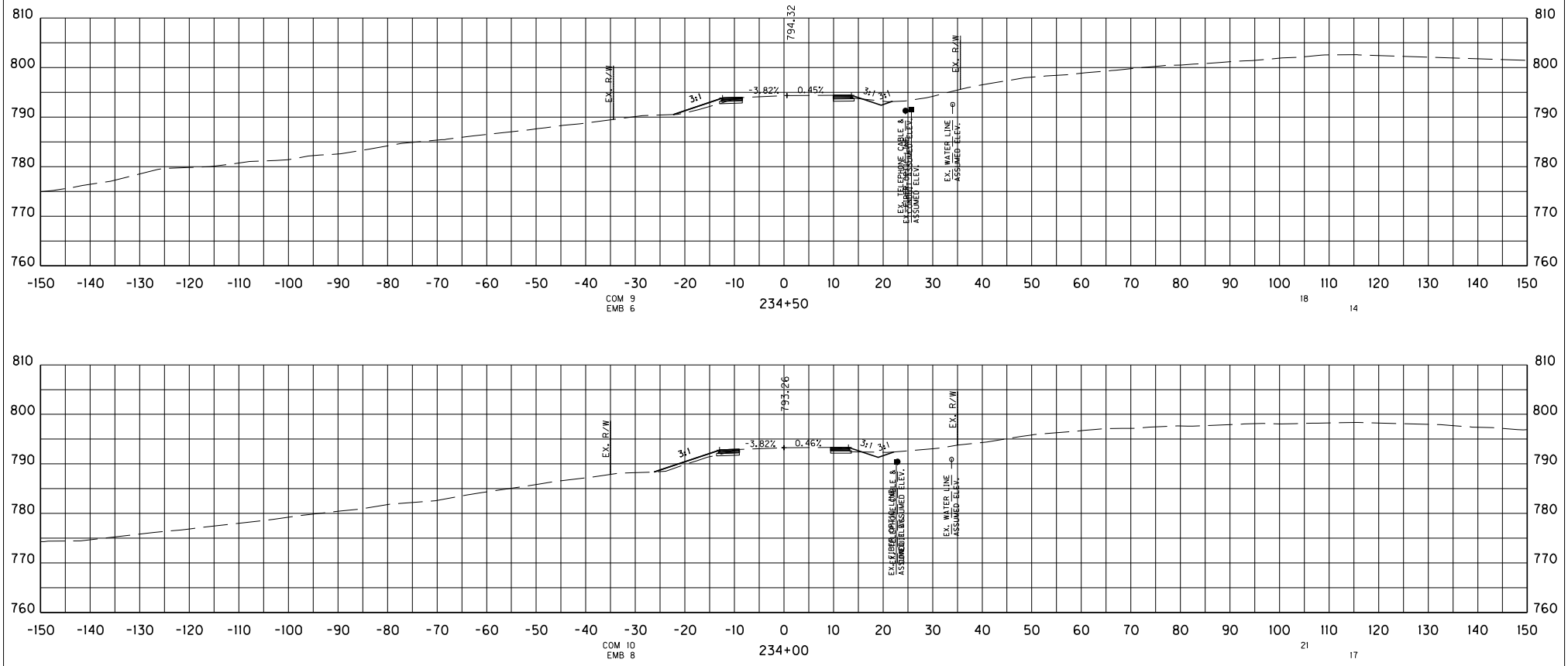


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X84

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.233+00 TO STA.233+50

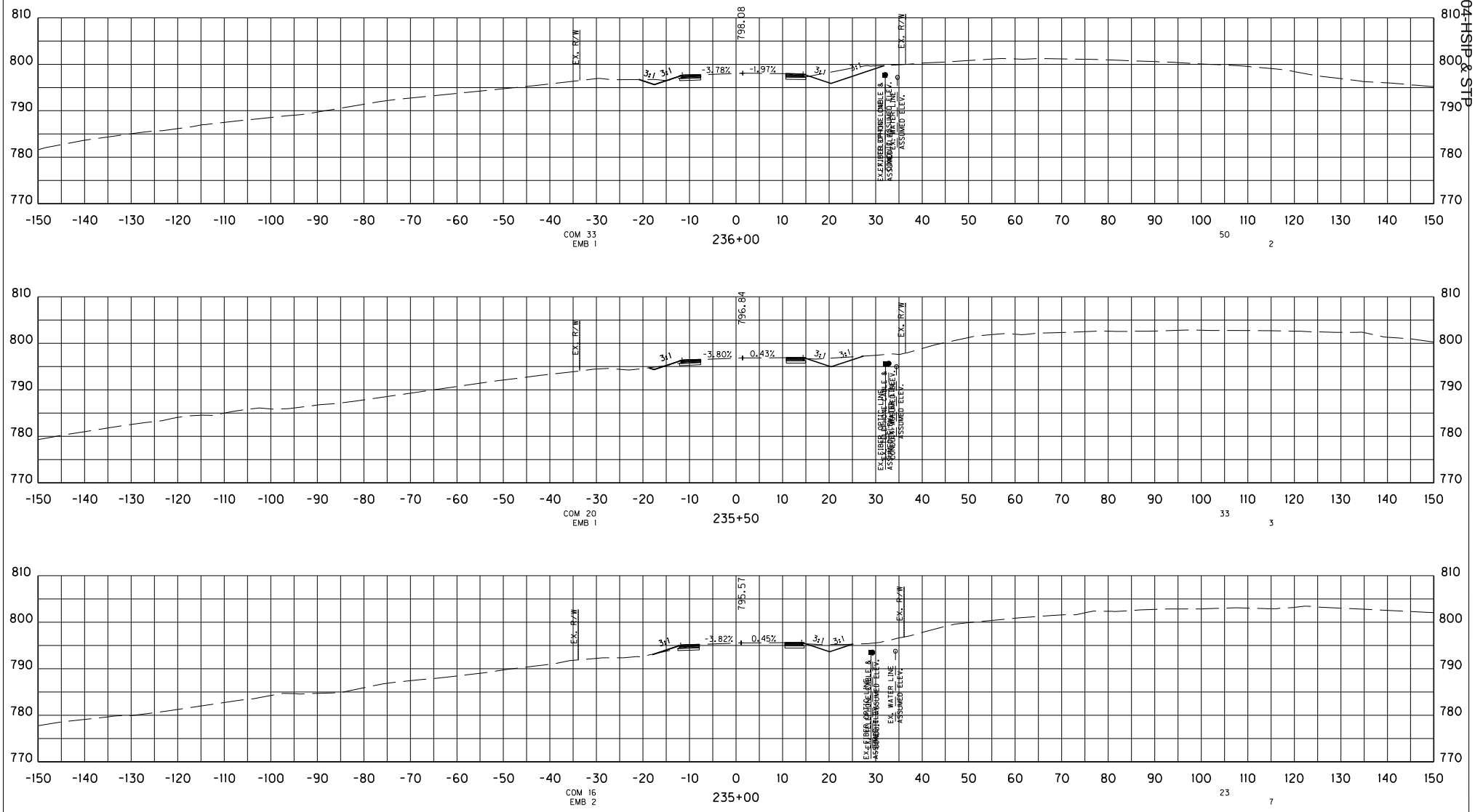


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X85

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.234+00 TO STA.234+50

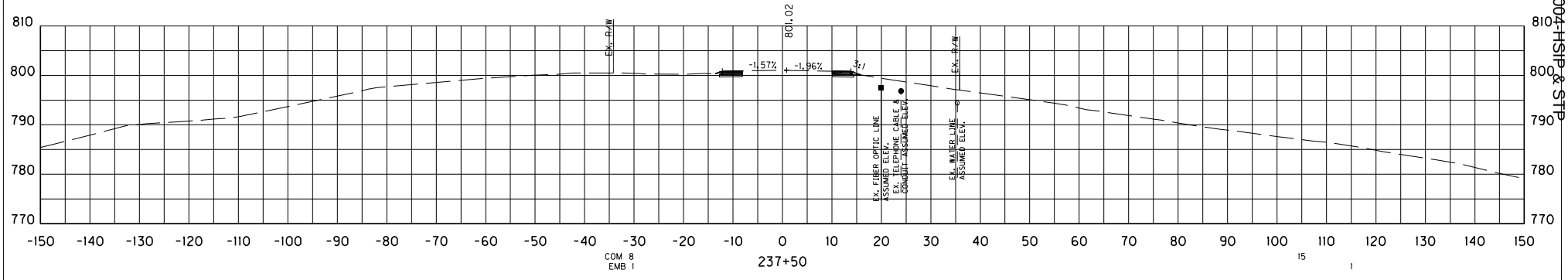


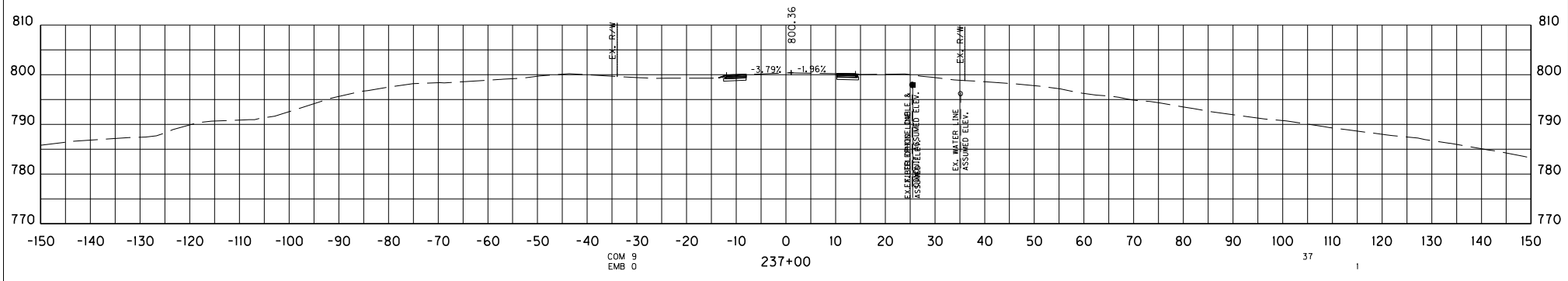
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

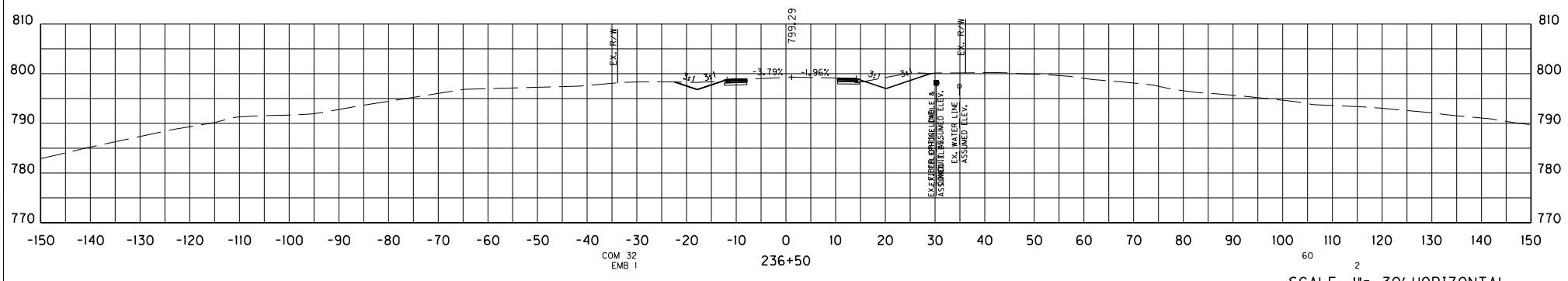
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X86

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.235+00 TO STA.236+00





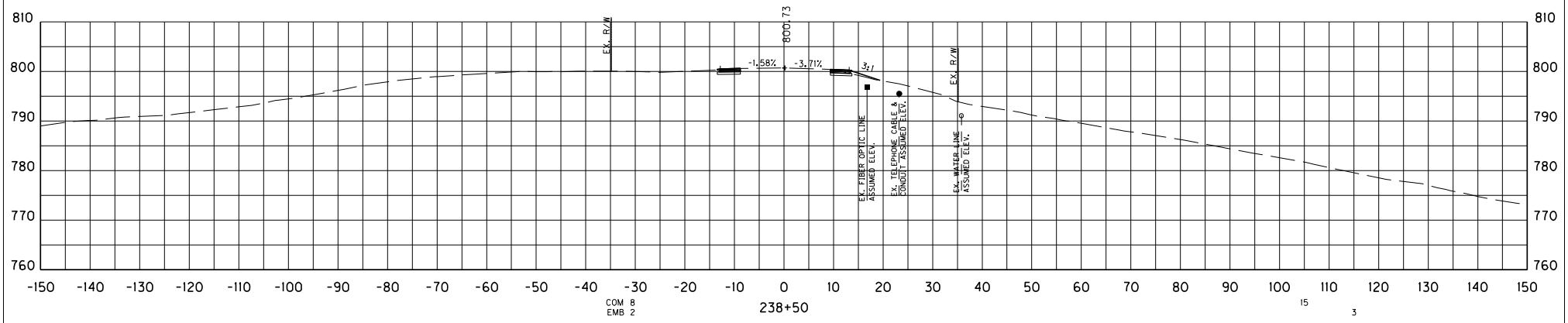


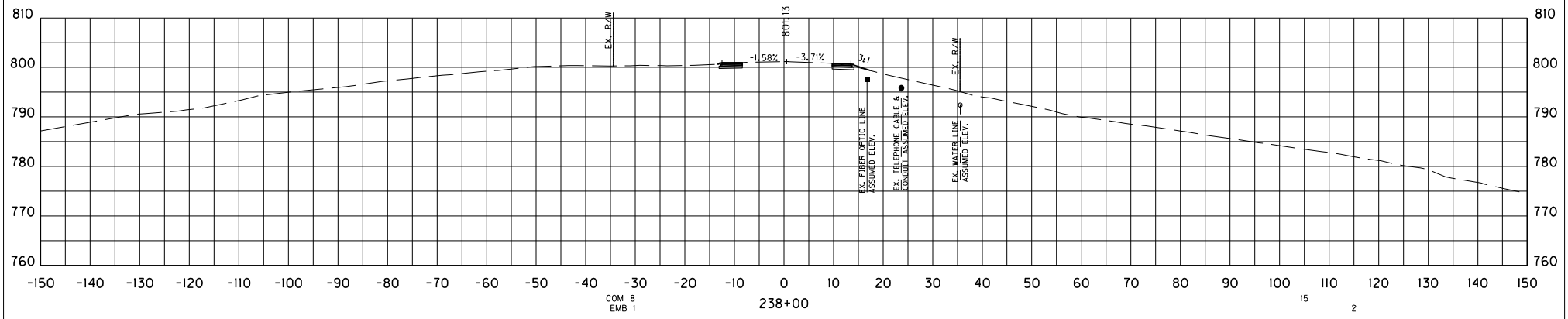
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X87

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.236+50 TO STA.237+50



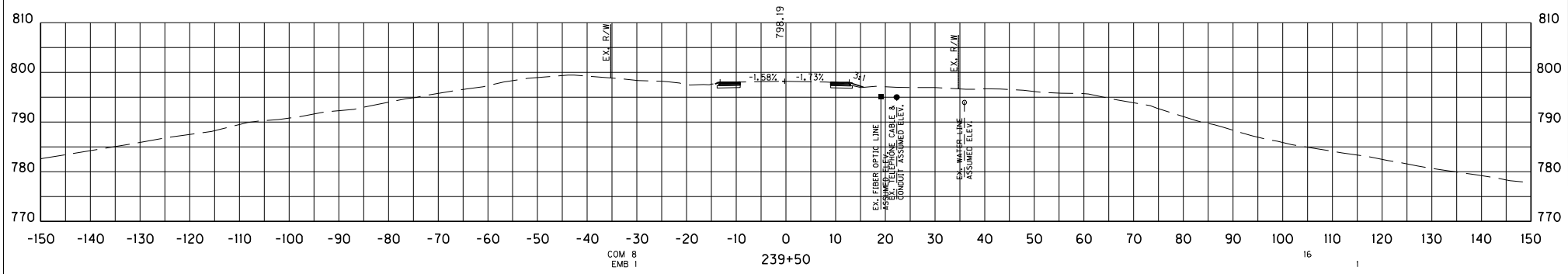


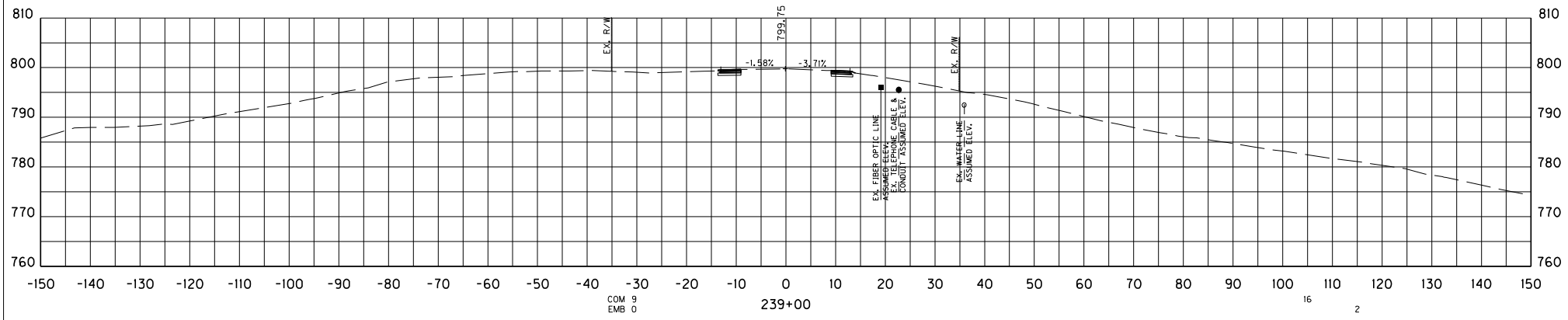
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X88

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.238+00 TO STA.238+50



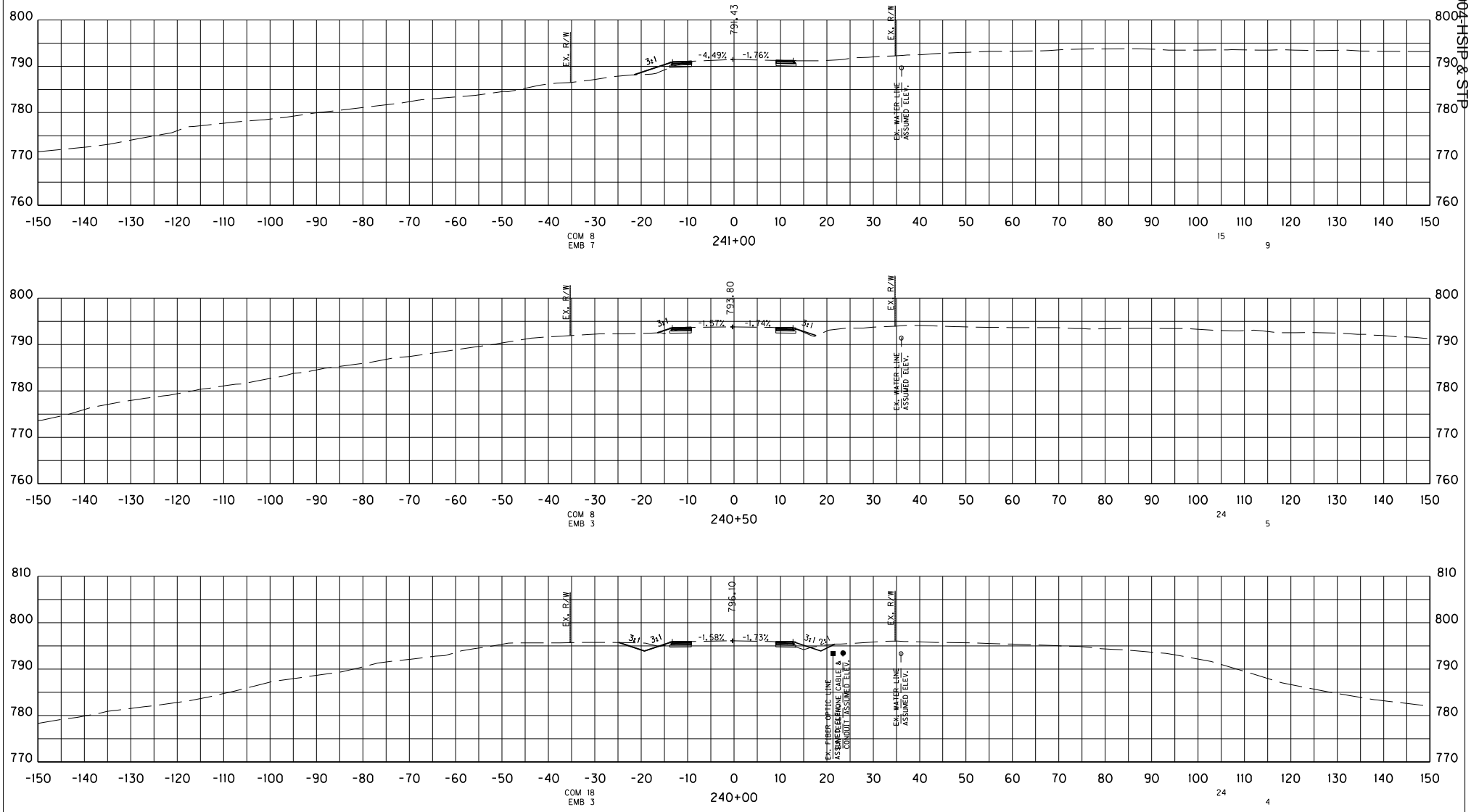


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X89

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.239+00 TO STA.239+50

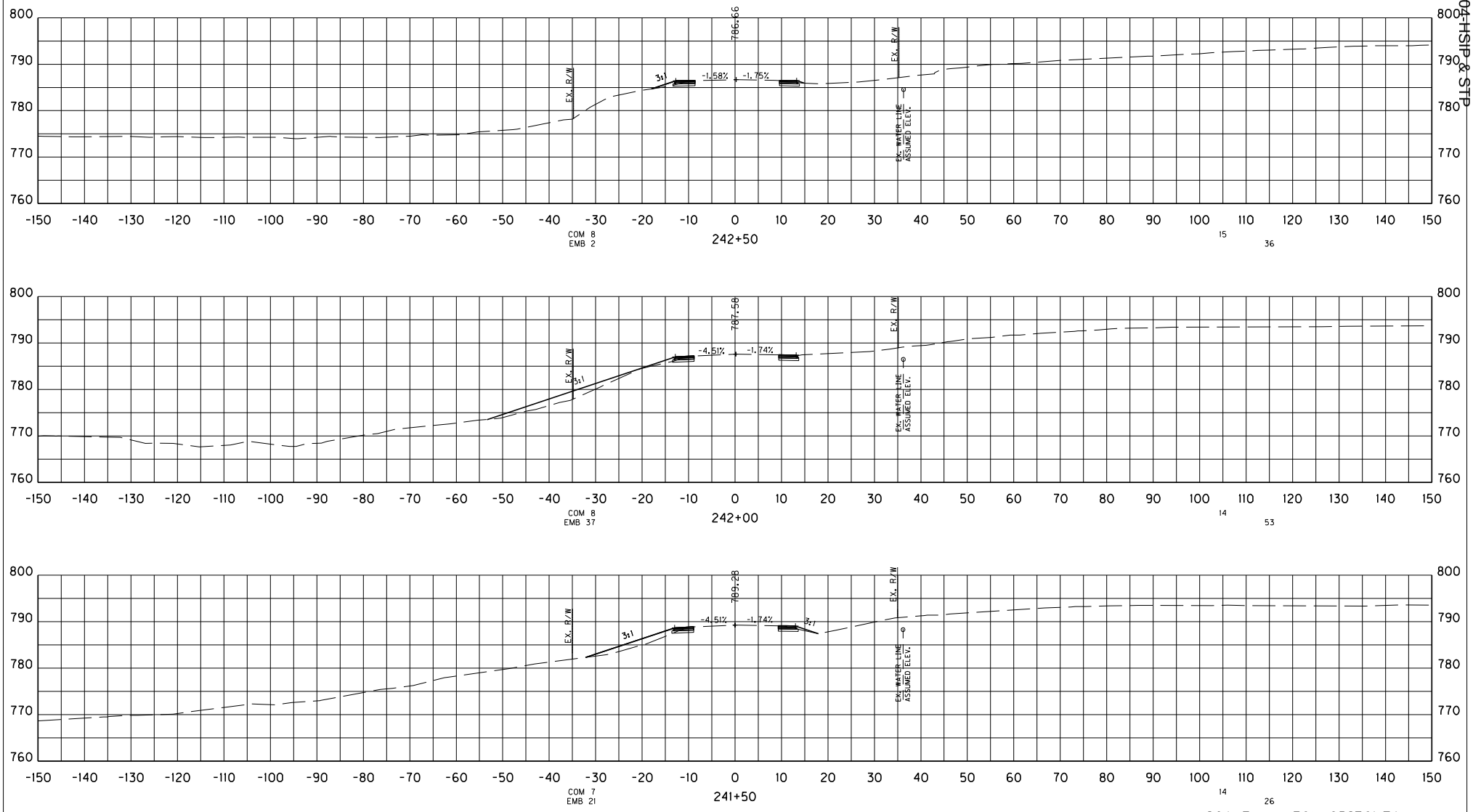


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X90

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.240+00 TO STA.241+00

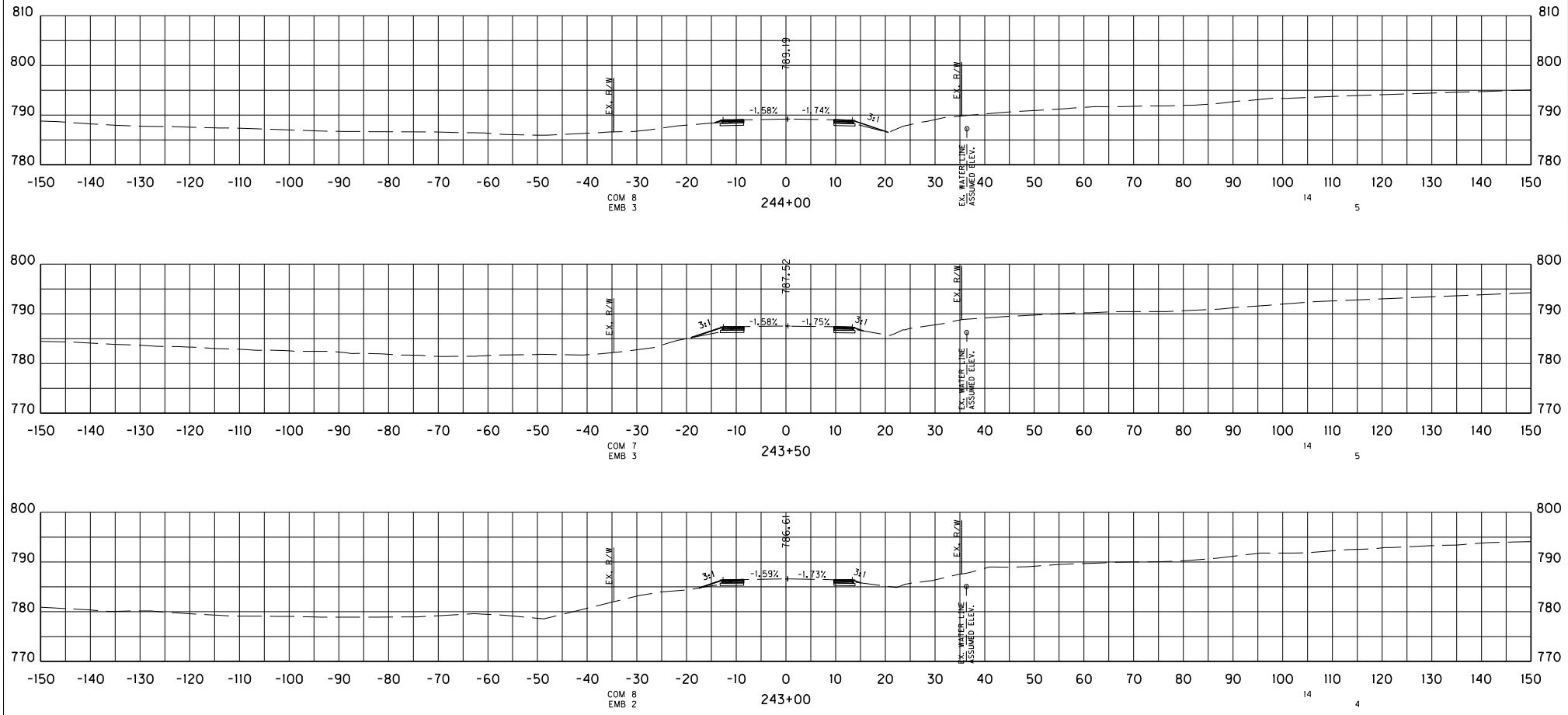


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X91

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.241+50 TO STA.242+50

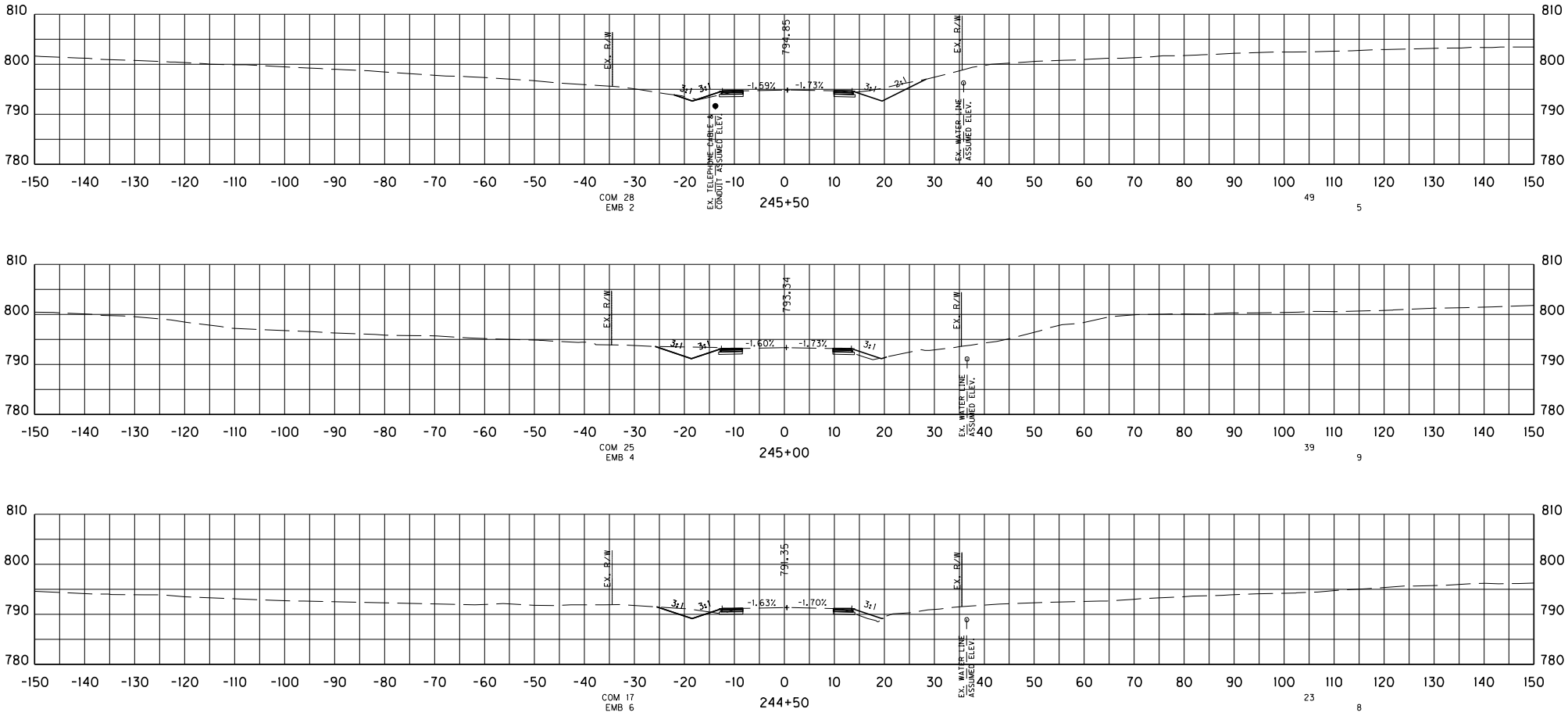


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X92

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.243+00 TO STA.244+00

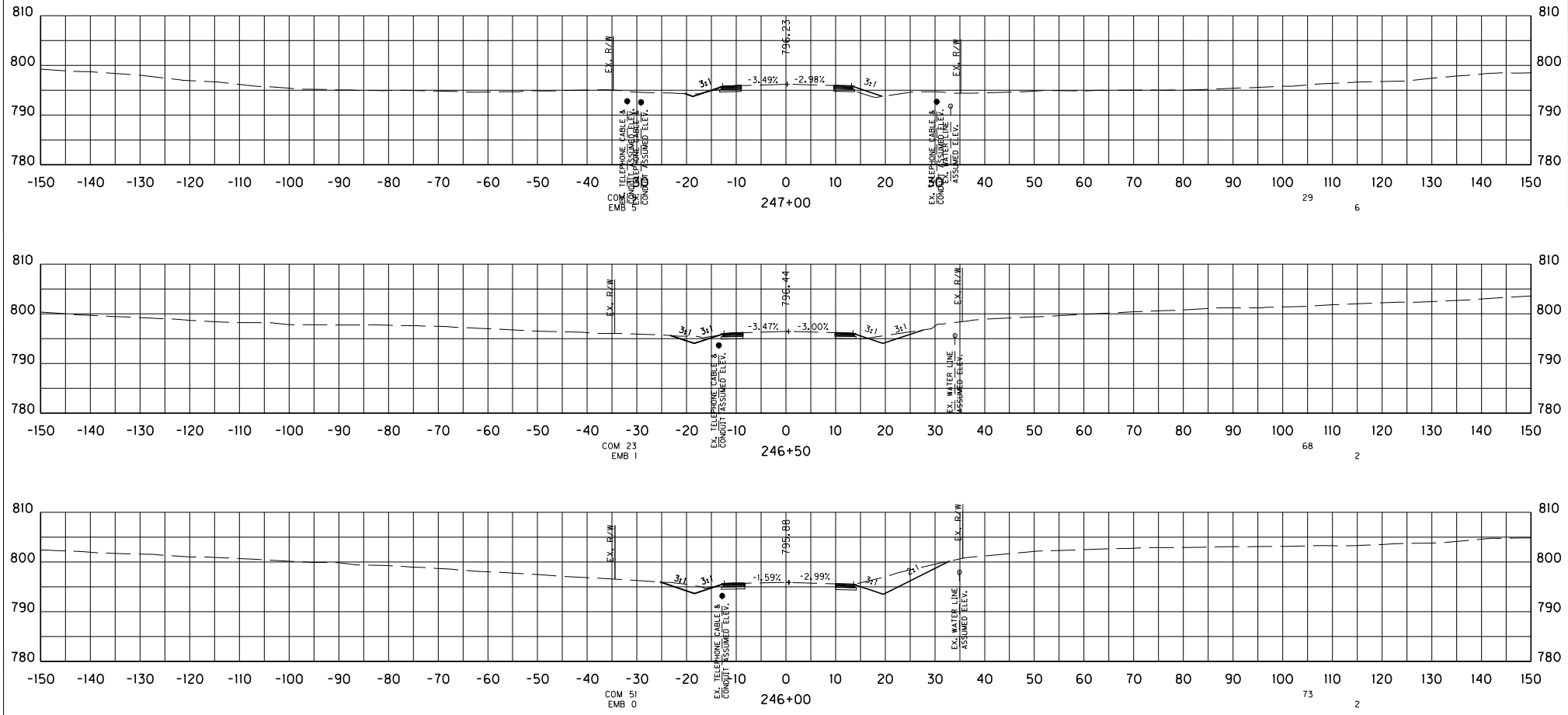


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X93

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.244+50 TO STA.245+50

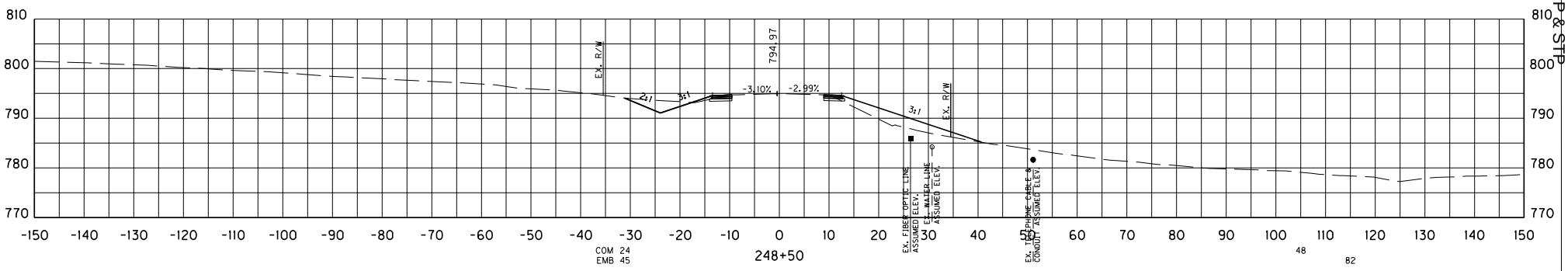


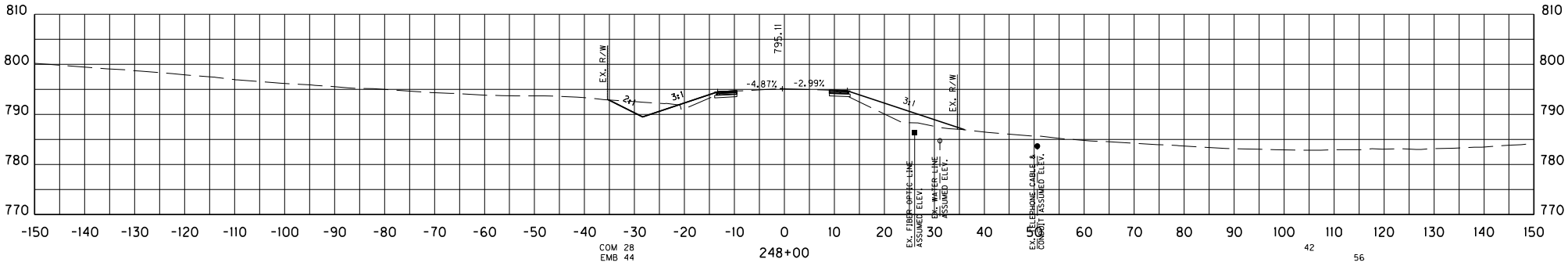
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

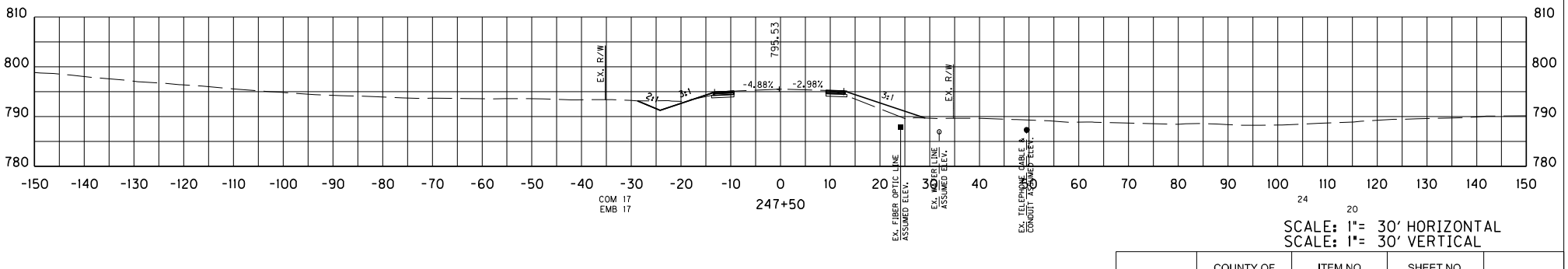
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X94

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.246+00 TO STA.247+00





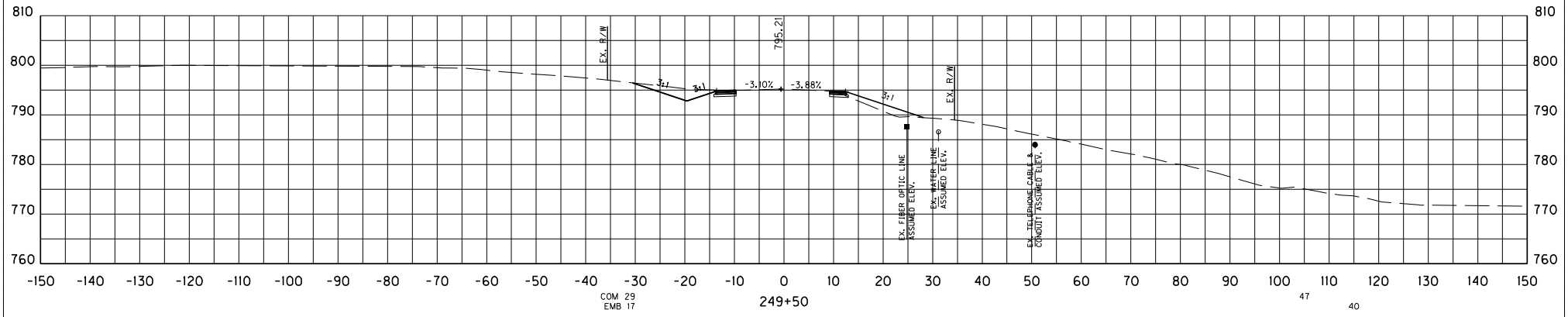


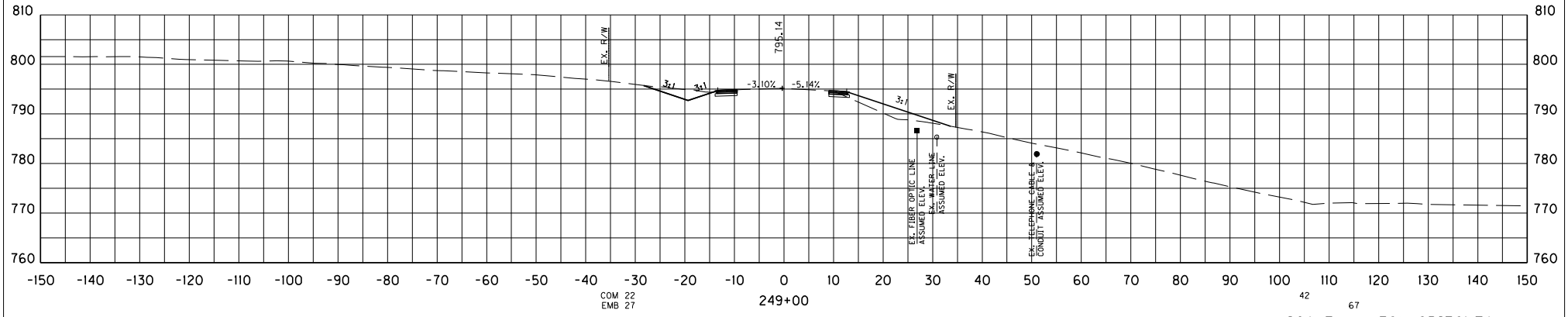
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X95

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.247+50 TO STA.248+50



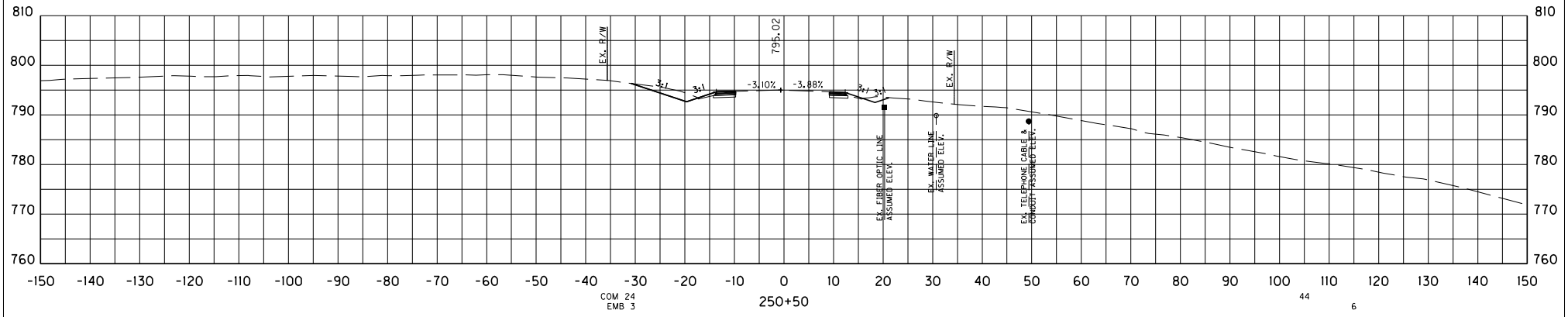


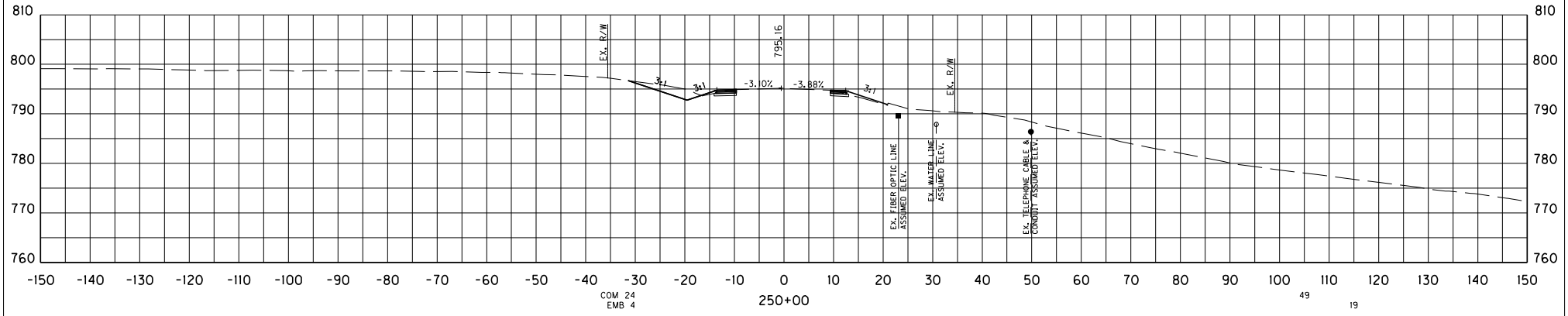
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X96

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.249+00 TO STA.249+50



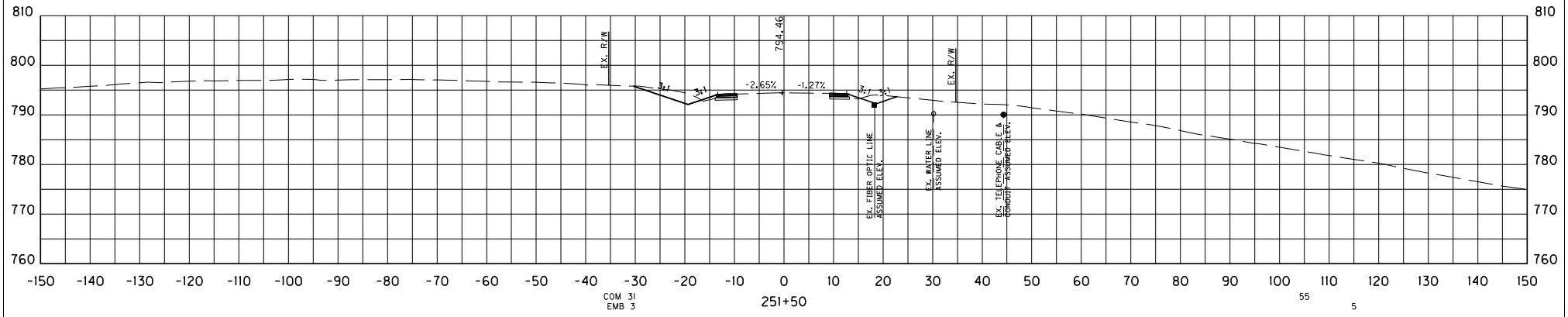


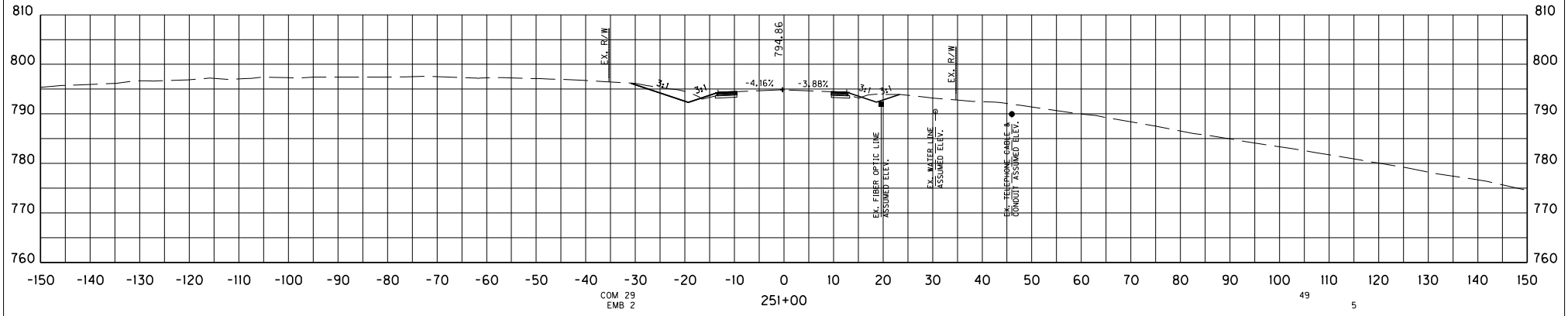
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X97

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.250+00 TO STA.250+50



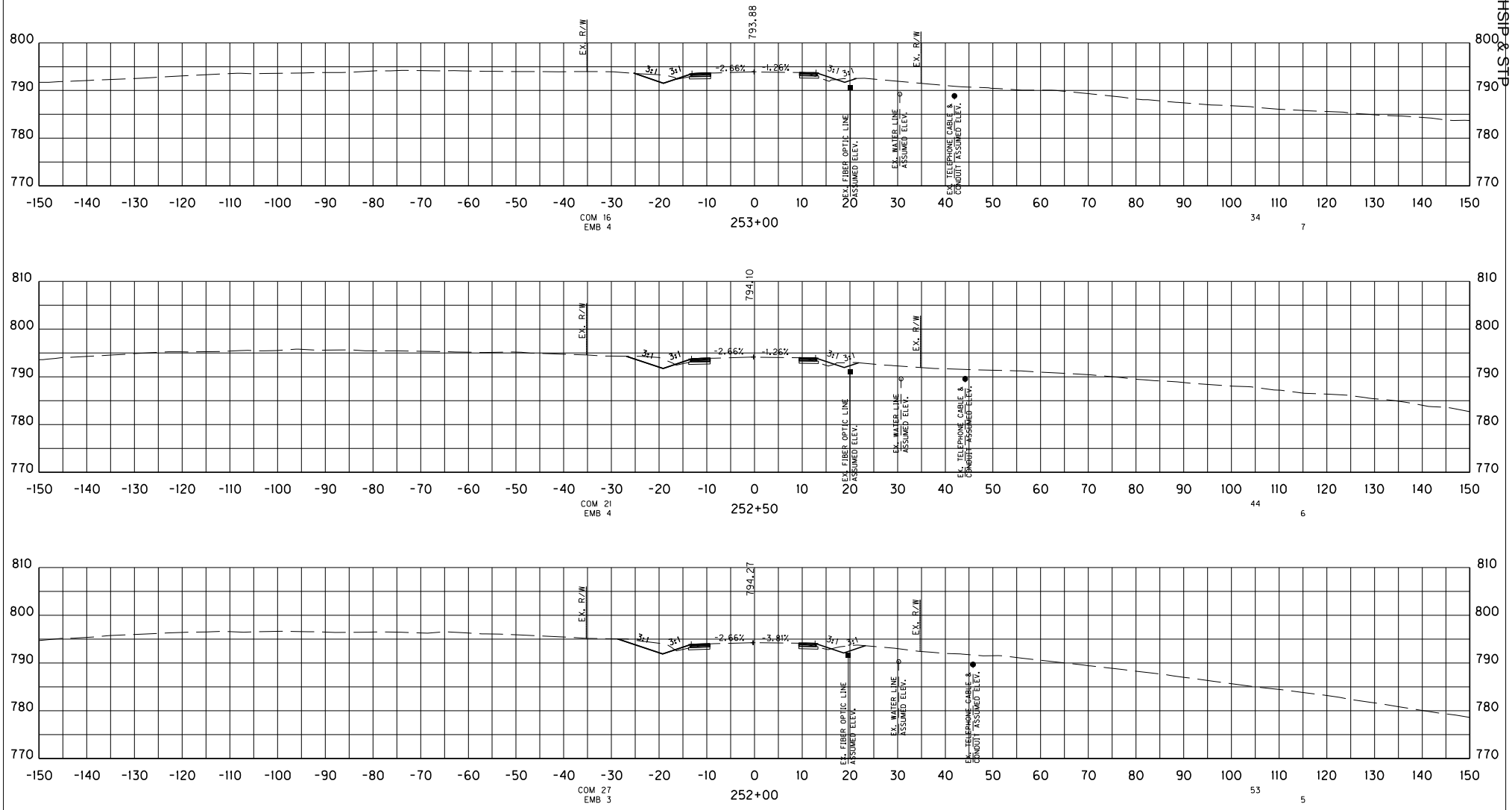


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X98

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.251+00 TO STA.251+50

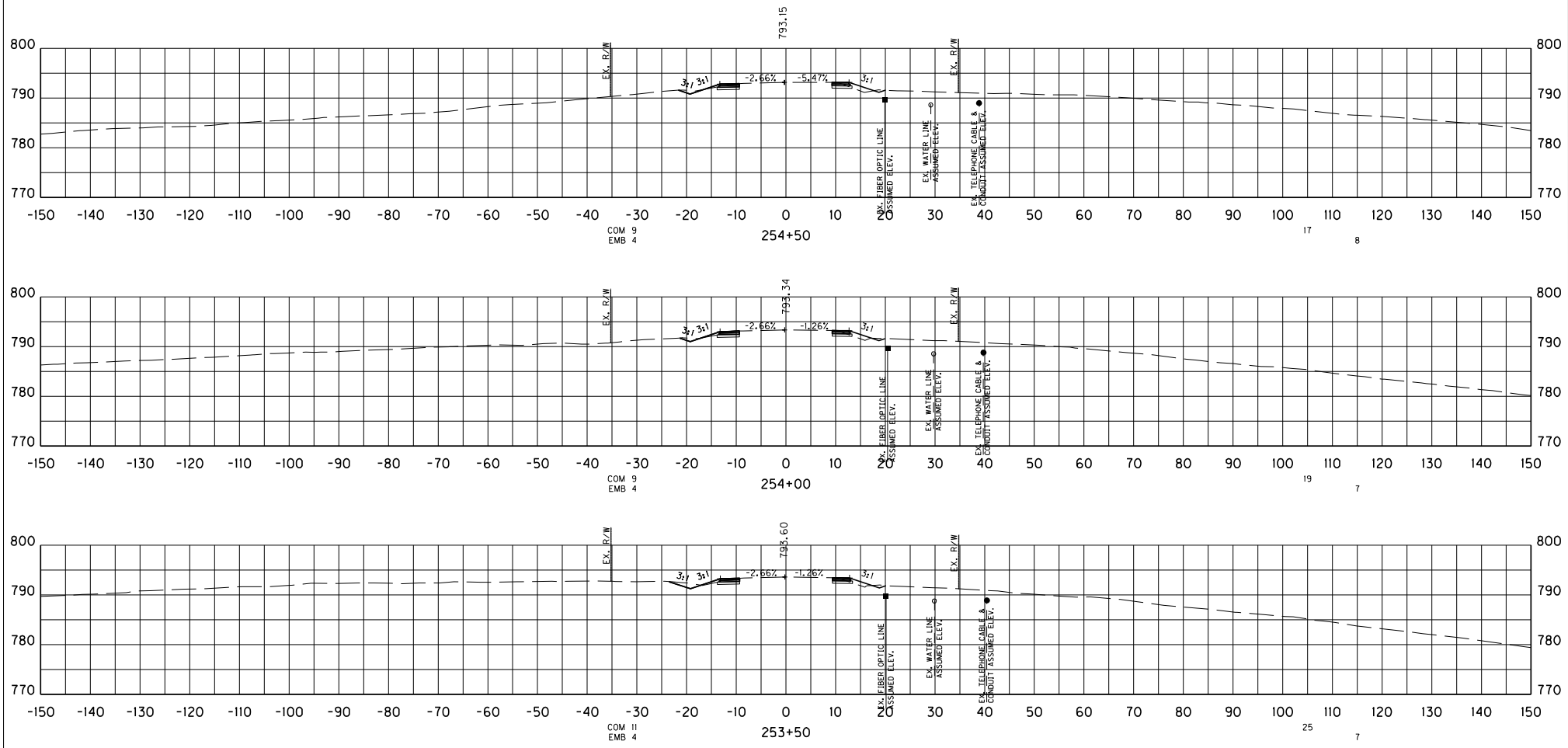


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X99

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.252+00 TO STA.253+00

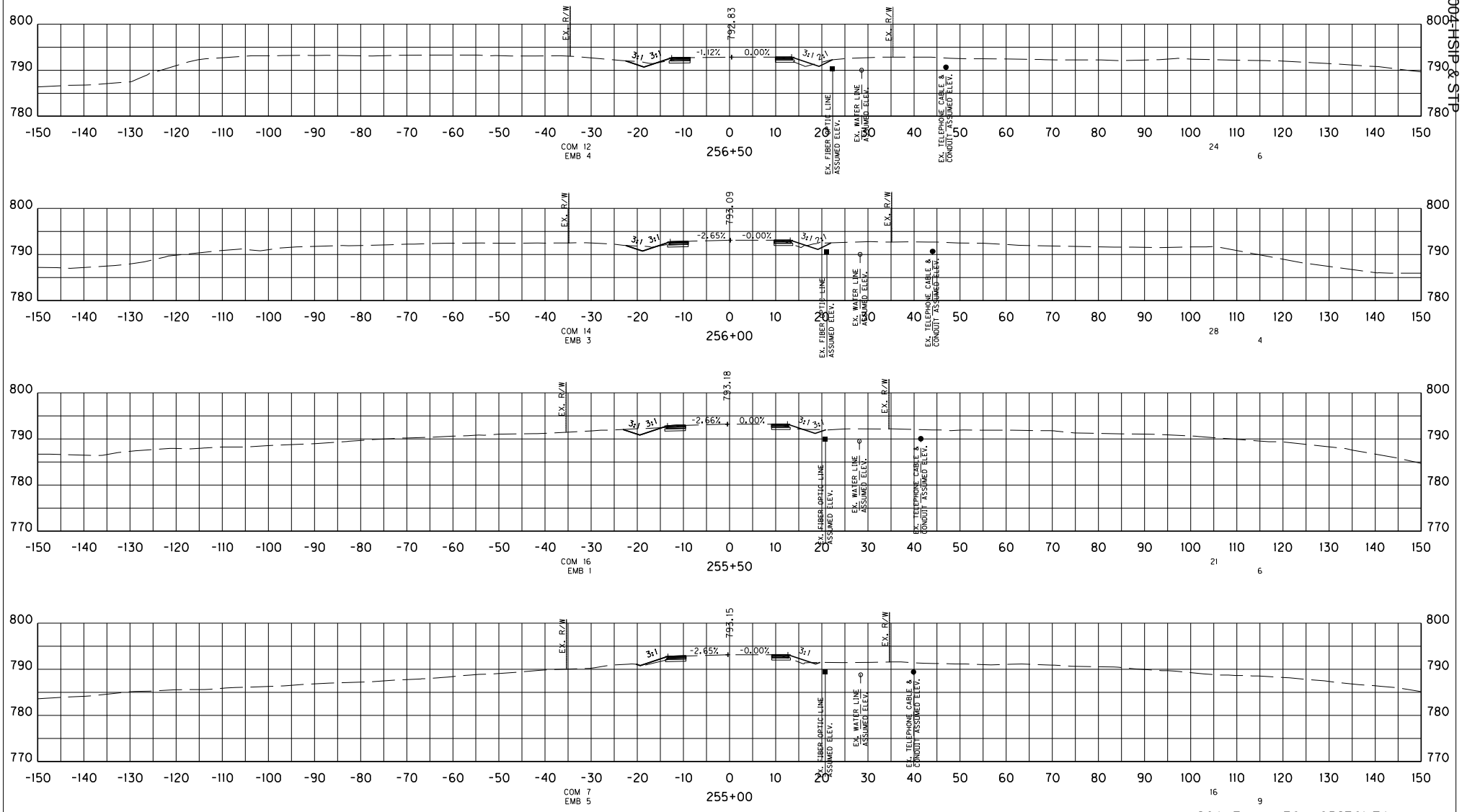


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X100

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.253+50 TO STA.254+50

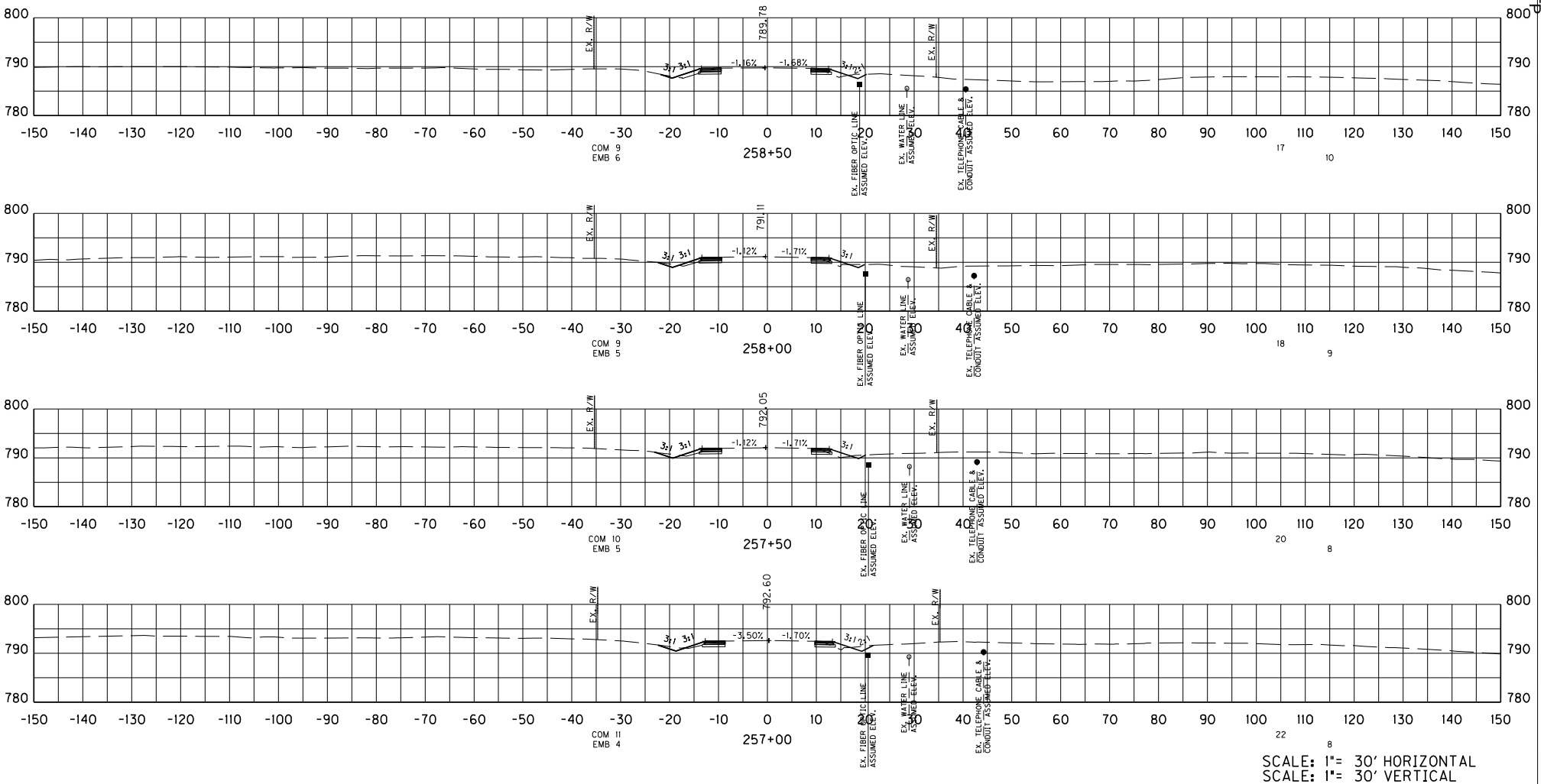


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X101

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.255+00 TO STA.256+50

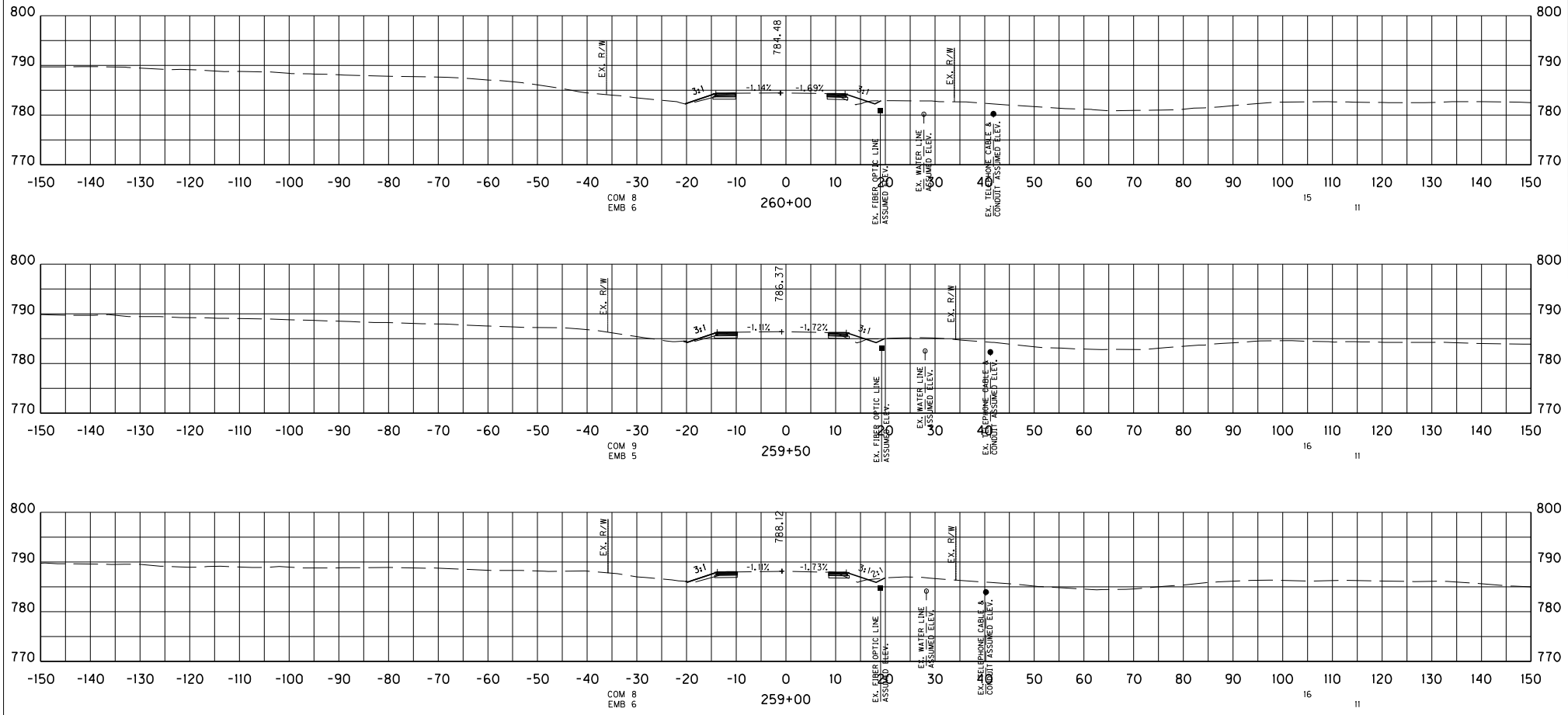


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X102

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.257+00 TO STA.258+50

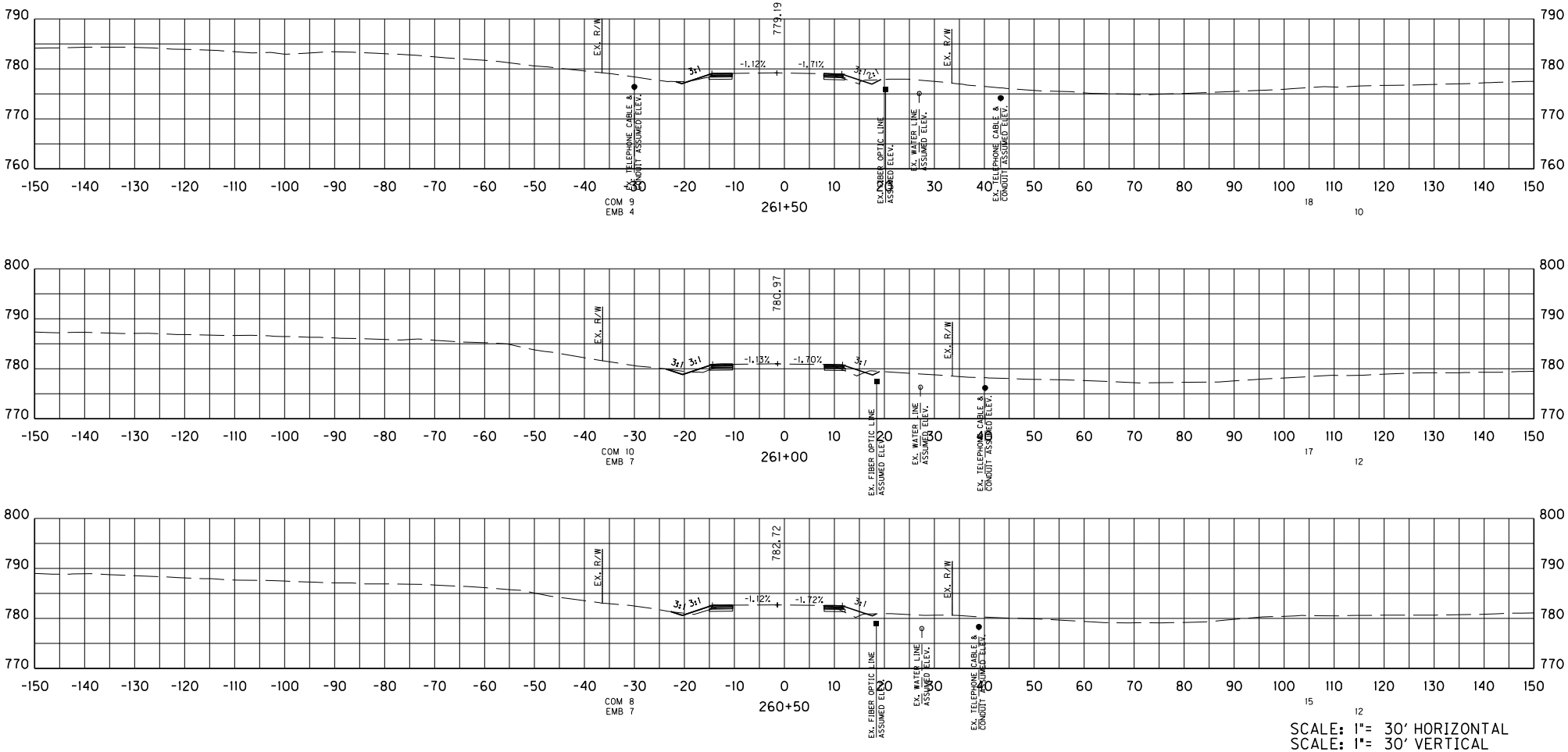


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X103

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.259+00 TO STA.260+00

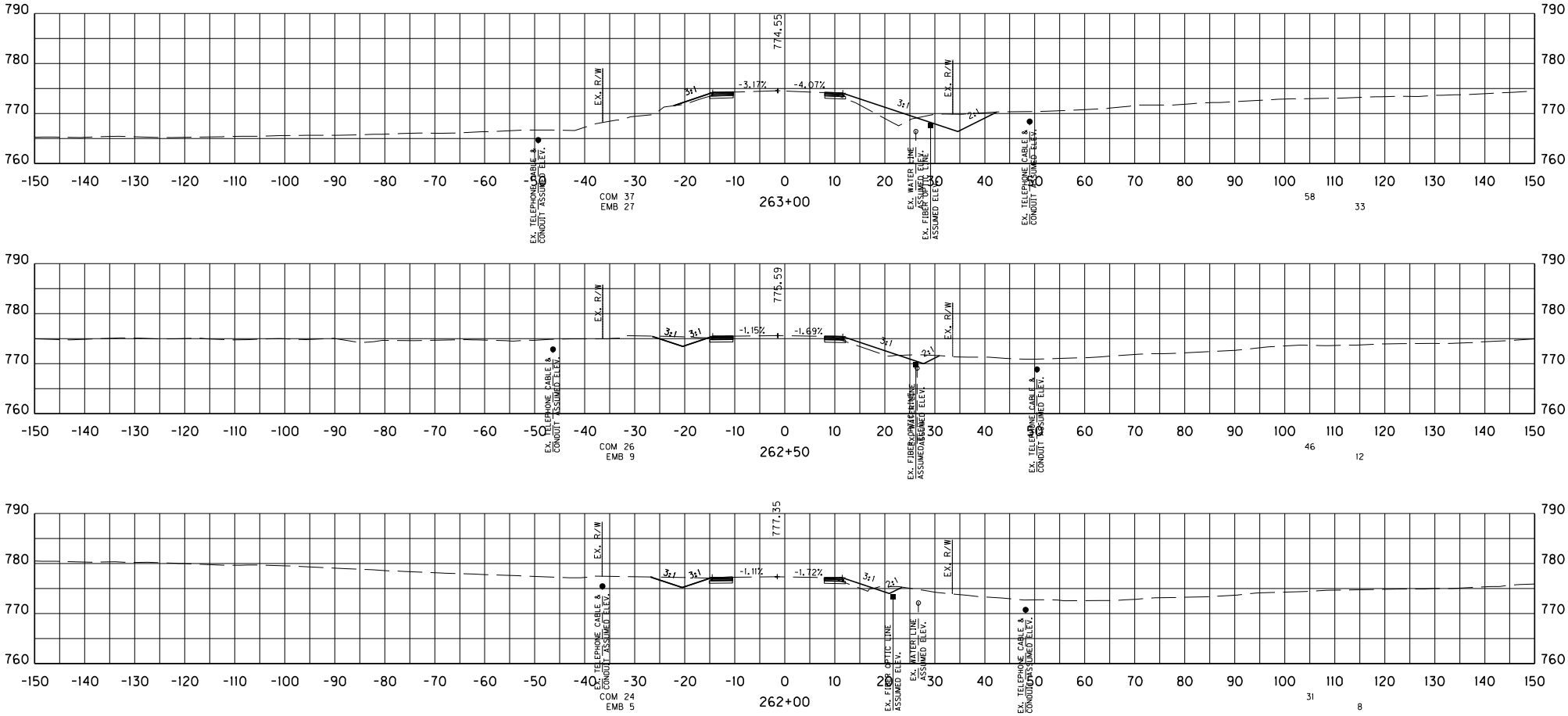


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X104

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.260+50 TO STA.261+50

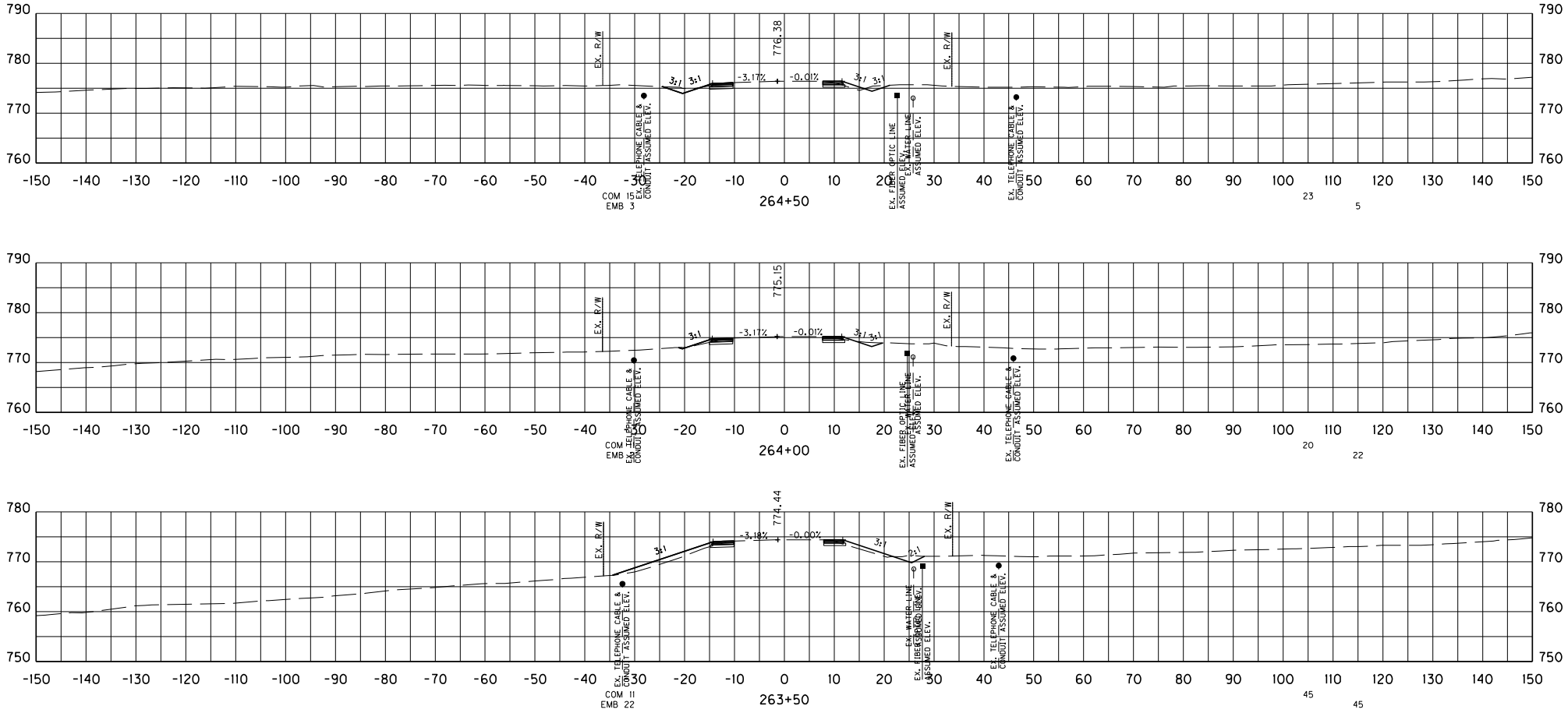


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X105

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.262+00 TO STA.263+00

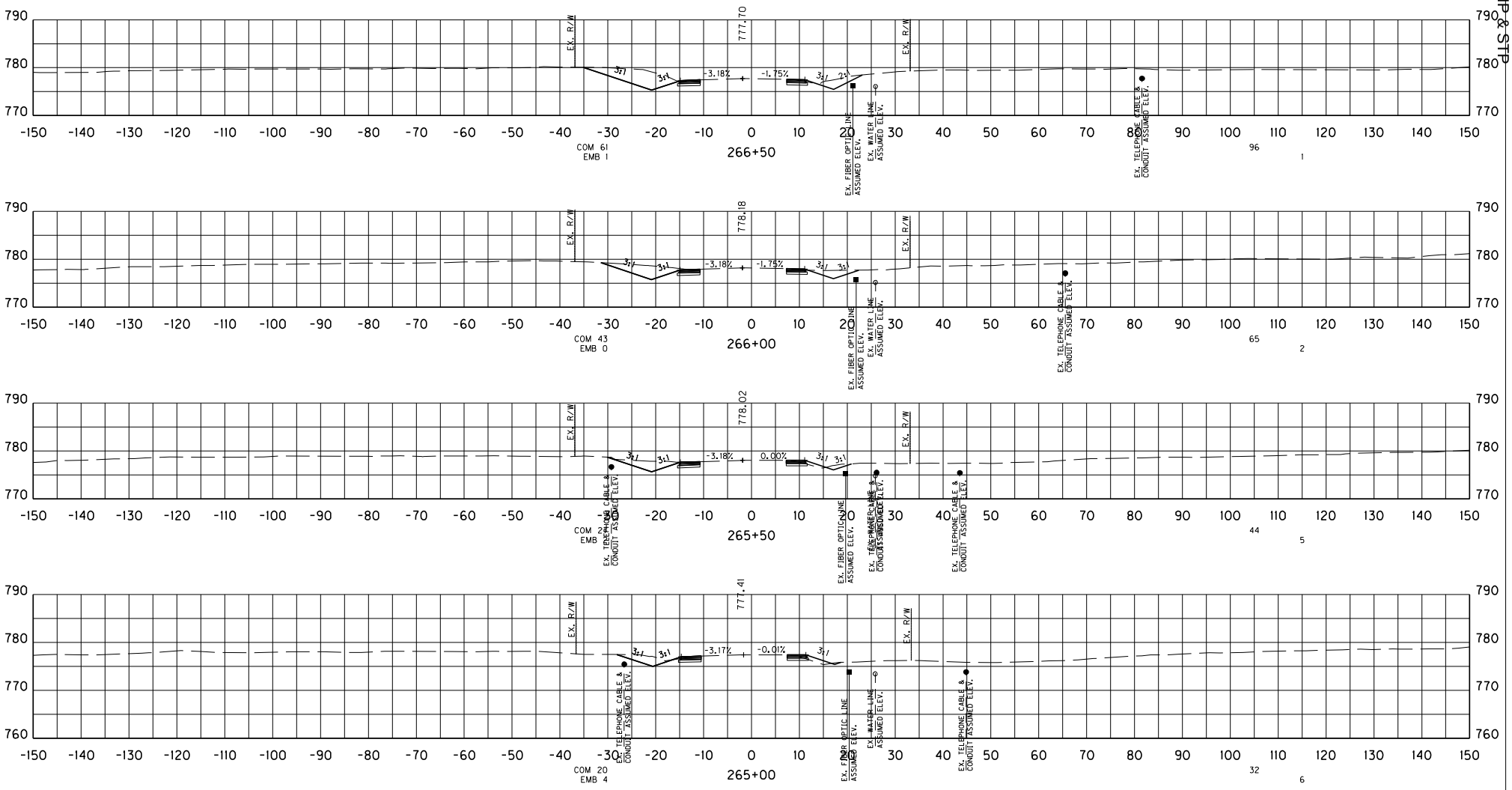


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X106

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.263+50 TO STA.264+50

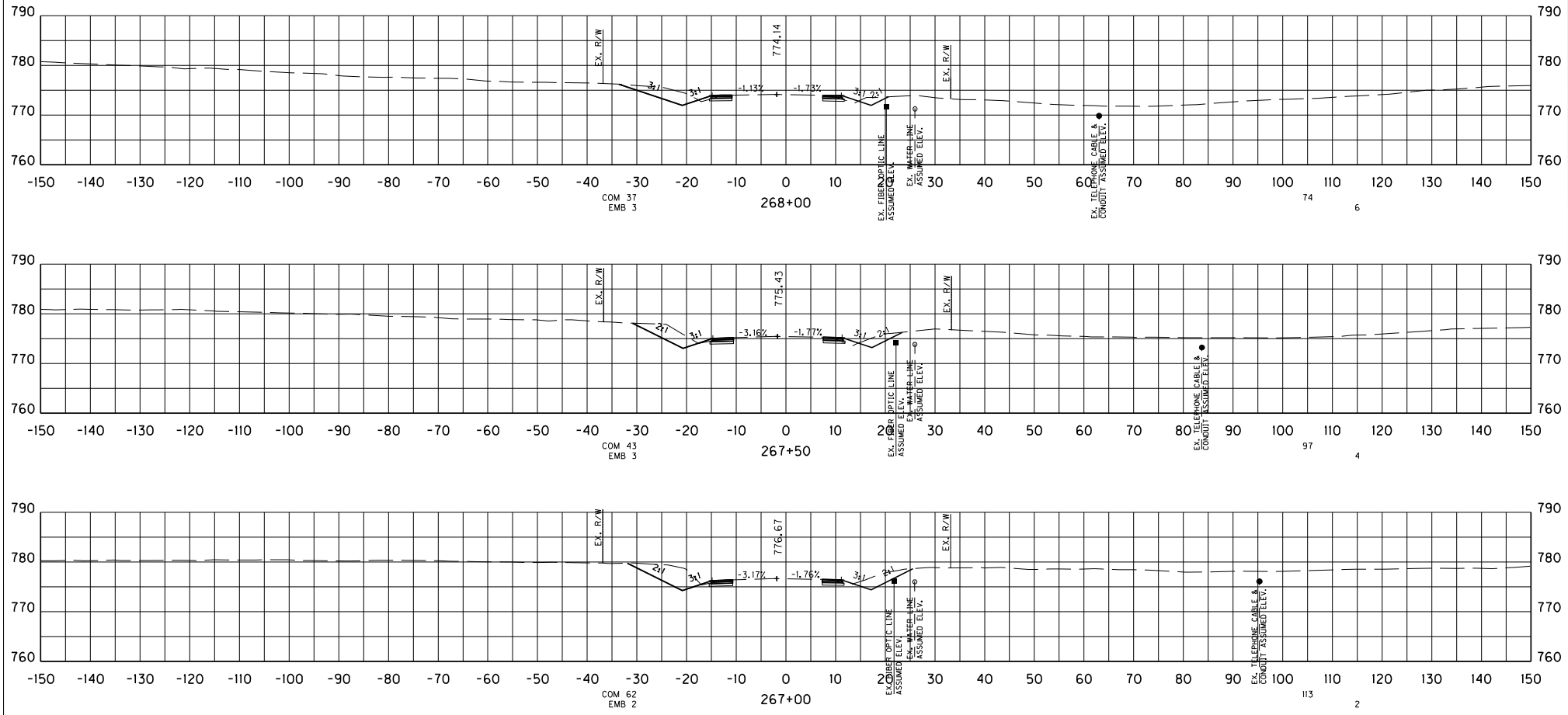


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X107

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.265+00 TO STA.266+50

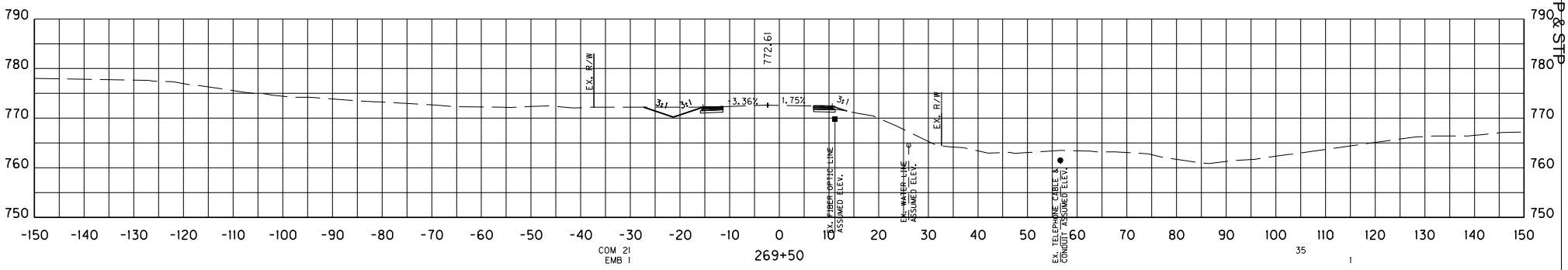


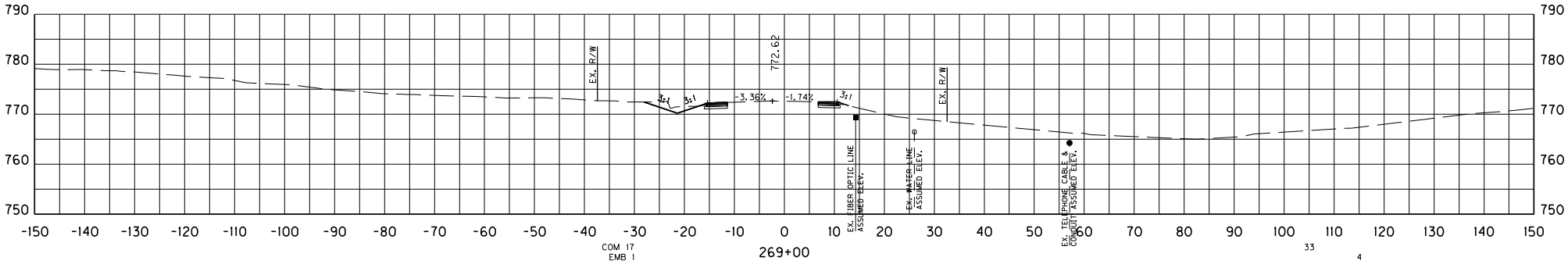
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

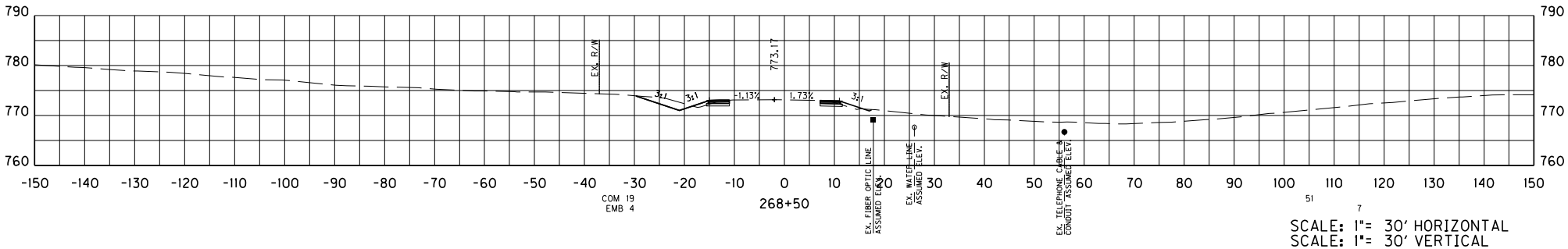
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X108

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.267+00 TO STA.268+00





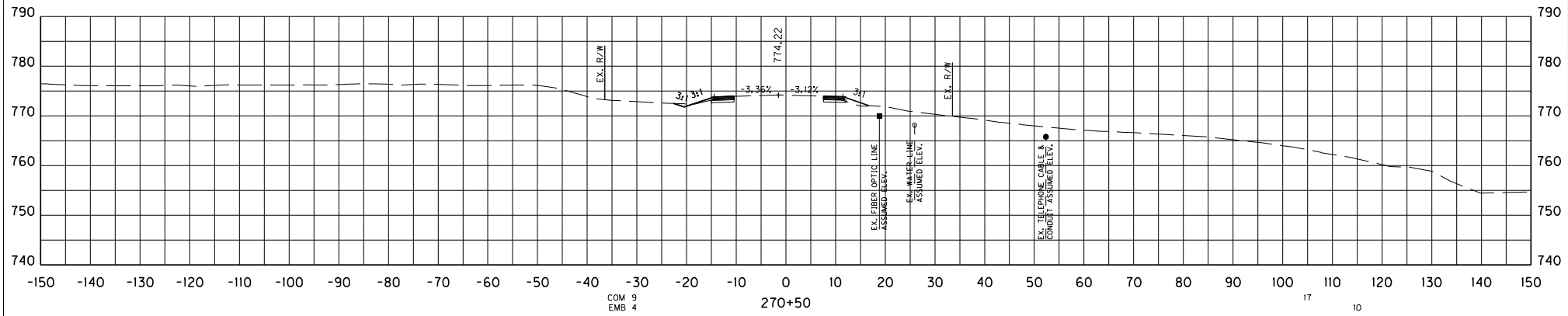


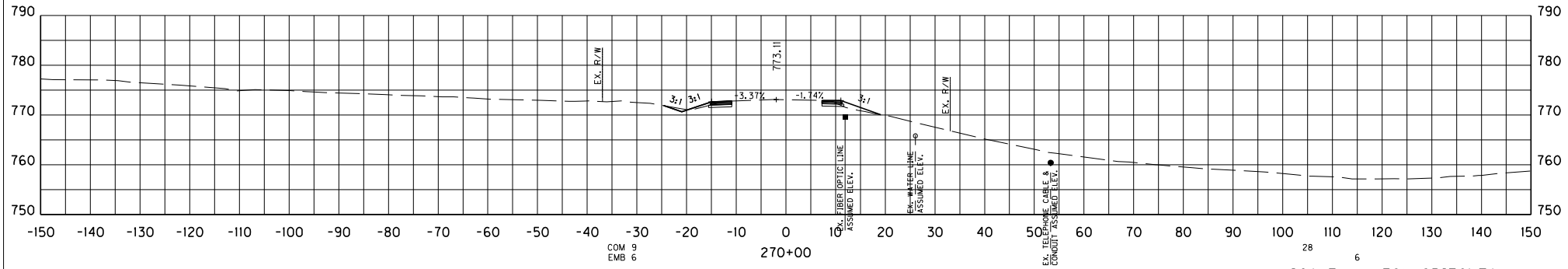
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X109

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.268+50 TO STA.269+50



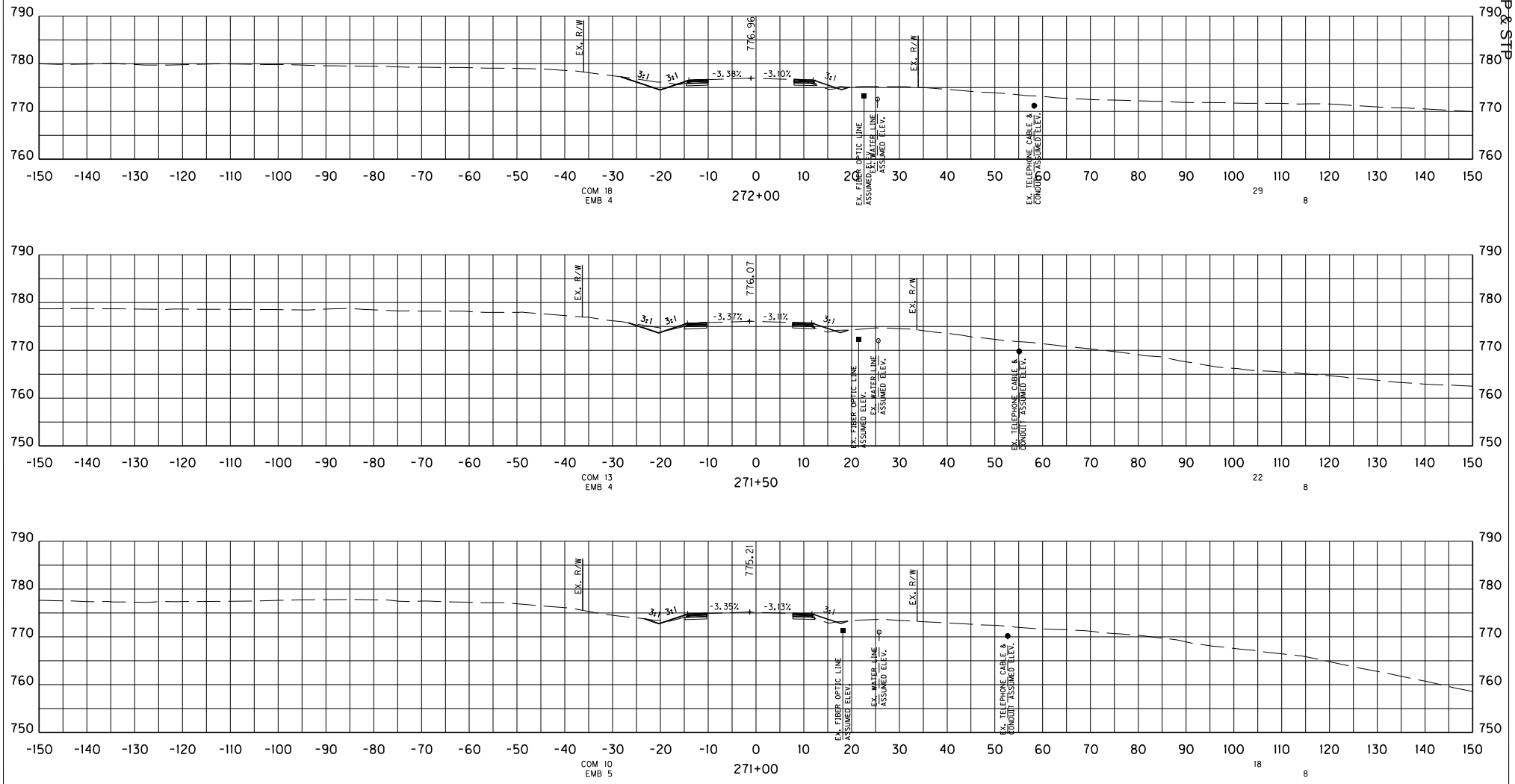


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X110

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.270+00 TO STA.270+50

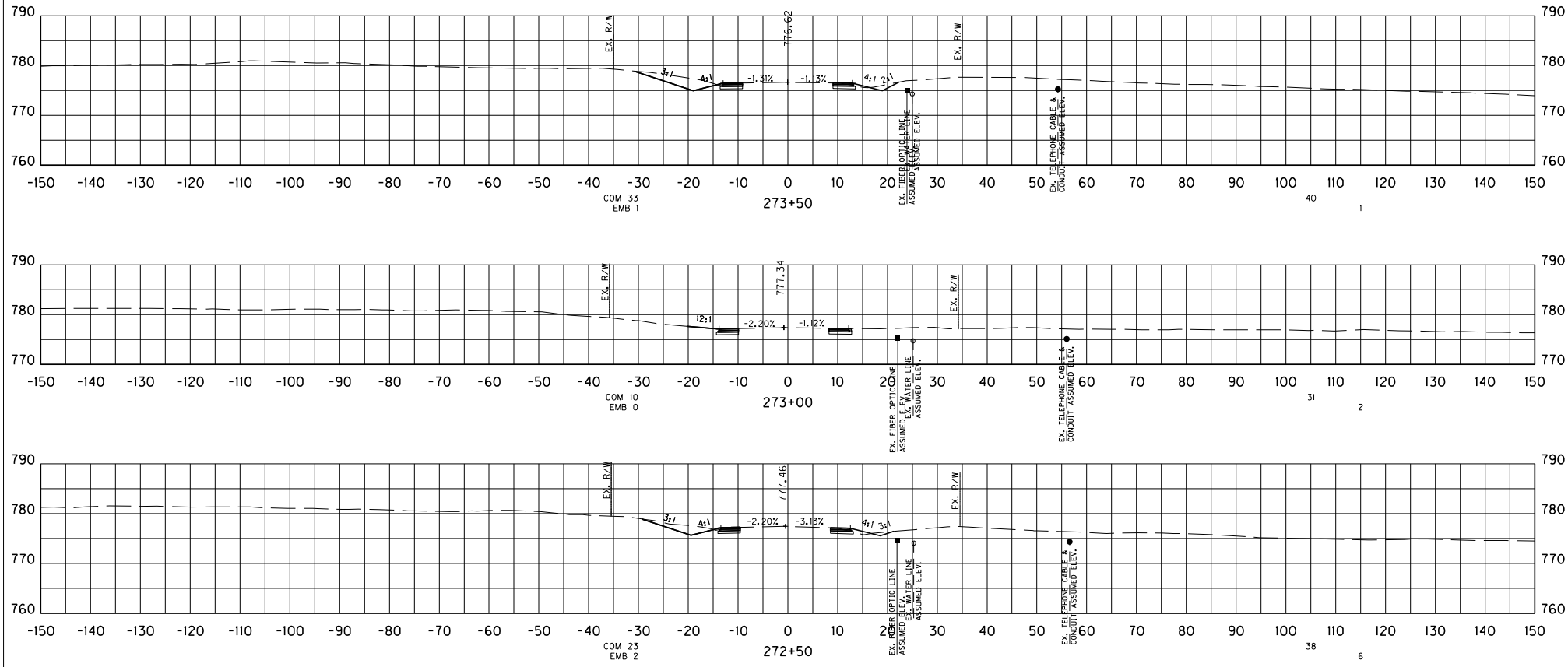


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X111

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.271+00 TO STA.272+00

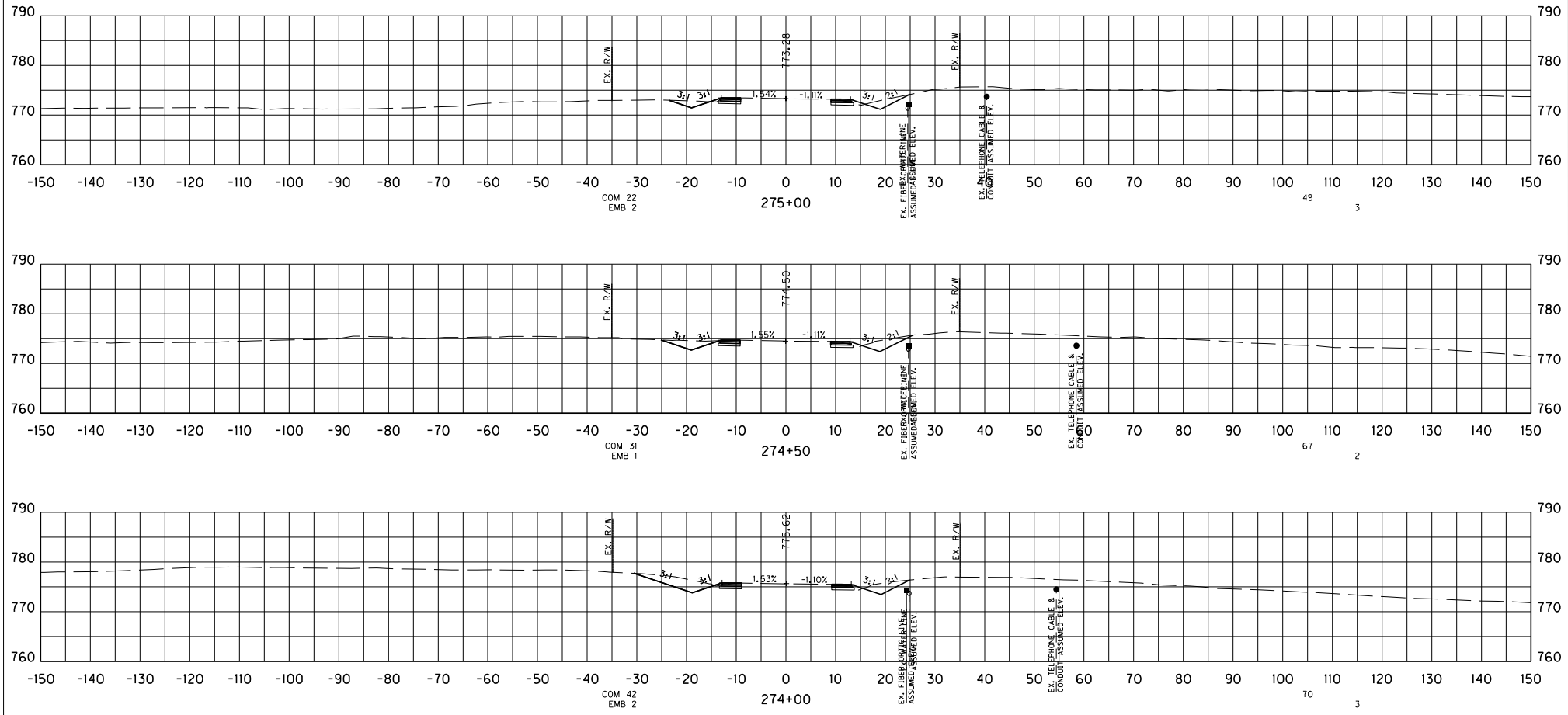


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X112

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.272+50 TO STA.273+50

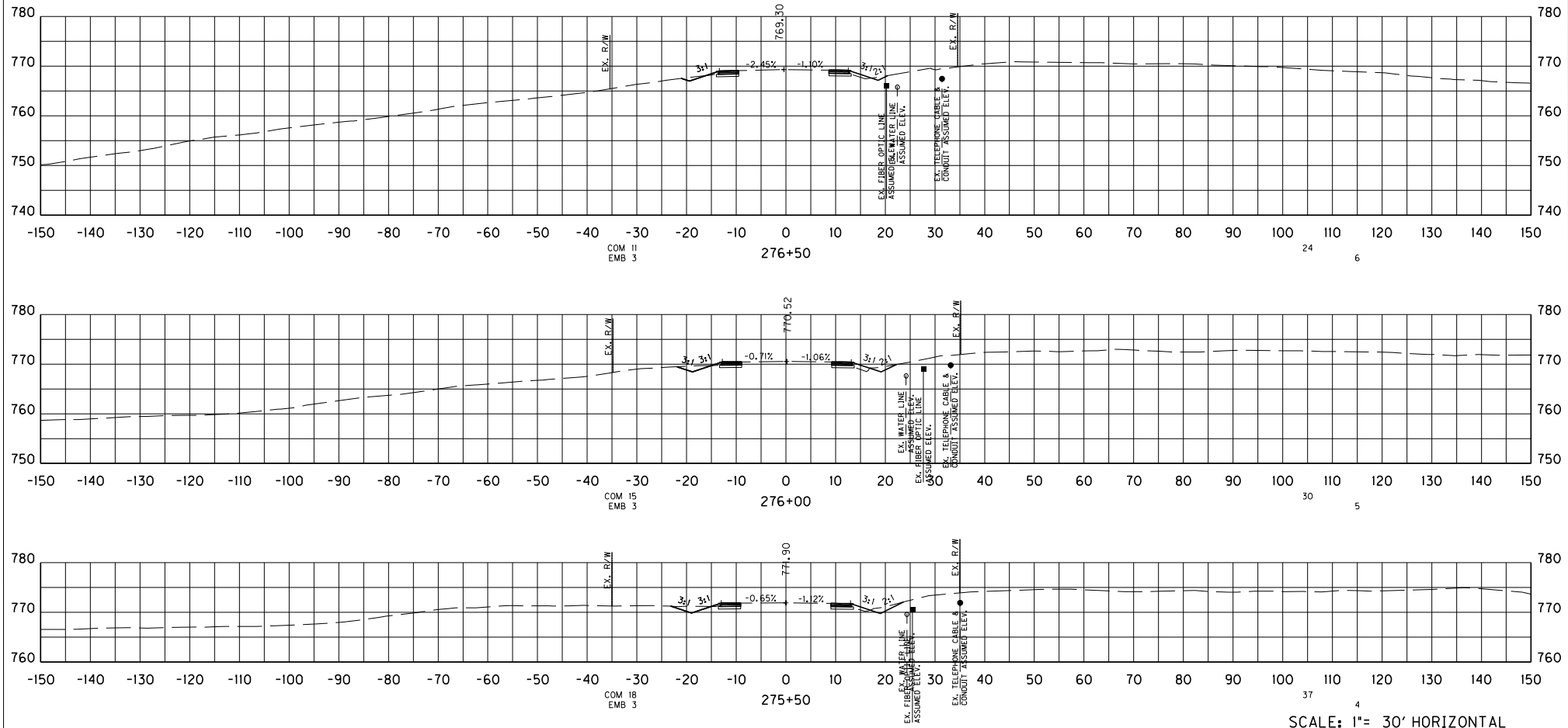


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X113

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.274+00 TO STA.275+00

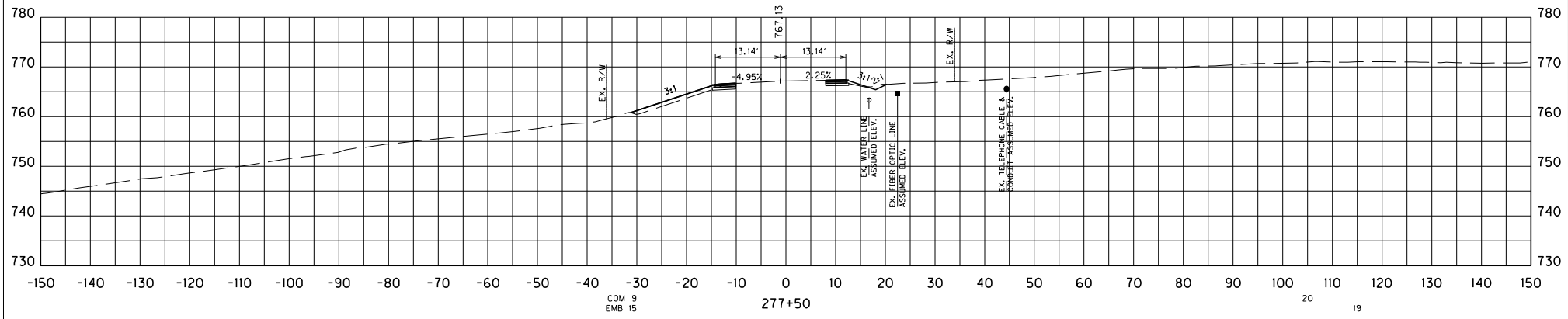


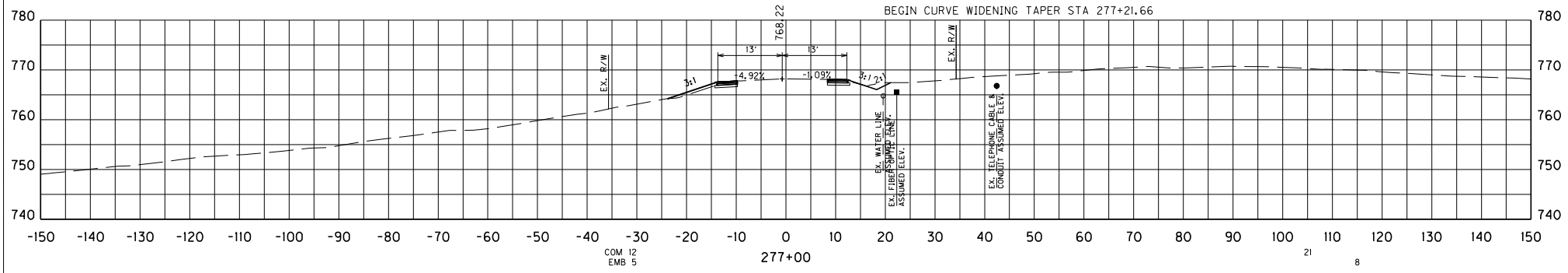
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X114

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.275+50 TO STA.276+50



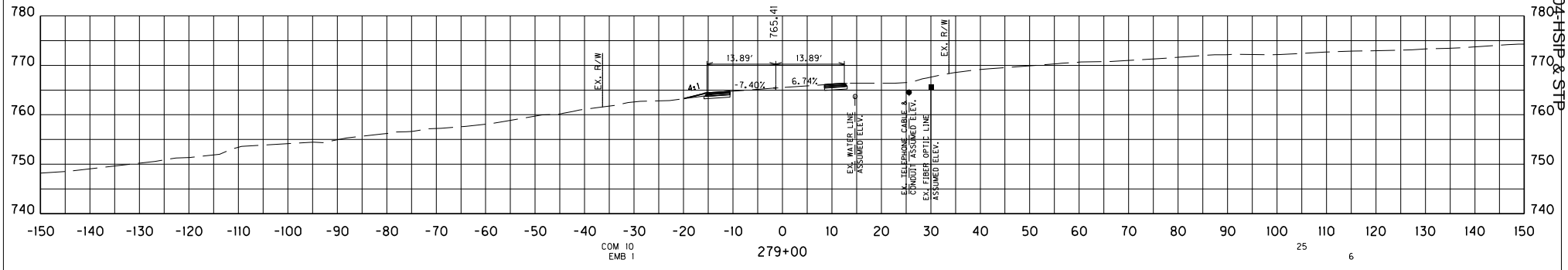


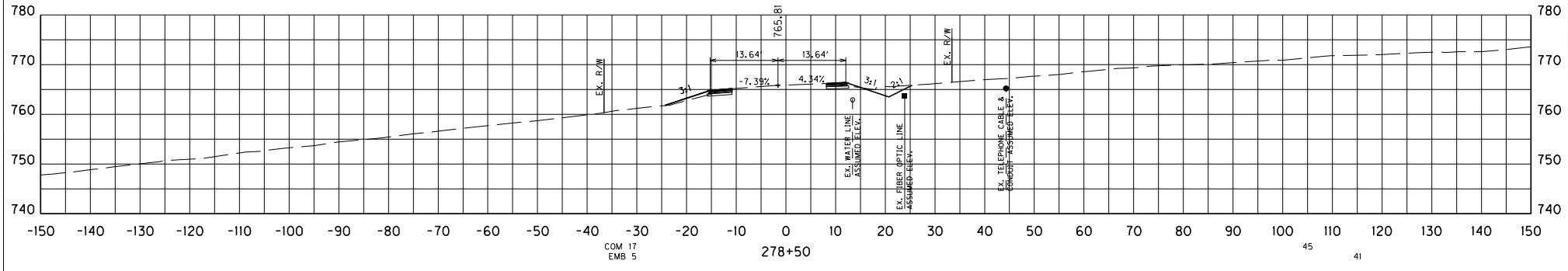
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

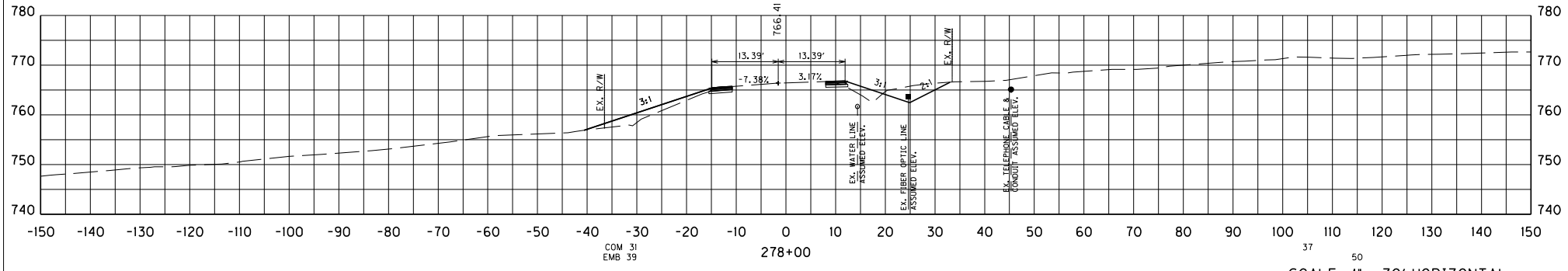
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X115

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.277+00 TO STA.277+50





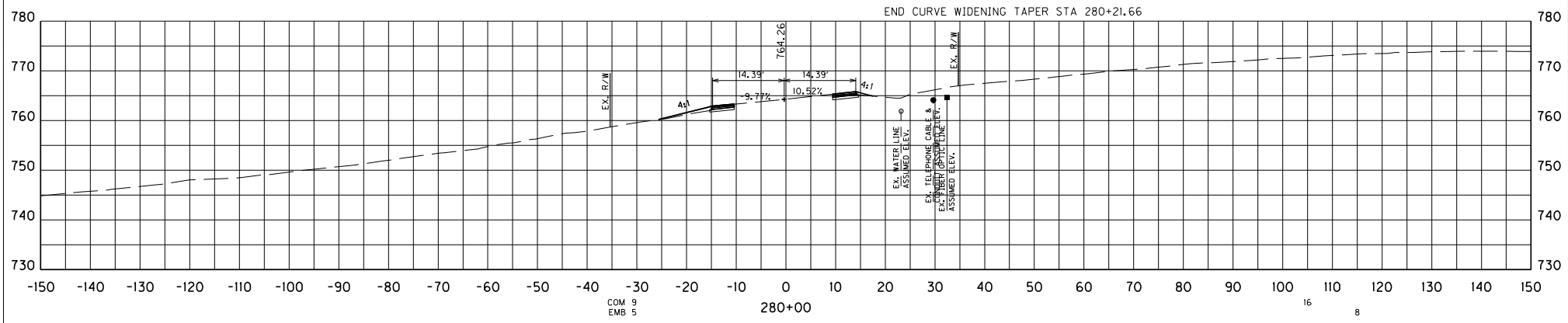


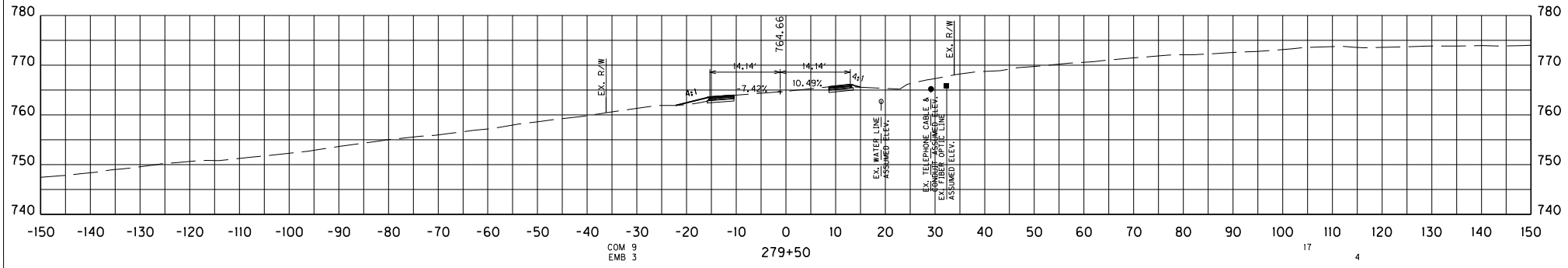
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X116

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.278+00 TO STA.279+00



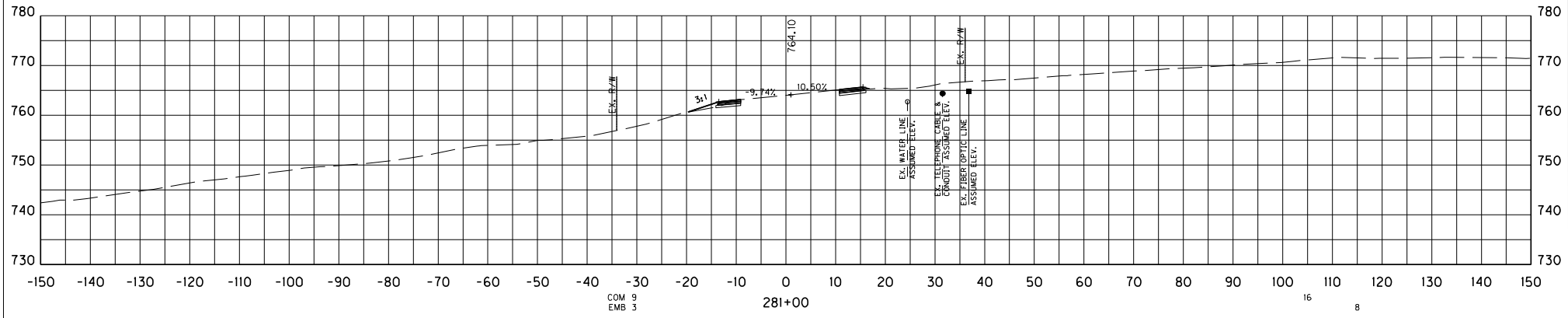


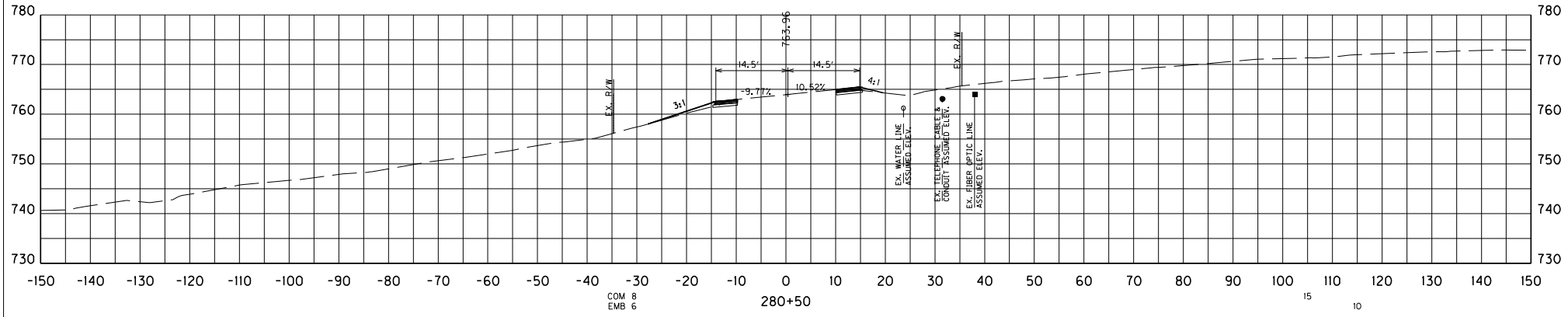
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X117

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.279+50 TO STA.280+00



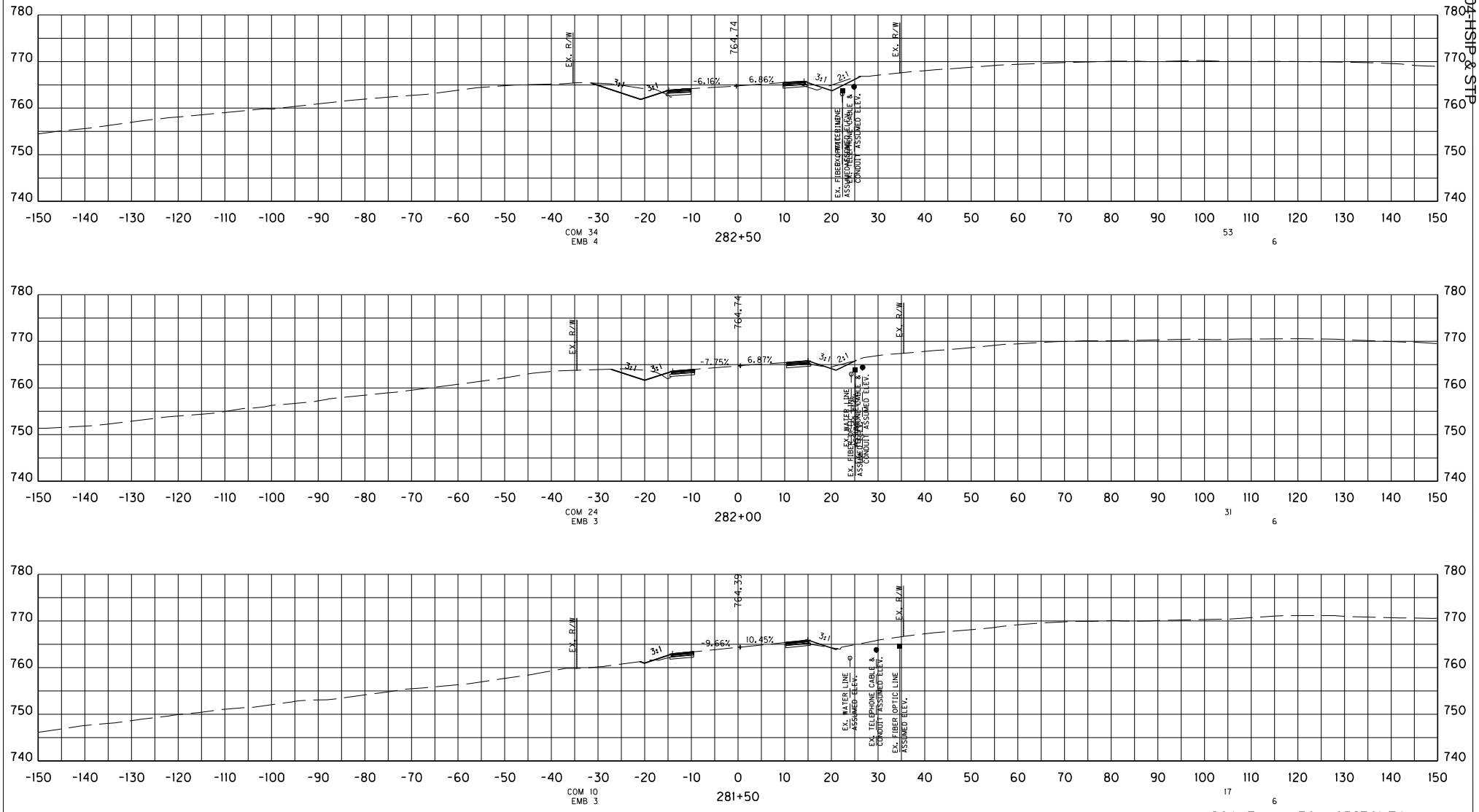


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X118

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.280+50 TO STA.281+00

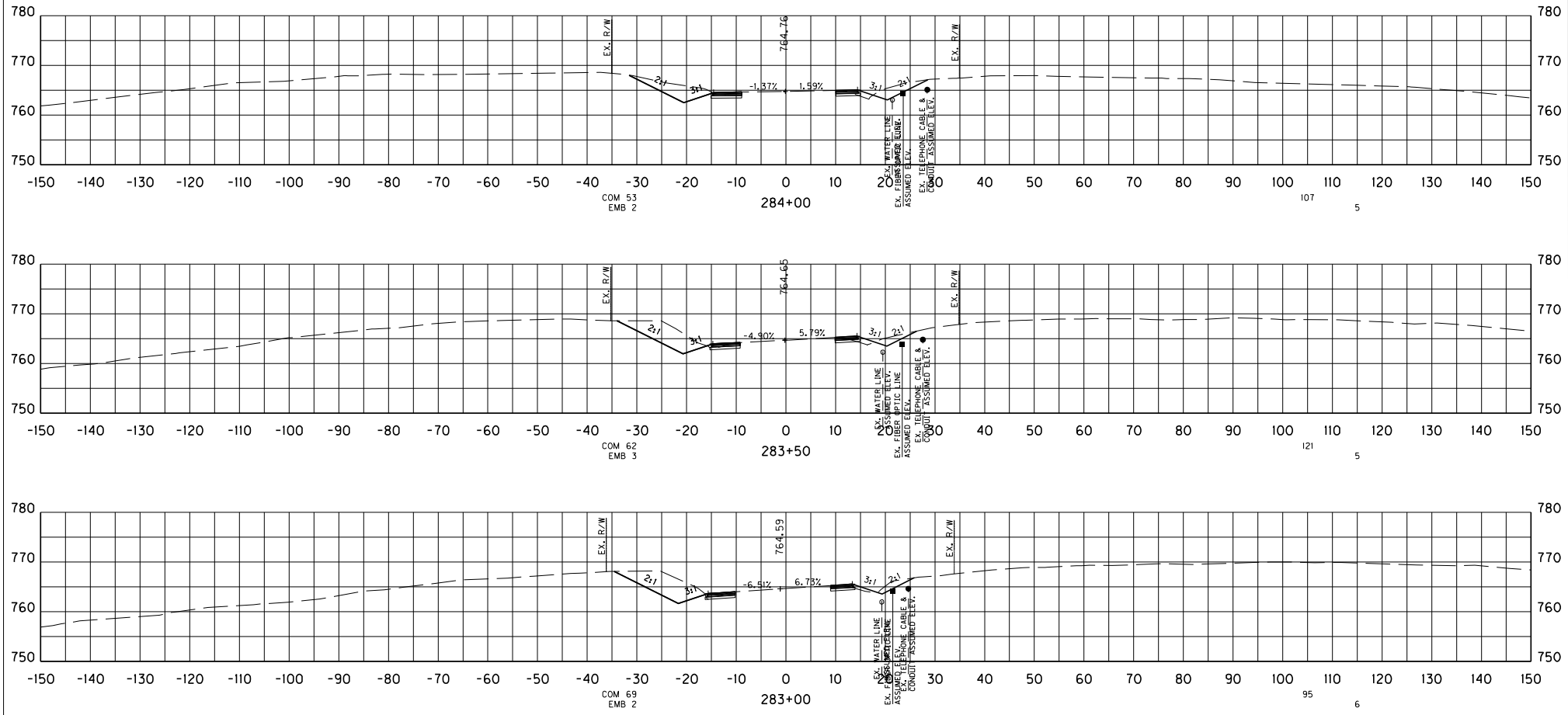


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X119

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.281+50 TO STA.282+50

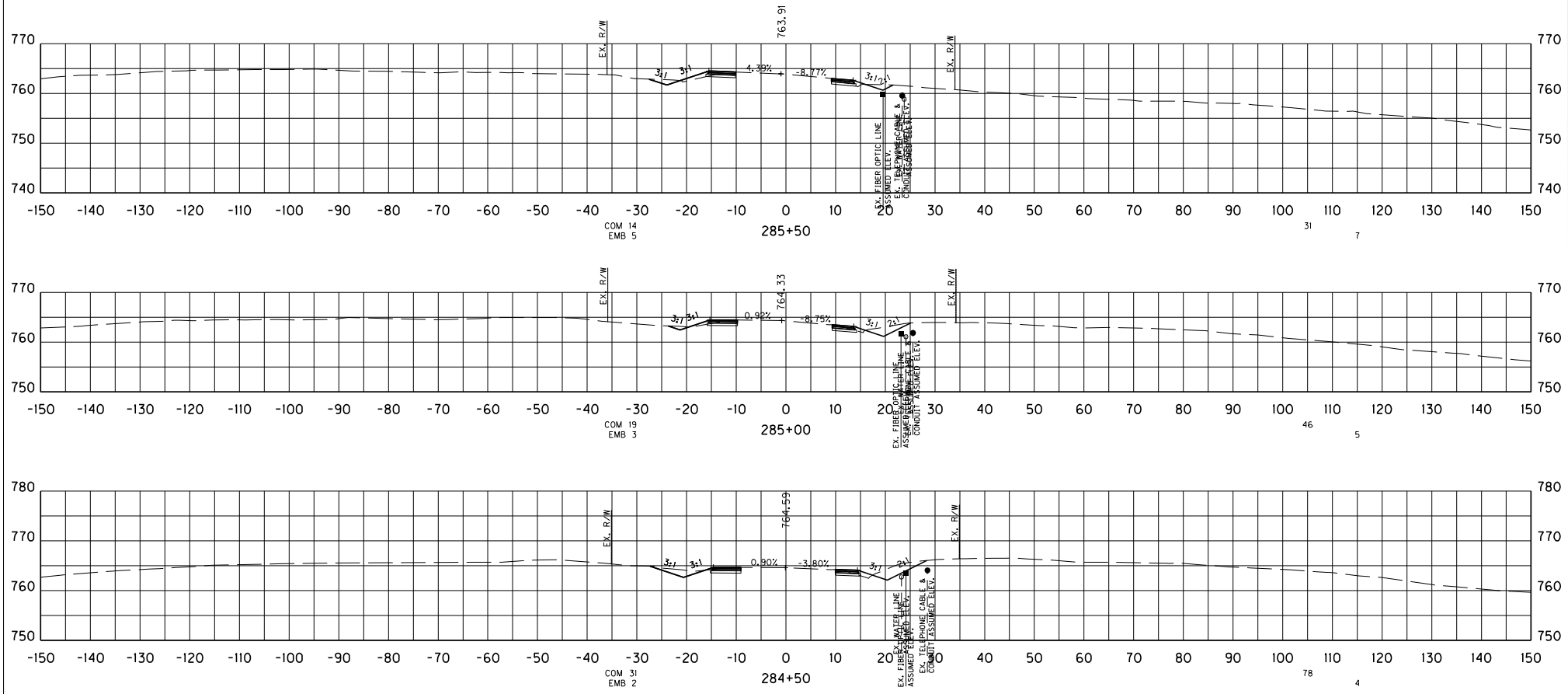


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X120

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.283+00 TO STA.284+00

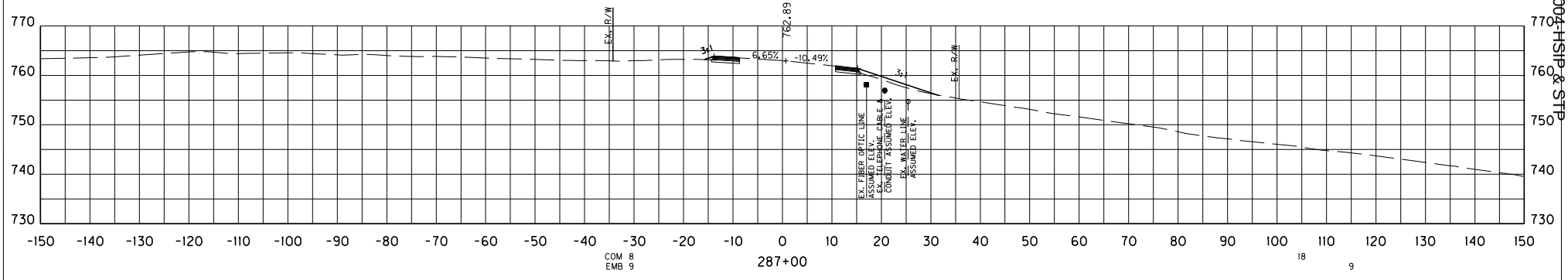


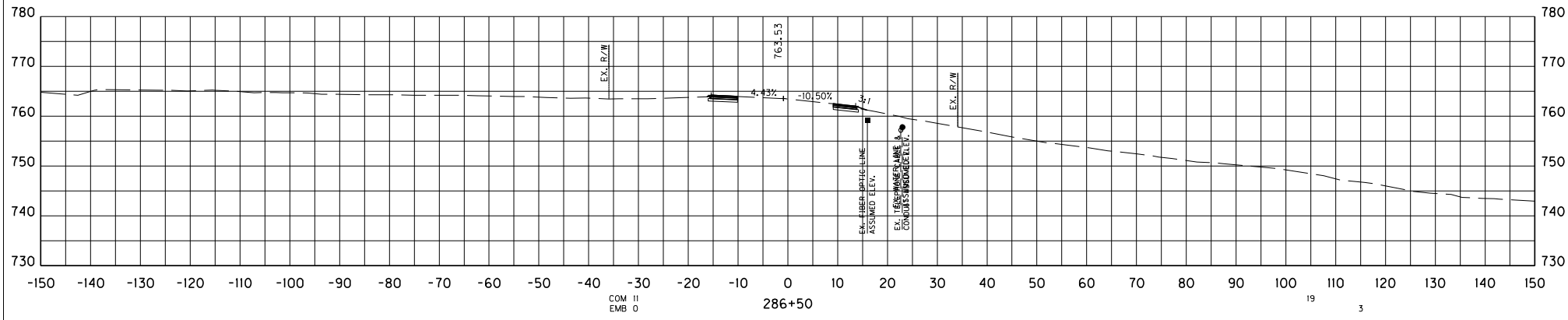
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

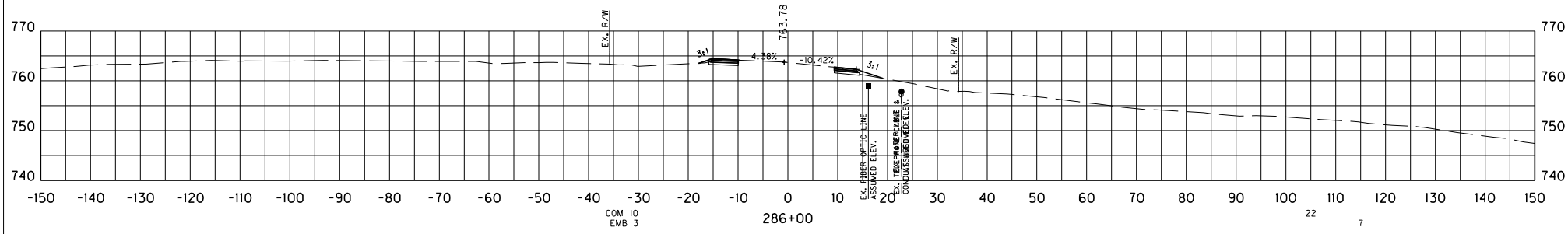
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X121

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.284+50 TO STA.285+50





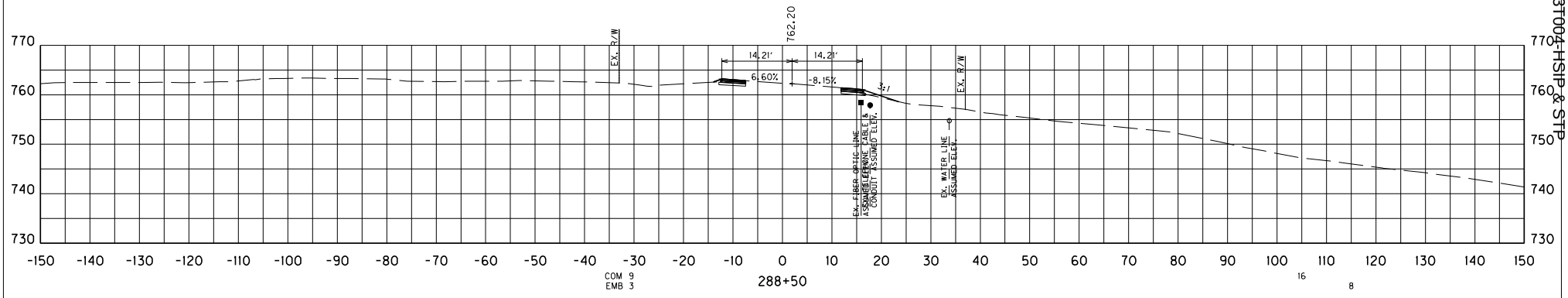


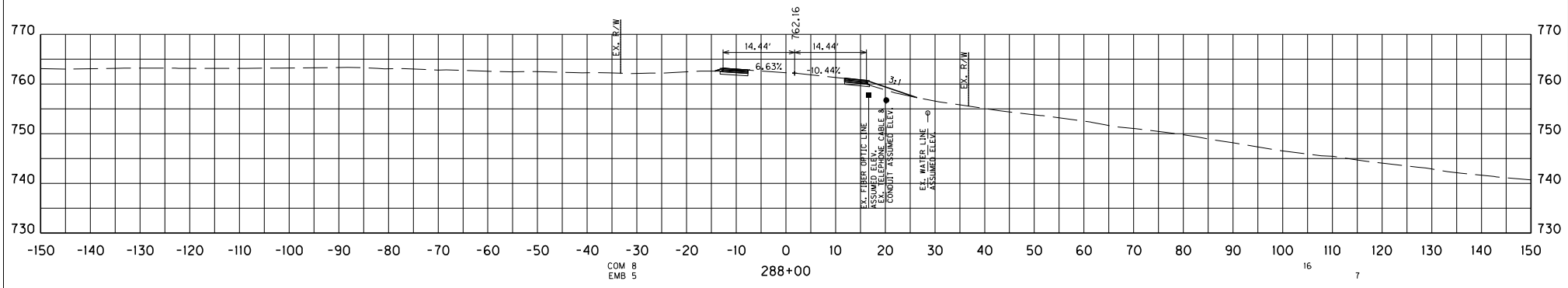
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

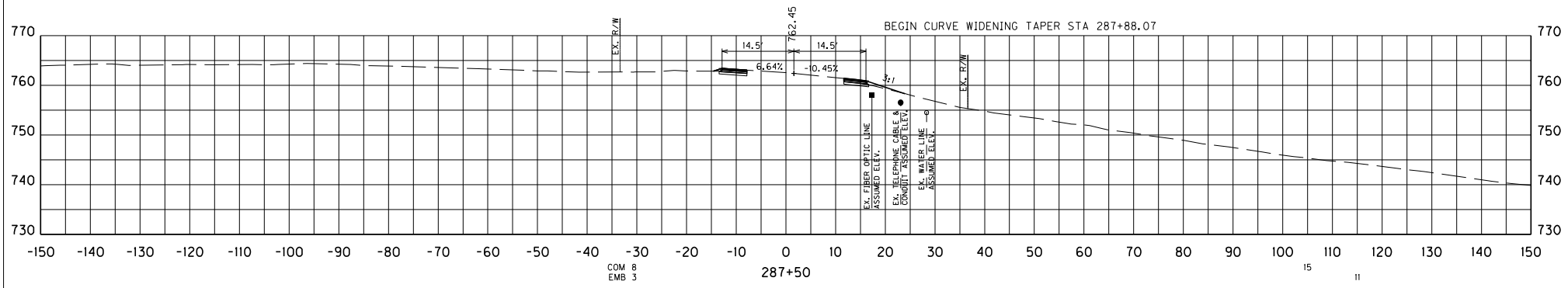
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X122

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.286+00 TO STA.287+00





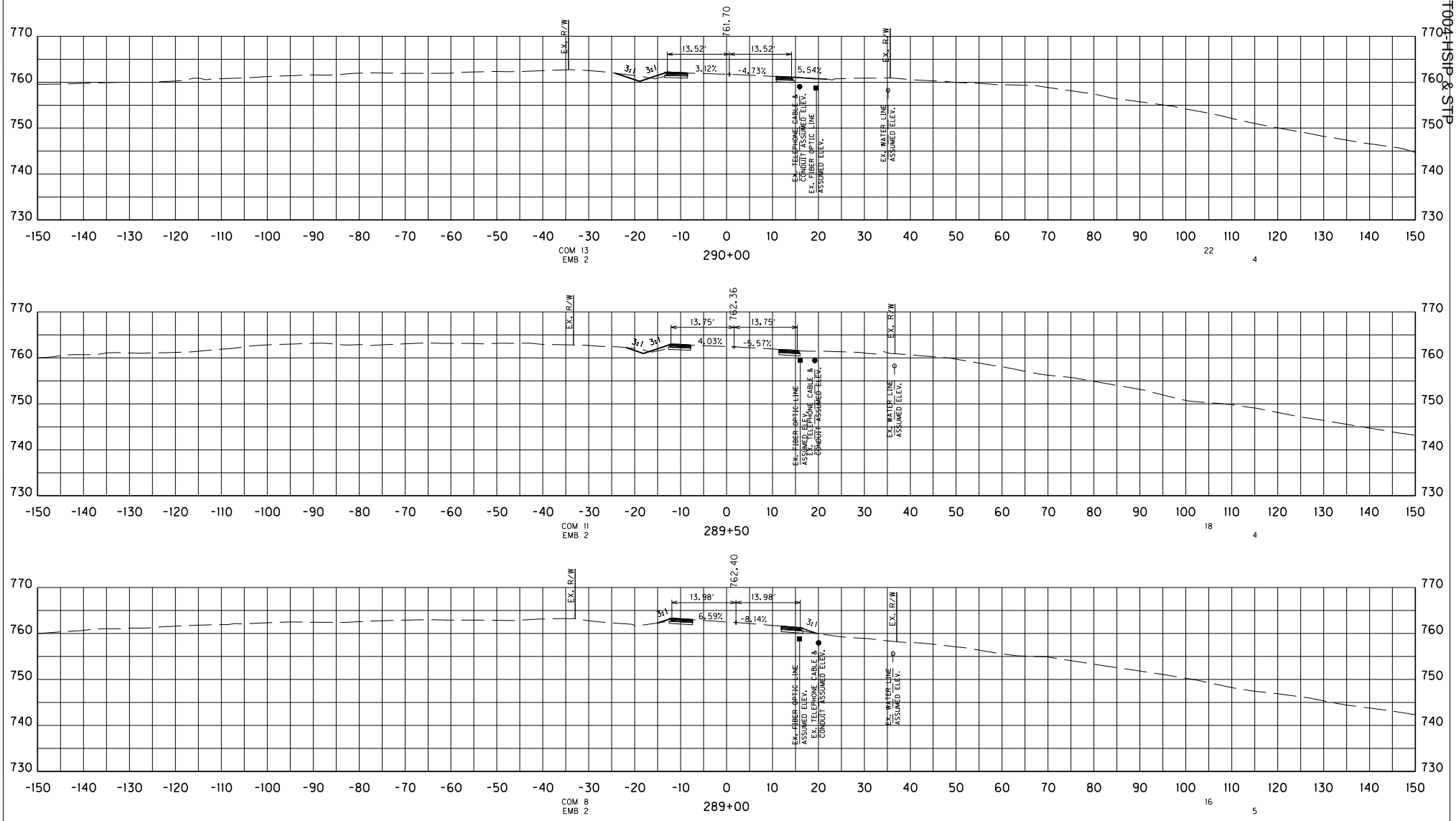


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X123

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.287+50 TO STA.288+50

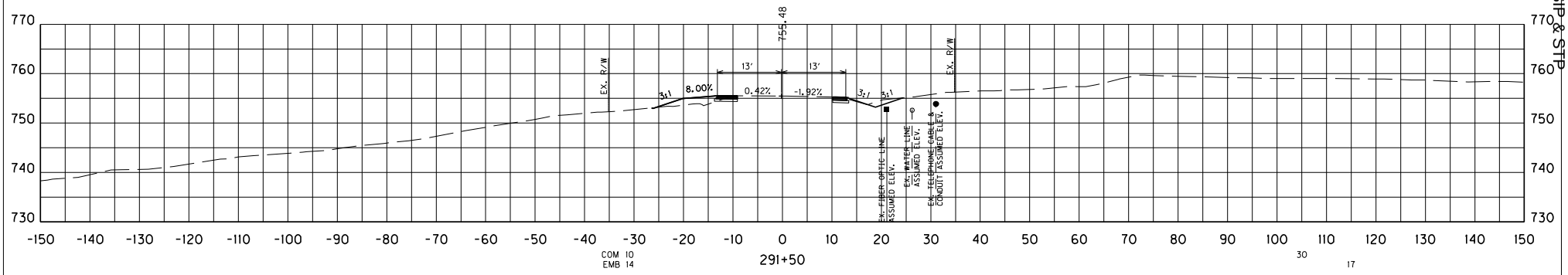


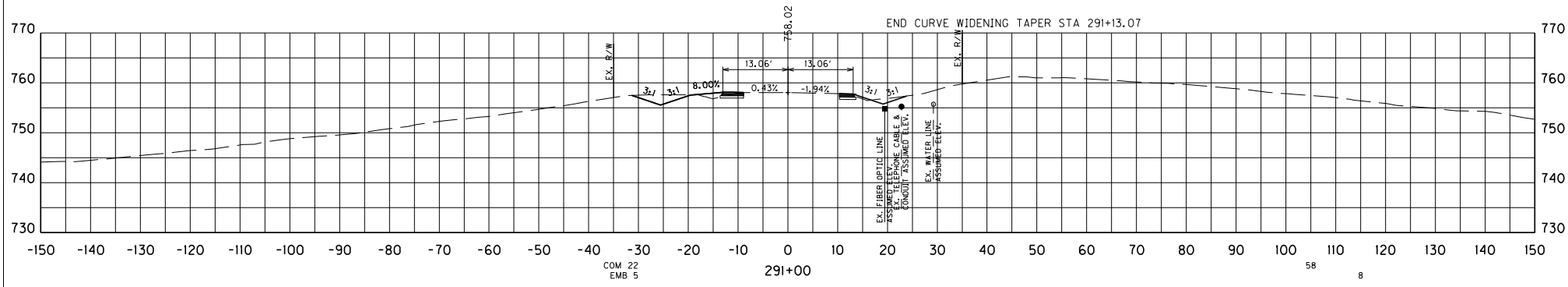
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

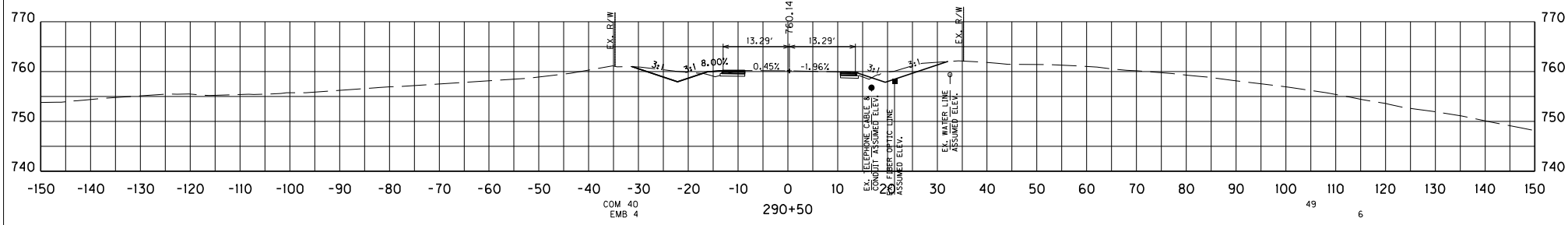
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X124

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.289+00 TO STA.290+00





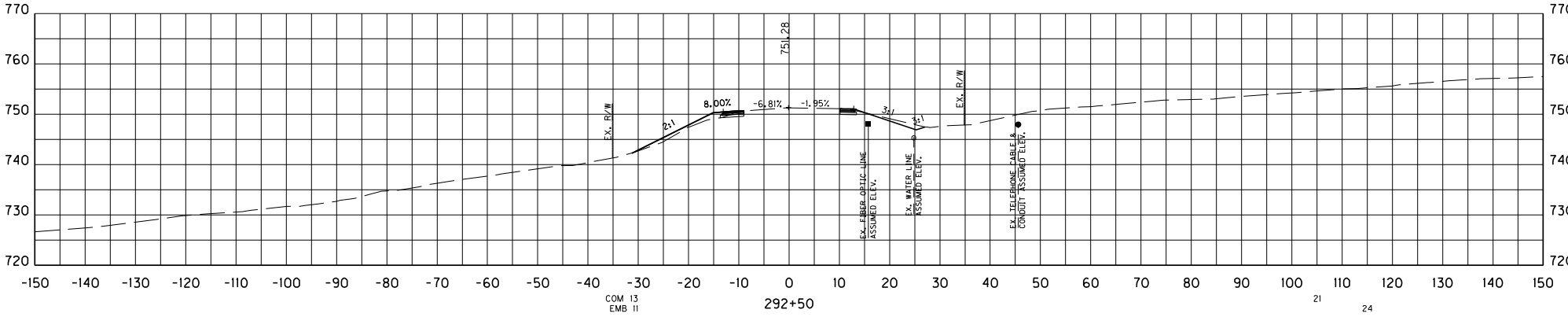


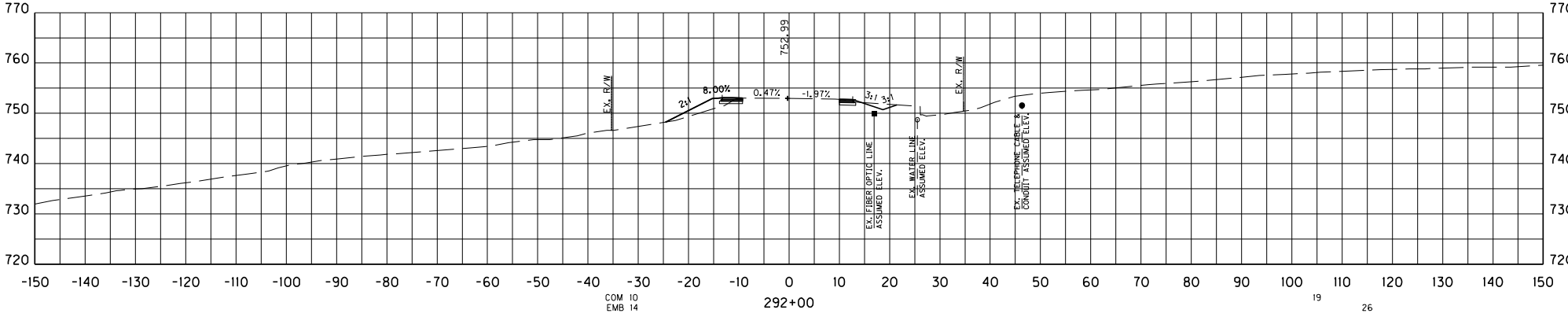
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X125

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.290+50 TO STA.291+50



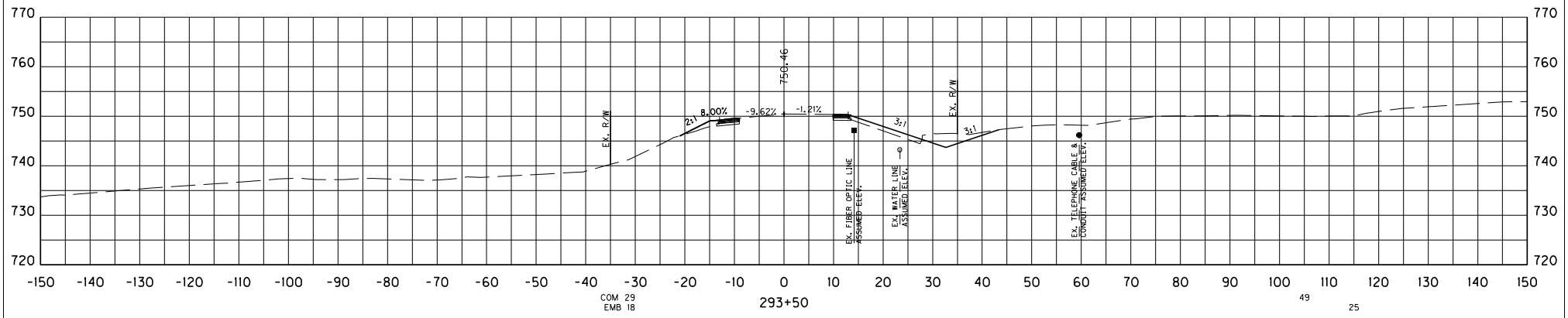


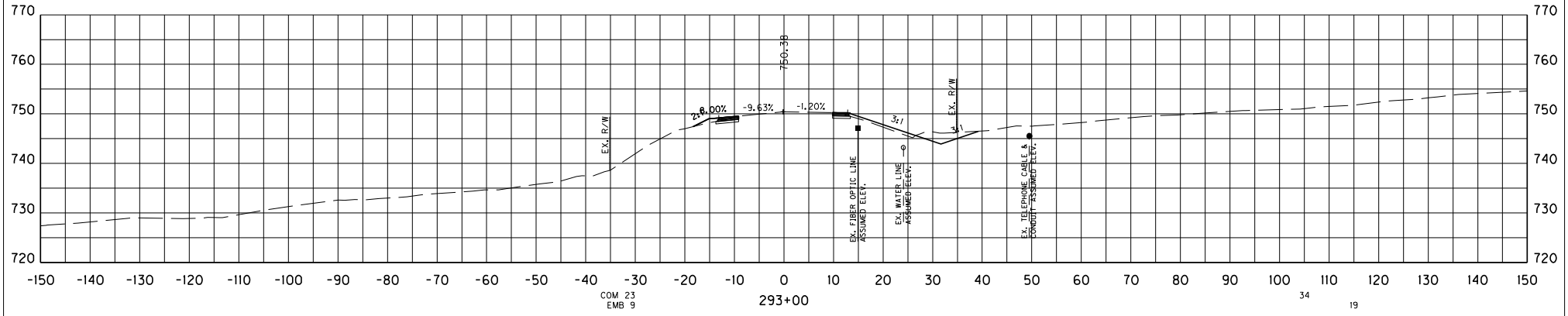
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X126

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.292+00 TO STA.292+50



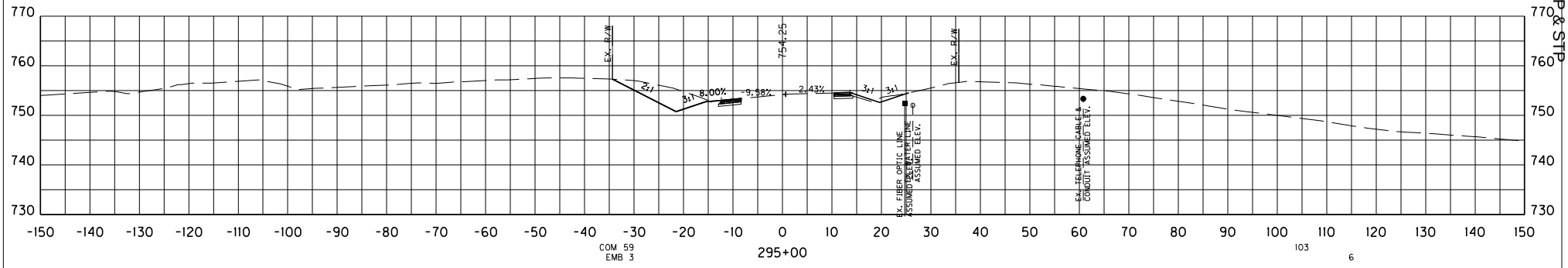


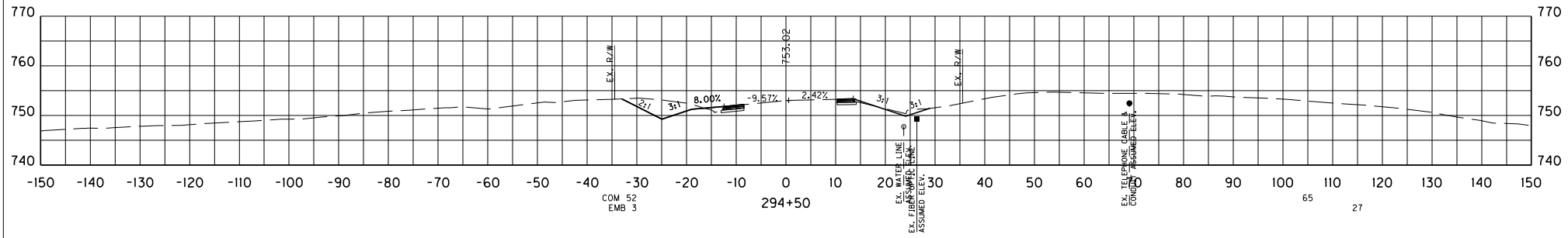
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

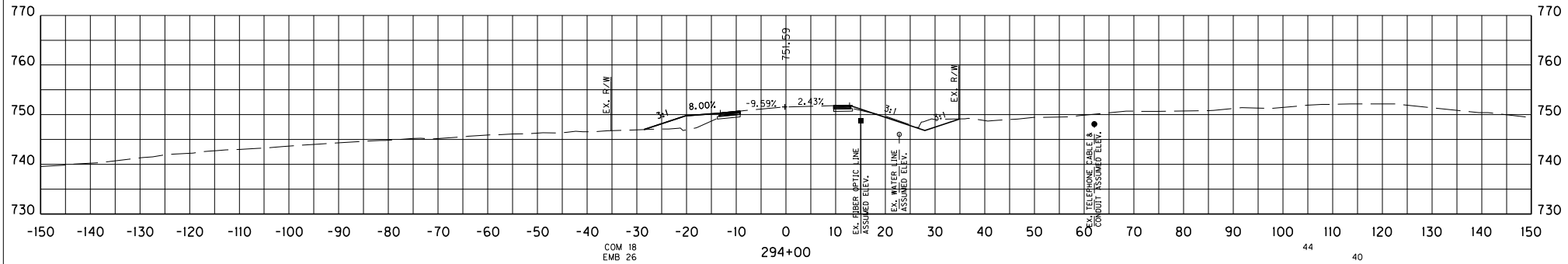
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X127

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.293+00 TO STA.293+50





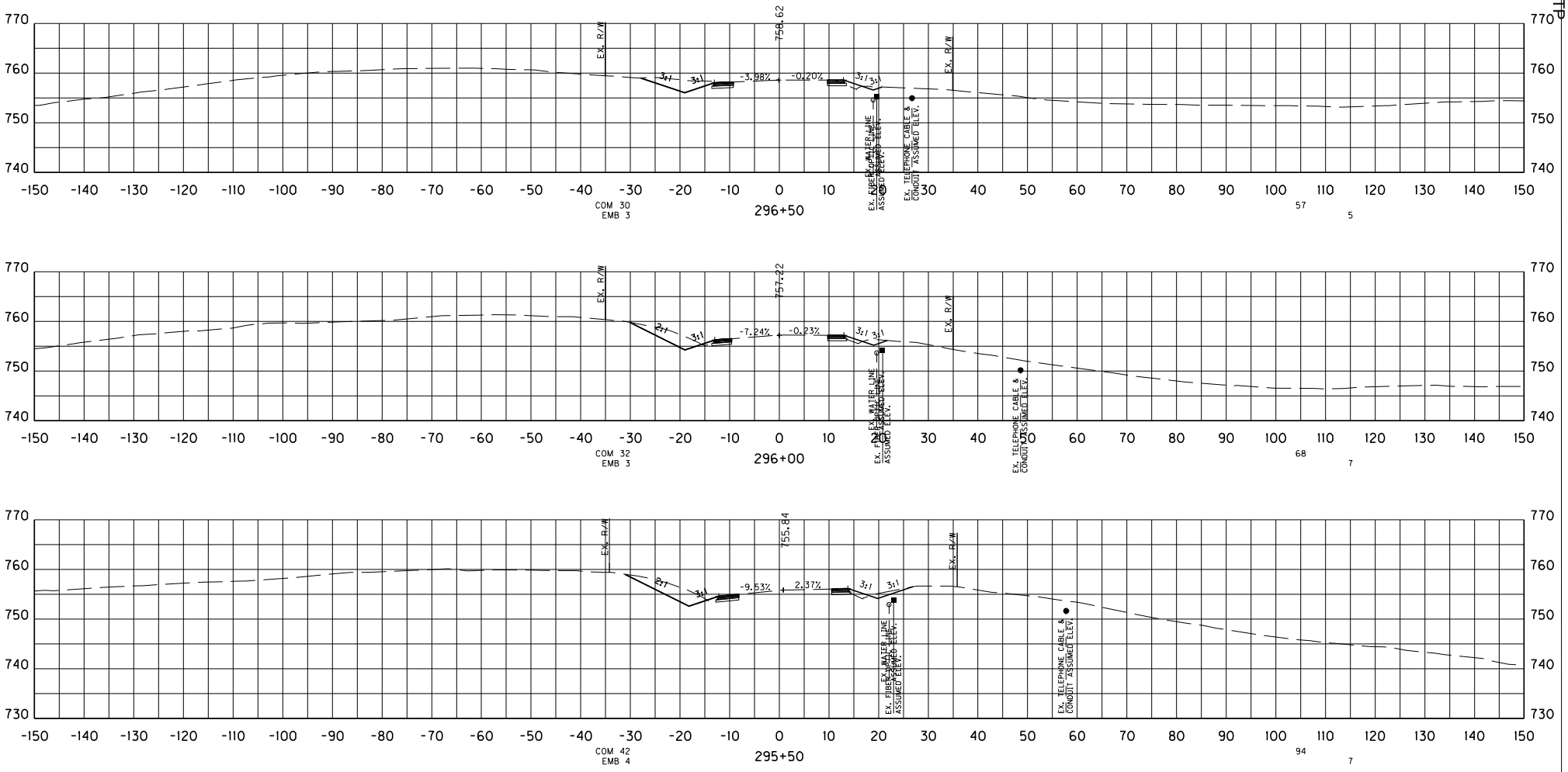


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X128

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.294+00 TO STA.295+00

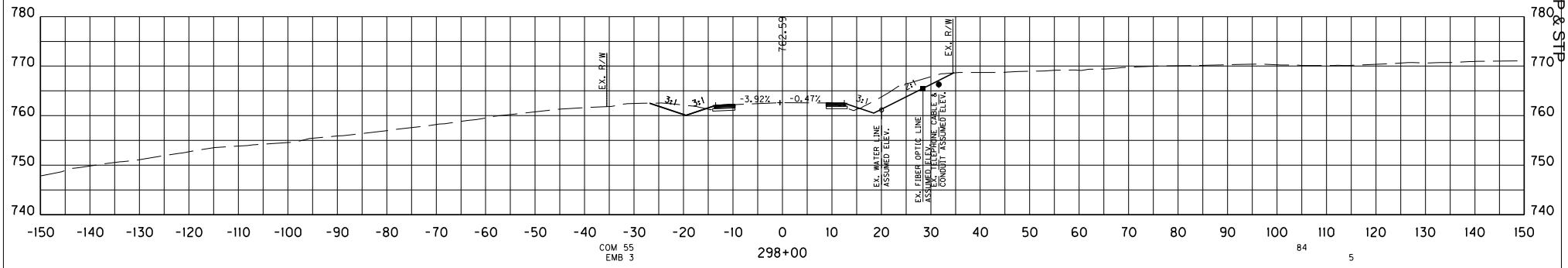


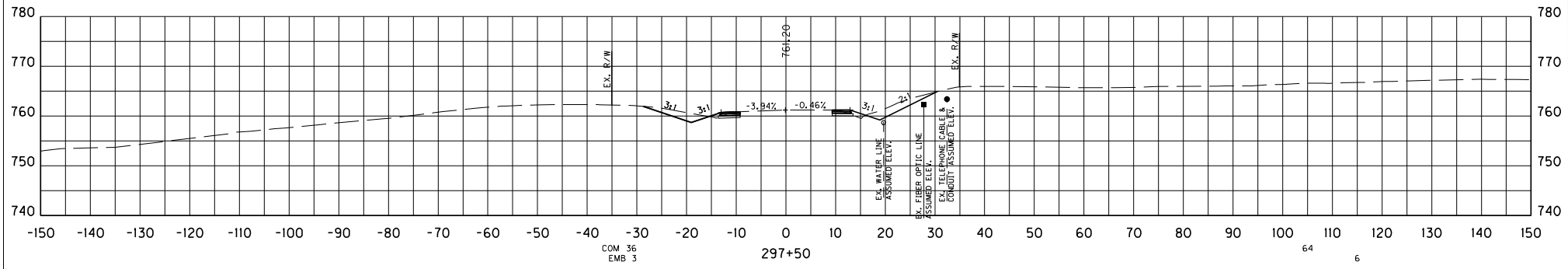
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

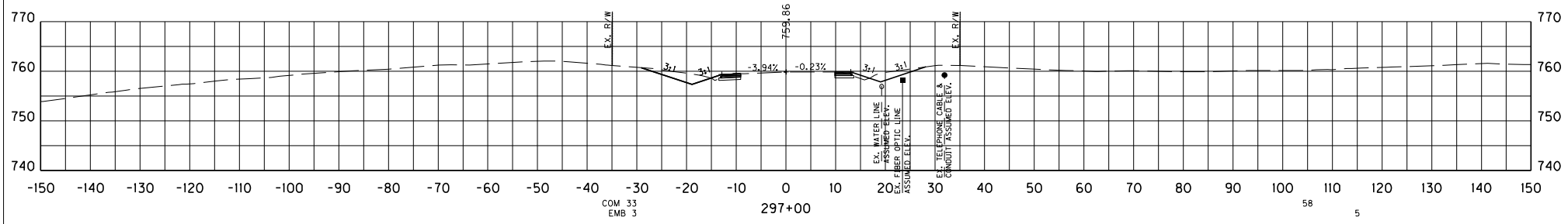
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X129

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.295+50 TO STA.296+50





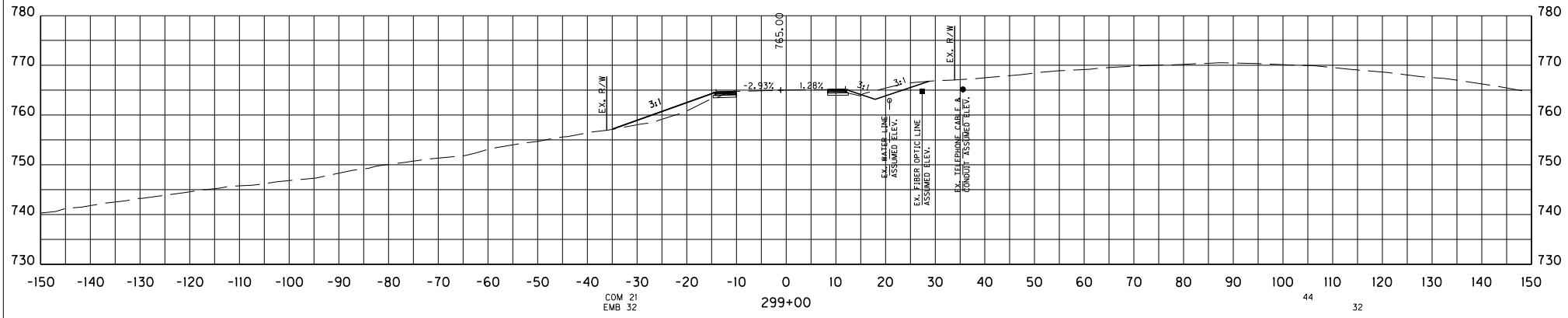


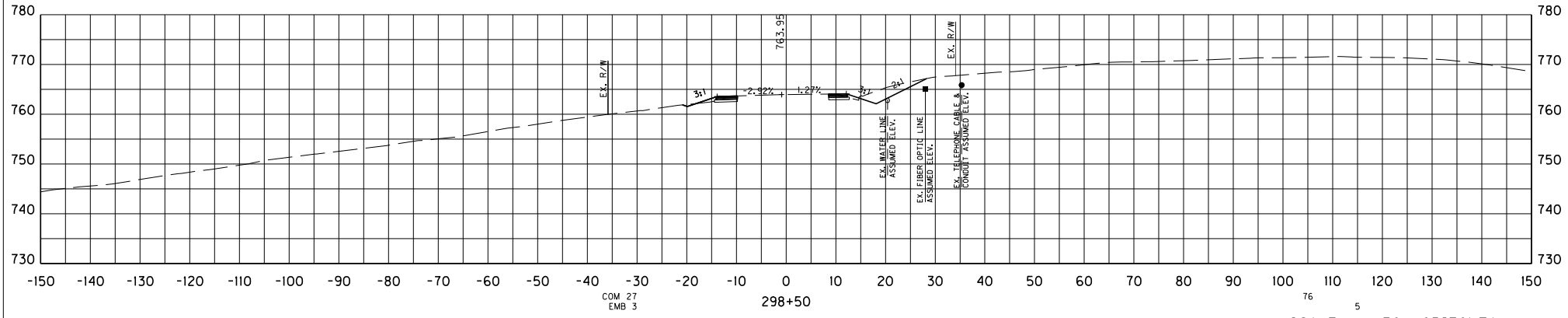
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X130

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.297+00 TO STA.298+00



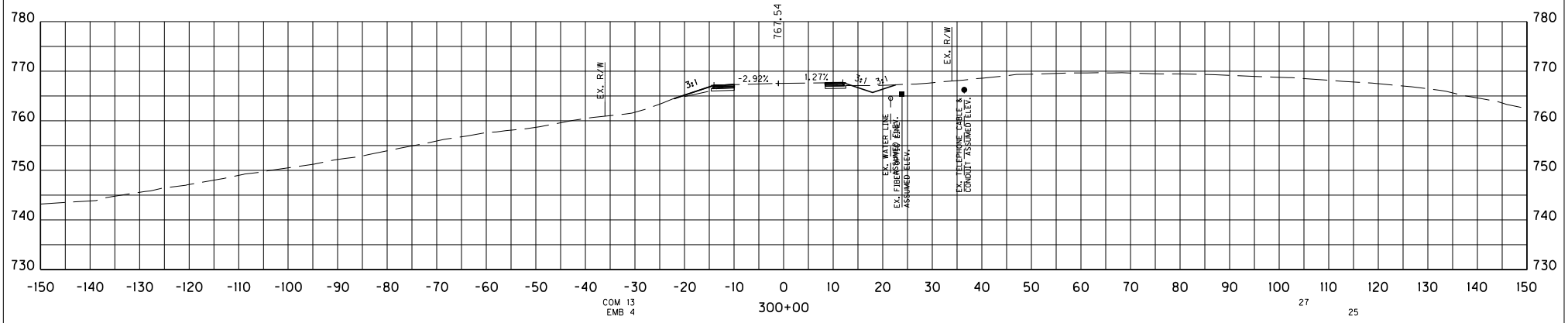


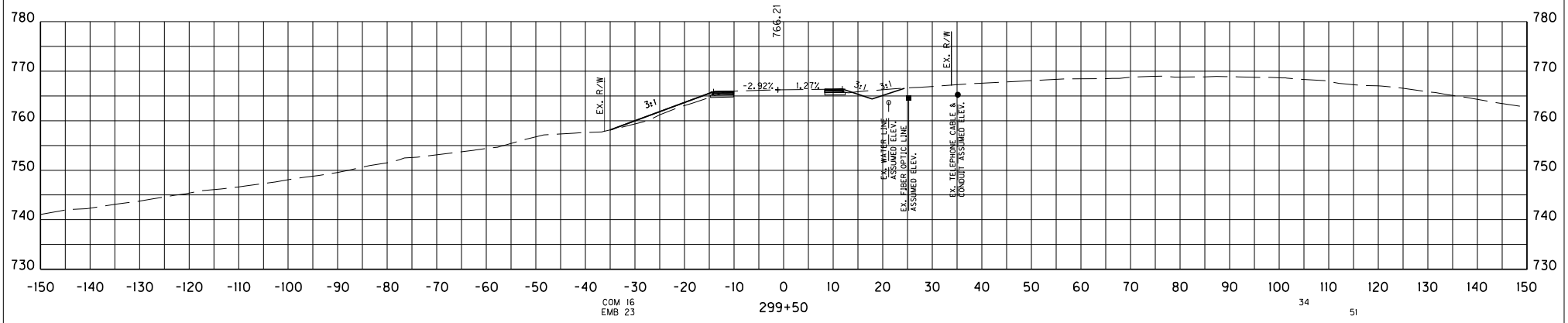
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X131

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.298+50 TO STA.299+00



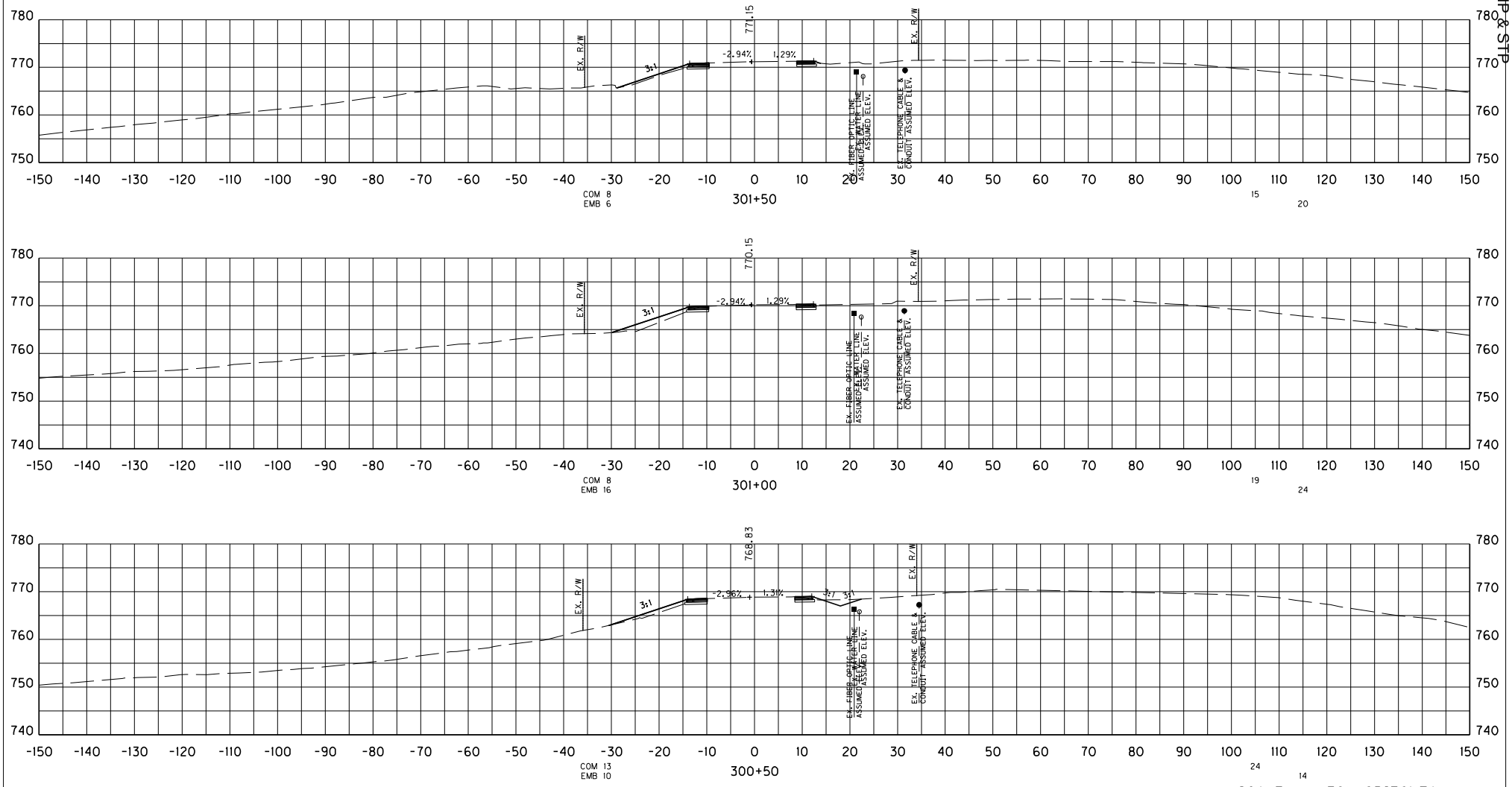


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X132

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.299+50 TO STA.300+00

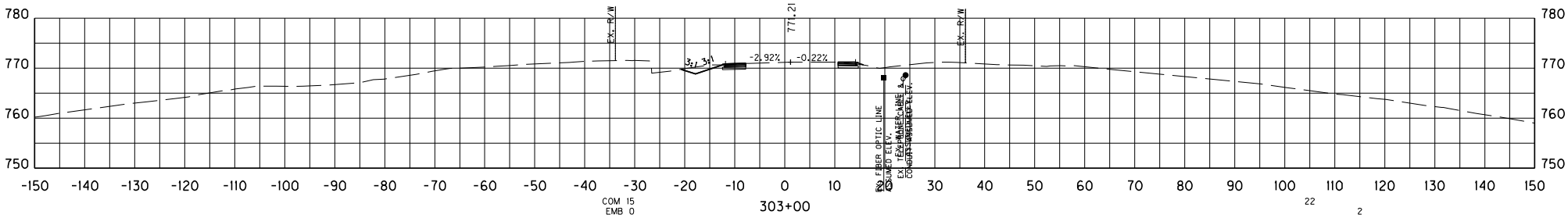


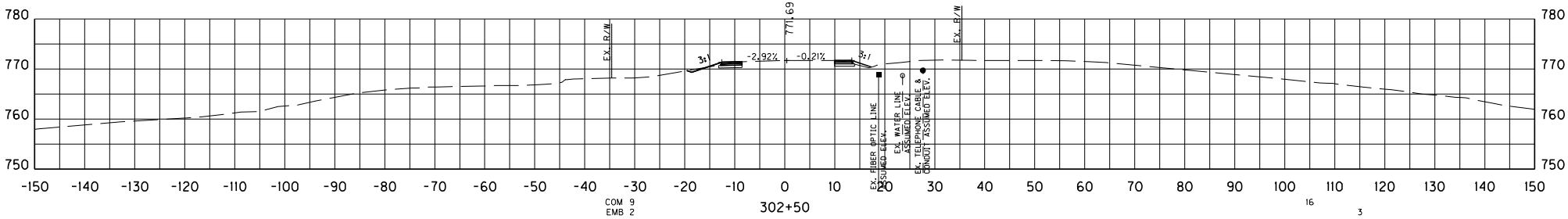
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

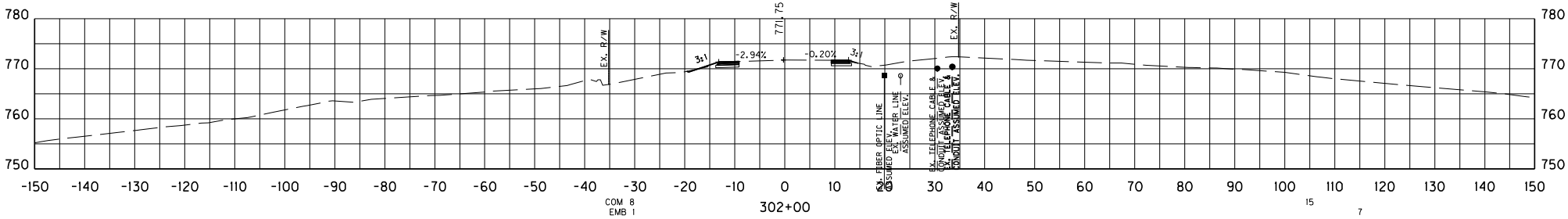
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X133

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.300+50 TO STA.301+50





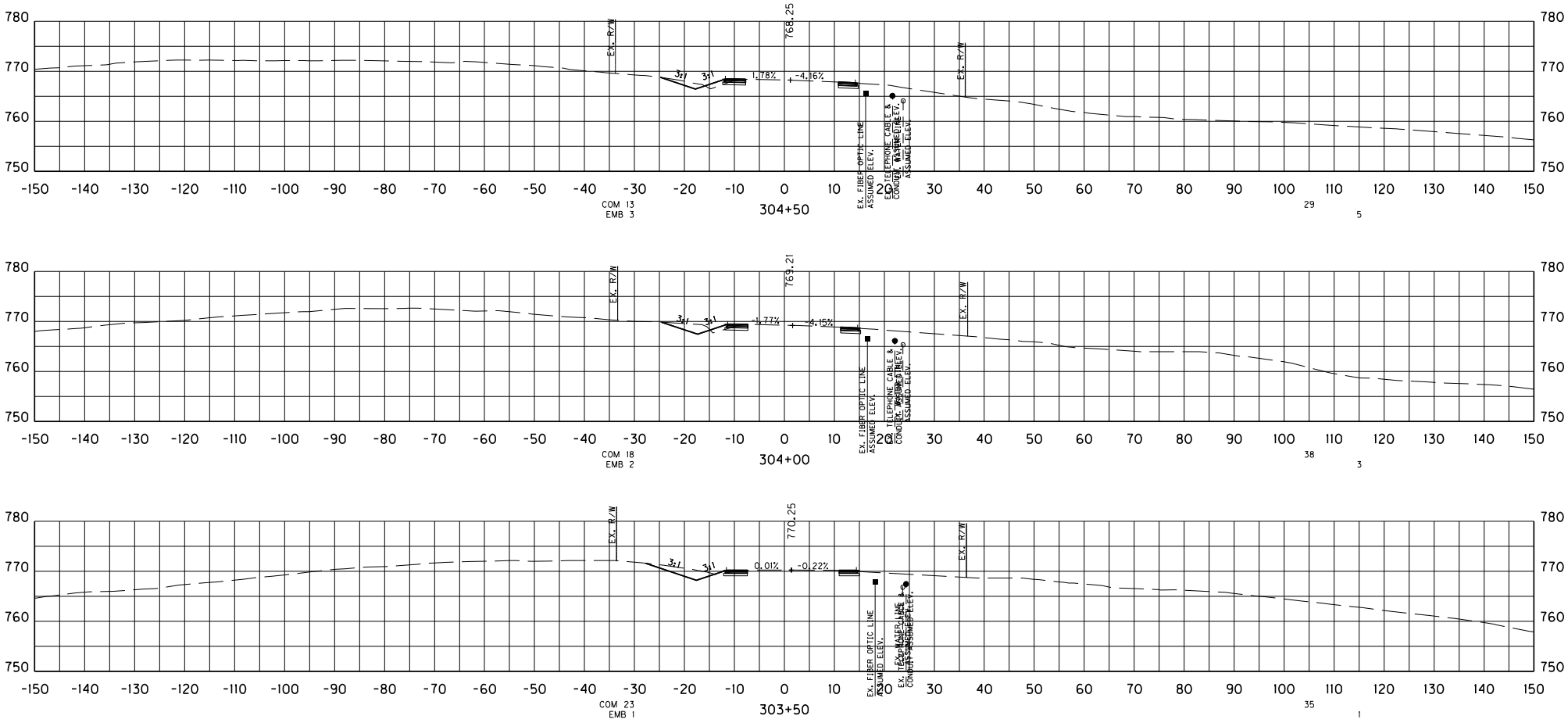


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X134

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.302+00 TO STA.303+00

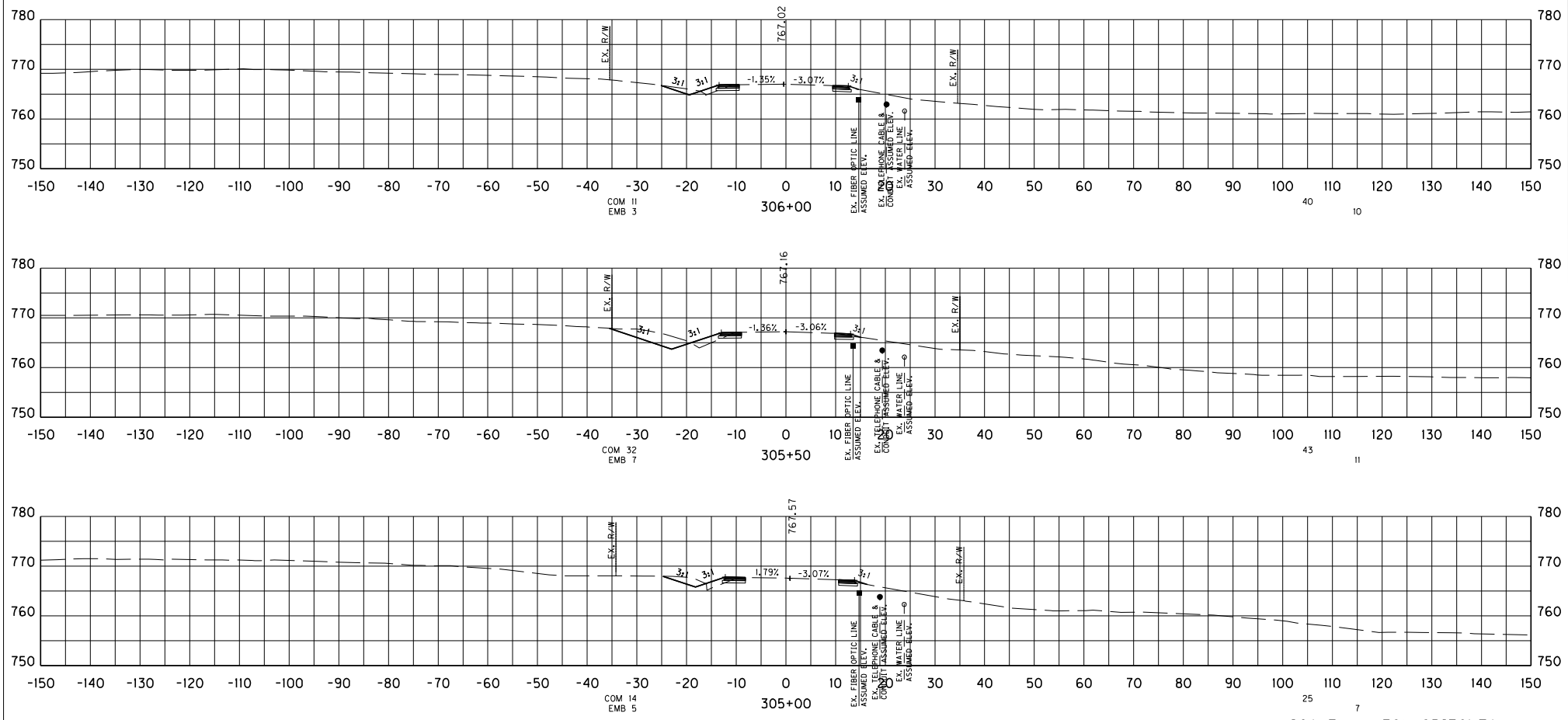


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X135

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.303+50 TO STA.304+50

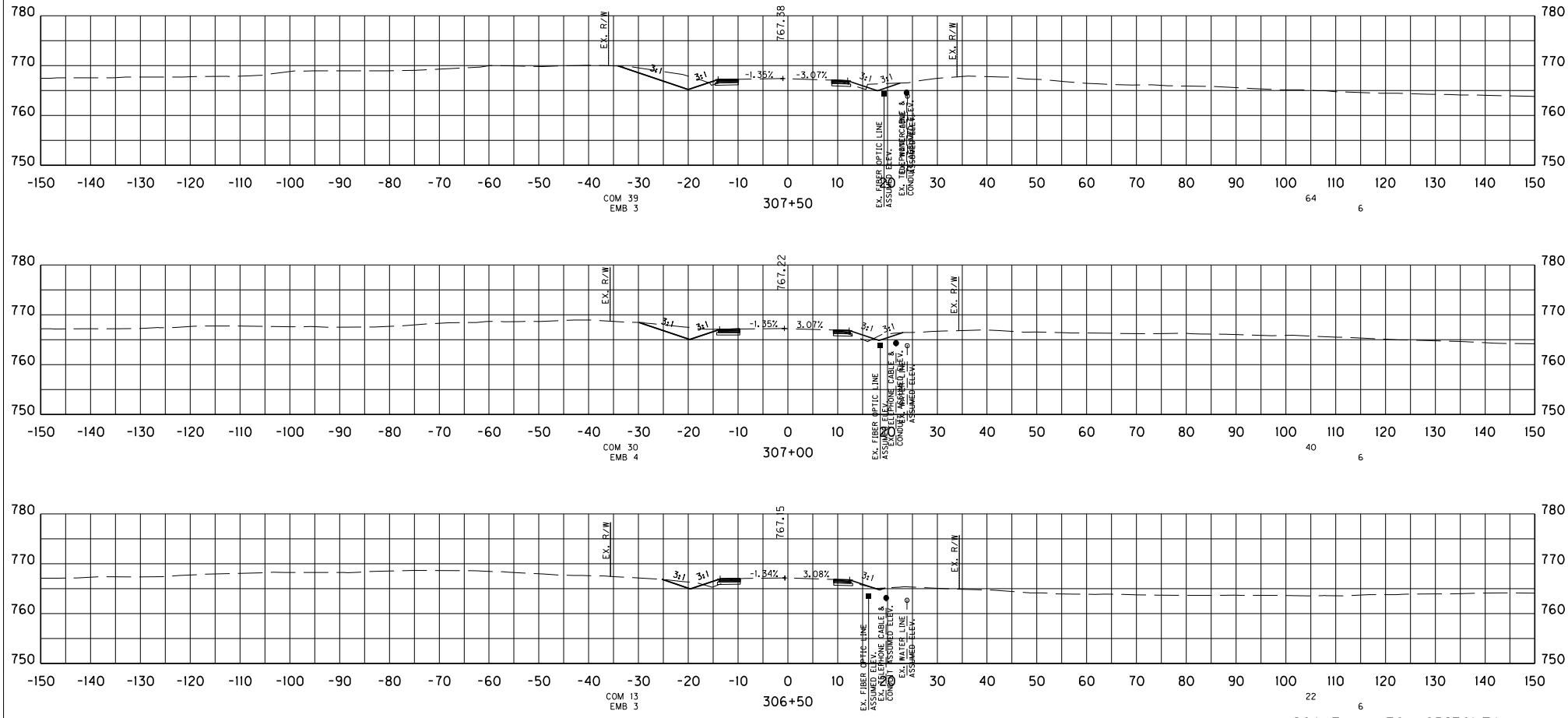


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X136

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.305+00 TO STA.306+00

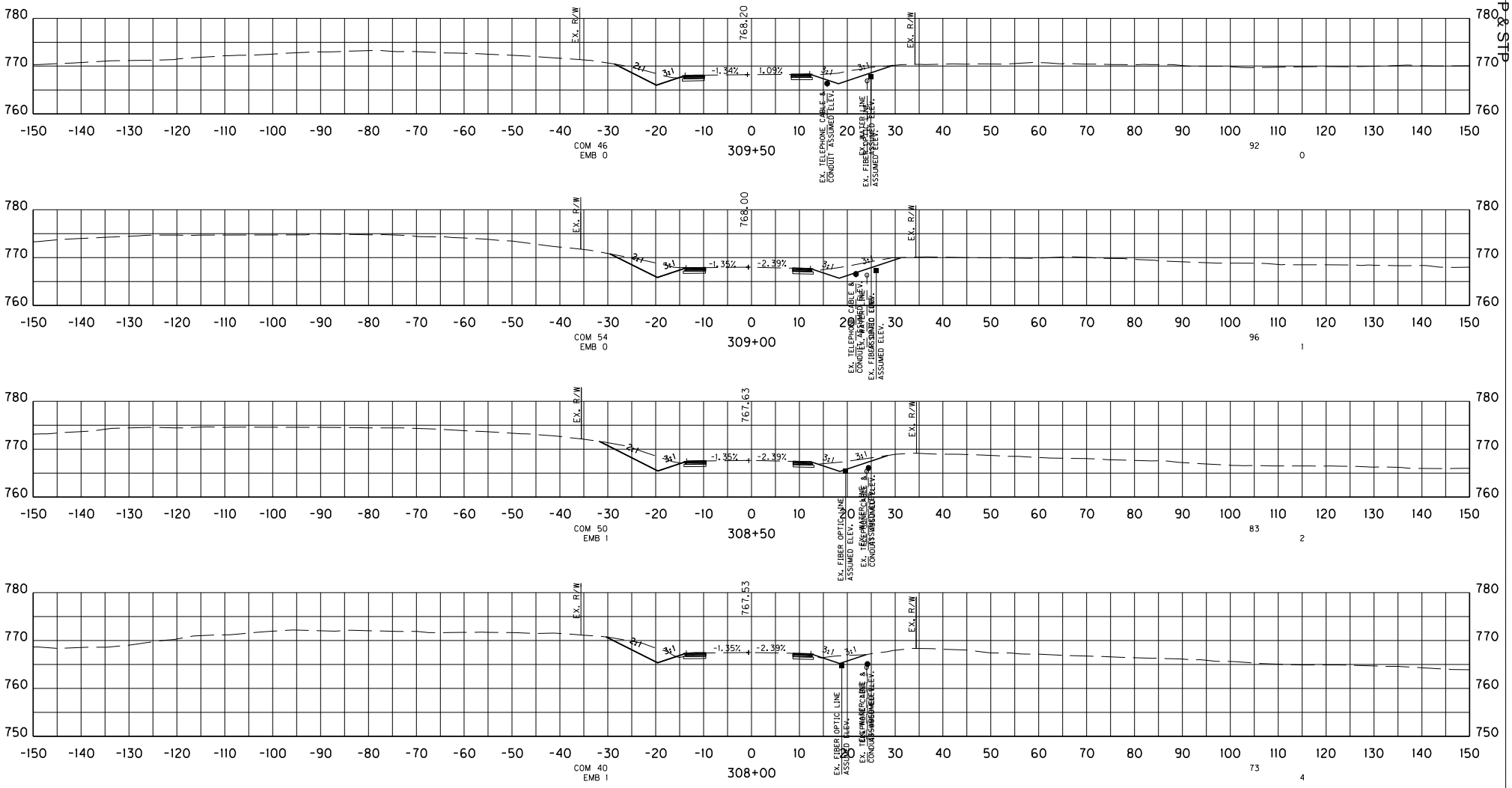


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X137

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.306+50 TO STA.307+50

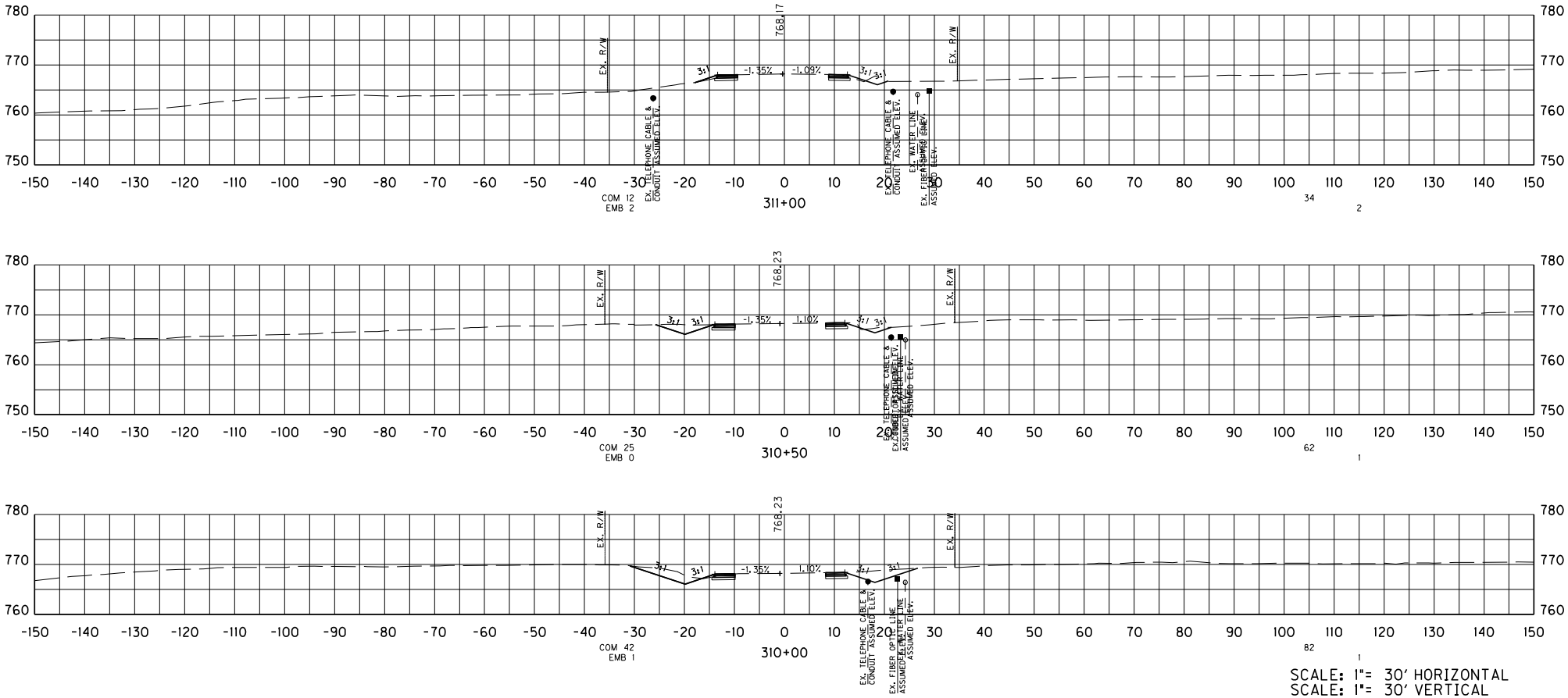


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X138

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.308+00 TO STA.309+50

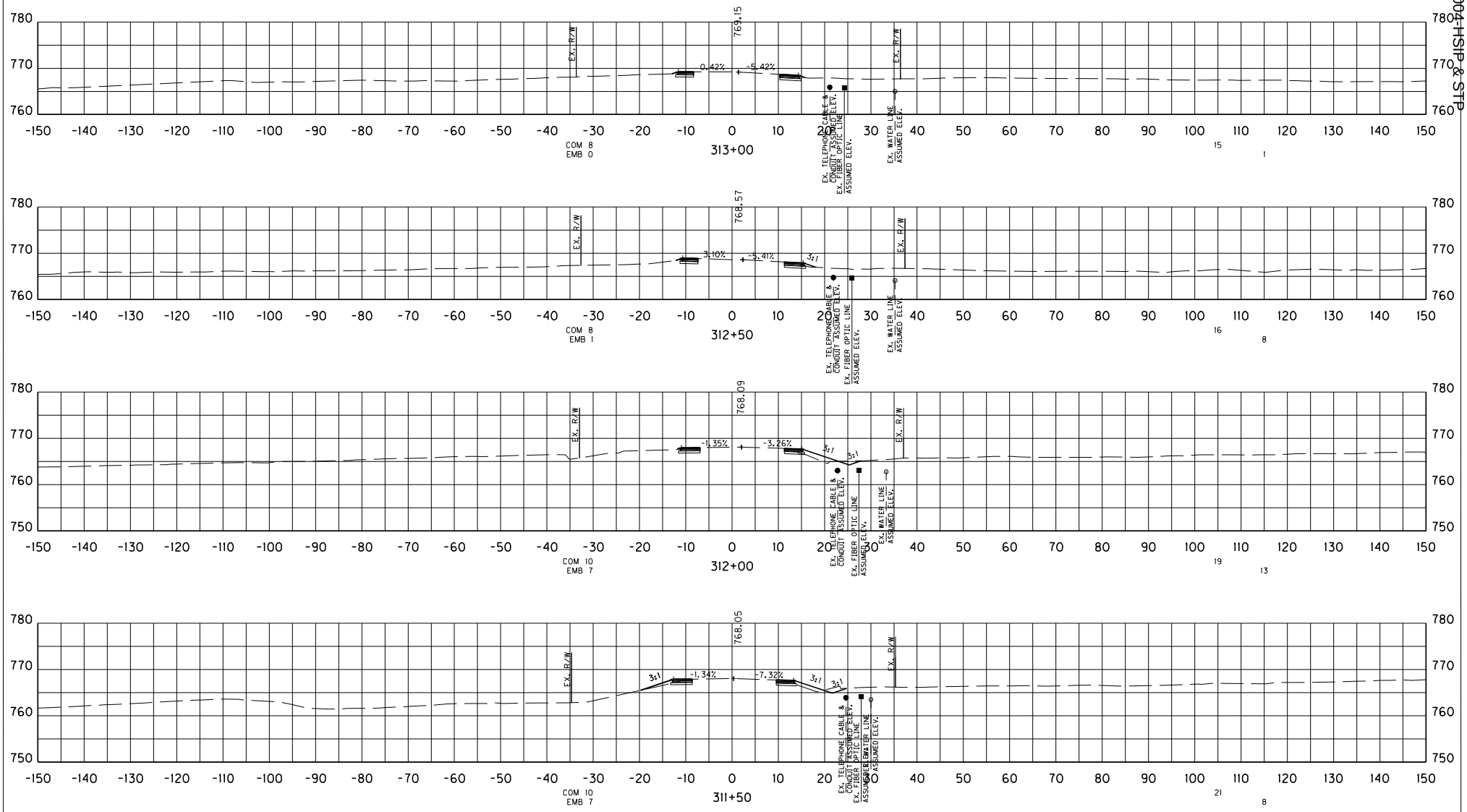


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X139

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.310+00 TO STA.311+00

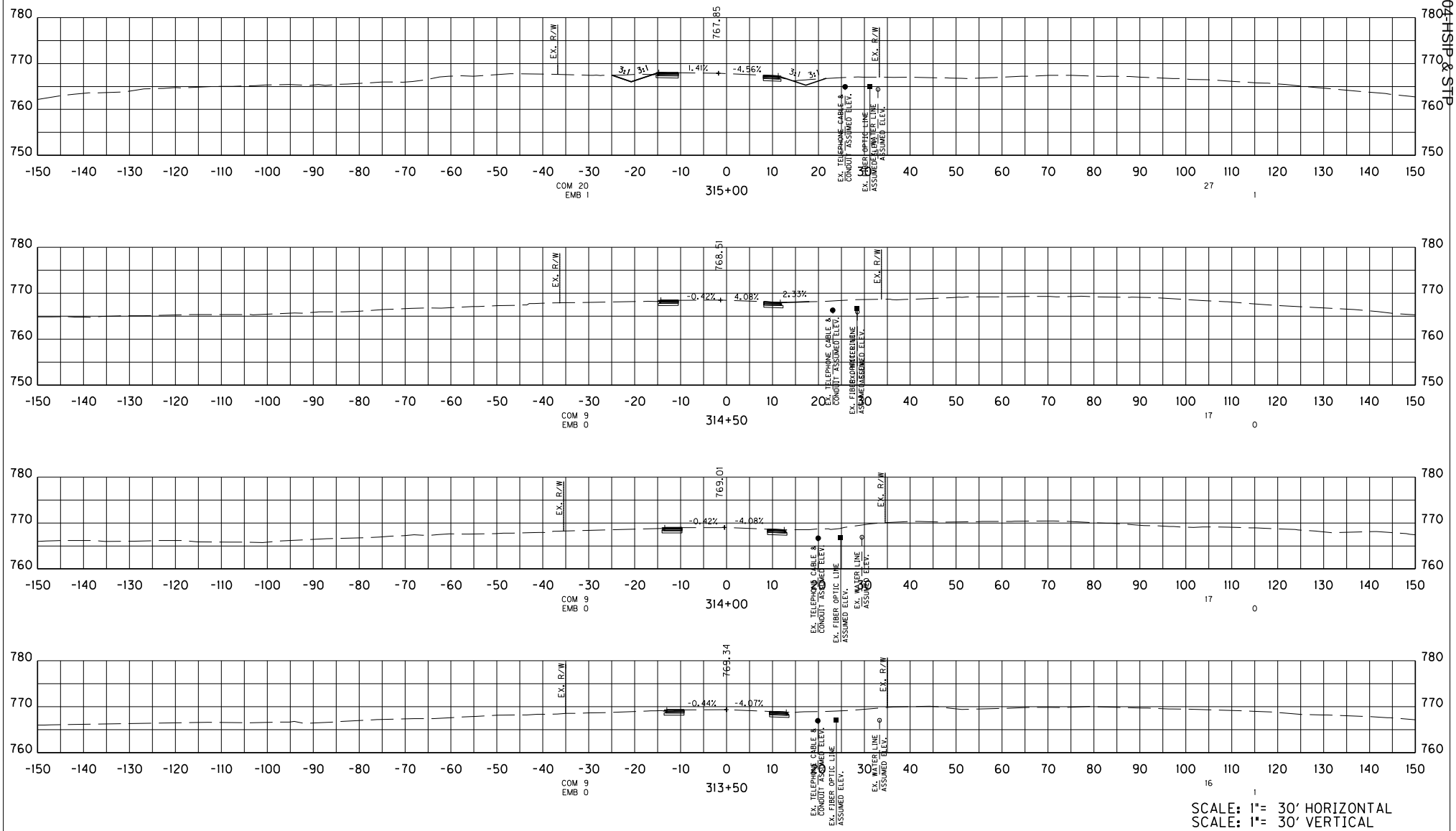


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X140

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.311+50 TO STA.313+00

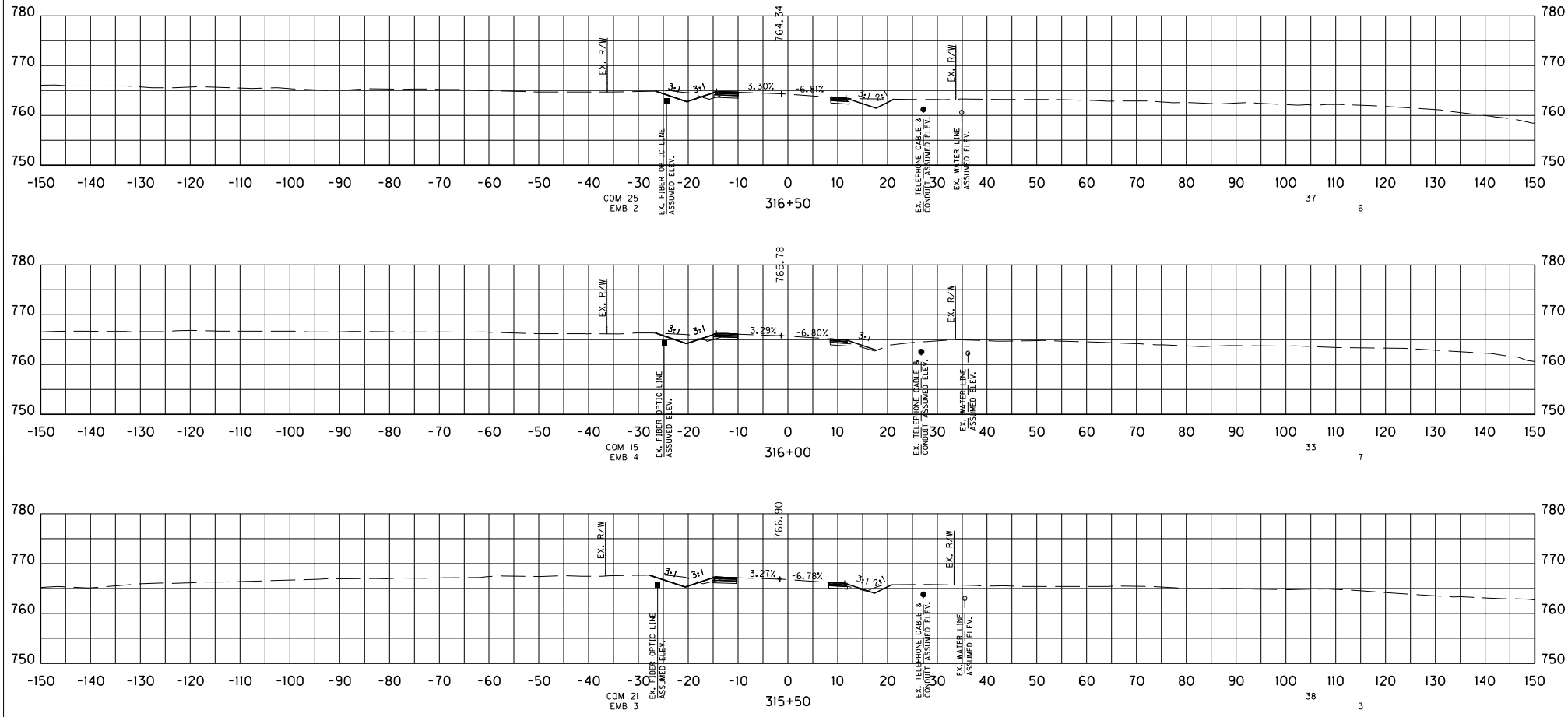


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X141

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.313+50 TO STA.315+00

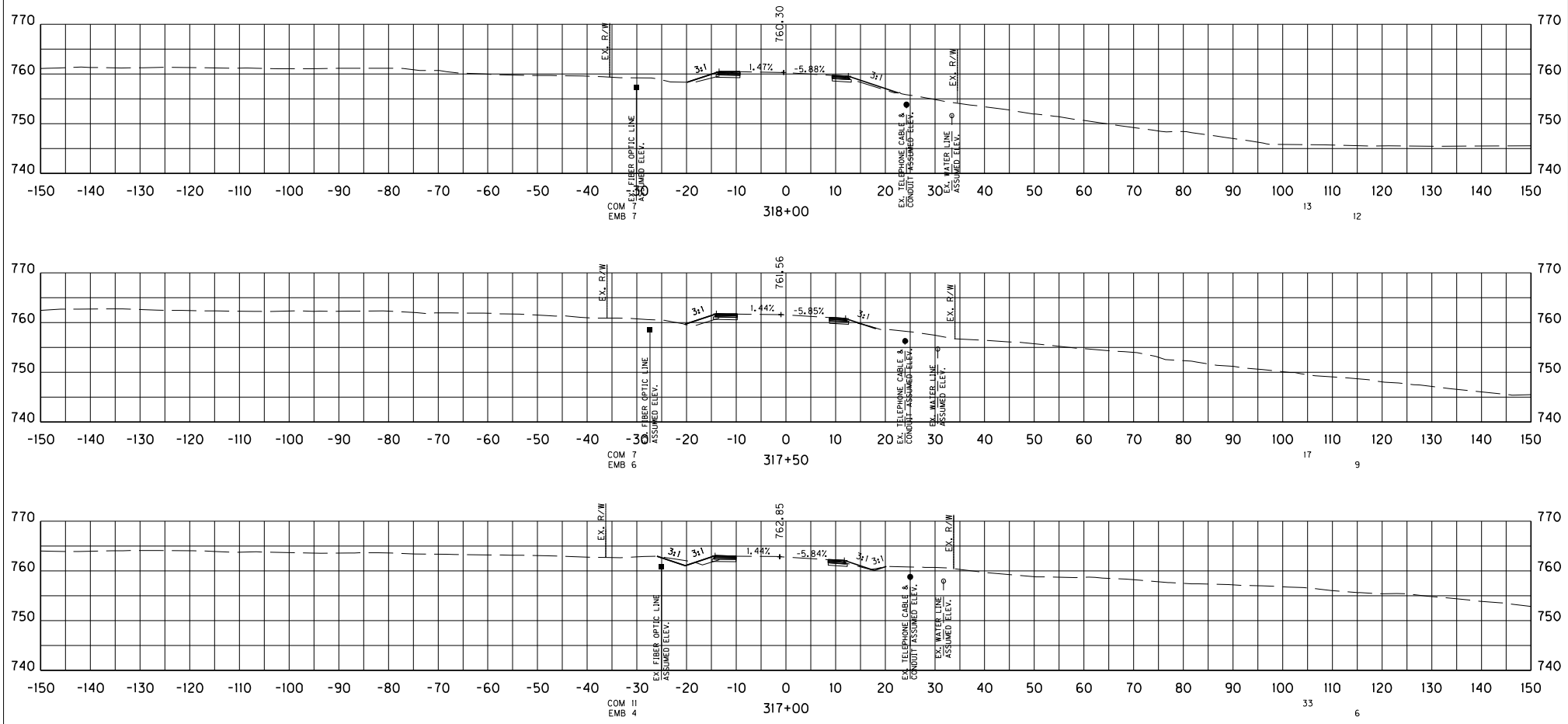


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X142

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.315+50 TO STA.316+50

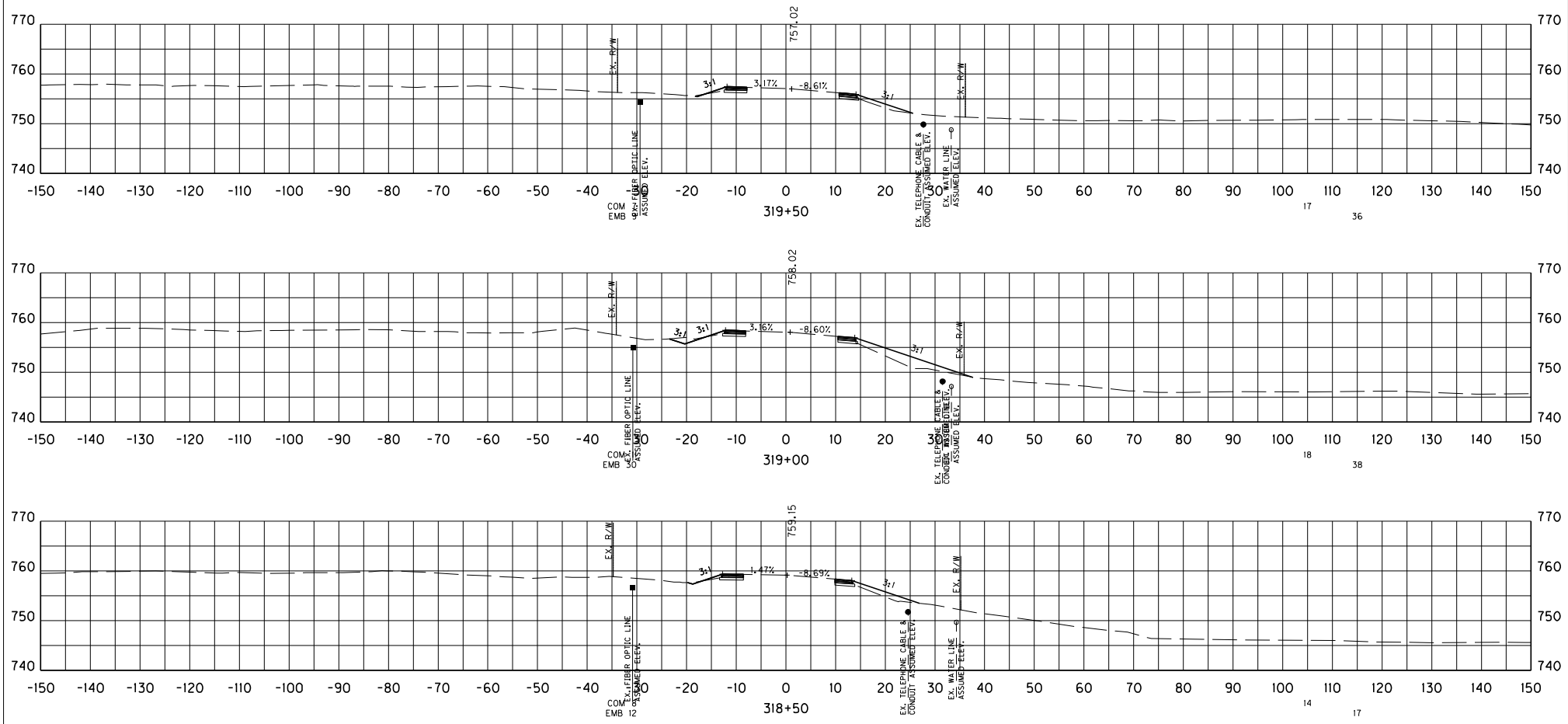


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X143

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.317+00 TO STA.318+00

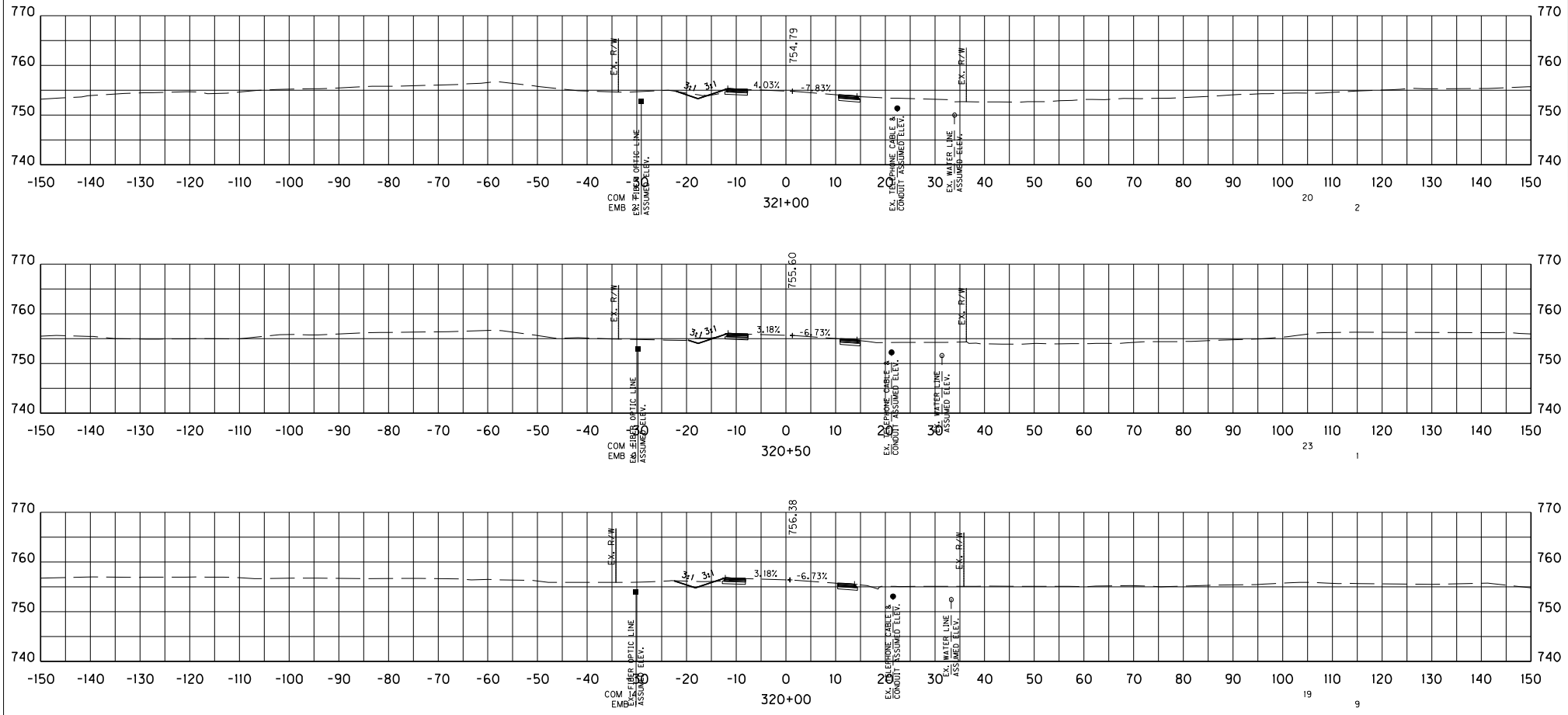


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X144

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.318+50 TO STA.319+50

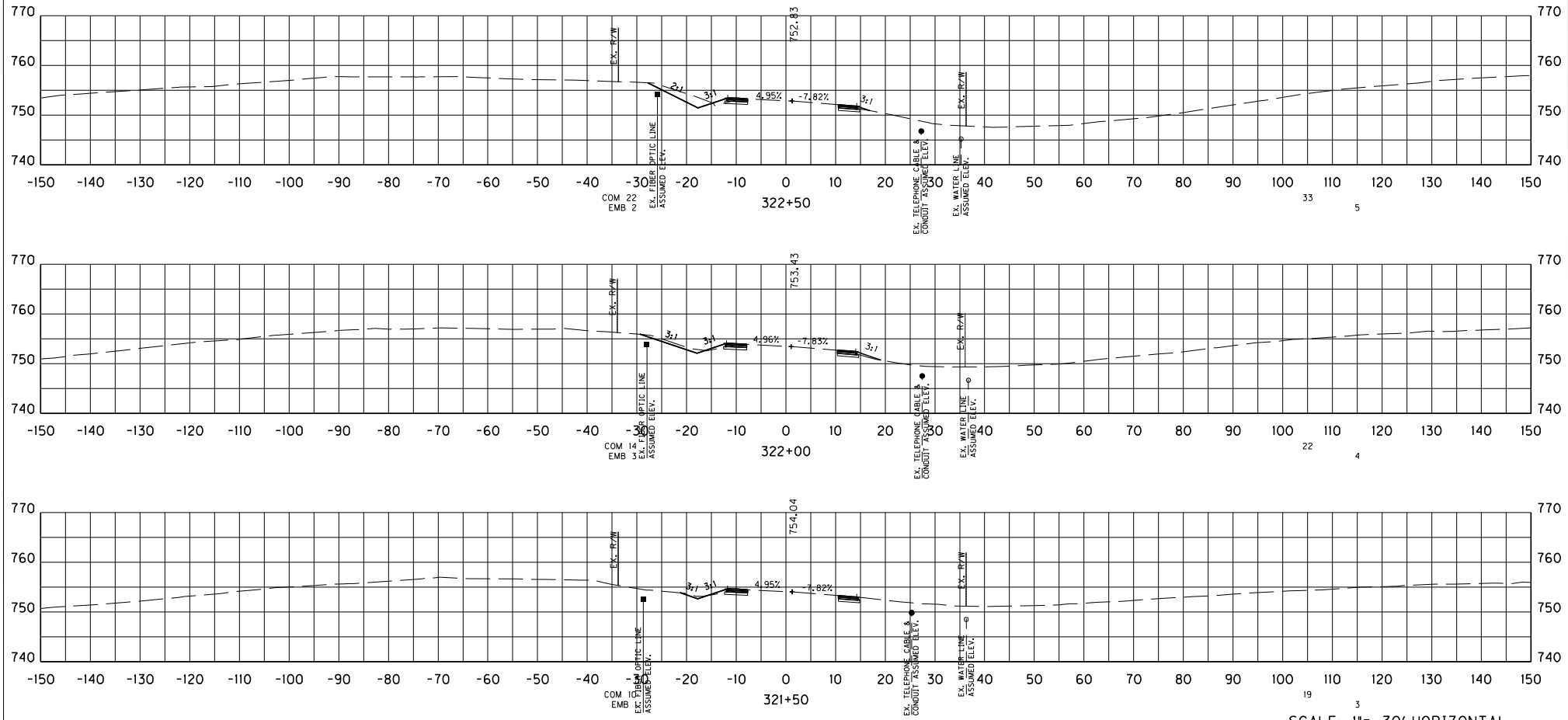


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X145

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.320+00 TO STA.321+00

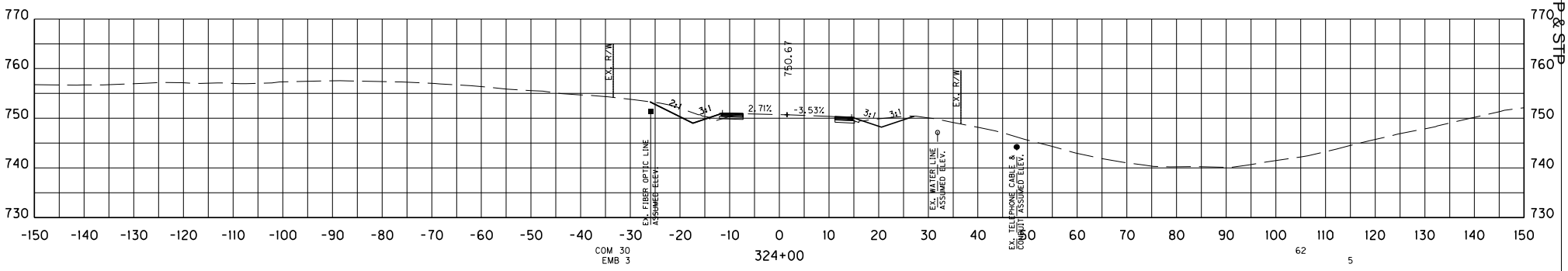


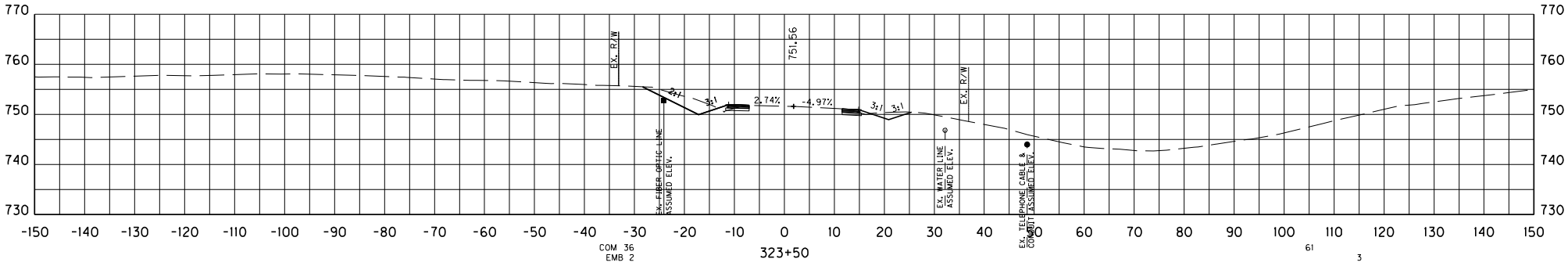
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

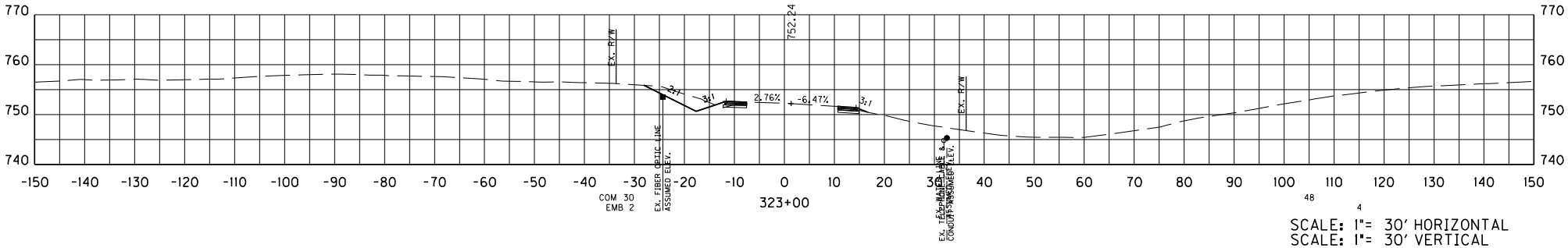
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X146

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.321+50 TO STA.322+50





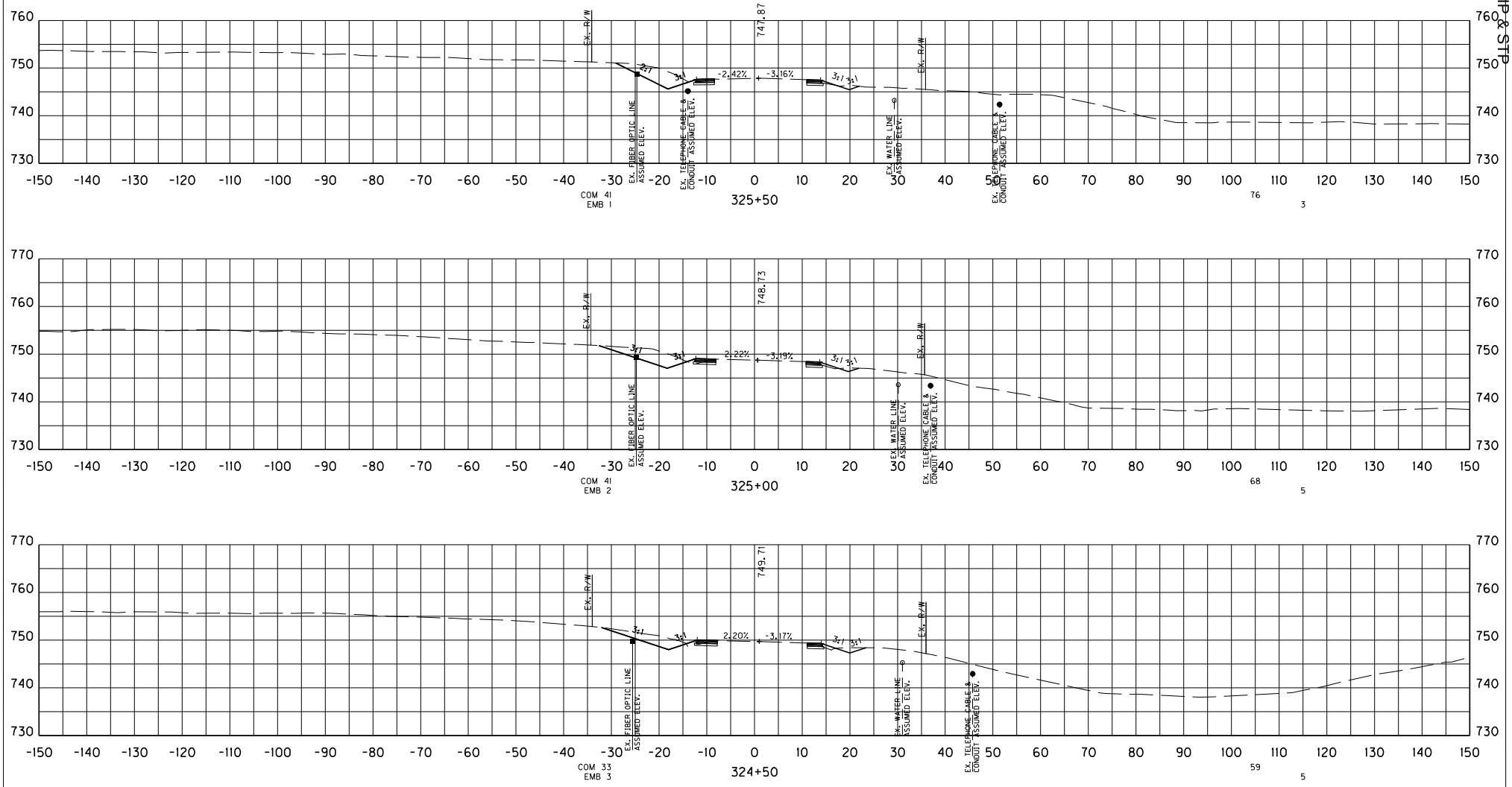


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X147

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.323+00 TO STA.324+00

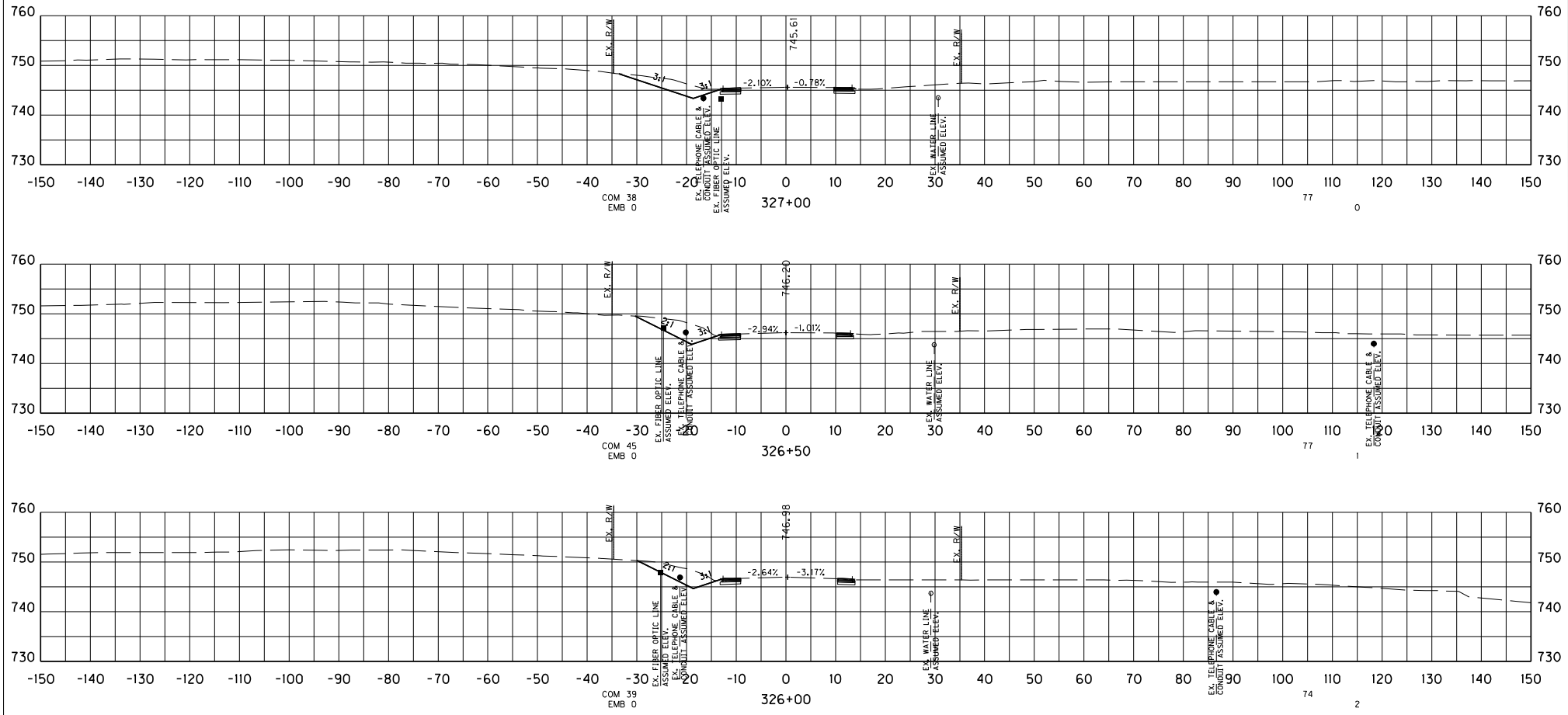


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X148

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.324+50 TO STA.325+50

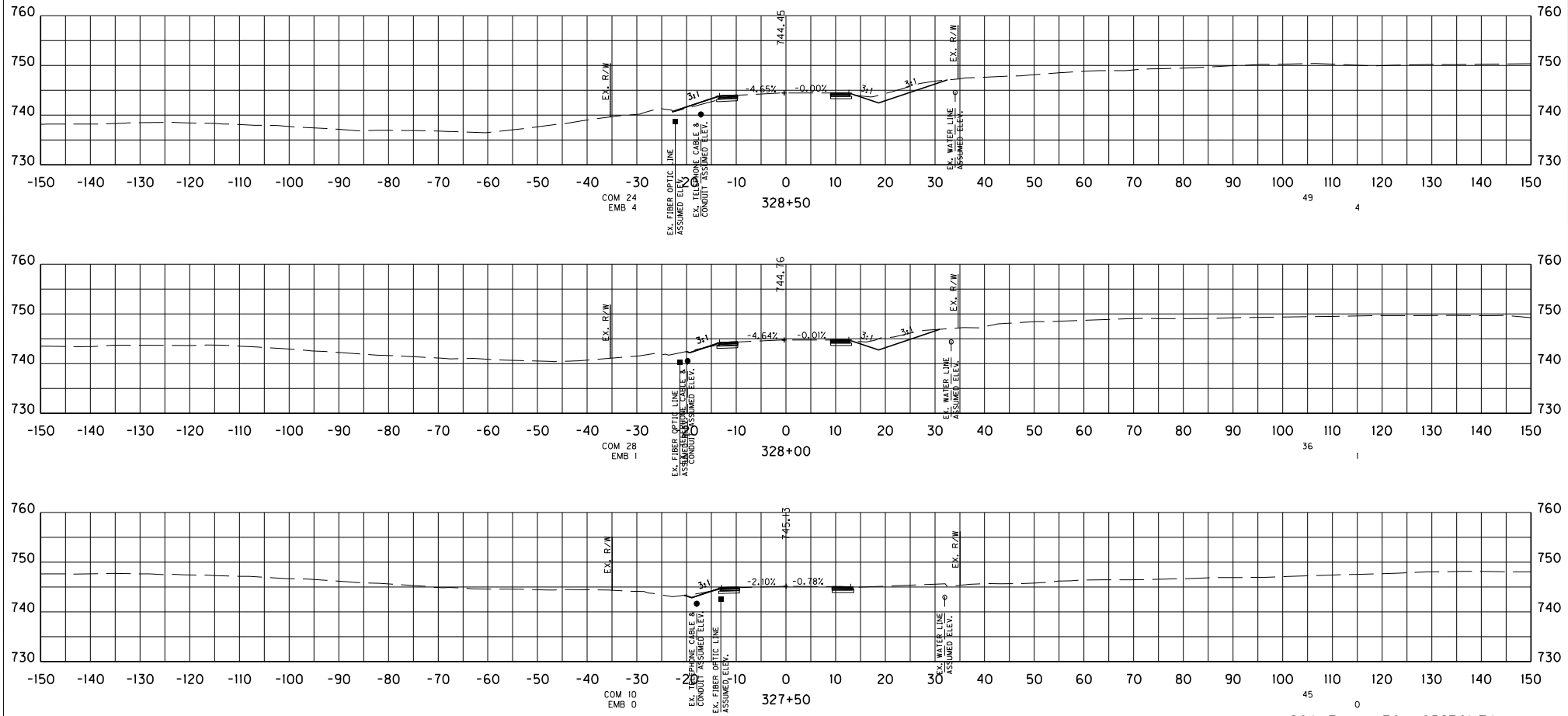


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X149

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.326+00 TO STA.327+00

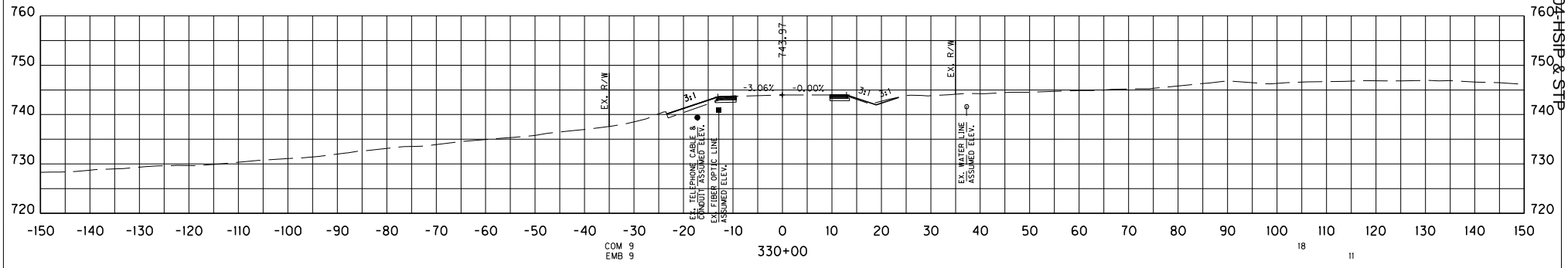


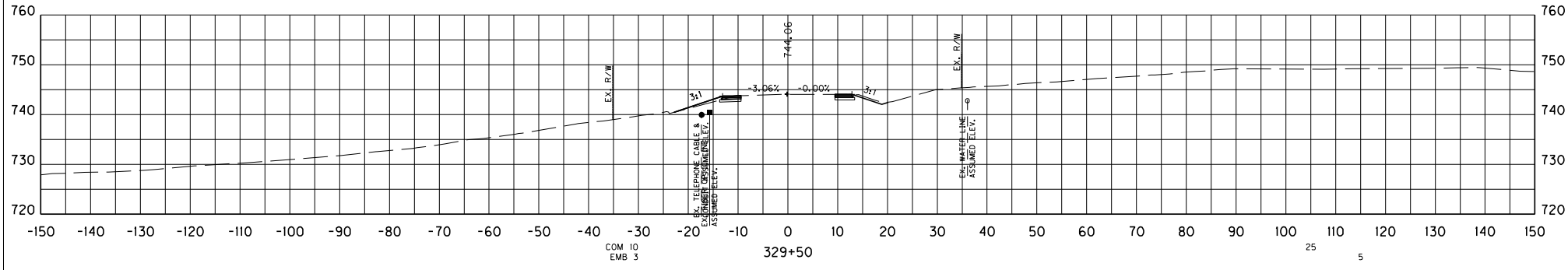
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

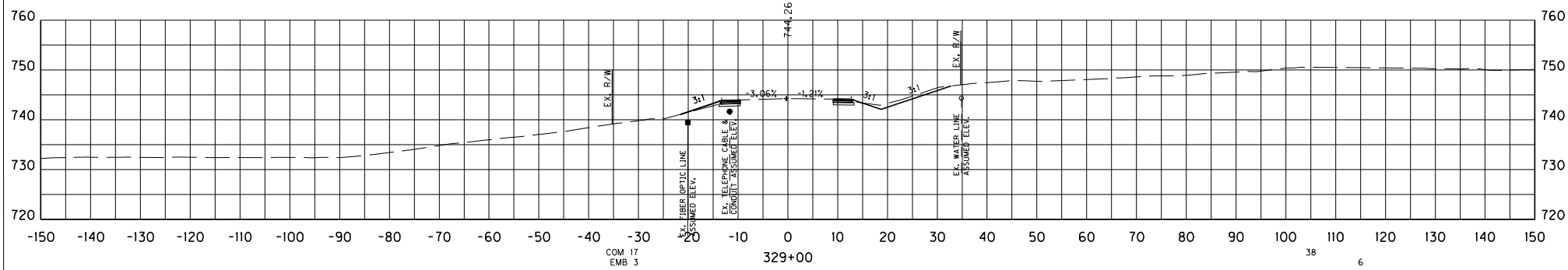
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X150

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.327+50 TO STA.328+50





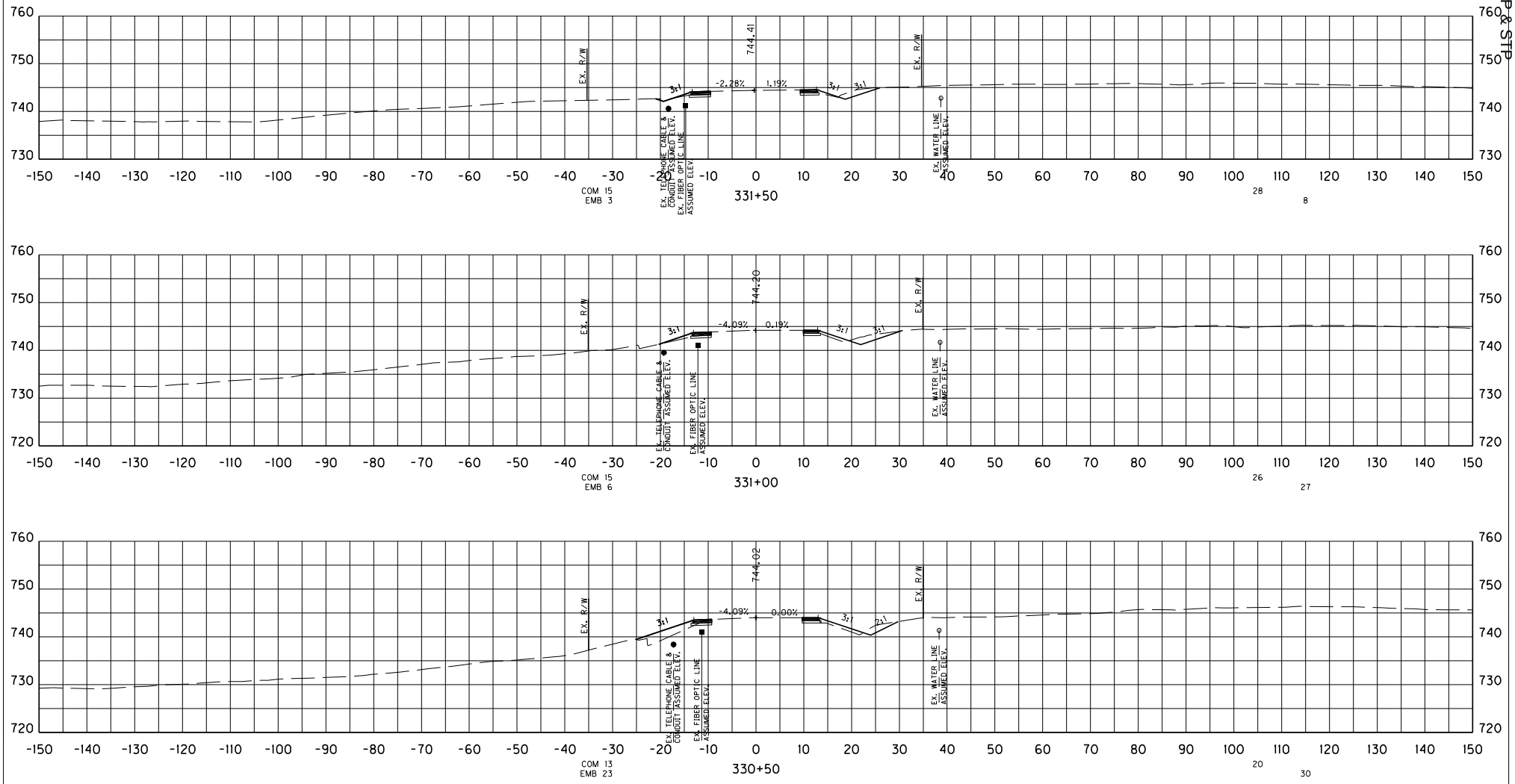


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X151

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.329+00 TO STA.330+00

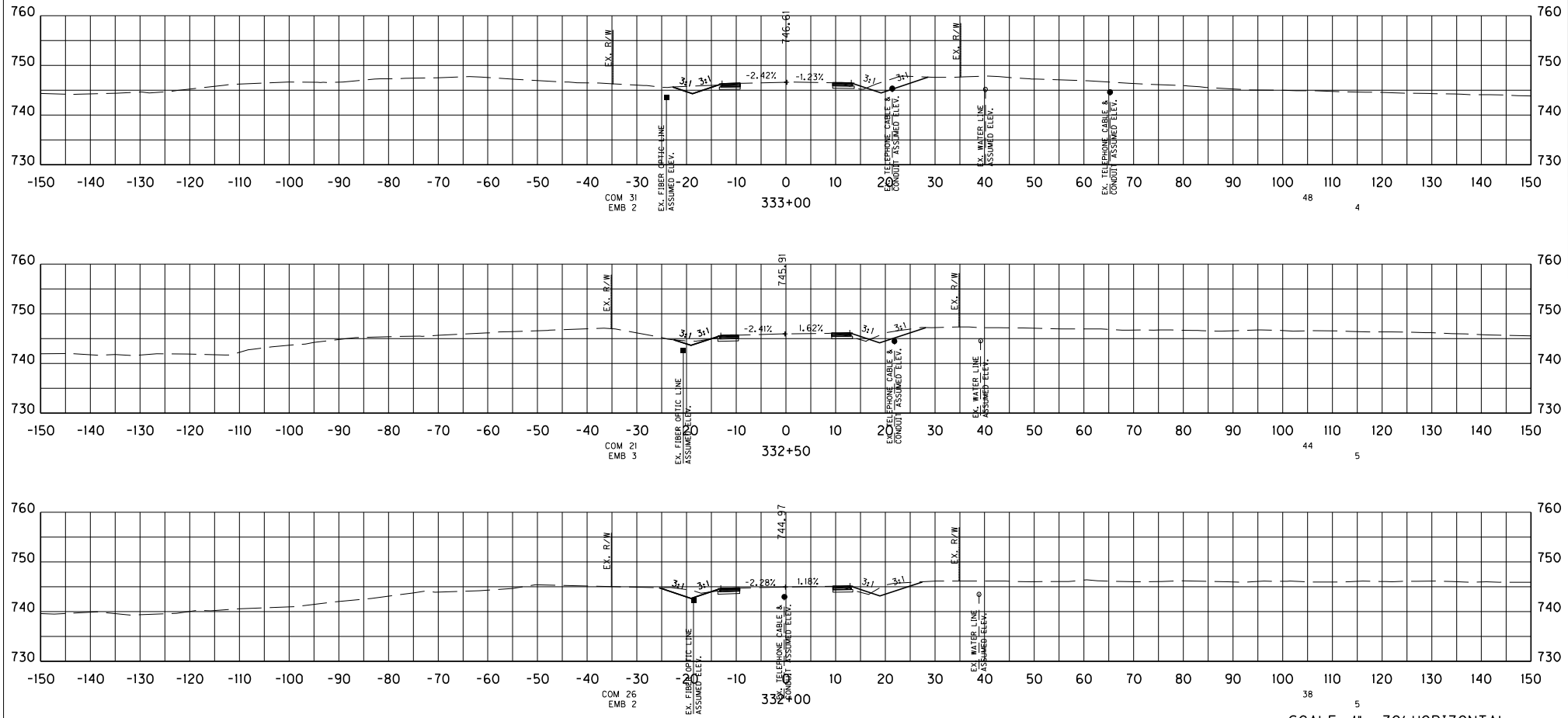


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X152

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.330+50 TO STA.331+50

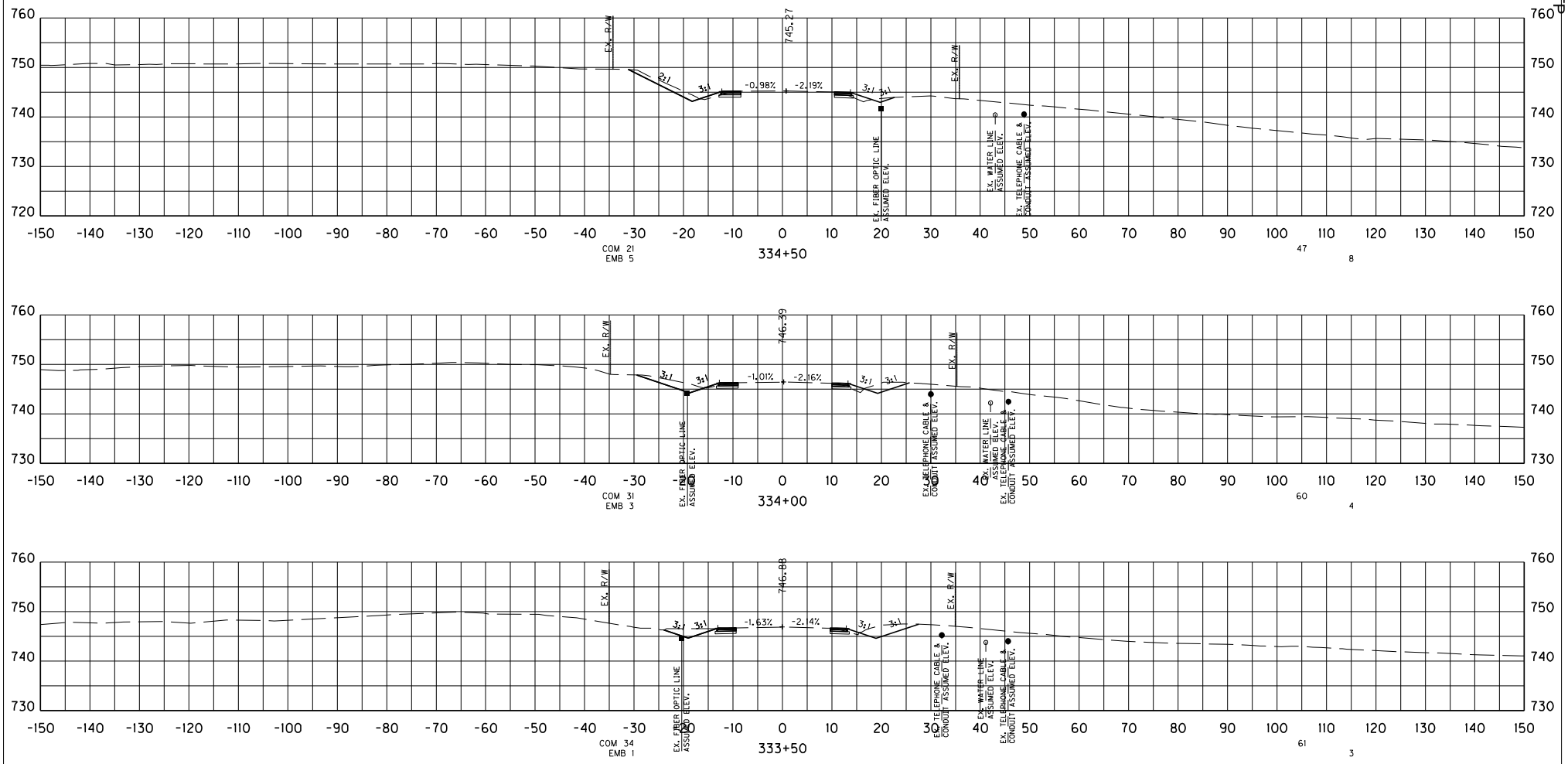


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X153

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.332+00 TO STA.333+00

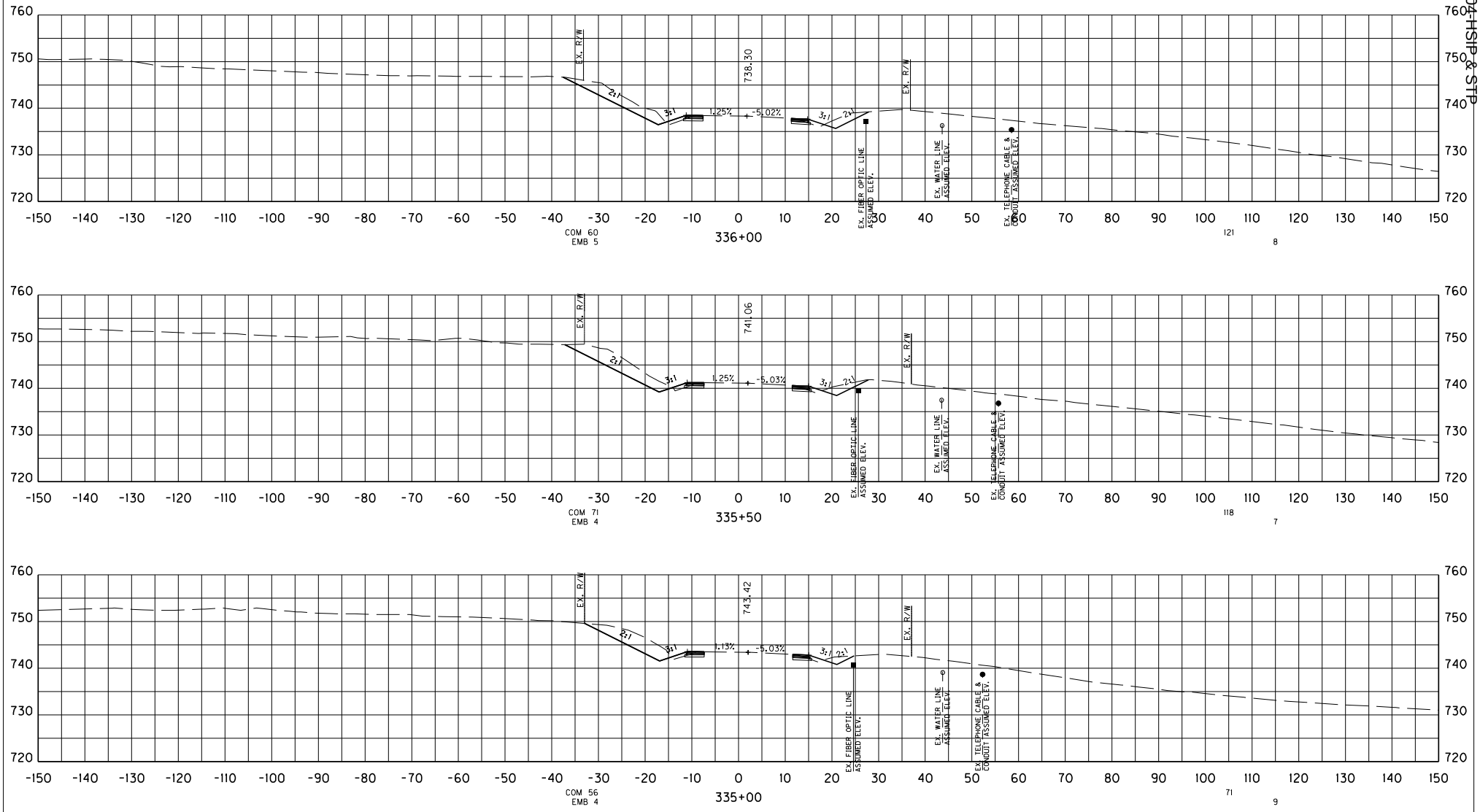


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X154

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.333+50 TO STA.334+50

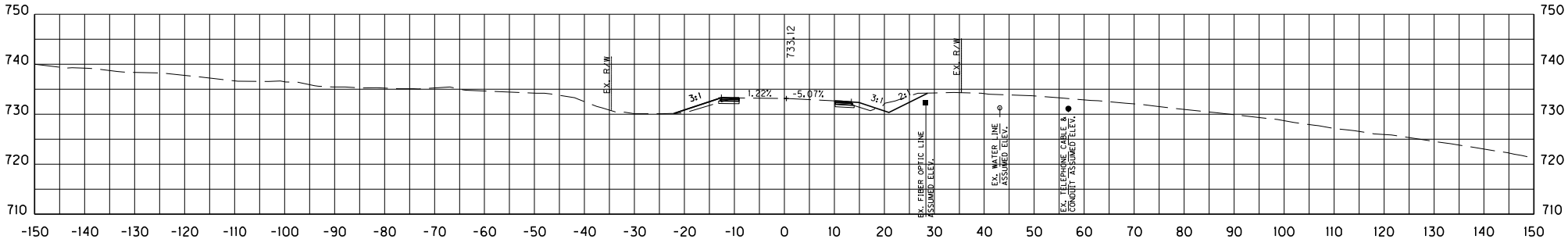


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

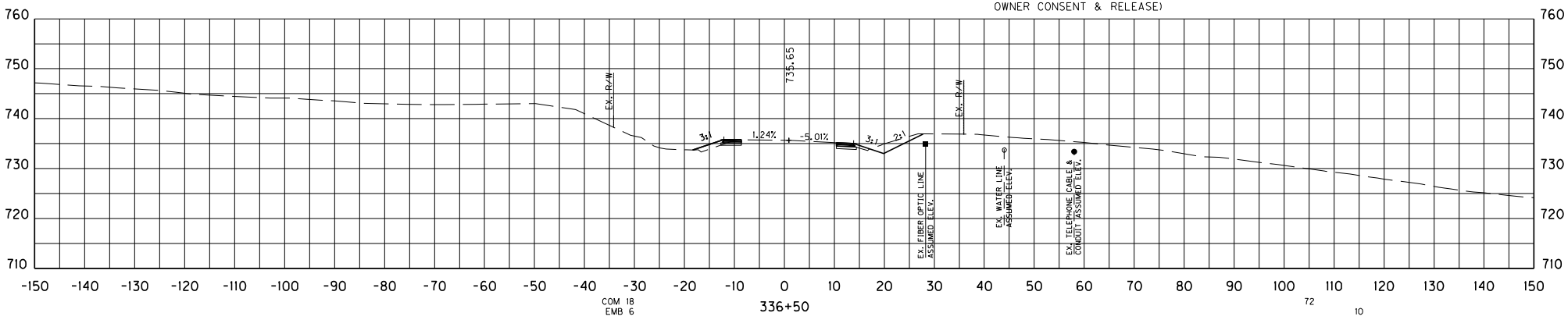
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X155

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.335+00 TO STA.336+00



NOTE: STA 336+75 - STA 341+50 RT
CONSTRUCT UNPAVED SHOULDER
AS SHOWN WITH 2:1 FILL SLOPES
(USE 3:1 FILL SLOPES WITH PARCEL
OWNER CONSENT & RELEASE)

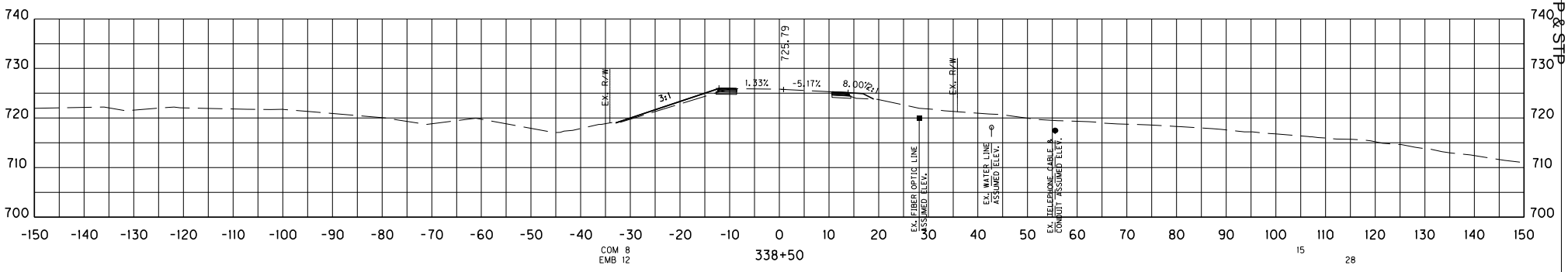


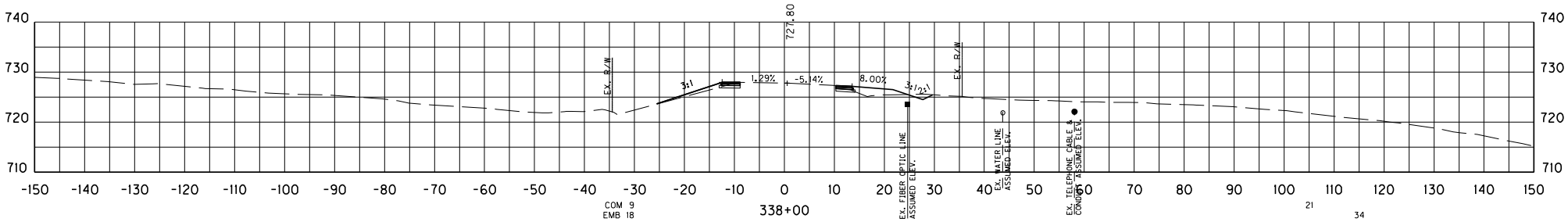
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

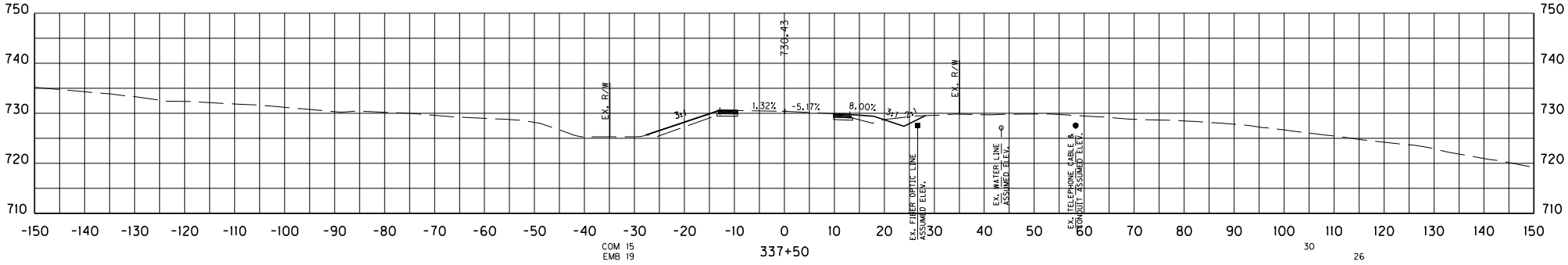
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X156

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.336+50 TO STA.337+00





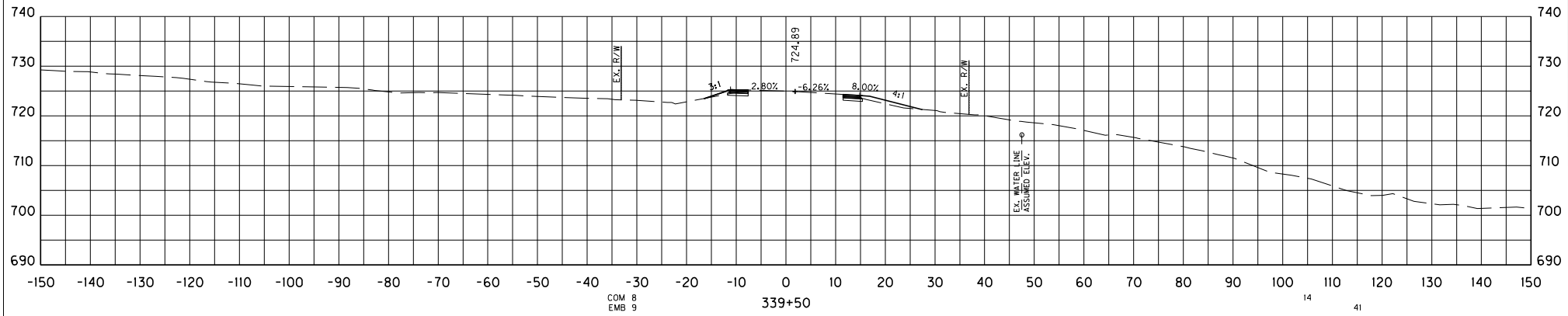


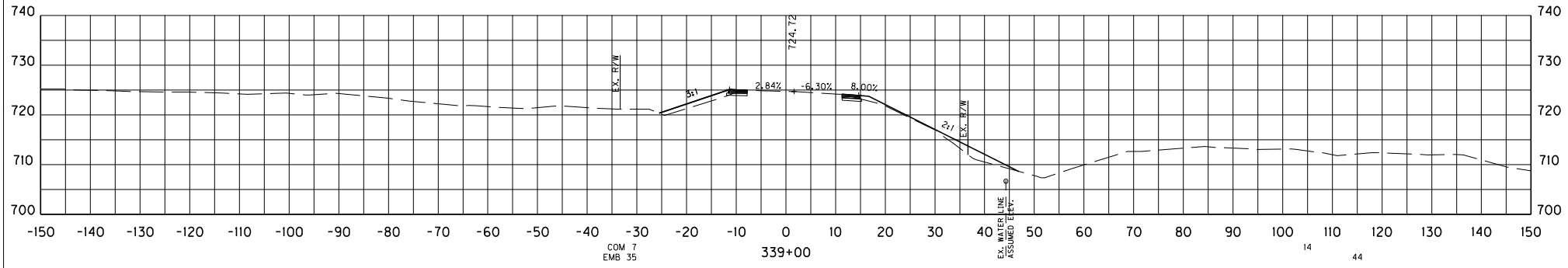
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X157

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.337+50 TO STA.338+50



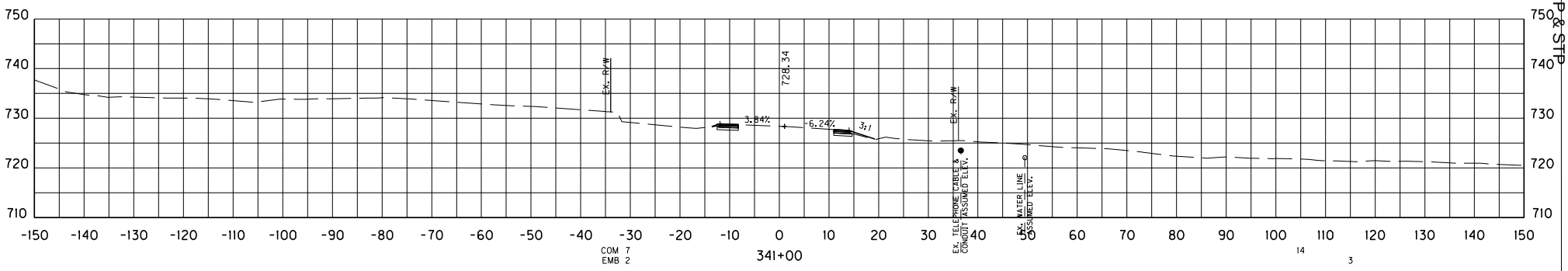


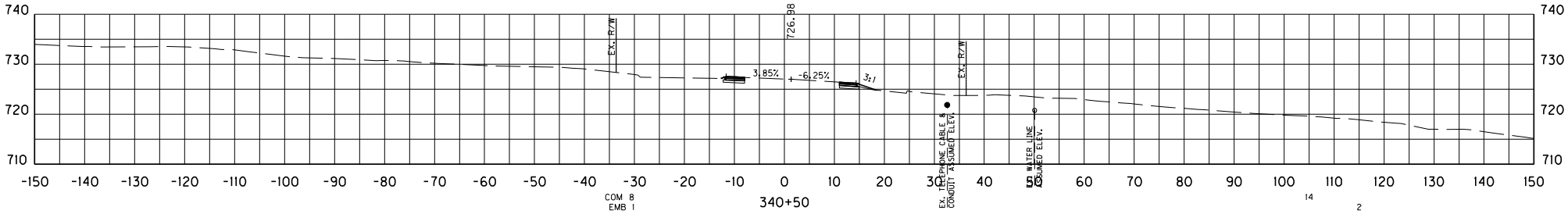
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

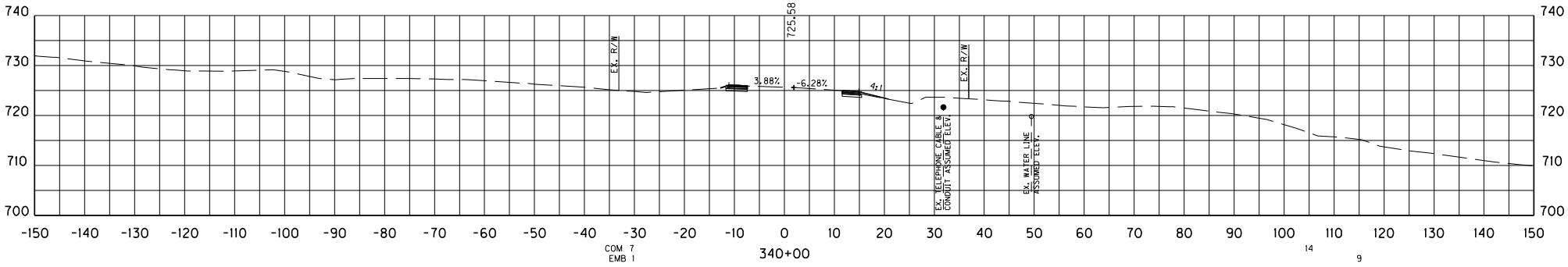
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X158

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.339+00 TO STA.339+50





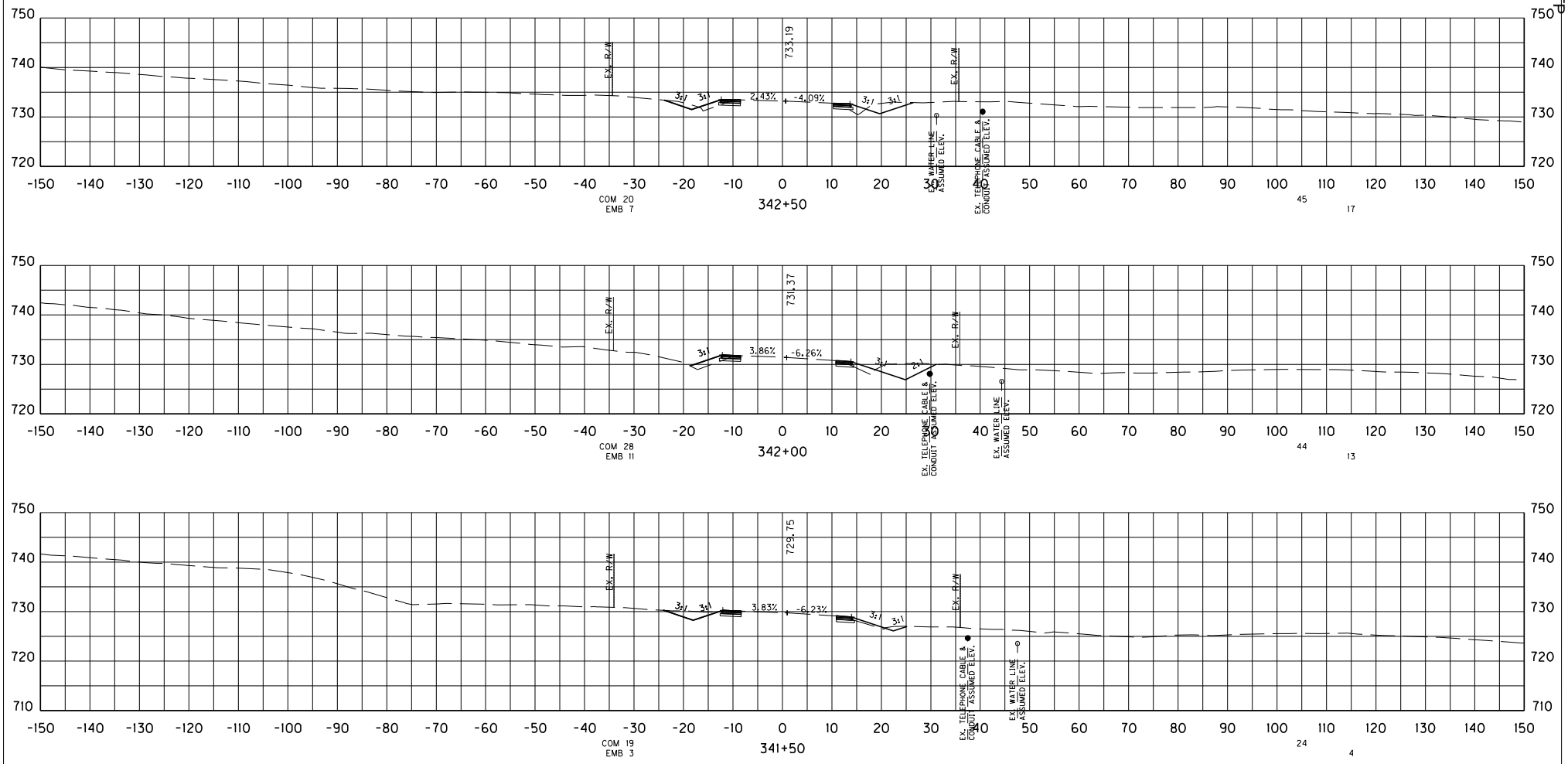


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X159

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.340+00 TO STA.341+00

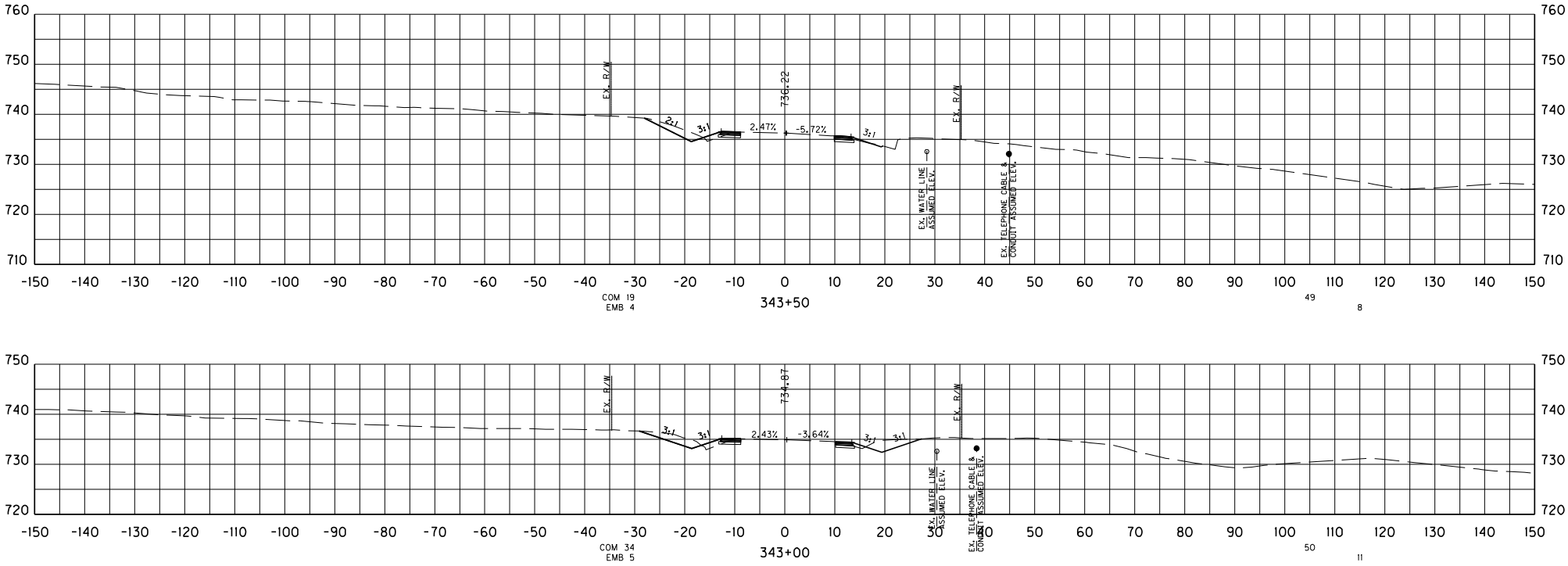


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X160

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.341+50 TO STA.342+50

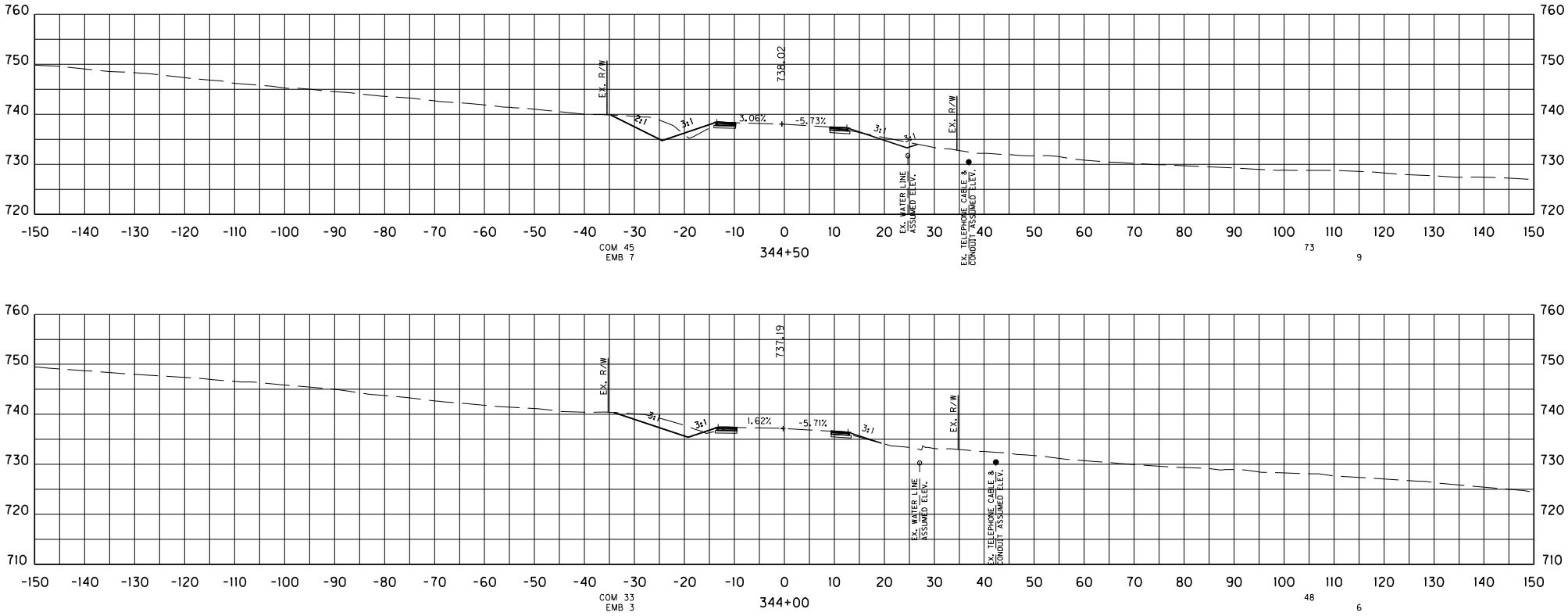


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X161

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.343+00 TO STA.343+50

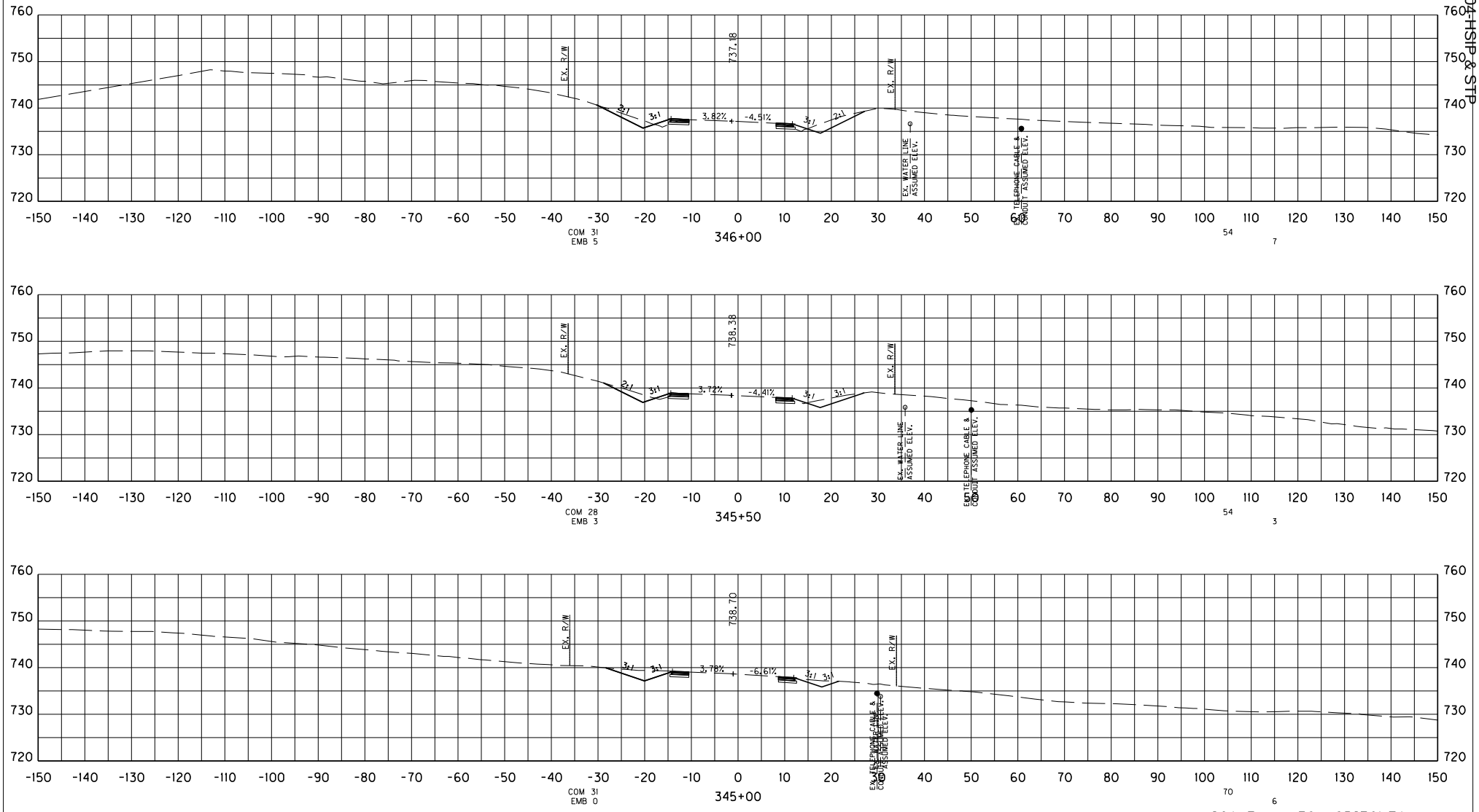


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X162

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.344+00 TO STA.344+50

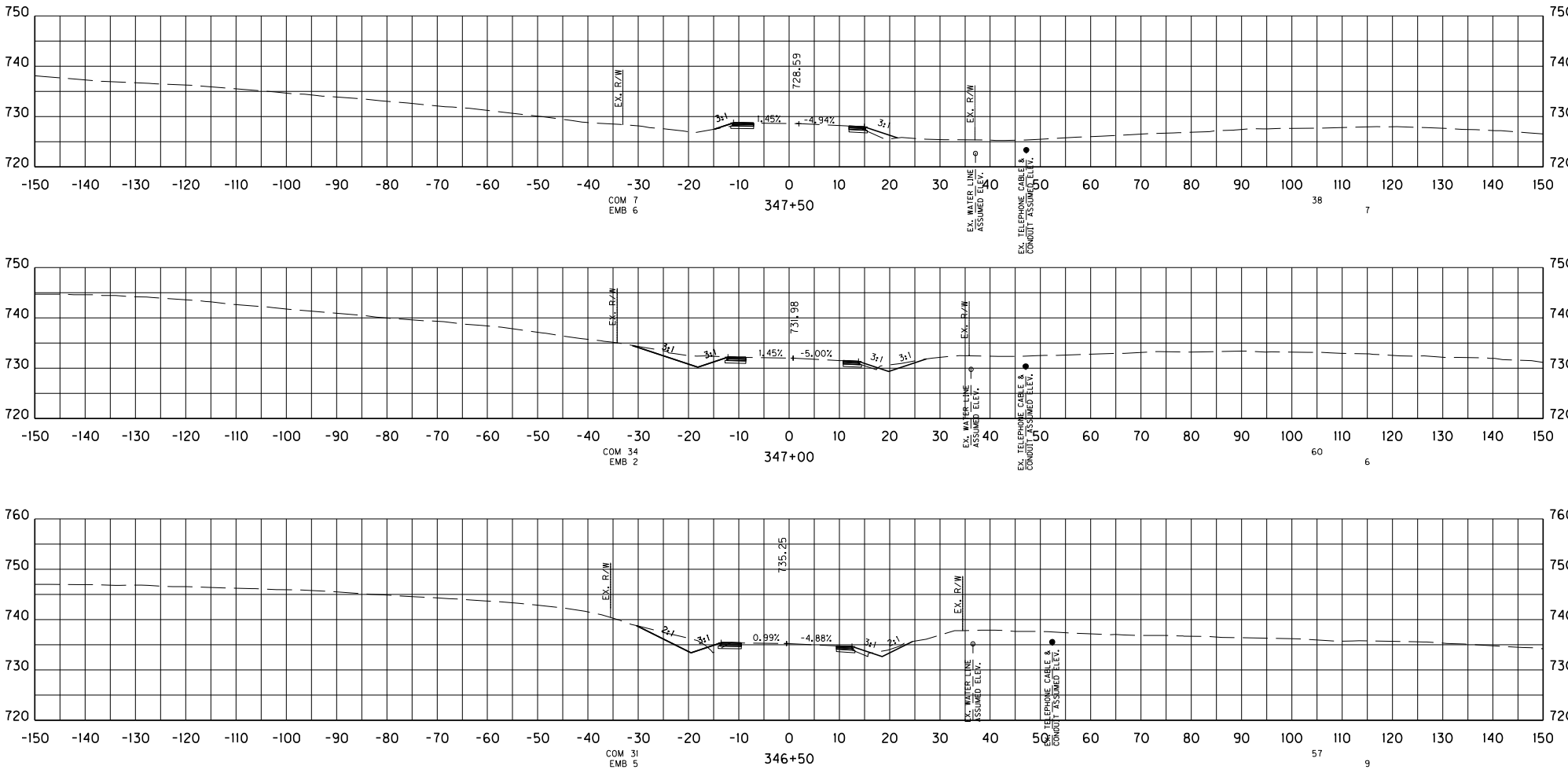


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X163

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.345+00 TO STA.346+00

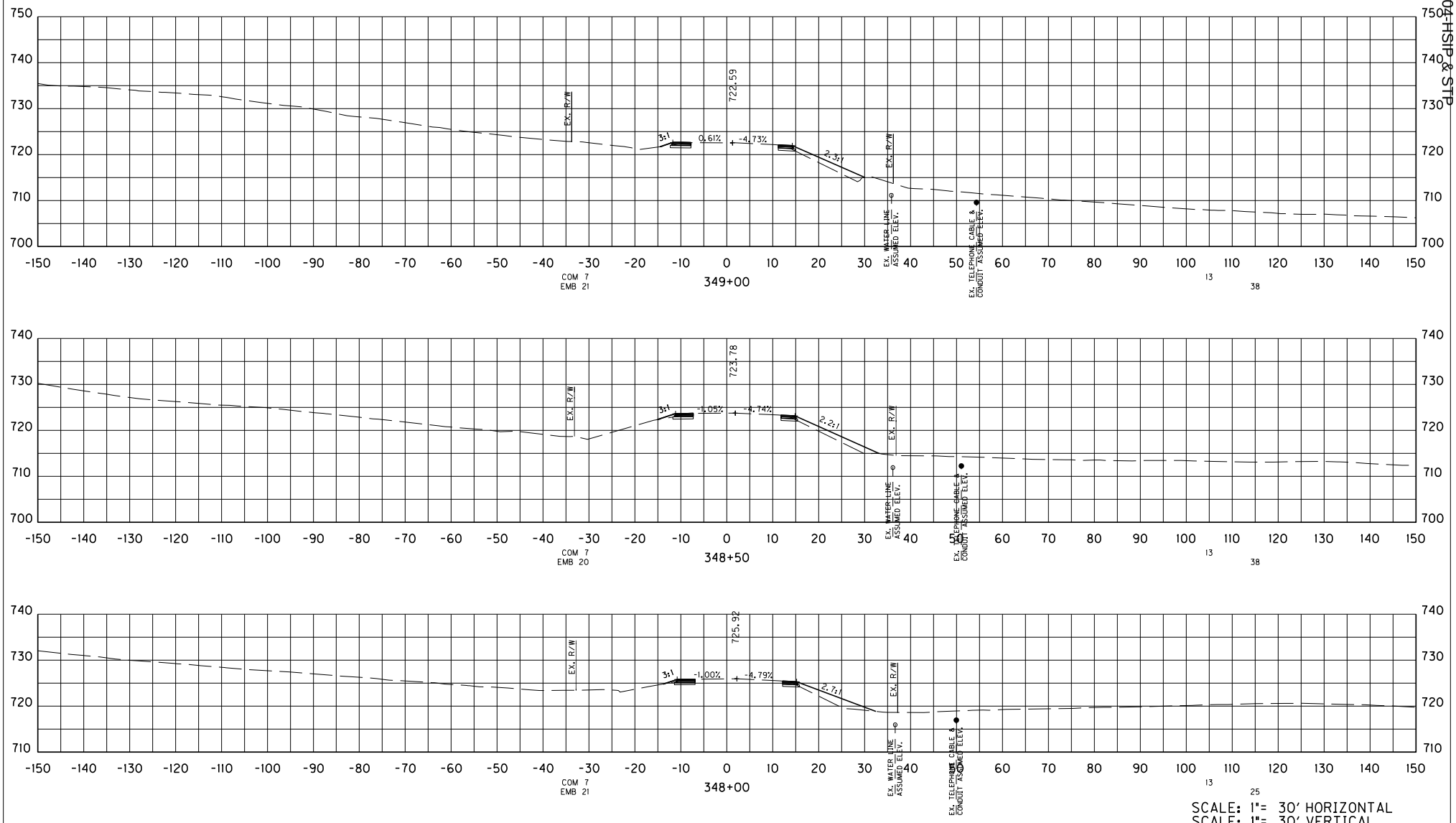


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X164

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.346+50 TO STA.347+50

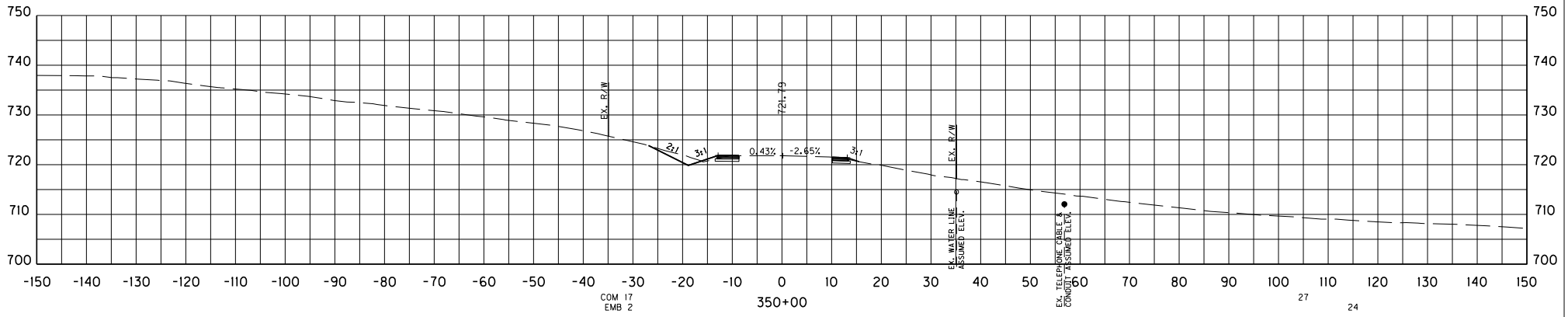


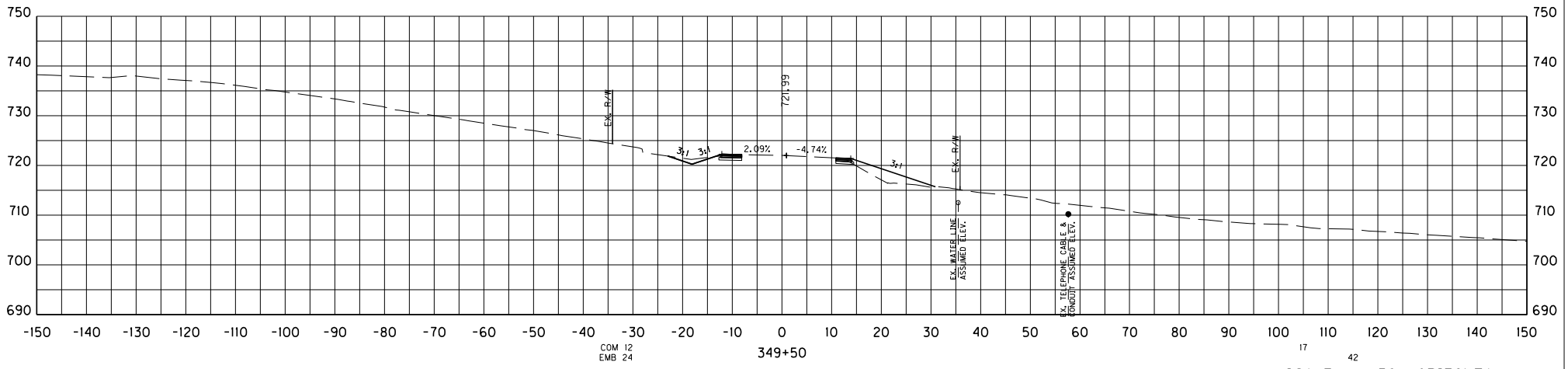
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X165

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.348+00 TO STA.349+00



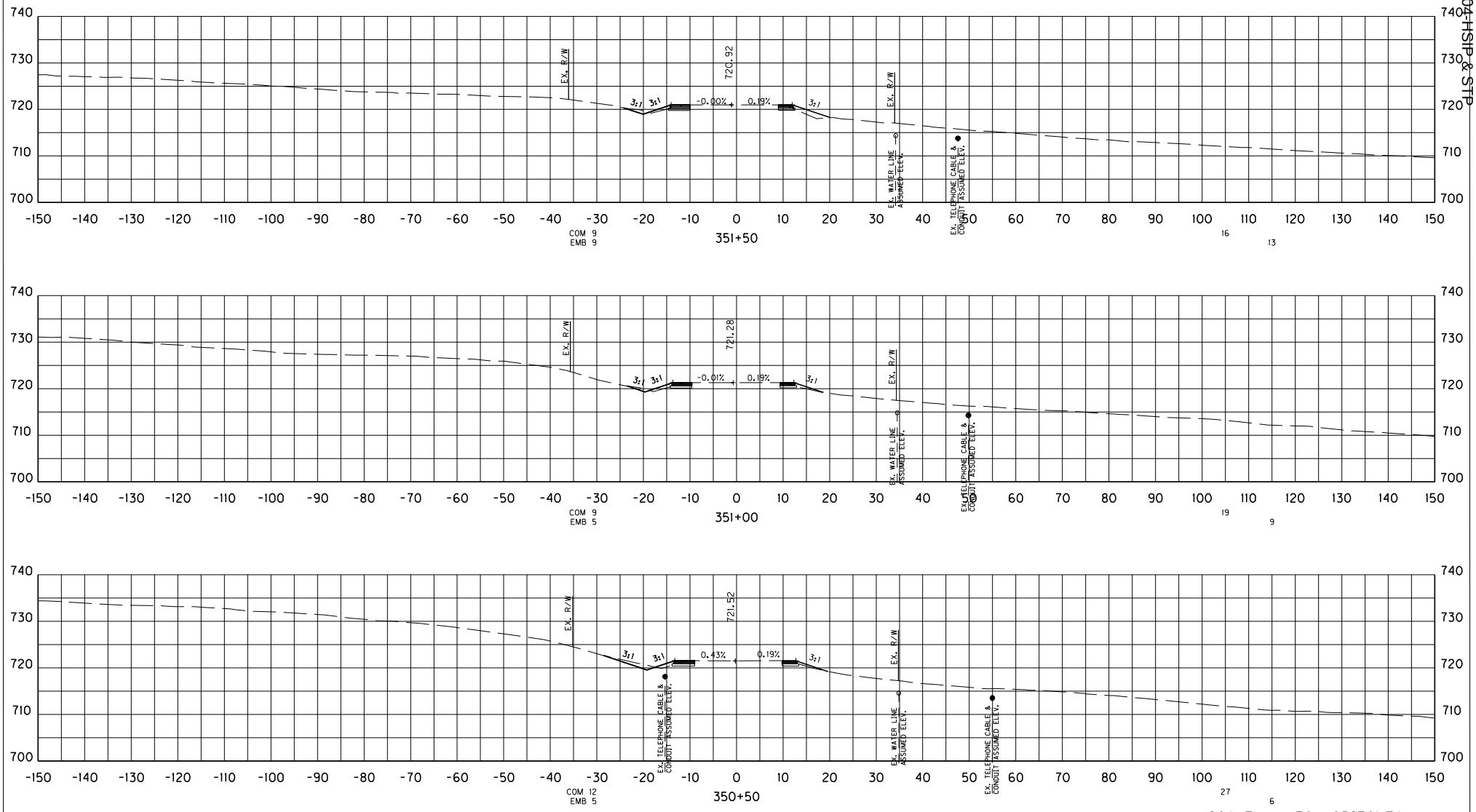


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X166

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.349+50 TO STA.350+00

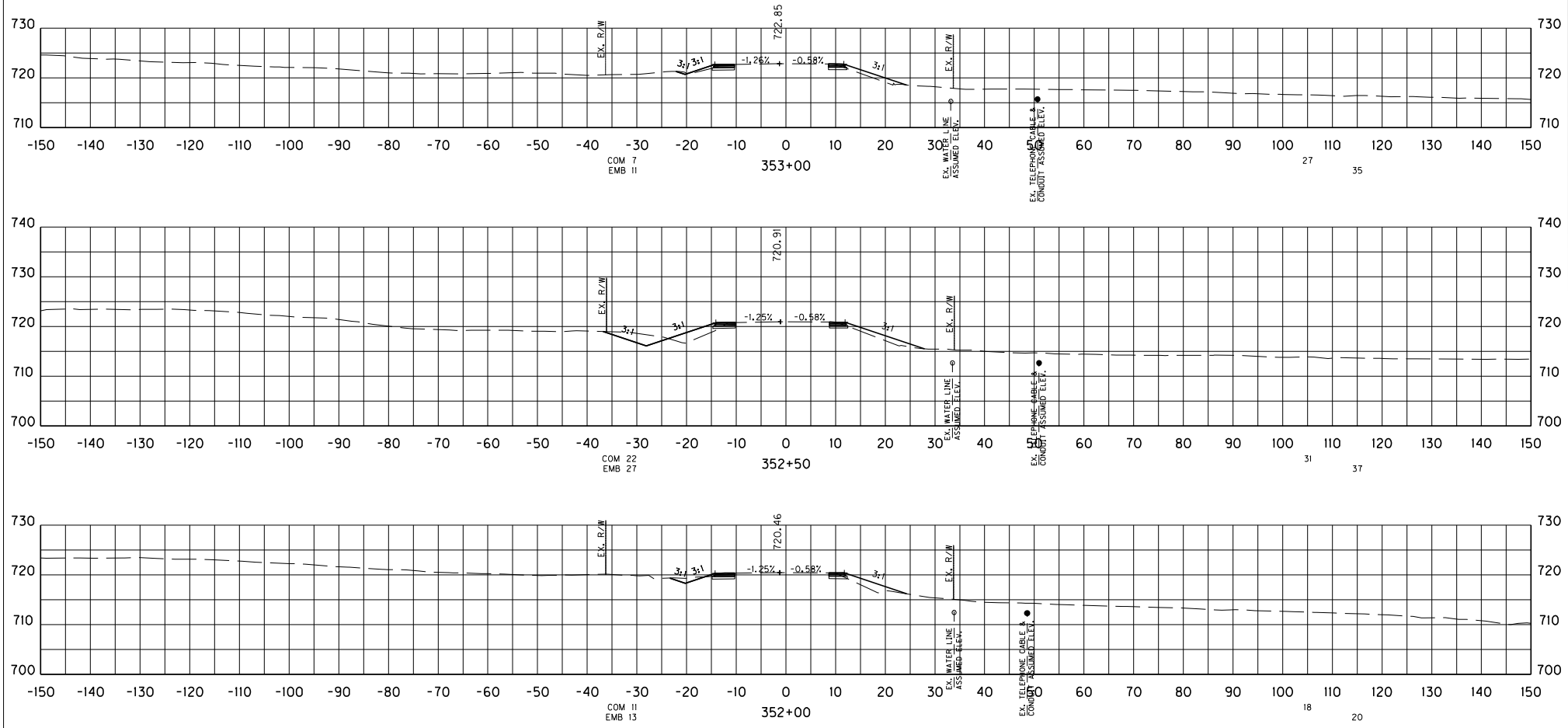


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X167

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.350+50 TO STA.351+50

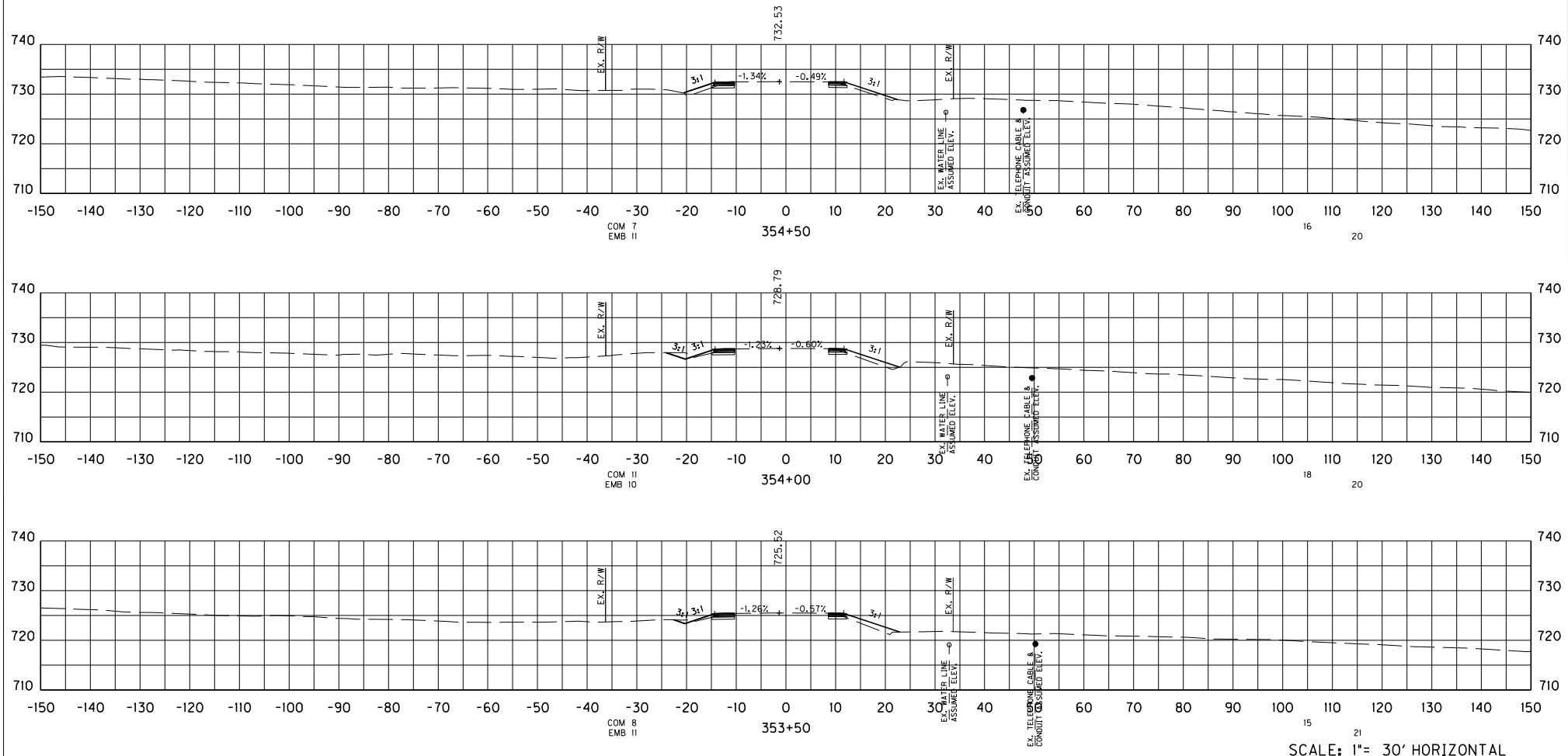


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X168

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.352+00 TO STA.353+00

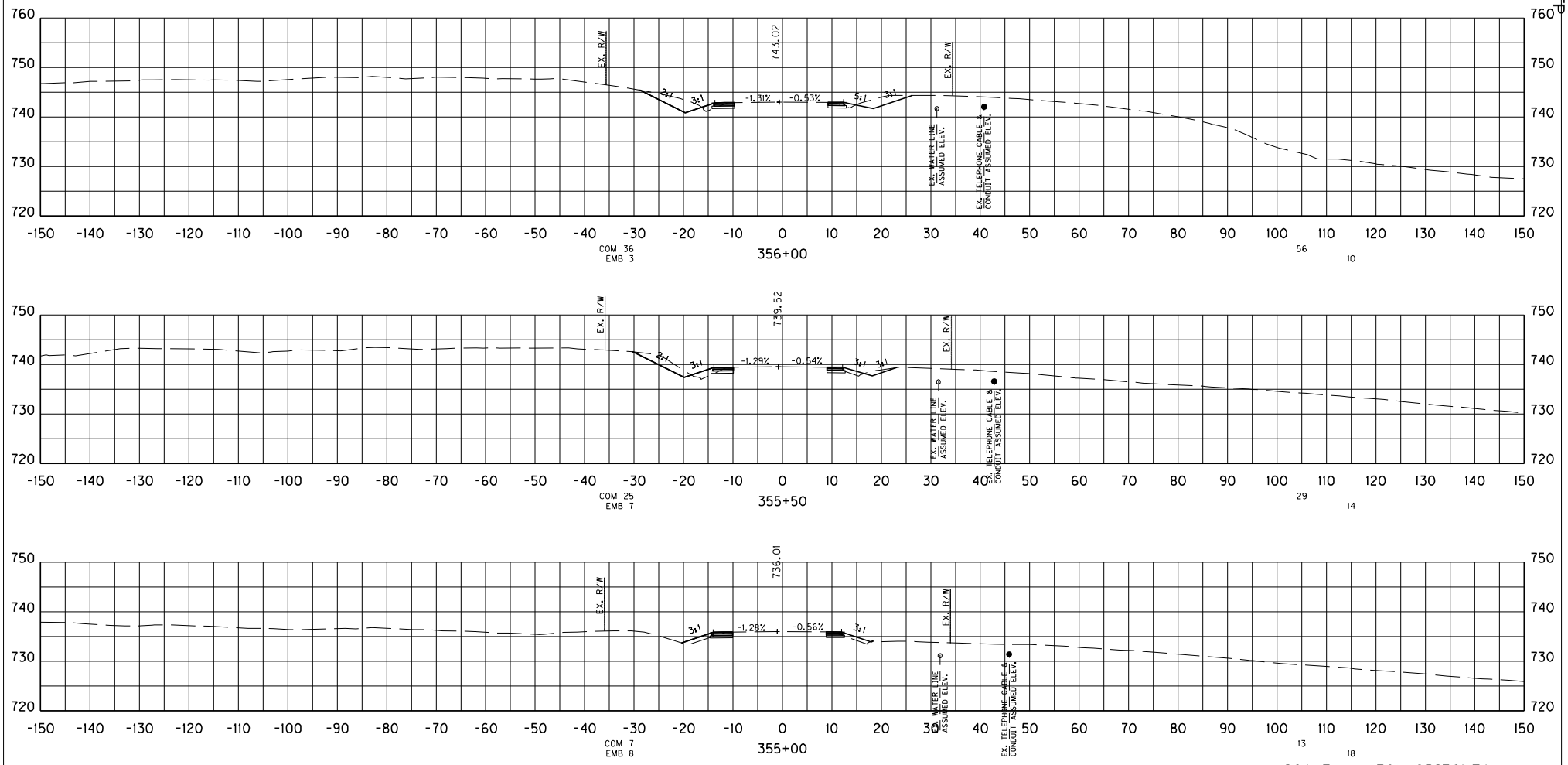


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X169

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.353+50 TO STA.354+50

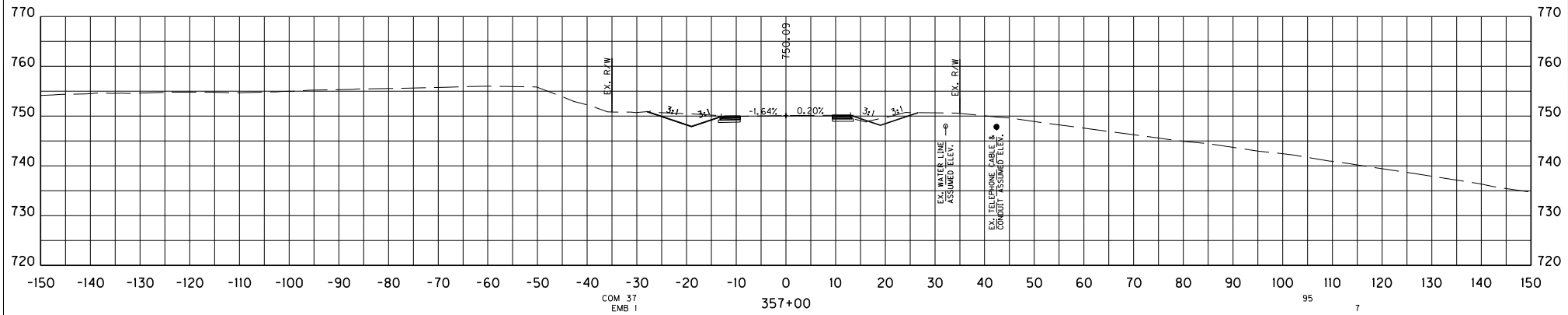


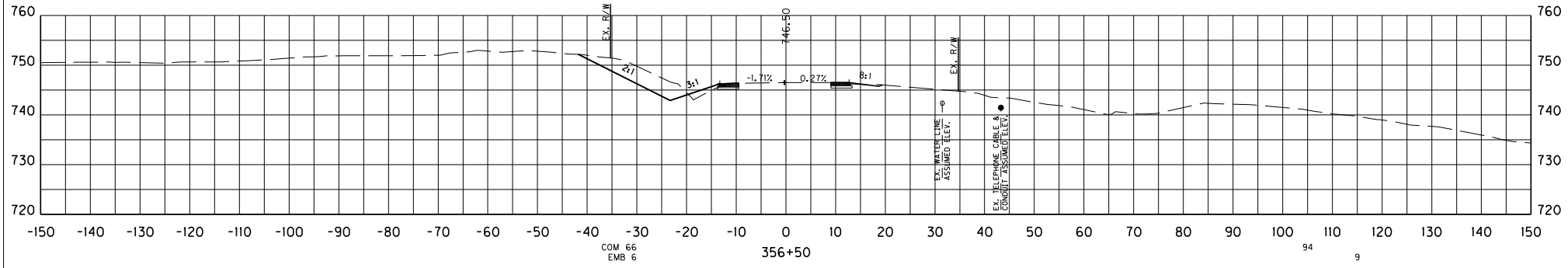
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X170

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.355+00 TO STA.356+00



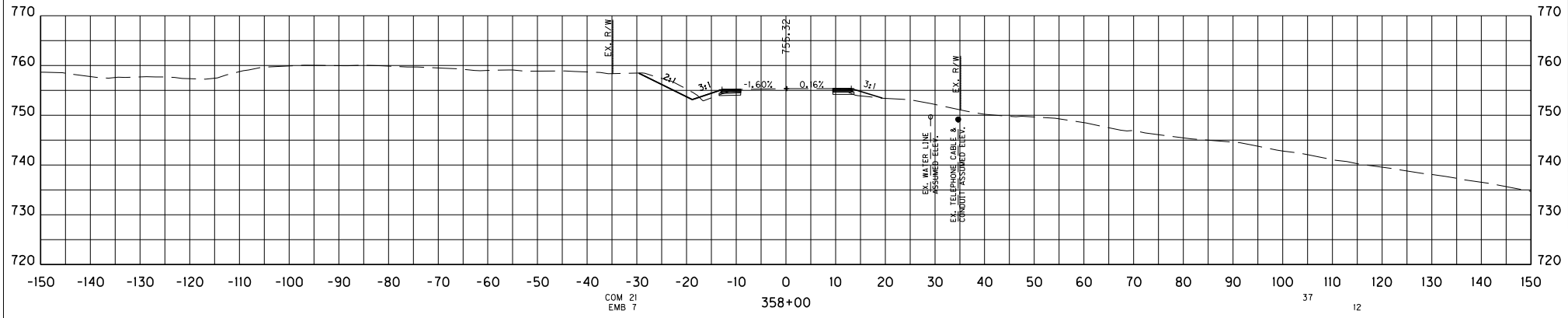


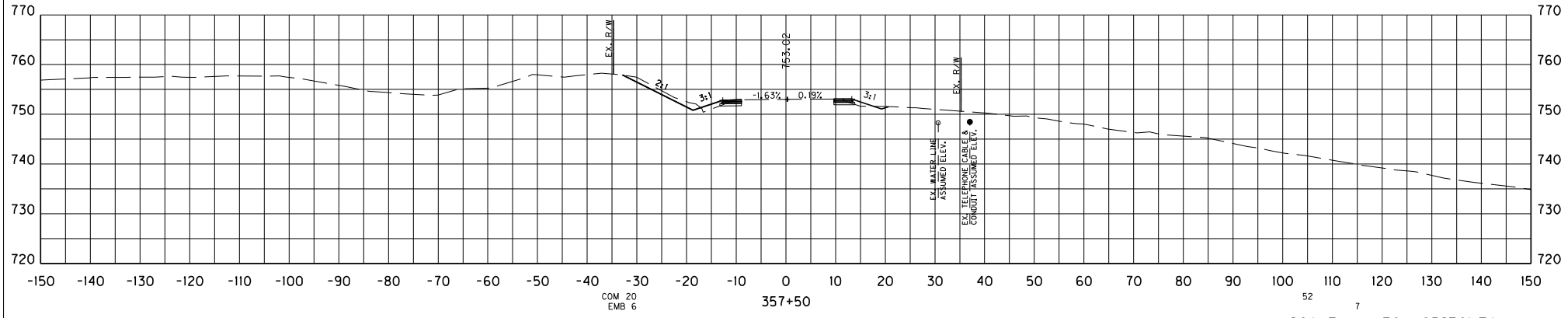
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X171

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.356+50 TO STA.357+00



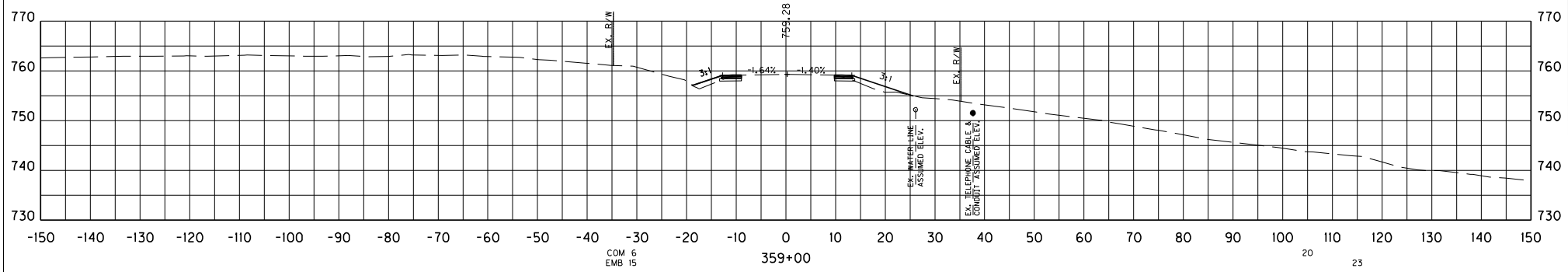


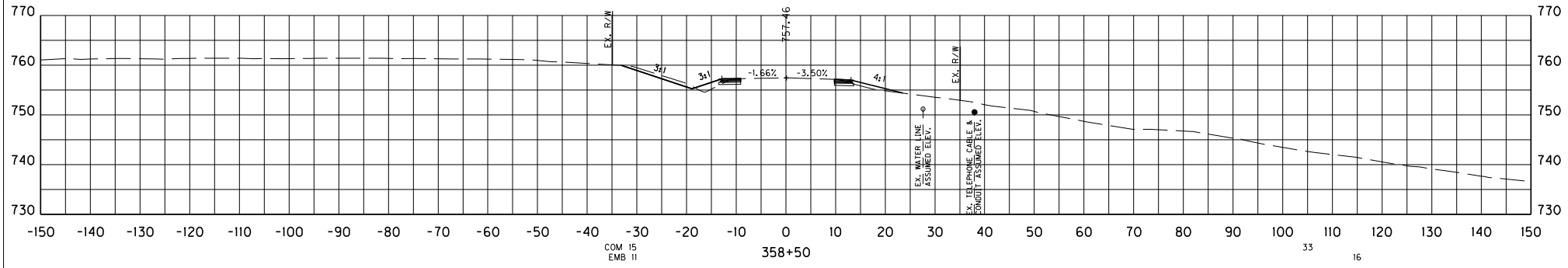
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X172

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.357+50 TO STA.358+00



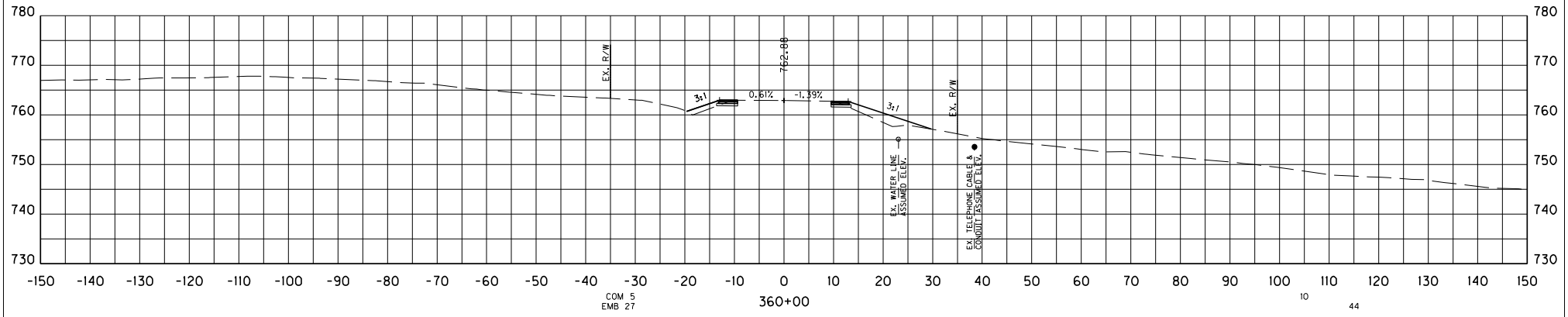


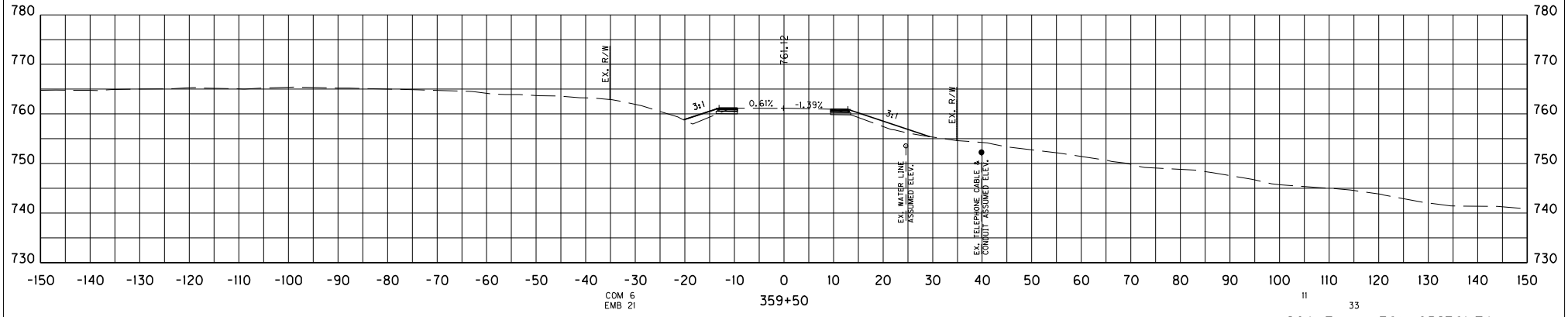
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X173

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.358+50 TO STA.359+00



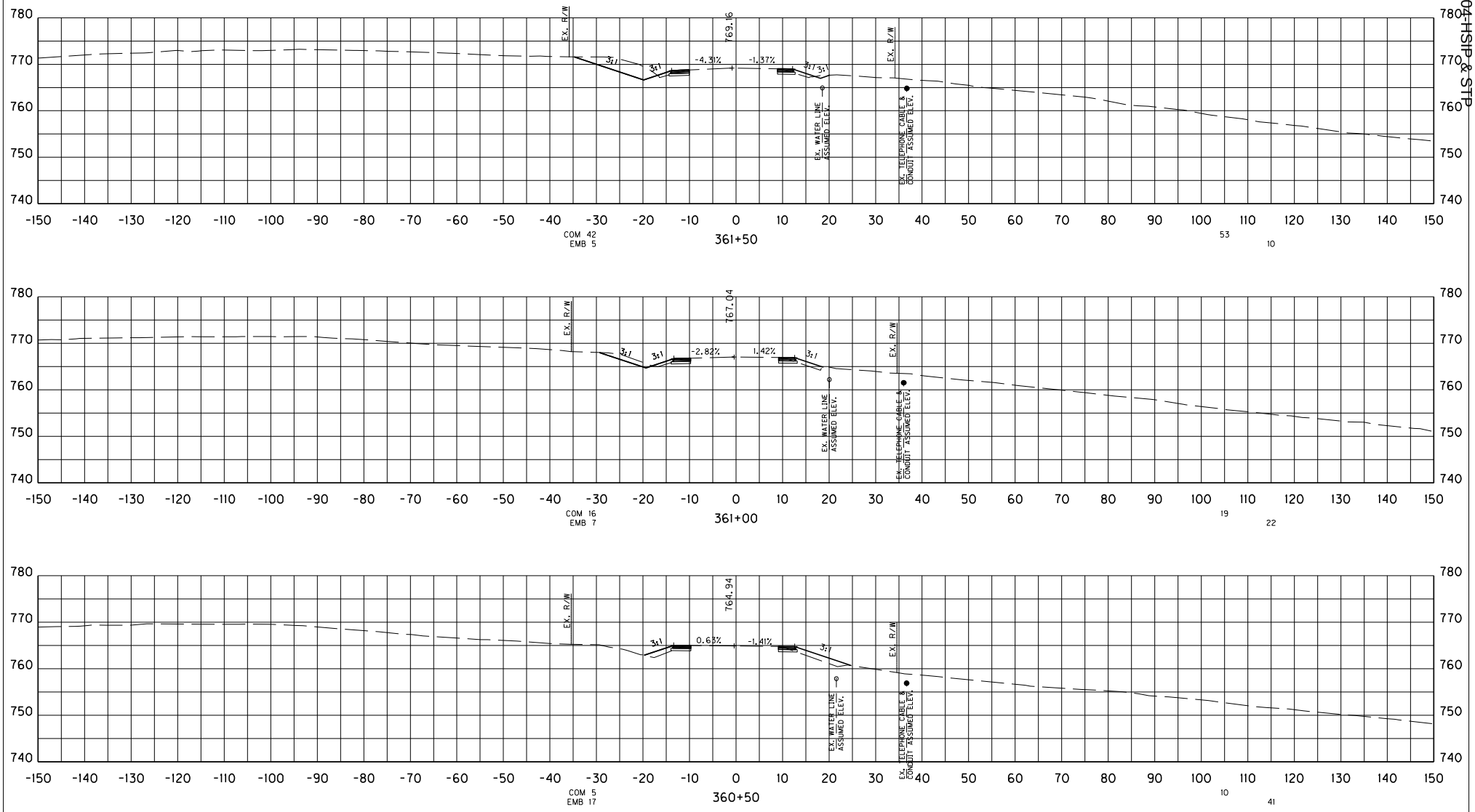


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X174

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.359+50 TO STA.360+00

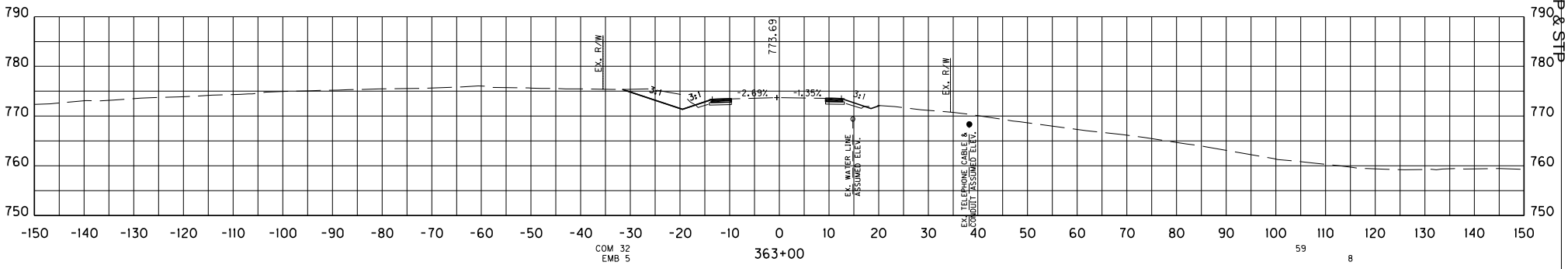


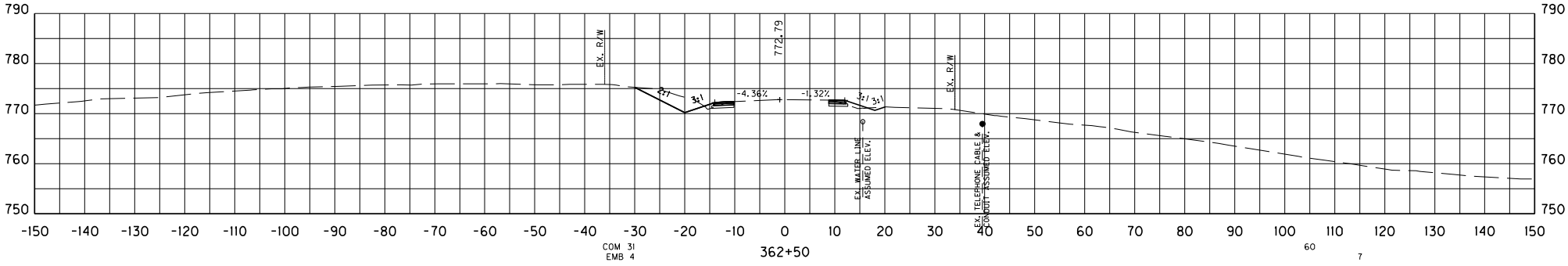
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

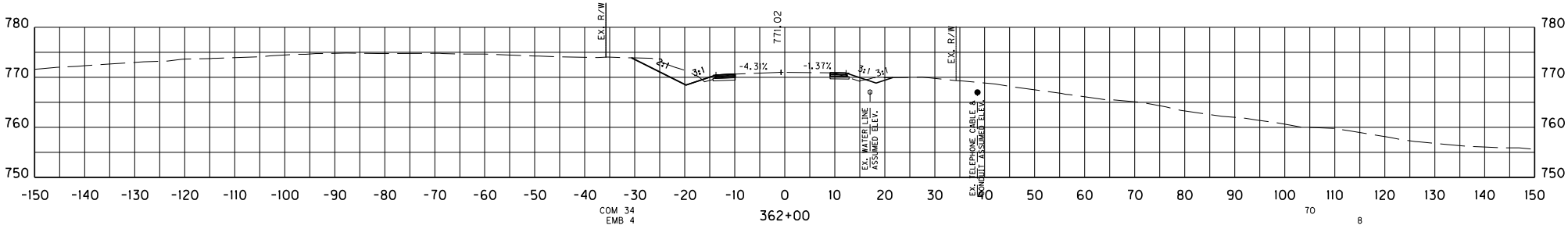
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X175

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.360+50 TO STA.361+50





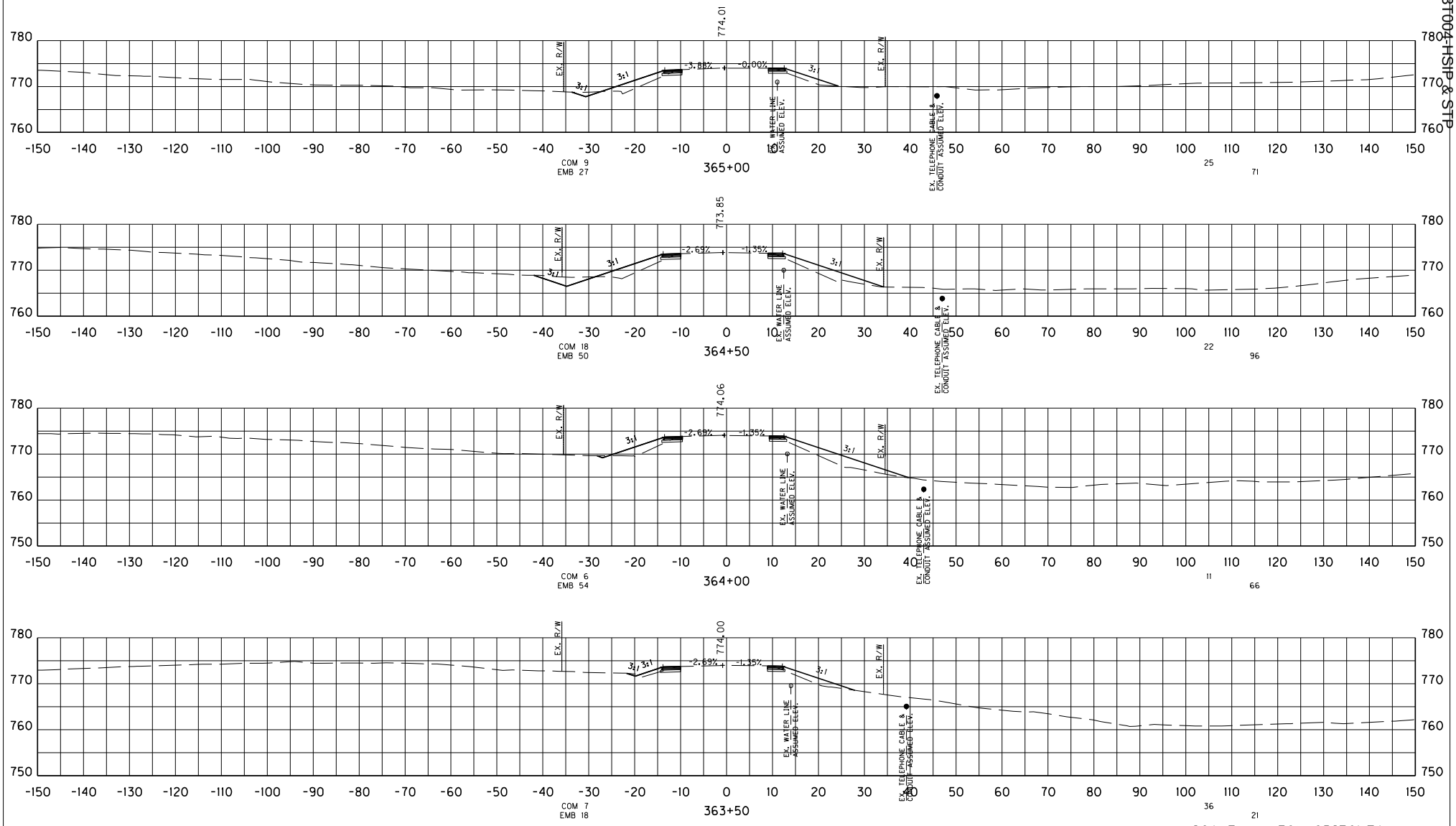


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X176

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.362+00 TO STA.363+00

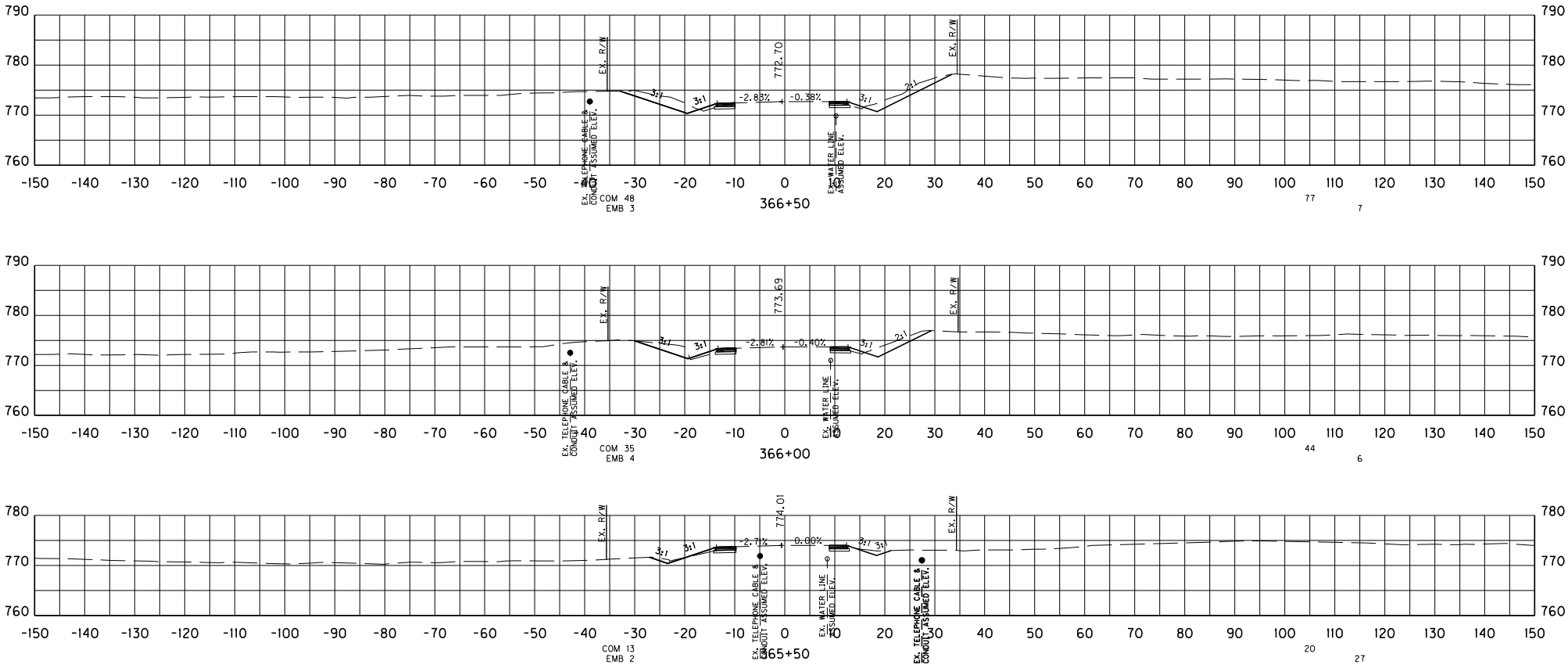


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X177

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.363+50 TO STA.365+00

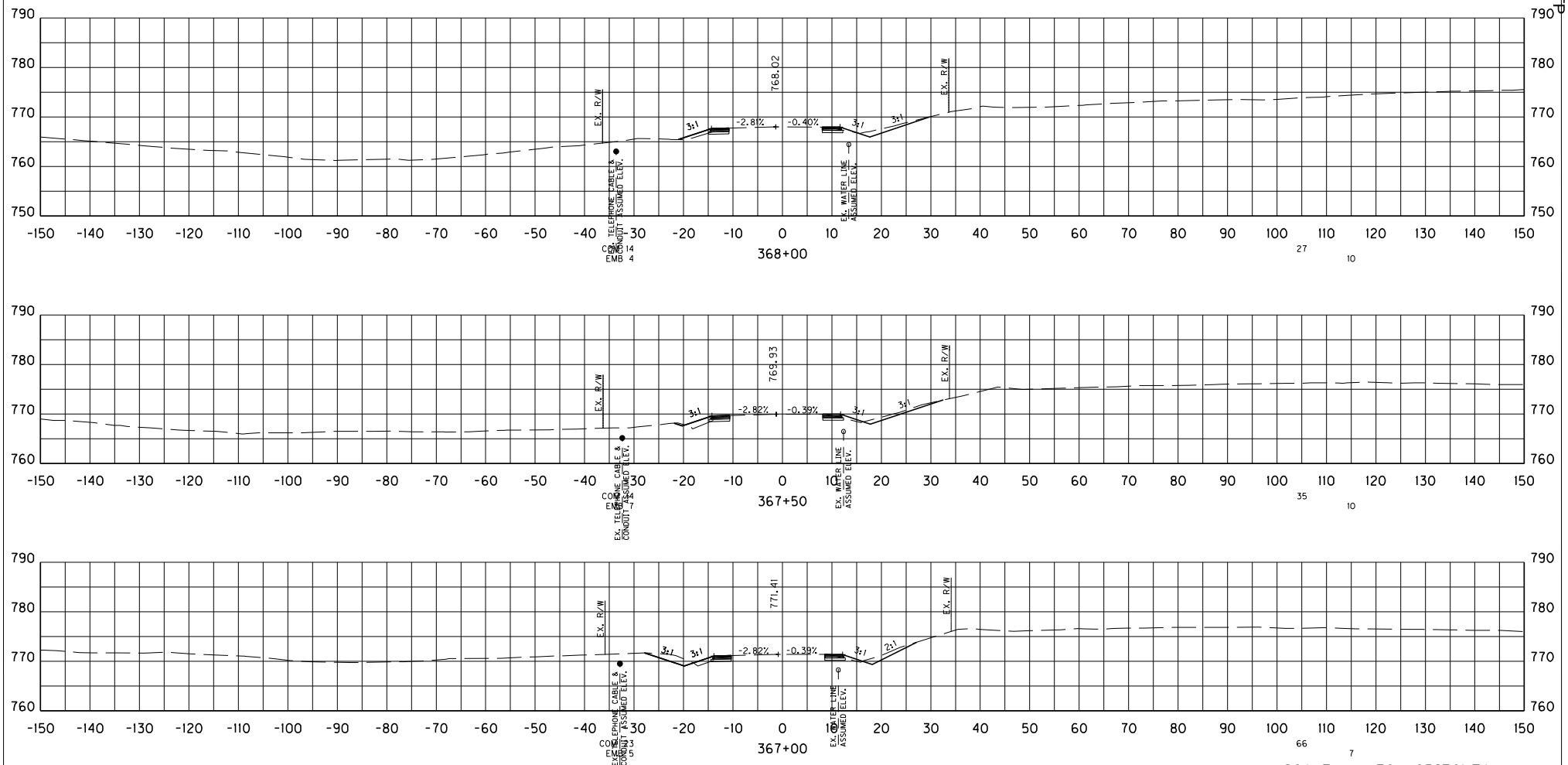


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X178

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.365+50 TO STA.366+50

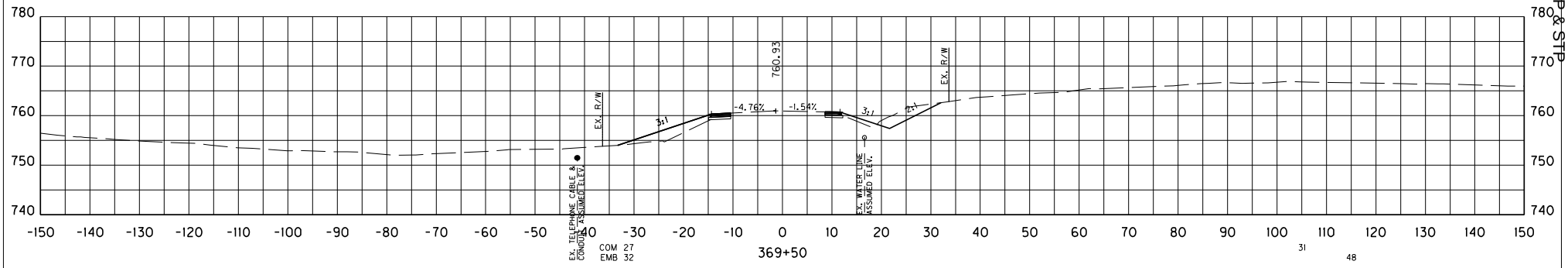


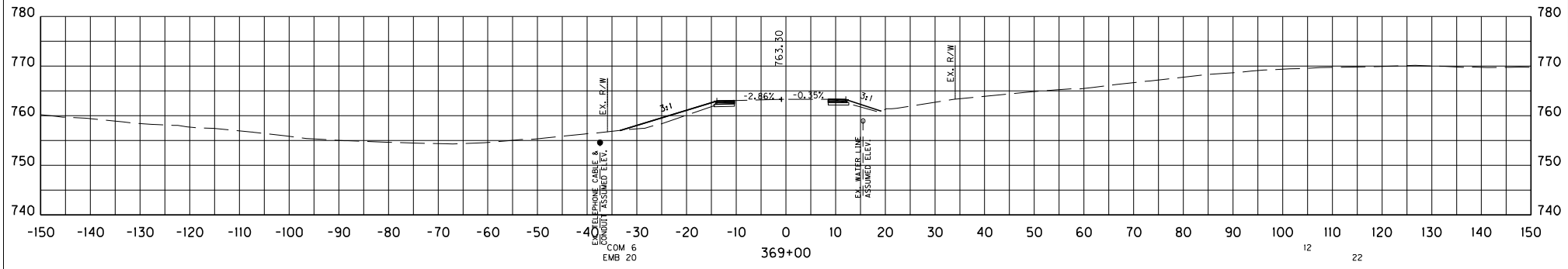
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

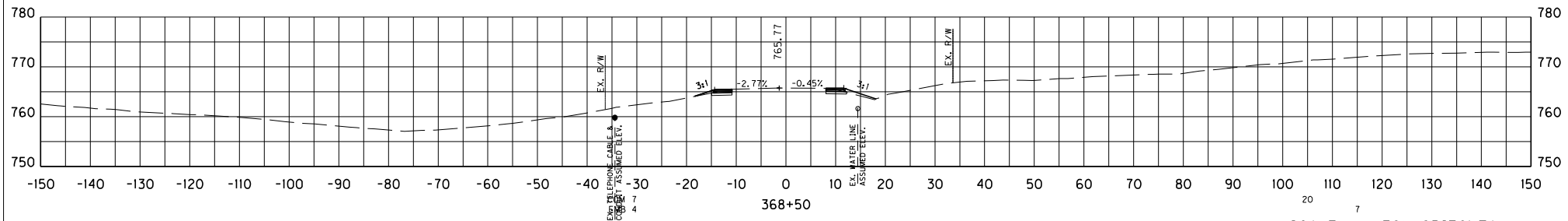
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X179

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.367+00 TO STA.368+00





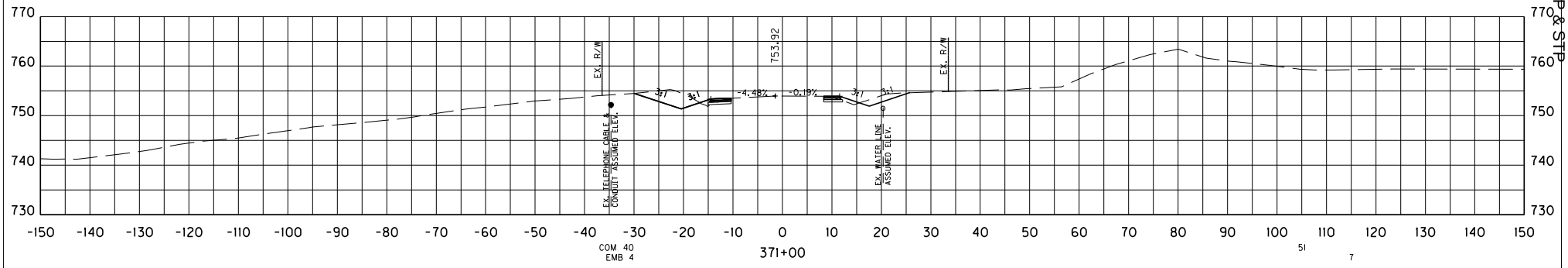


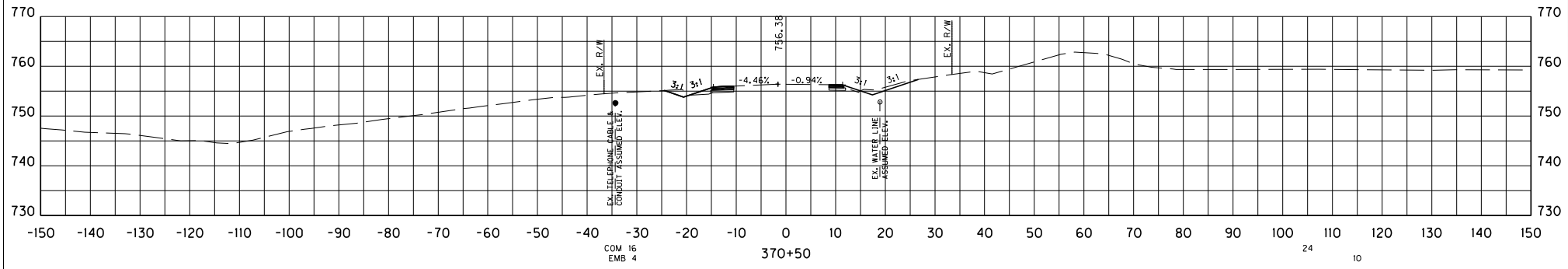
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

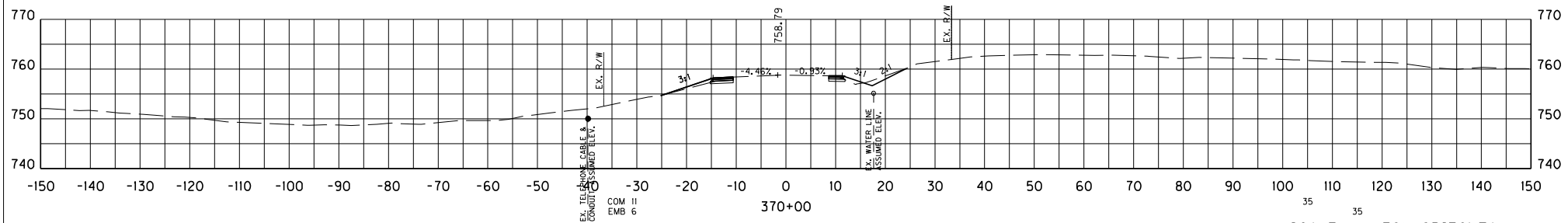
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X180

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.368+50 TO STA.369+50





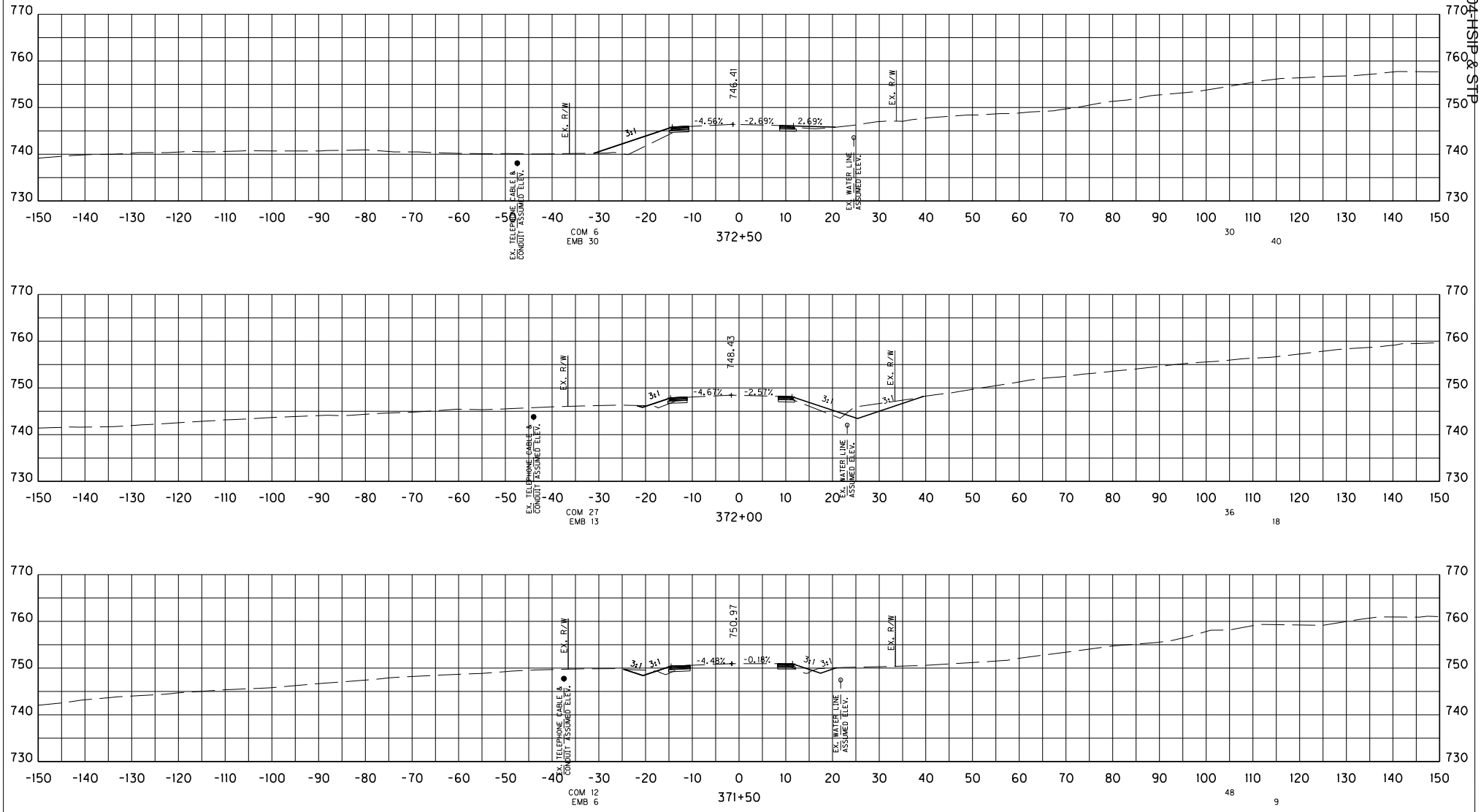


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X181

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.370+00 TO STA.371+00

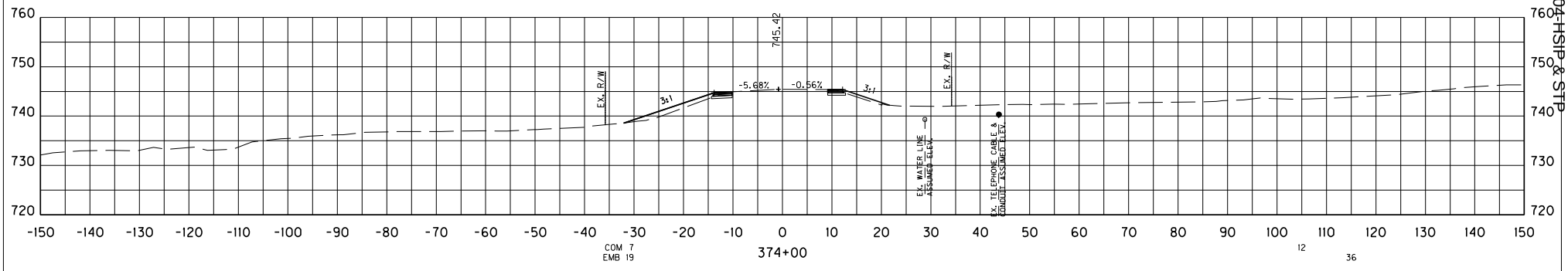


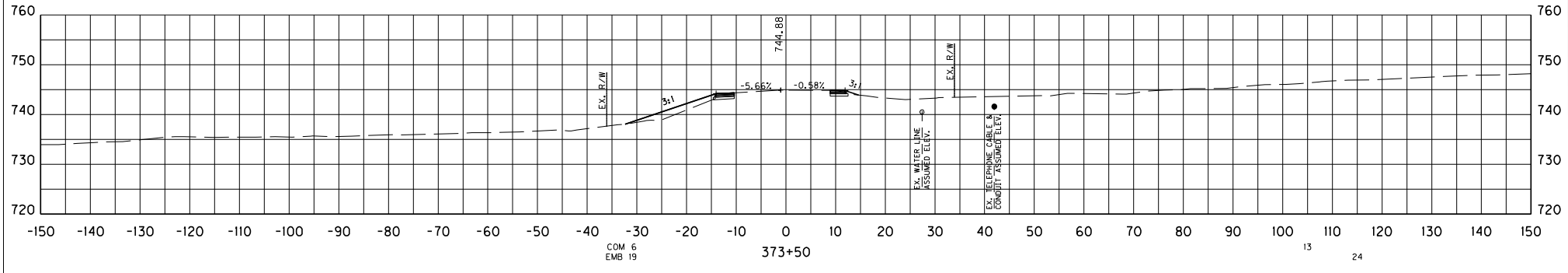
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

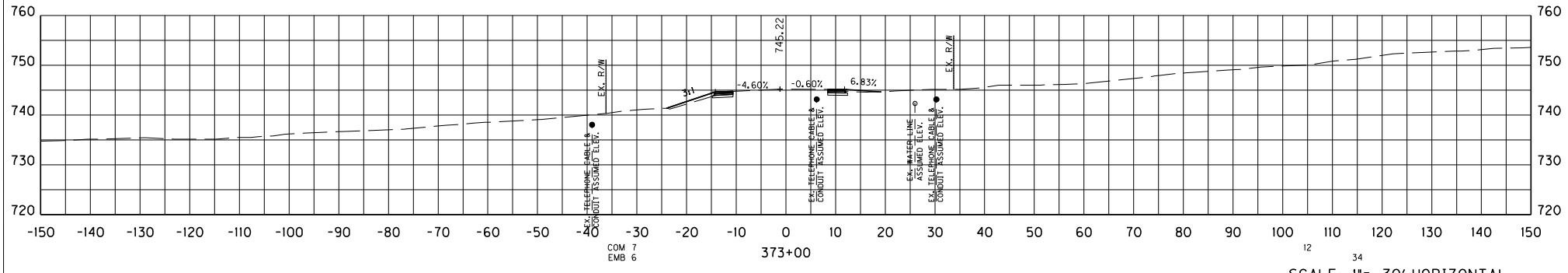
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X182

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.371+50 TO STA.372+50





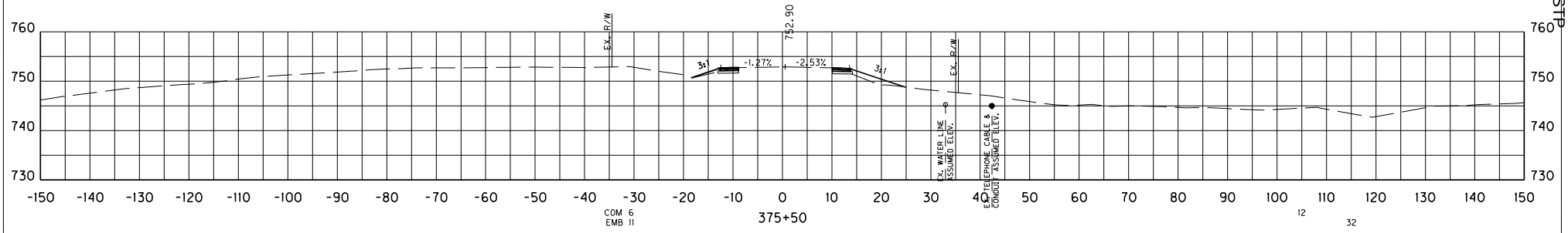


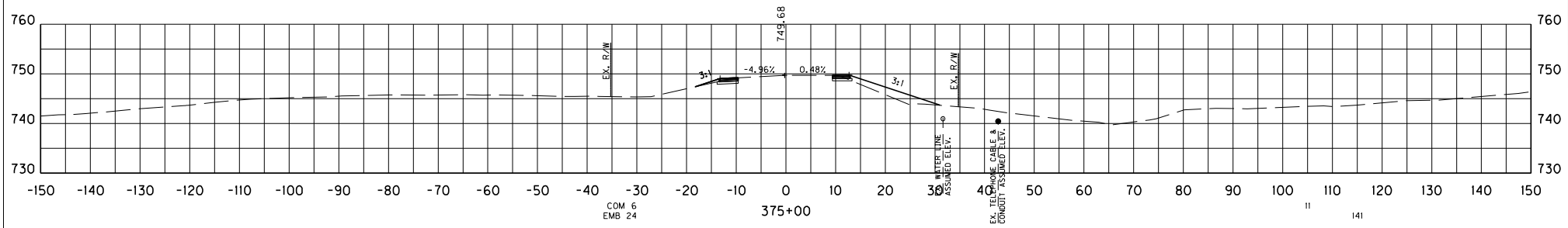
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

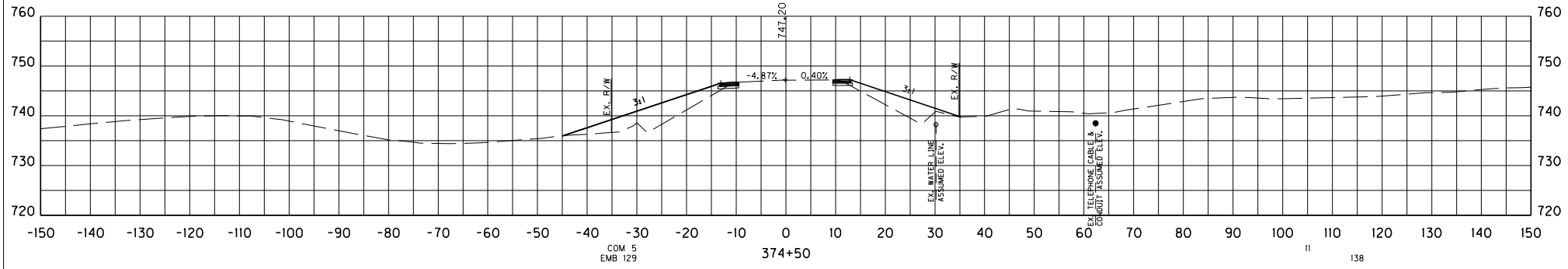
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X183

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.373+00 TO STA.374+00





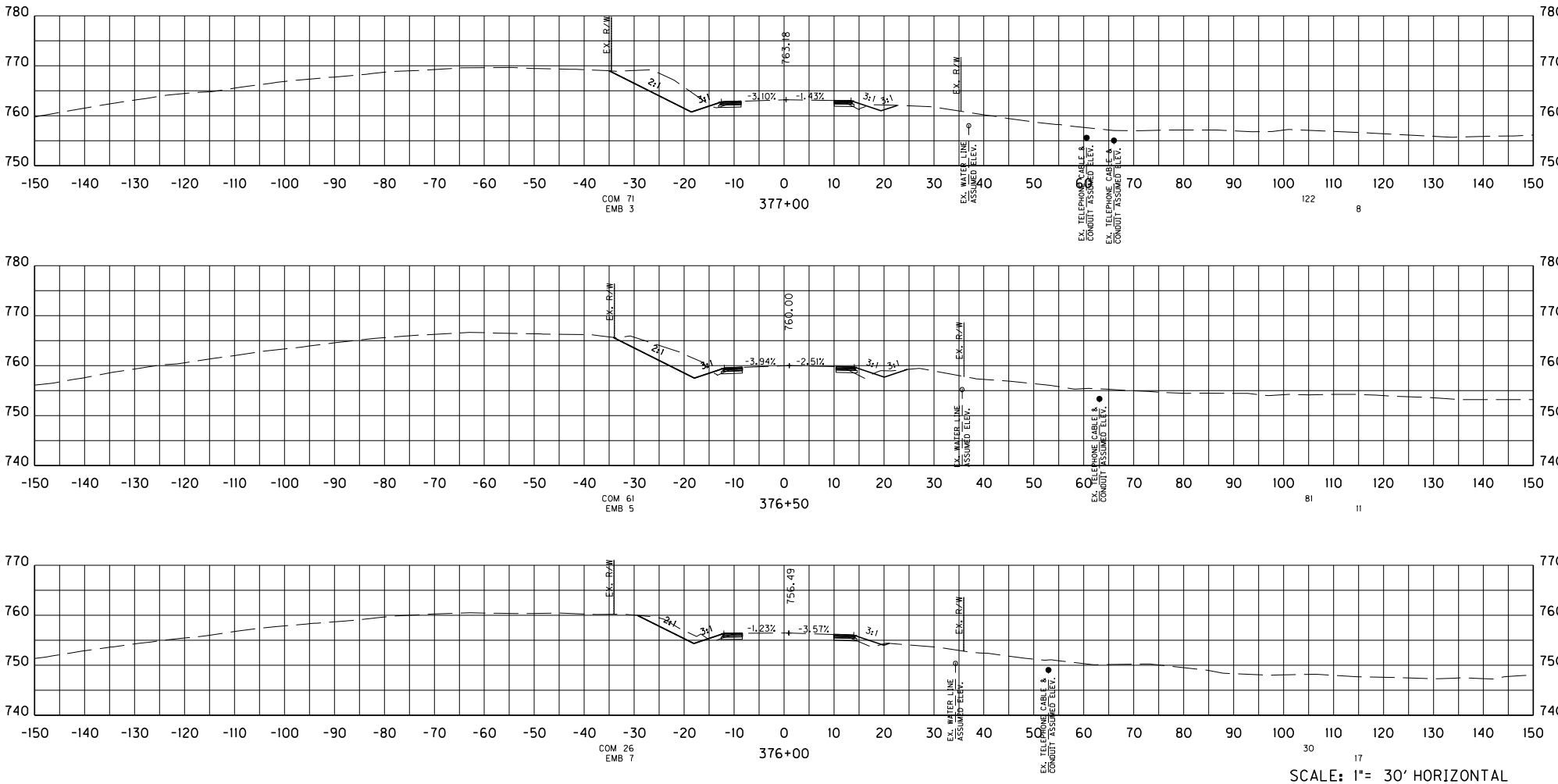


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X184

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.374+50 TO STA.375+50

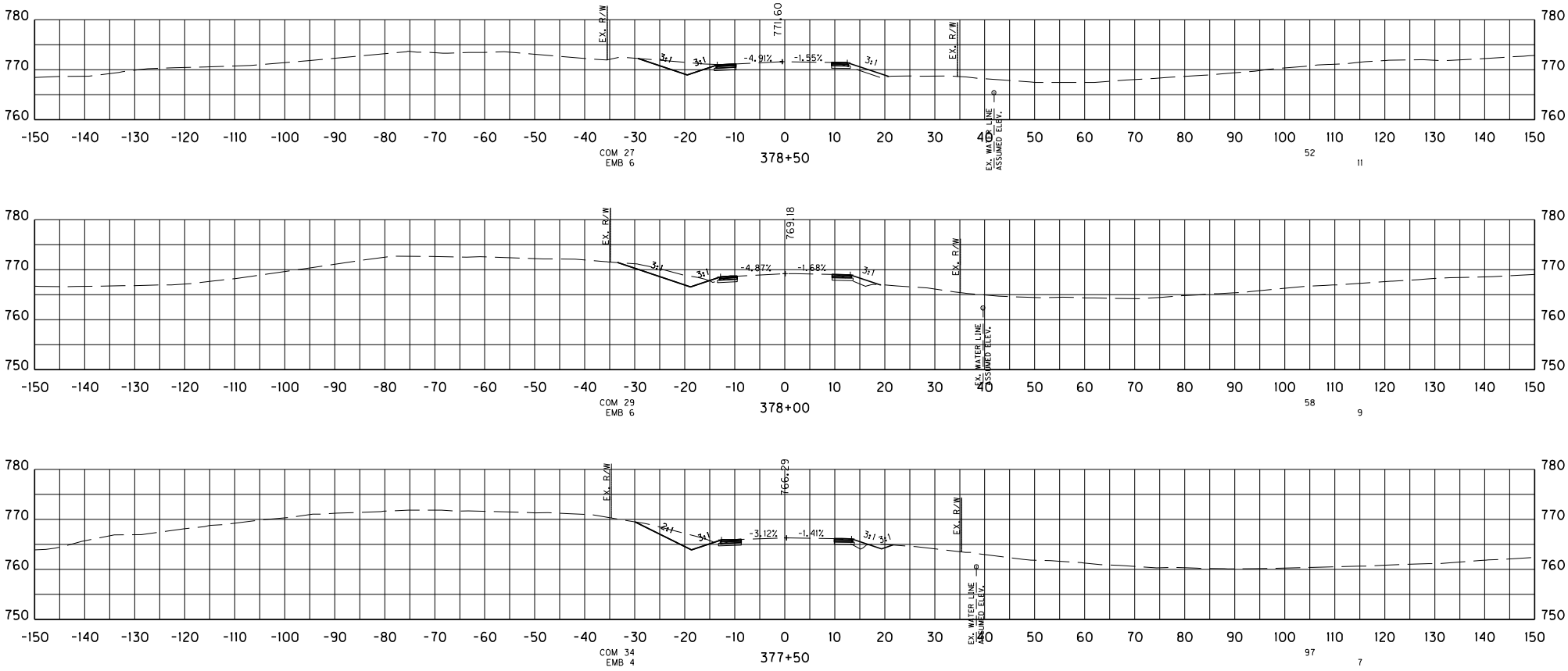


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X185

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.376+00 TO STA.377+00

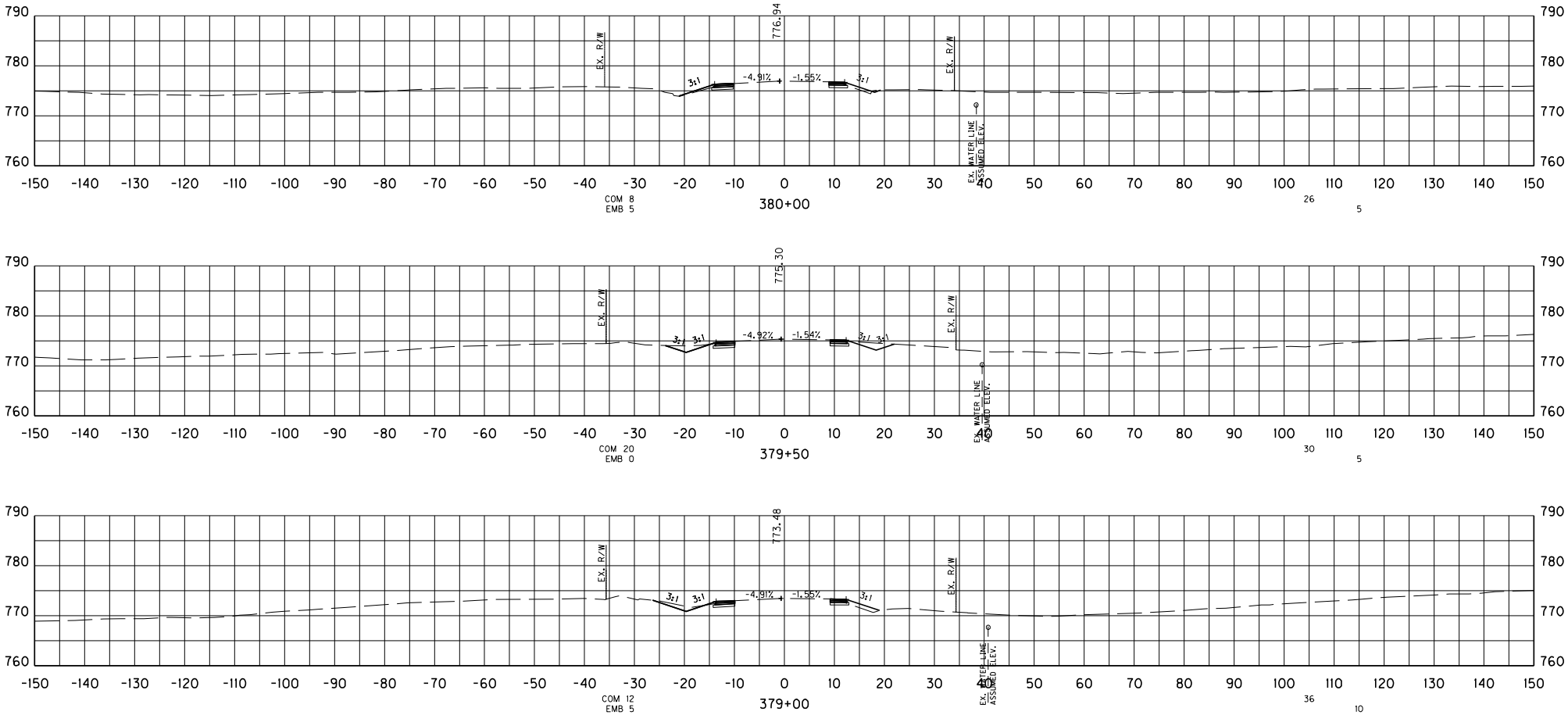


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X186

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.377+50 TO STA.378+50

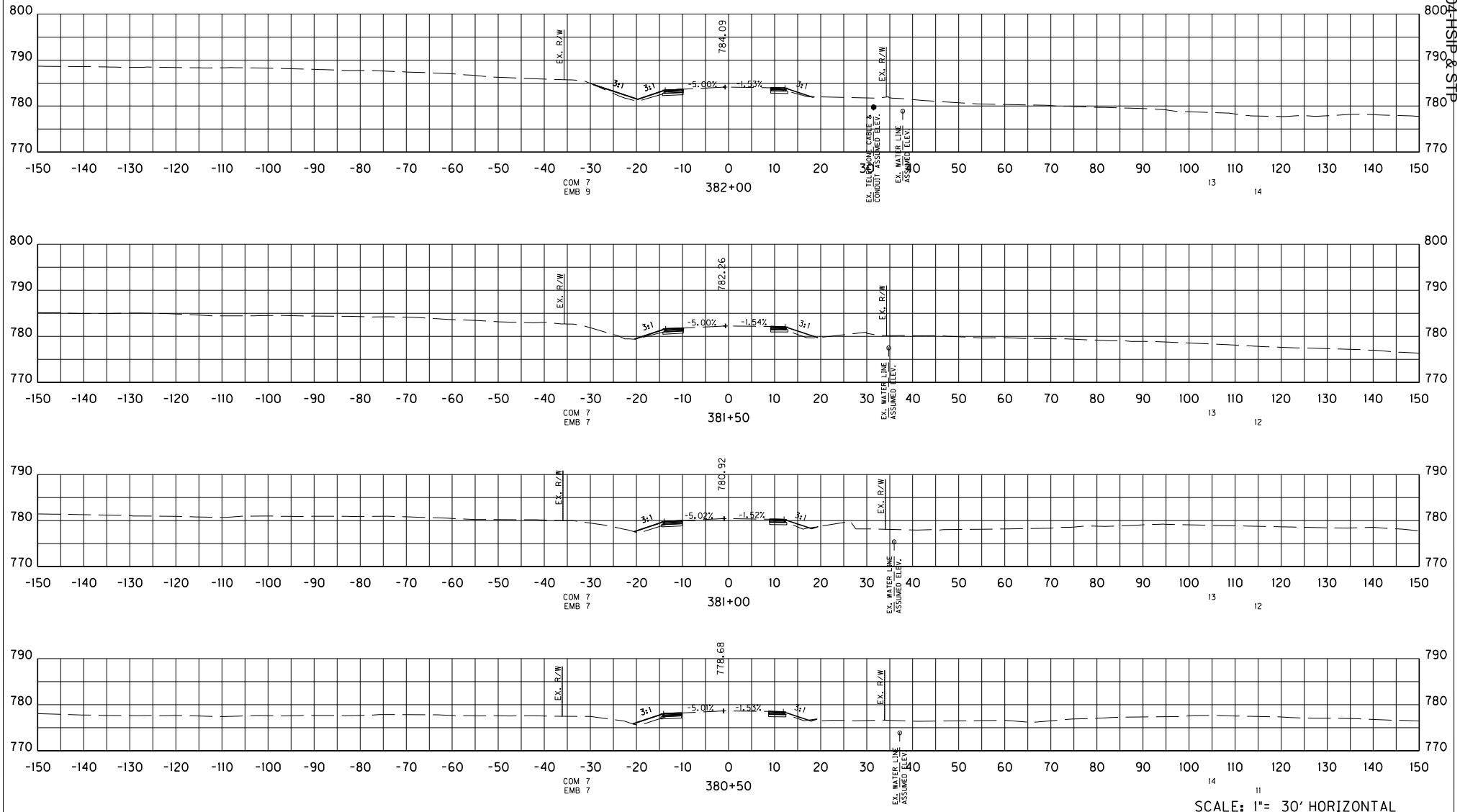


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X187

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.379+00 TO STA.380+00

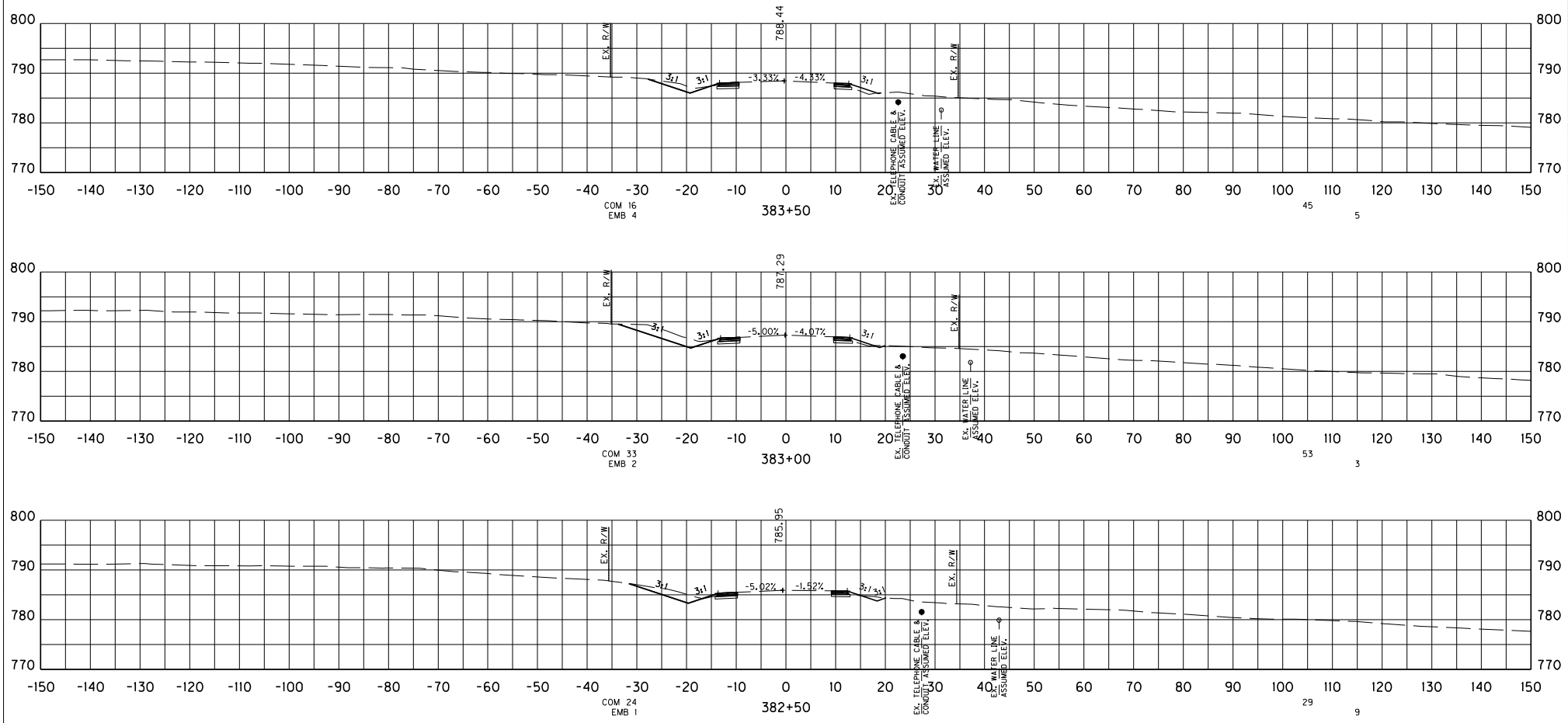


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X188

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.380+50 TO STA.382+00

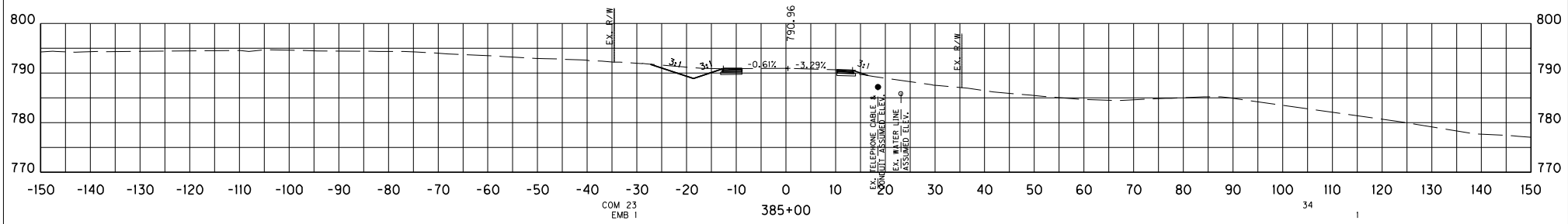


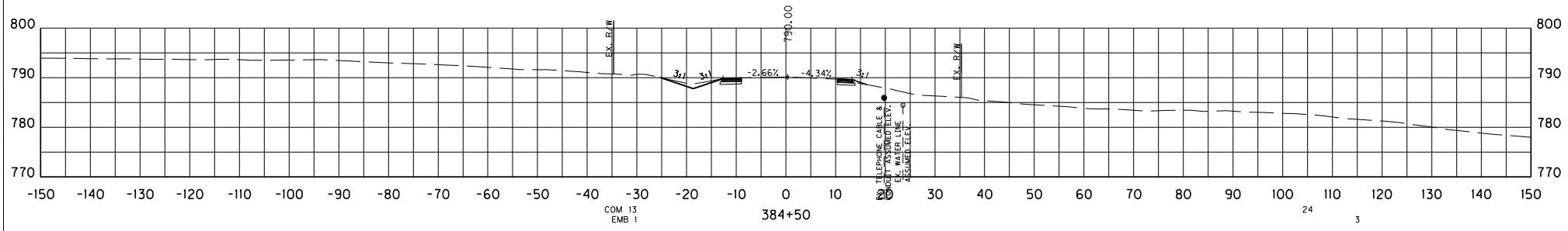
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

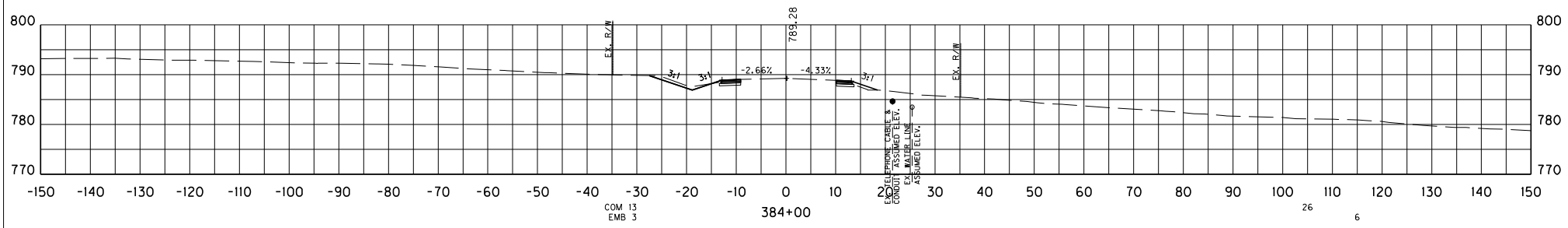
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X189

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.382+50 TO STA.383+50





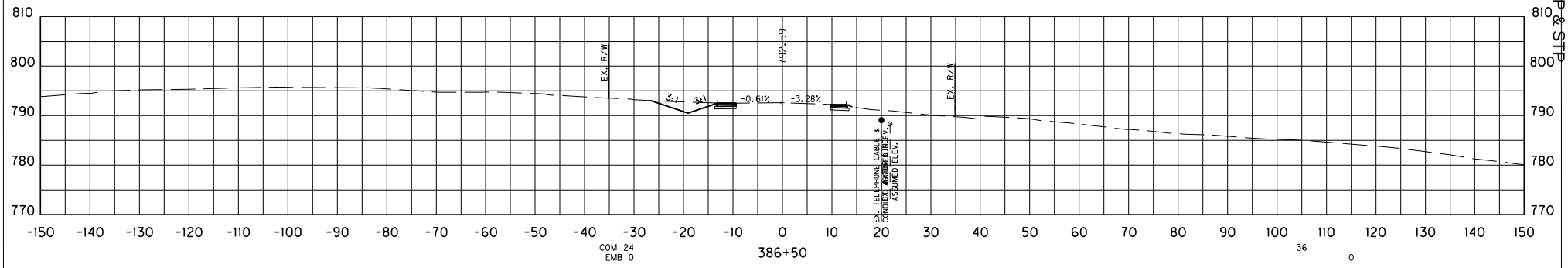


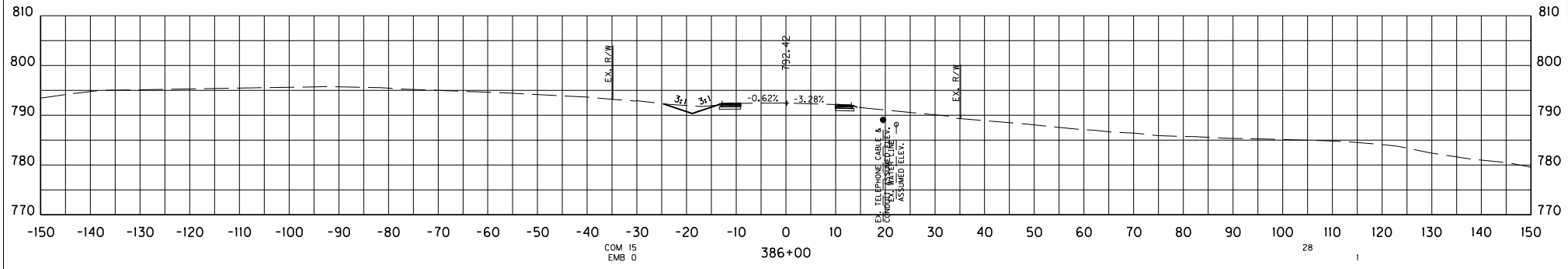
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

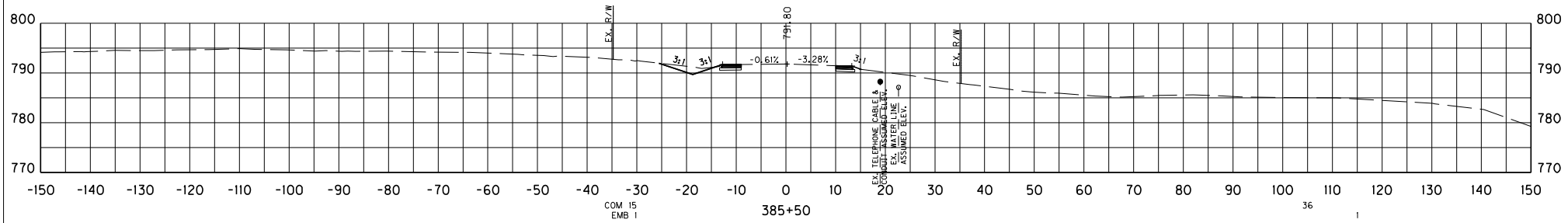
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X190

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.384+00 TO STA.385+00





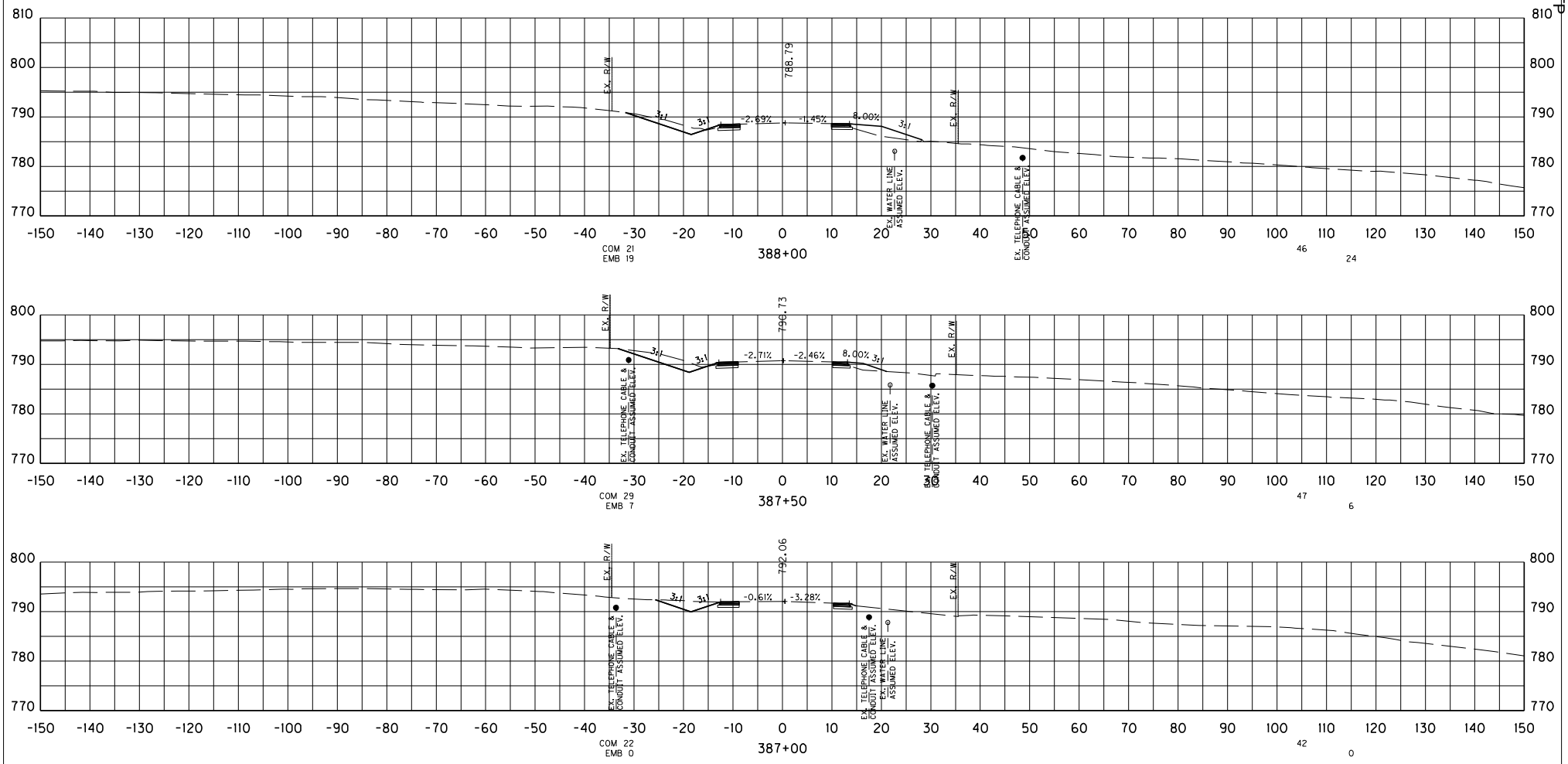


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X191

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.385+50 TO STA.386+50

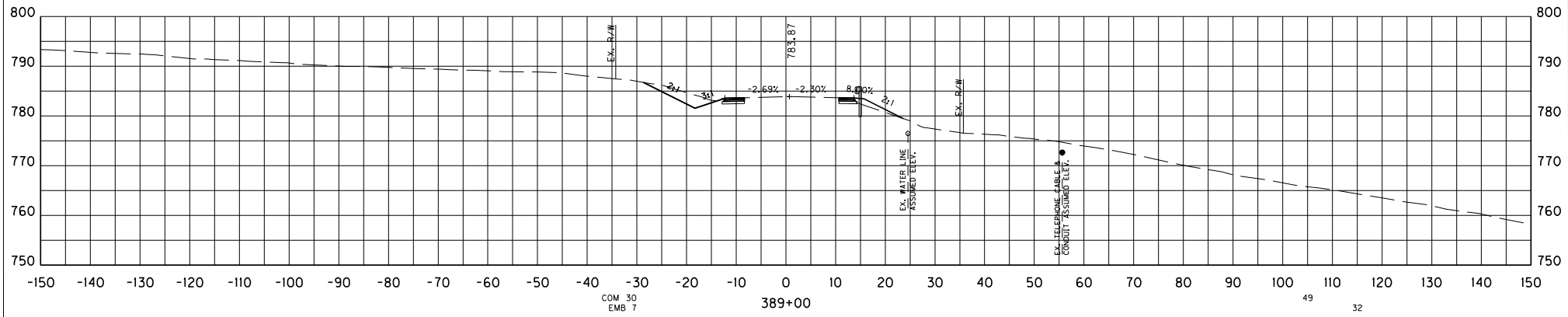


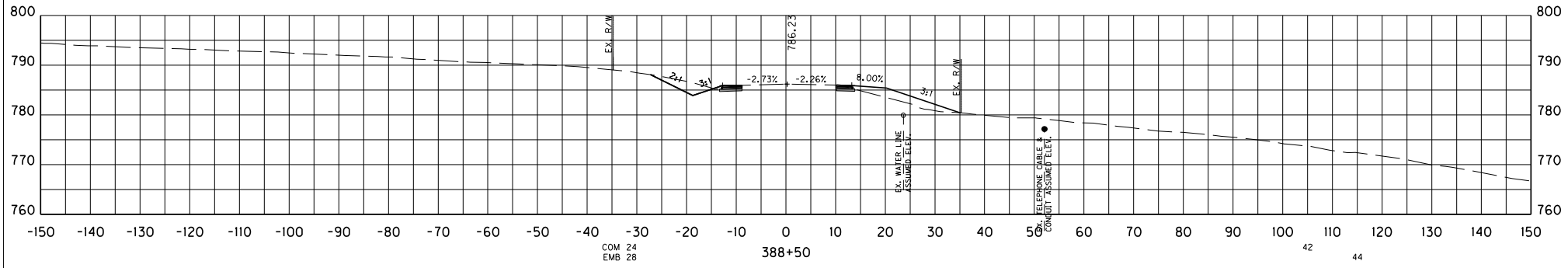
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X192

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.387+00 TO STA.388+00



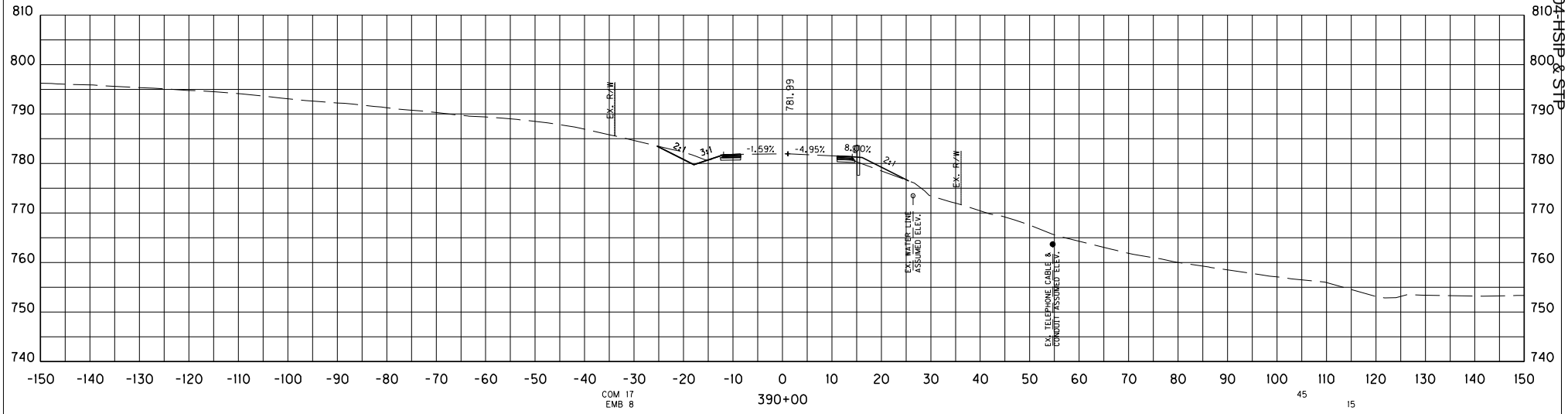


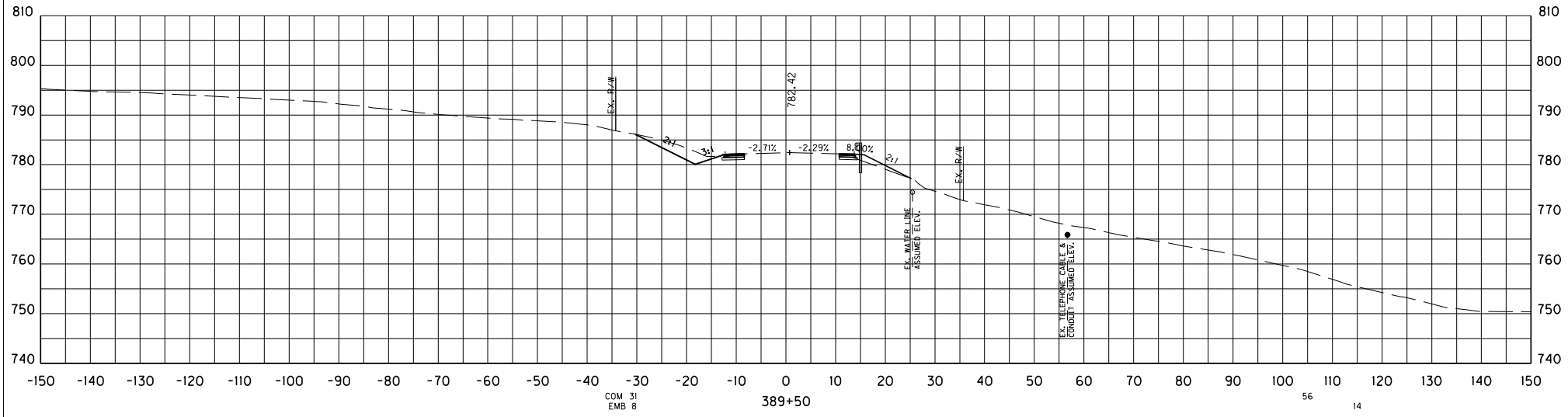
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X193

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.388+50 TO STA.389+00



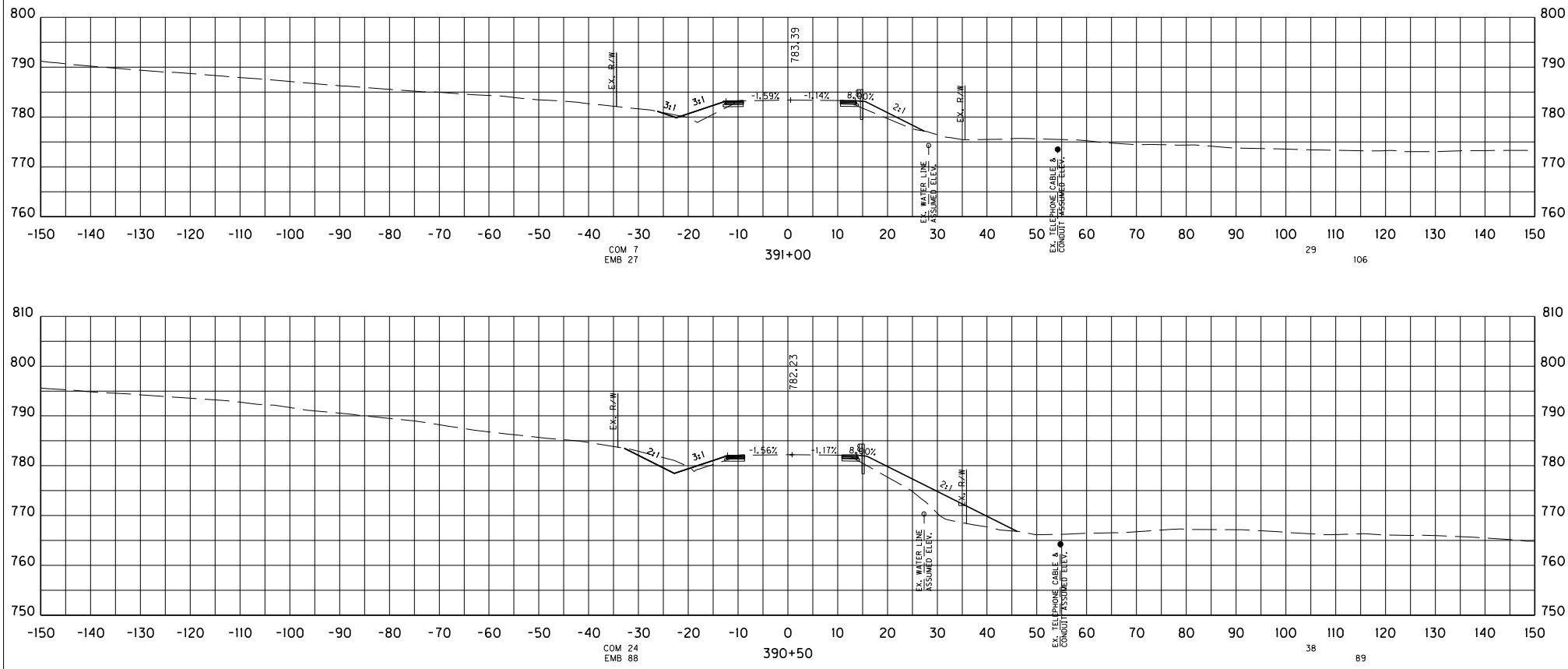


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X194

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.389+50 TO STA.390+00

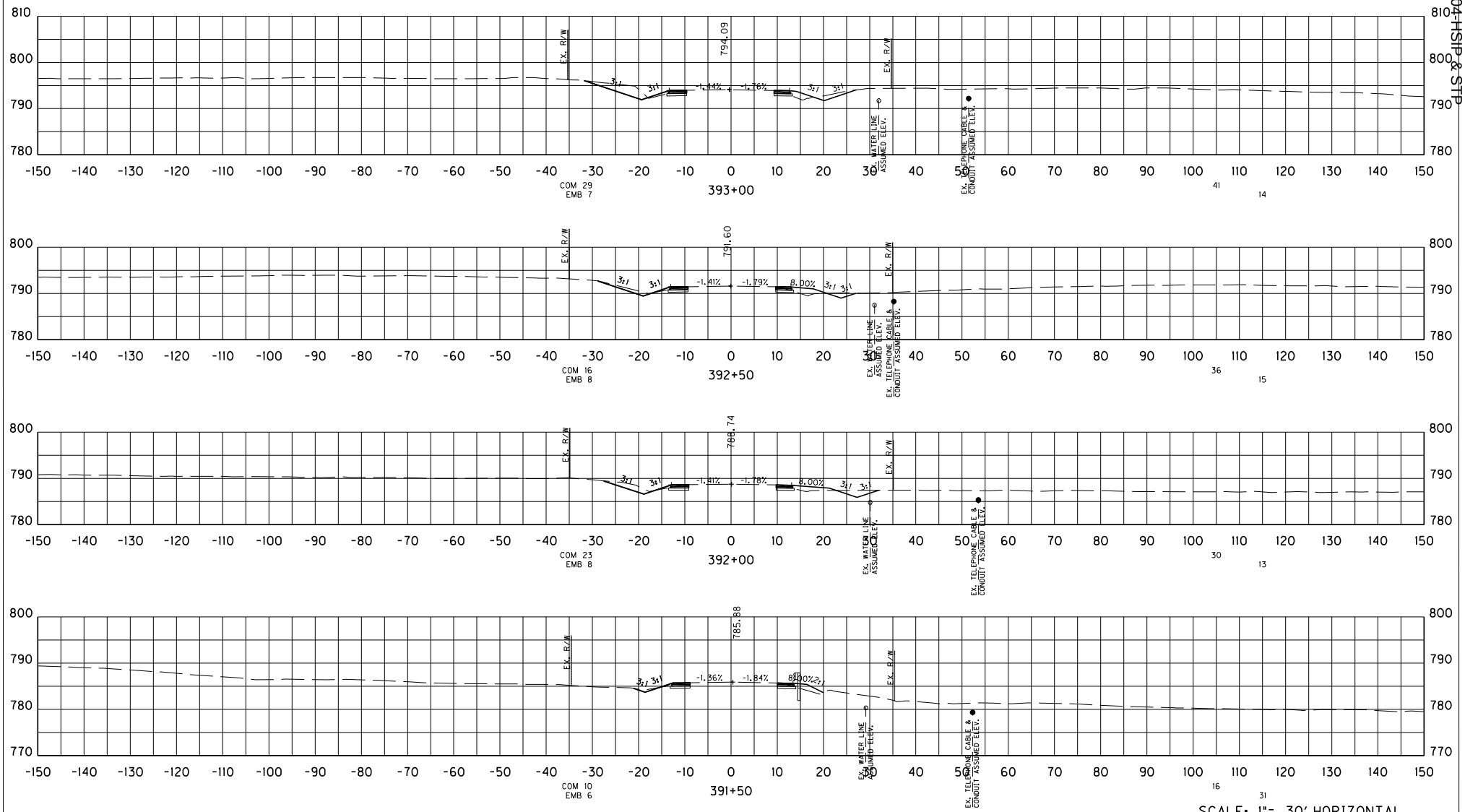


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X195

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.390+50 TO STA.391+00

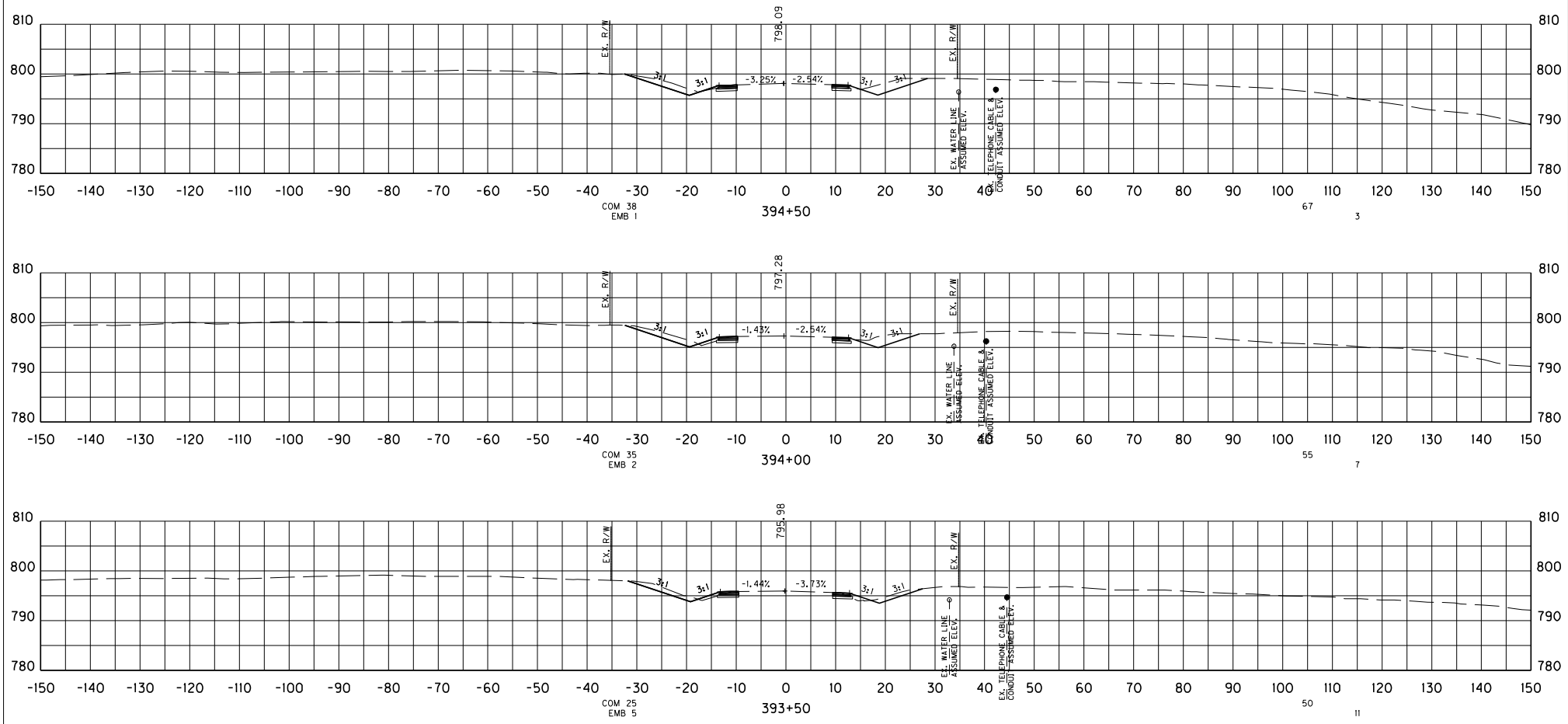


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X196

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.391+50 TO STA.393+00

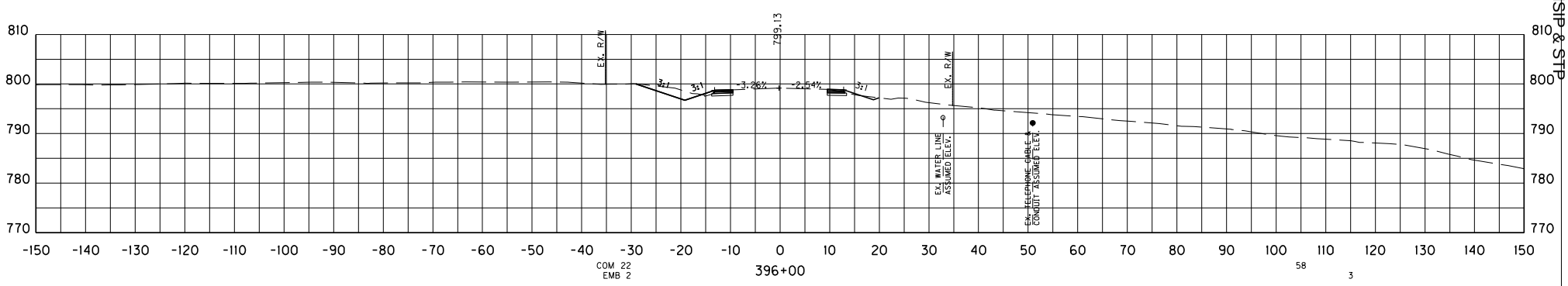


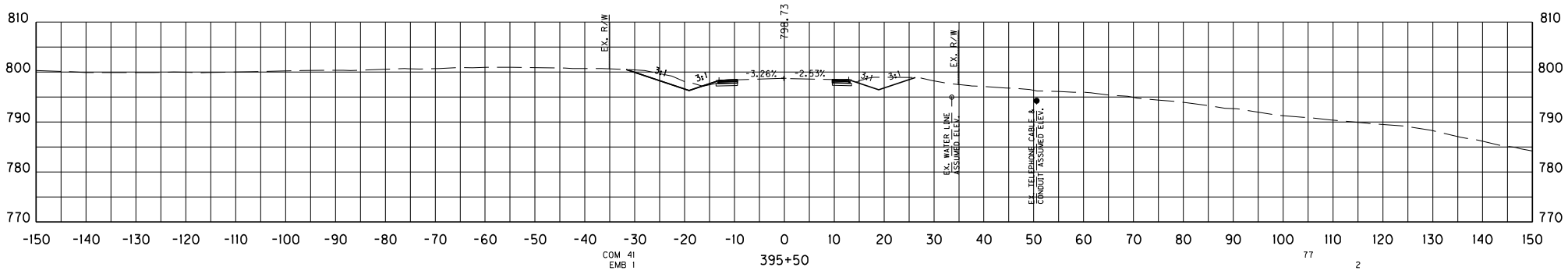
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

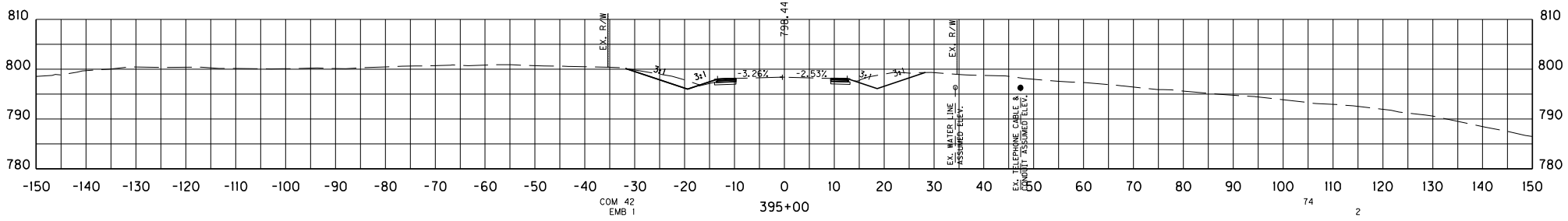
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X197

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.393+50 TO STA.394+50





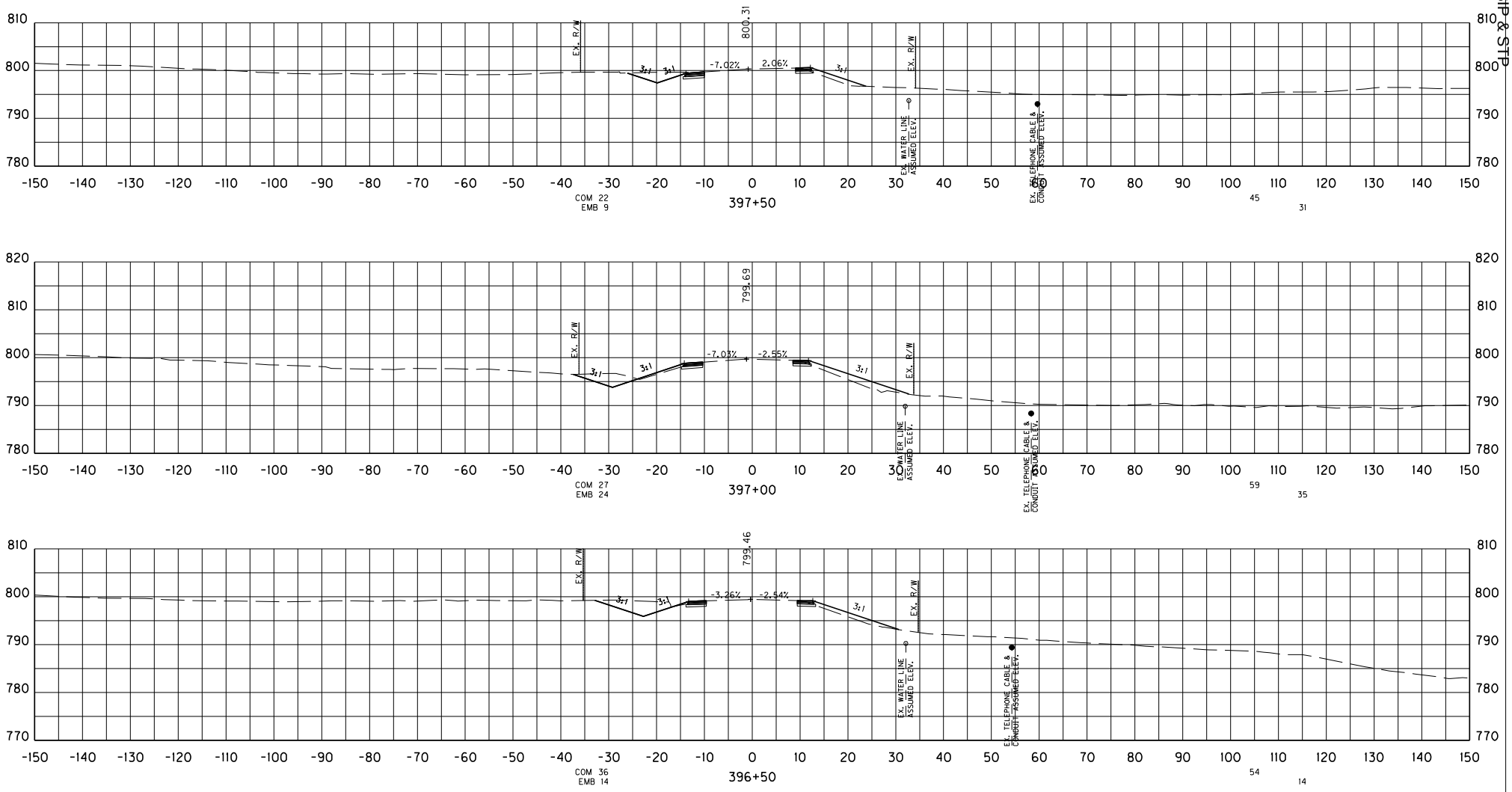


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X198

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.395+00 TO STA.396+00

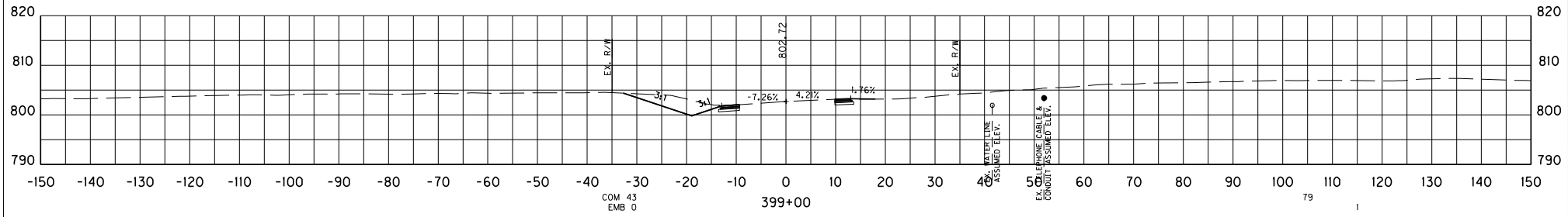


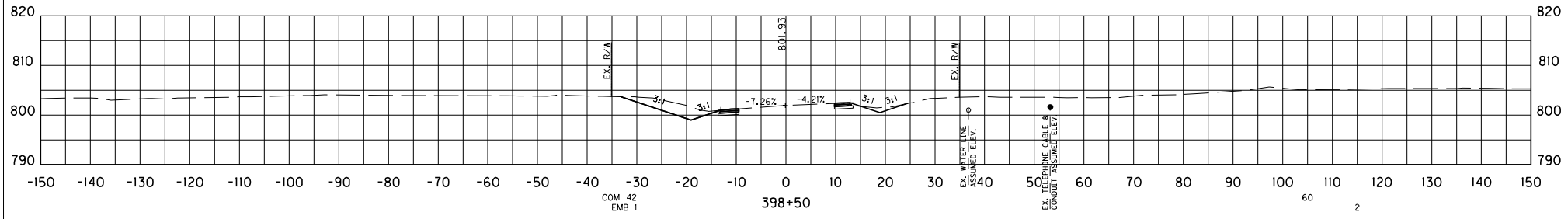
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

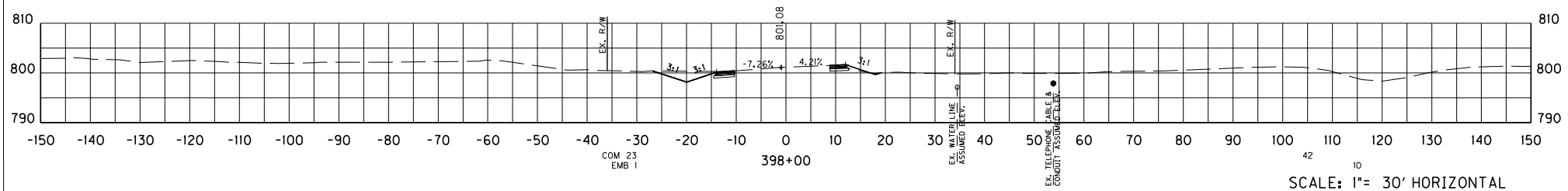
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X199

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.396+50 TO STA.397+50





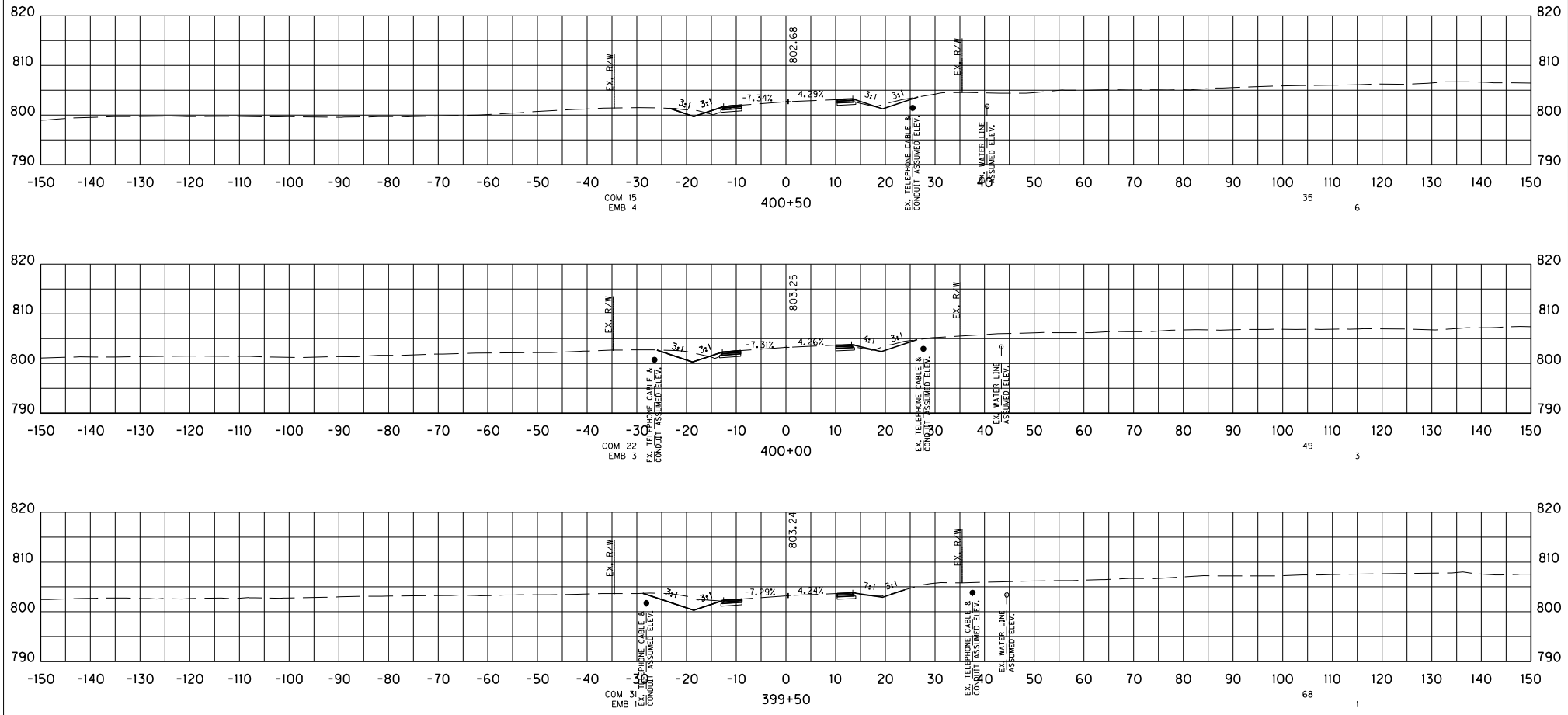


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X200

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.398+00 TO STA.399+00

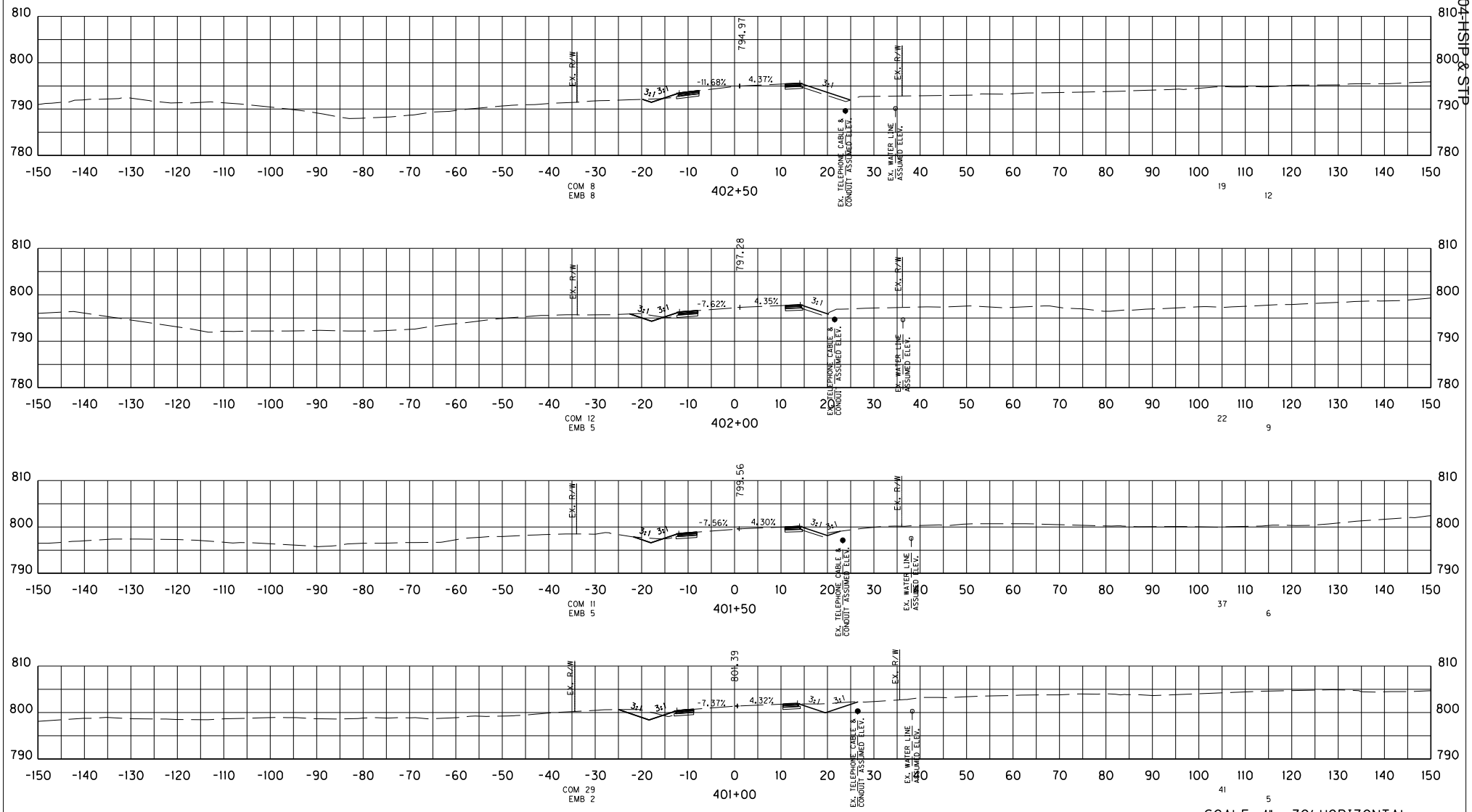


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X201

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.399+50 TO STA.400+50

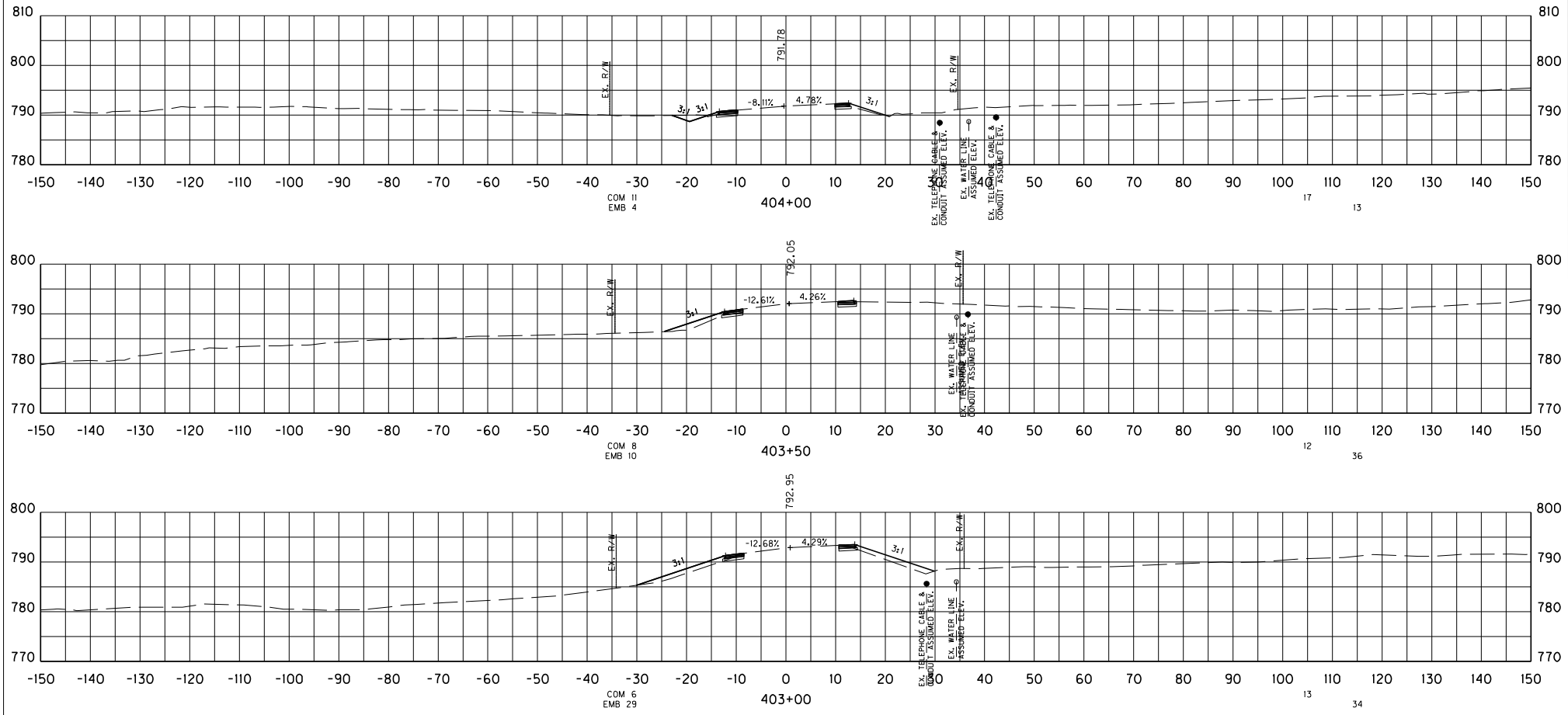


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X202

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.401+00 TO STA.402+50

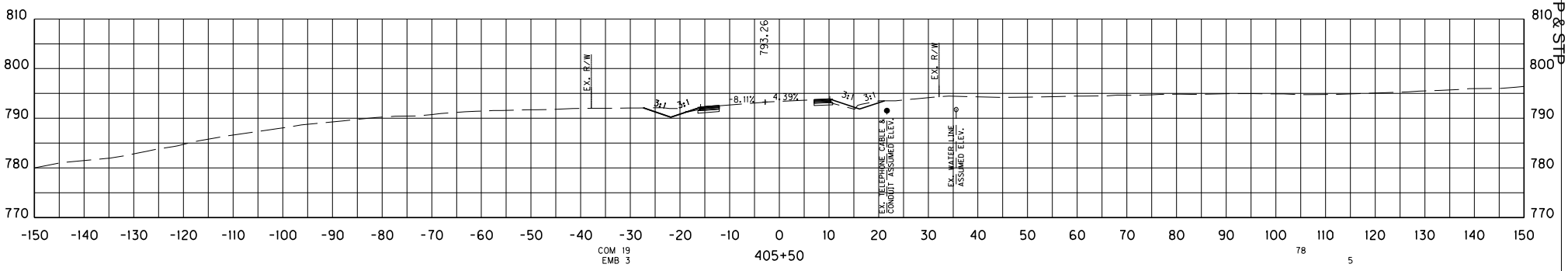


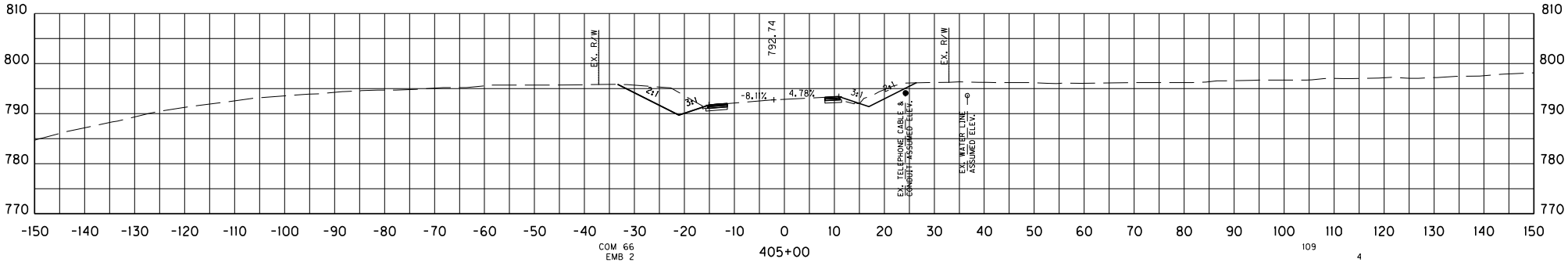
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

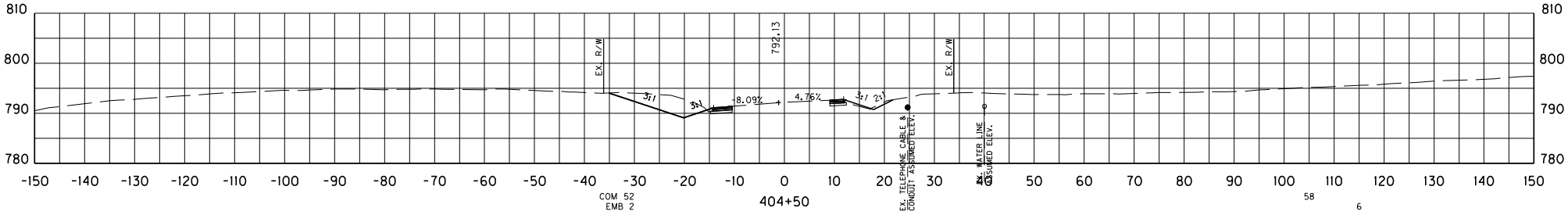
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X203

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.403+00 TO STA.404+00





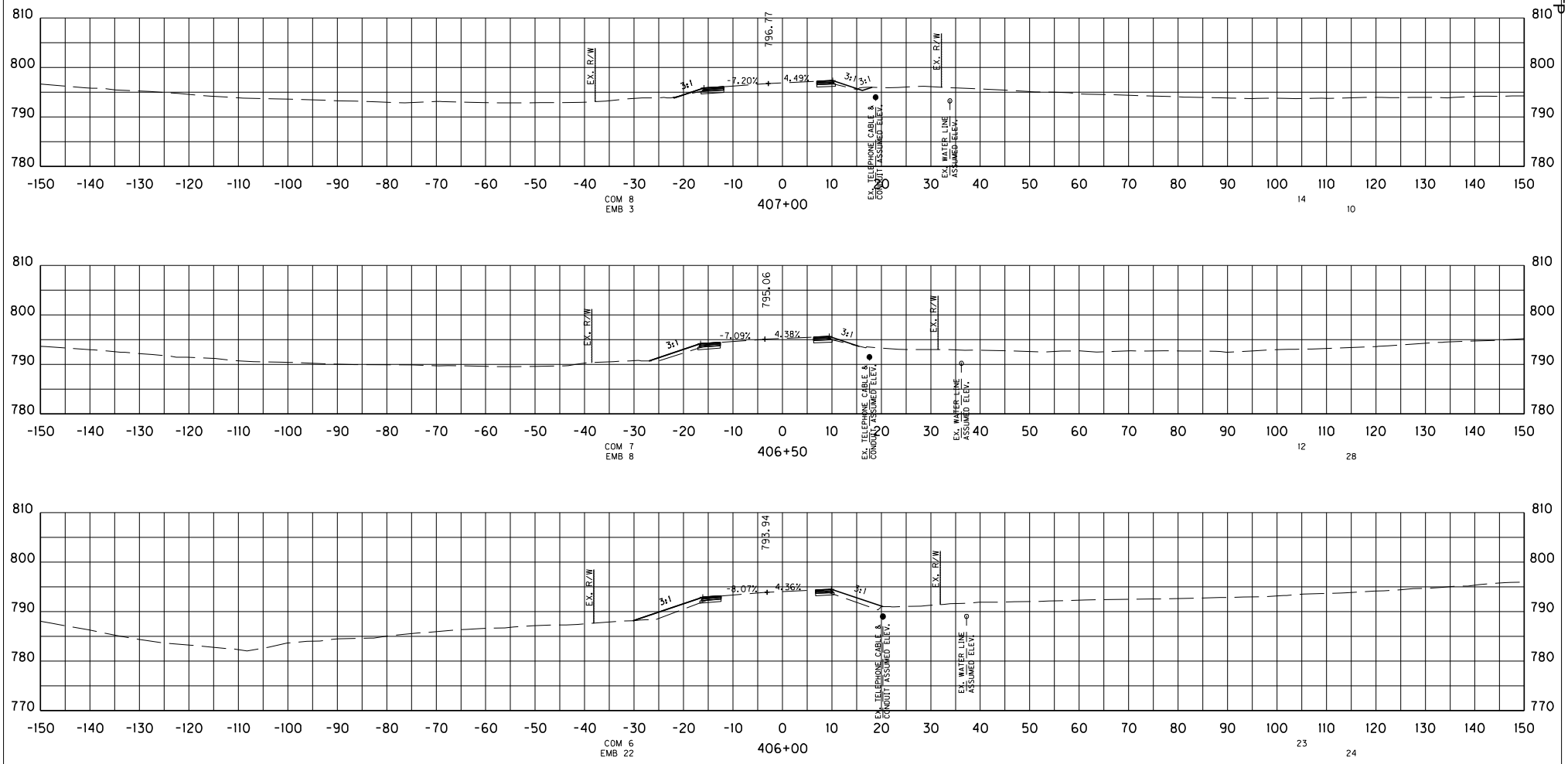


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X204

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.404+50 TO STA.405+50

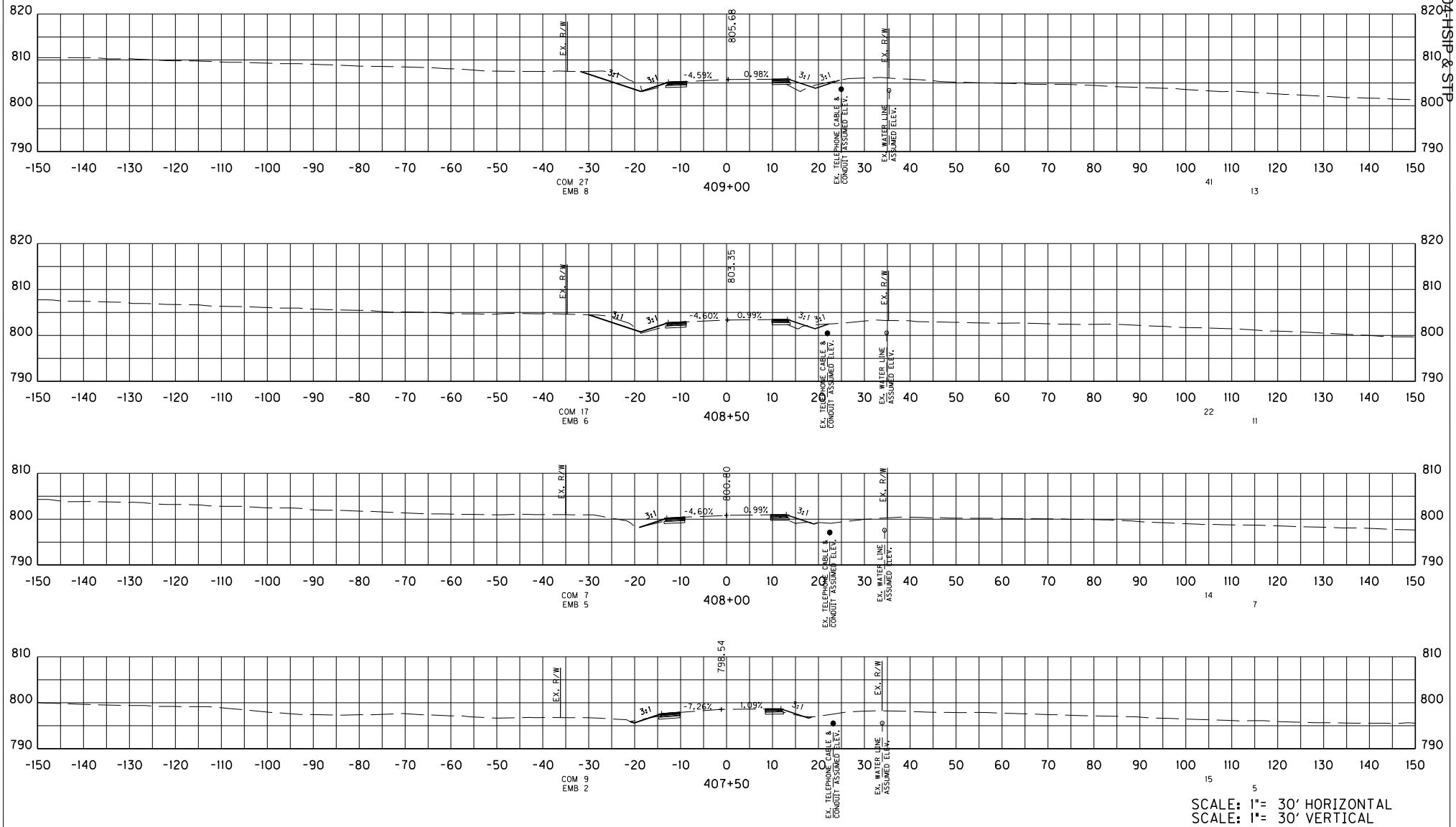


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X205

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.406+00 TO STA.407+00

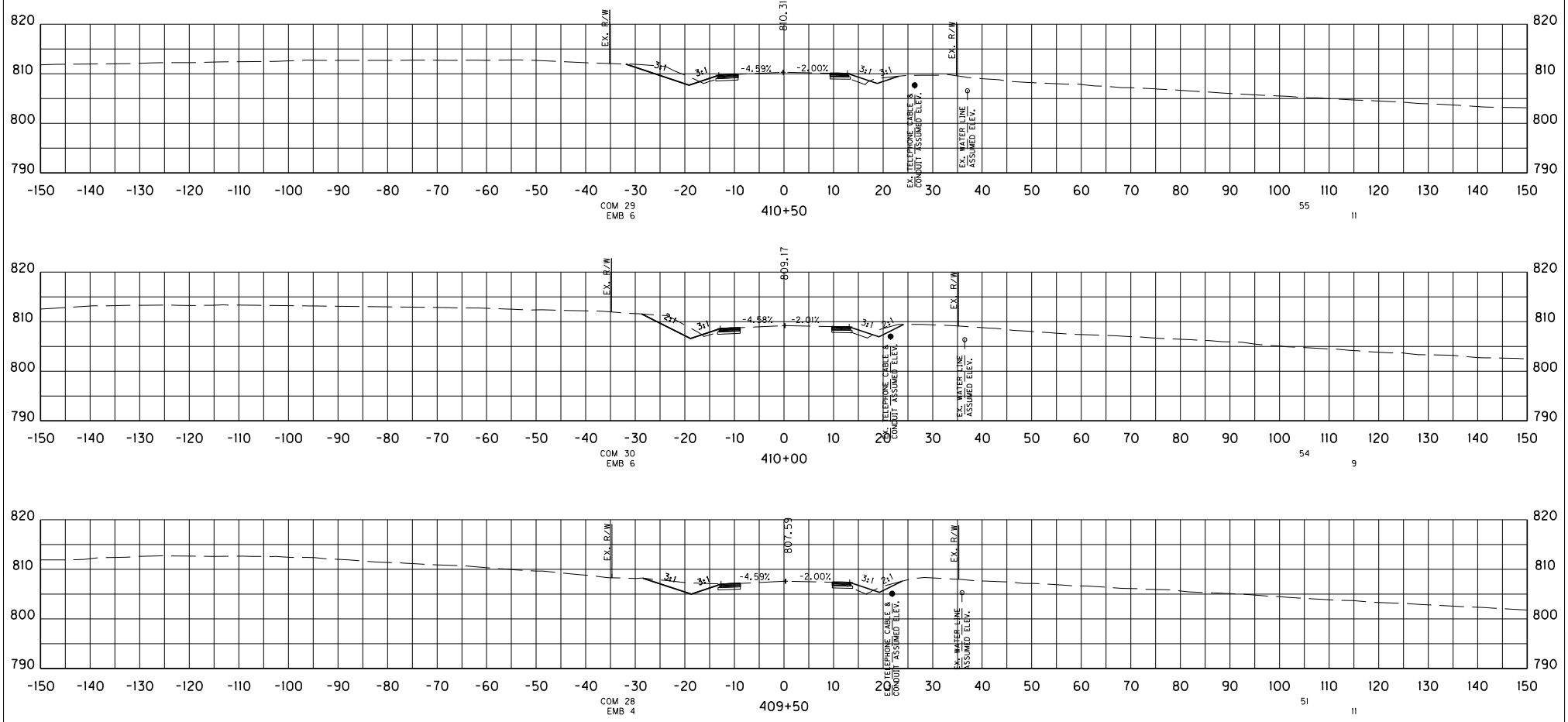


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X206

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.407+50 TO STA.409+00

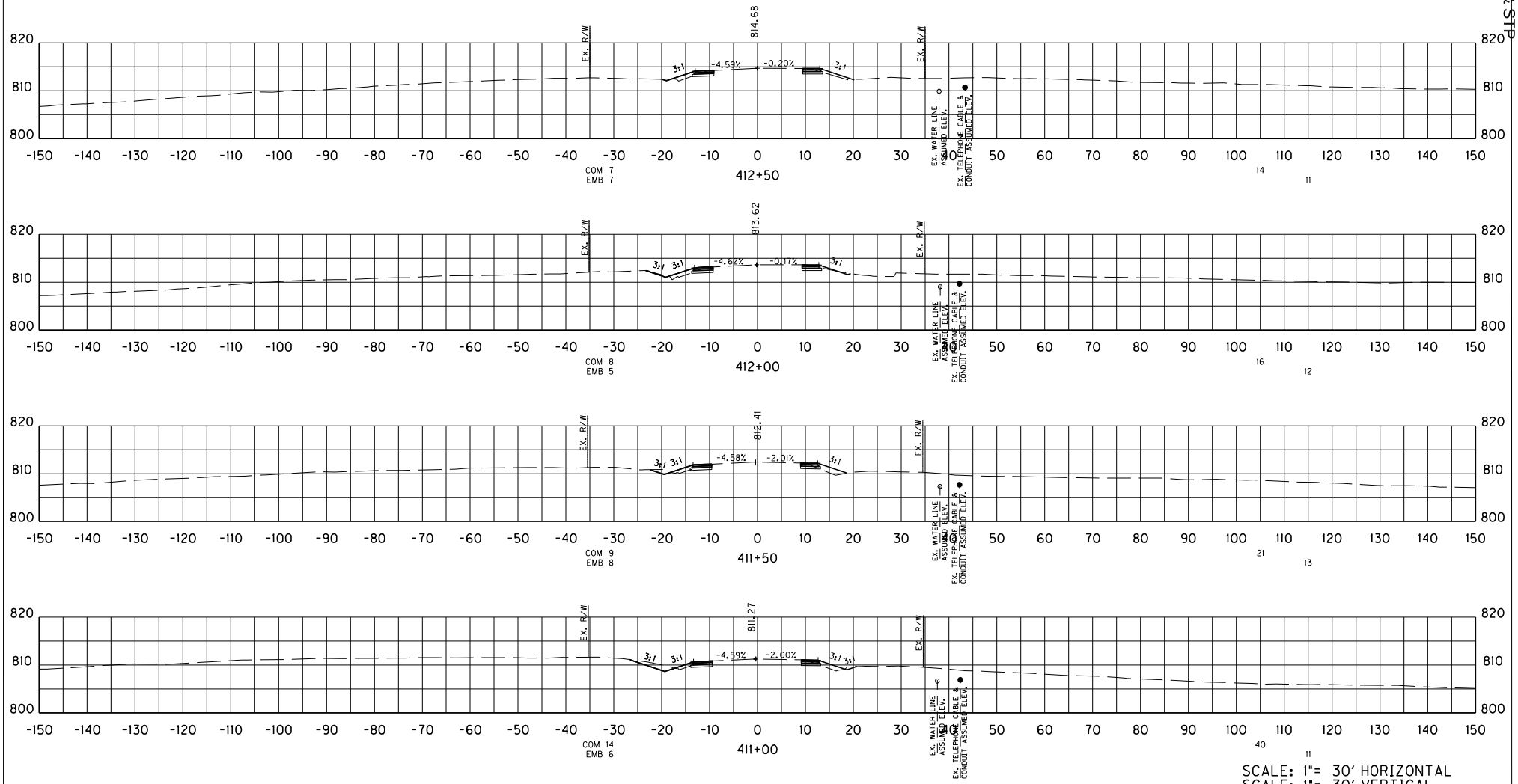


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X207

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.409+50 TO STA.410+50

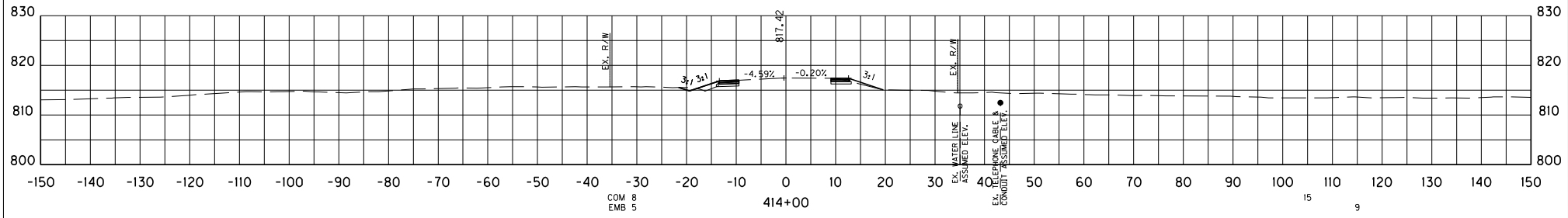


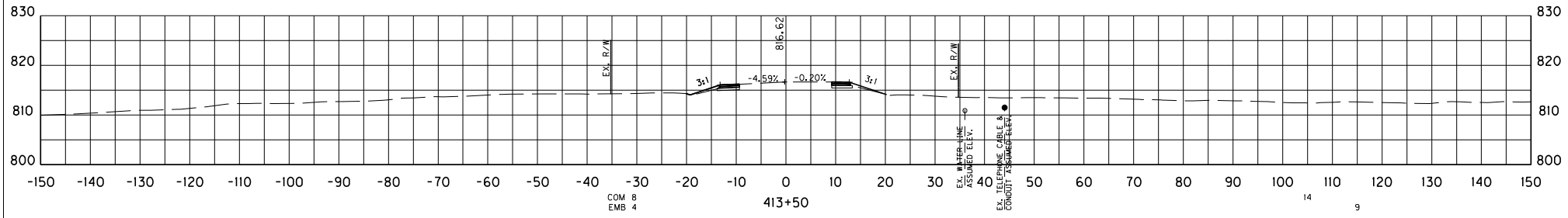
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

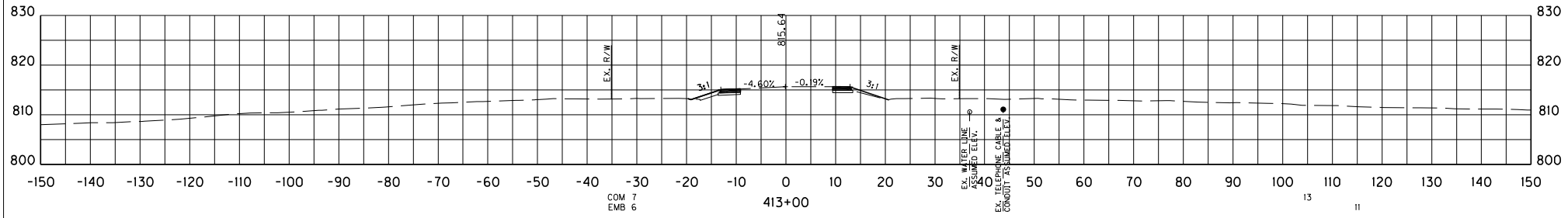
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X208

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.411+00 TO STA.412+50





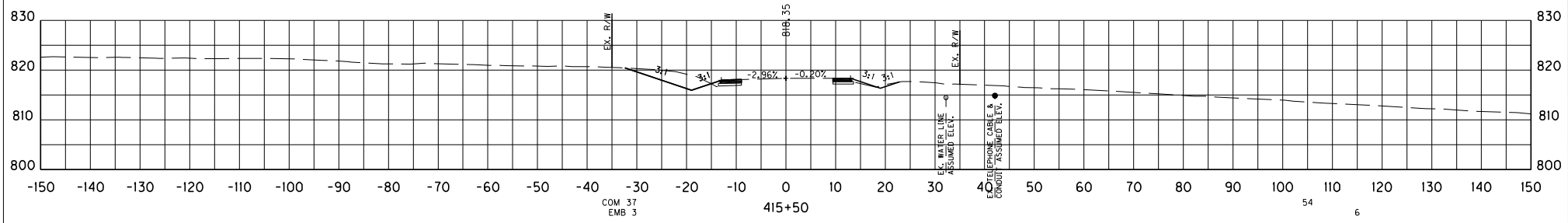


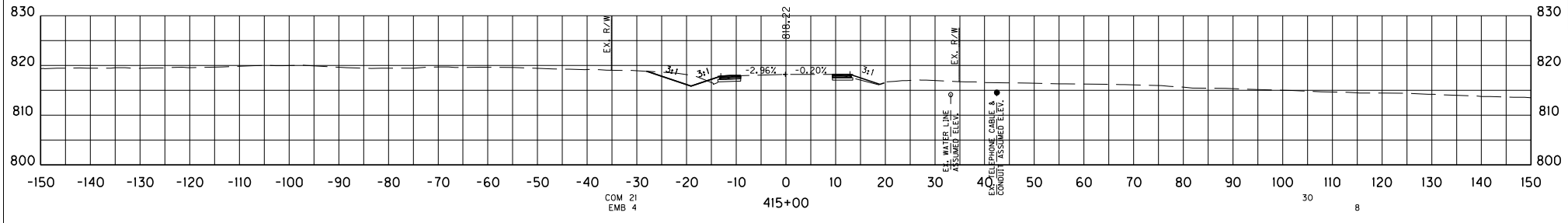
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

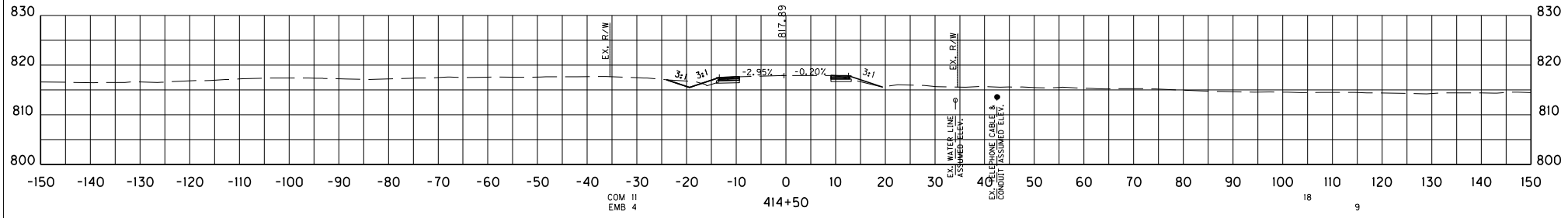
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X209

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.413+00 TO STA.414+00





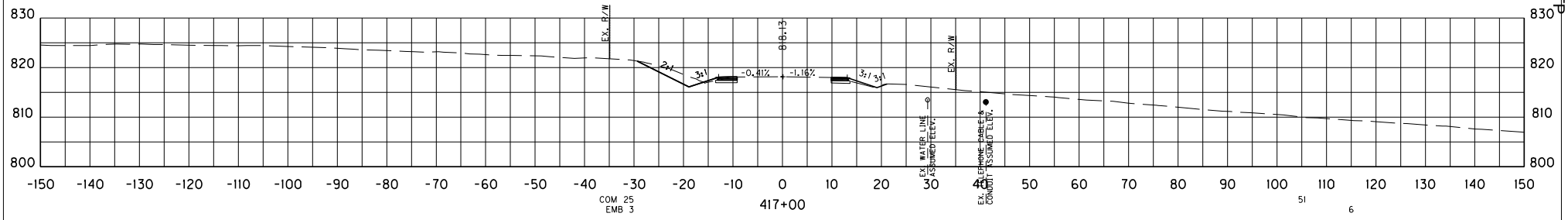


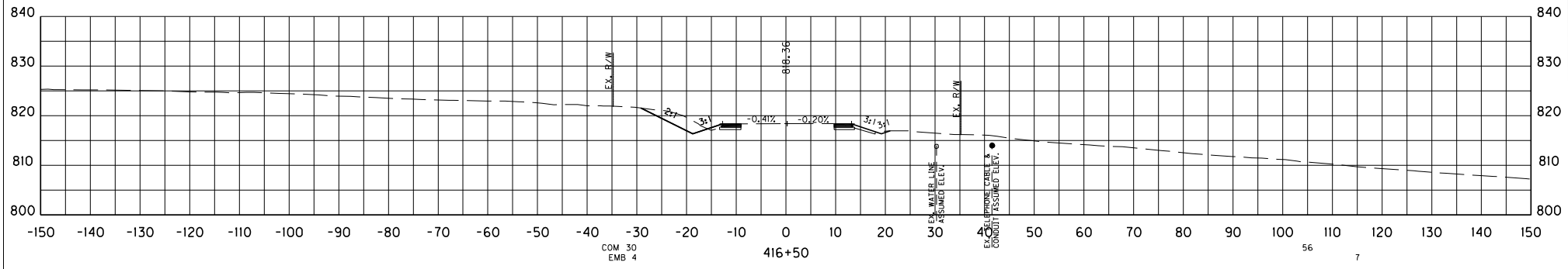
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

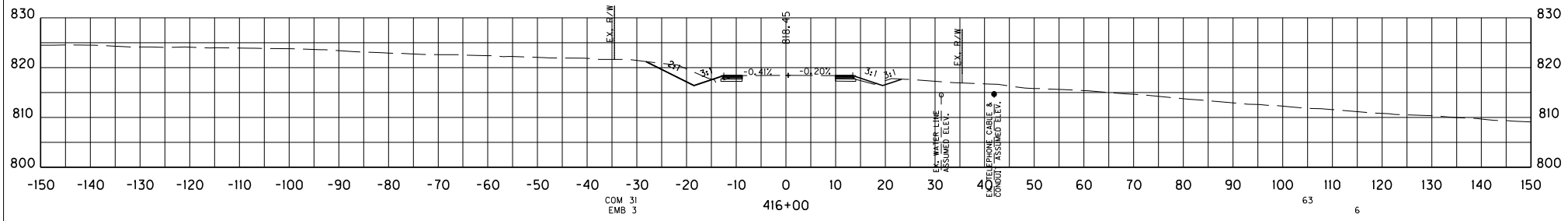
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X210

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.414+50 TO STA.415+50





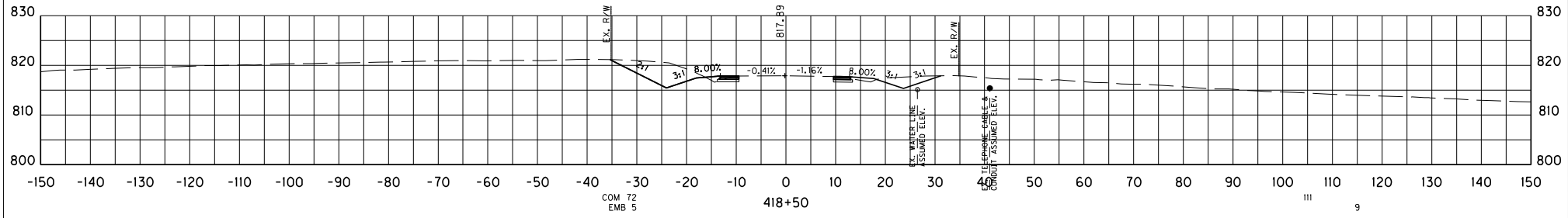


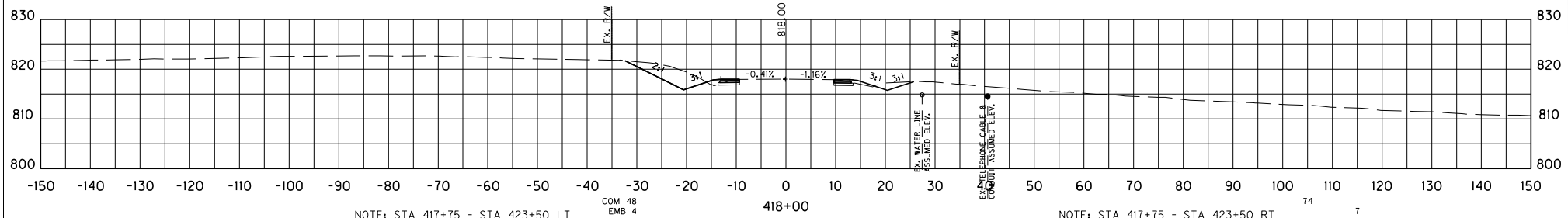
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X211

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

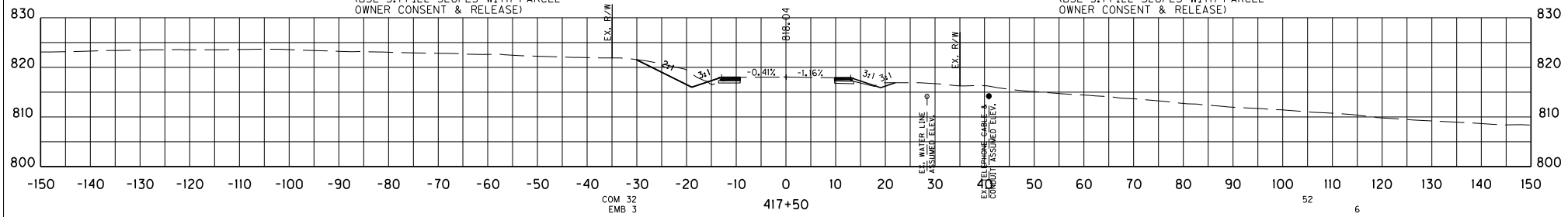
STA.416+00 TO STA.417+00





NOTE: STA 417+75 - STA 423+50 LT
CONSTRUCT UNPAVED SHOULDER
AS SHOWN WITH 2:1 FILL SLOPES
(USE 3:1 FILL SLOPES WITH PARCEL
OWNER CONSENT & RELEASE)

NOTE: STA 417+75 - STA 423+50 RT
CONSTRUCT UNPAVED SHOULDER
AS SHOWN WITH 2:1 FILL SLOPES
(USE 3:1 FILL SLOPES WITH PARCEL
OWNER CONSENT & RELEASE)

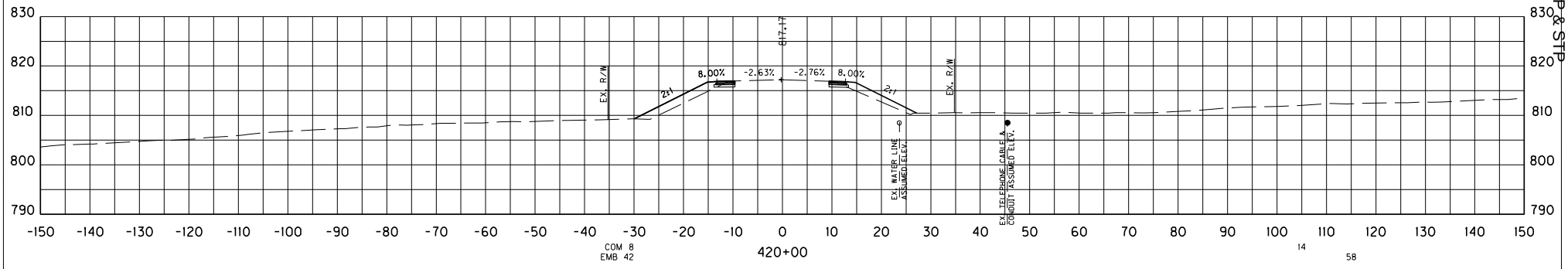


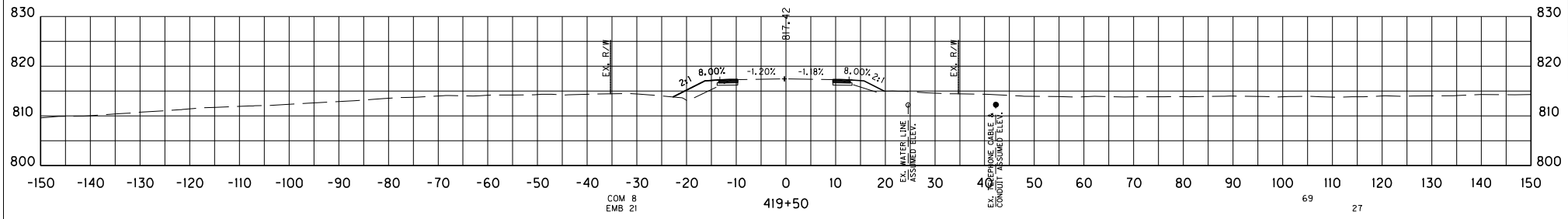
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

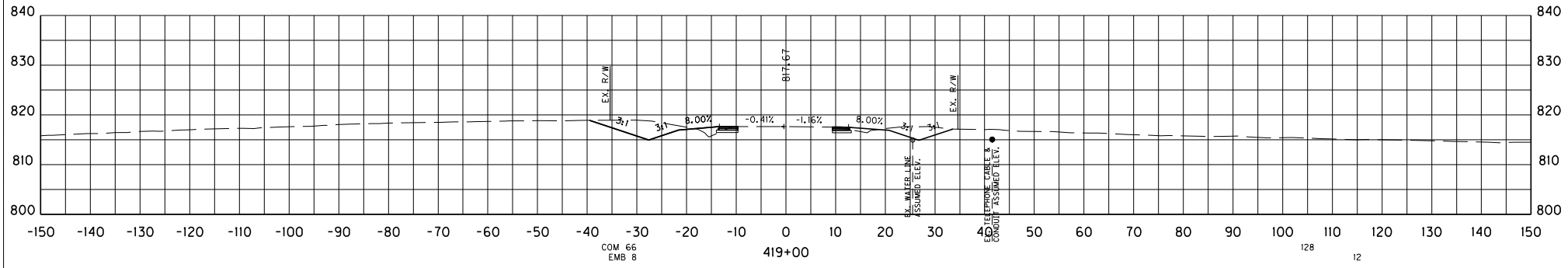
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X212

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.417+50 TO STA.418+50





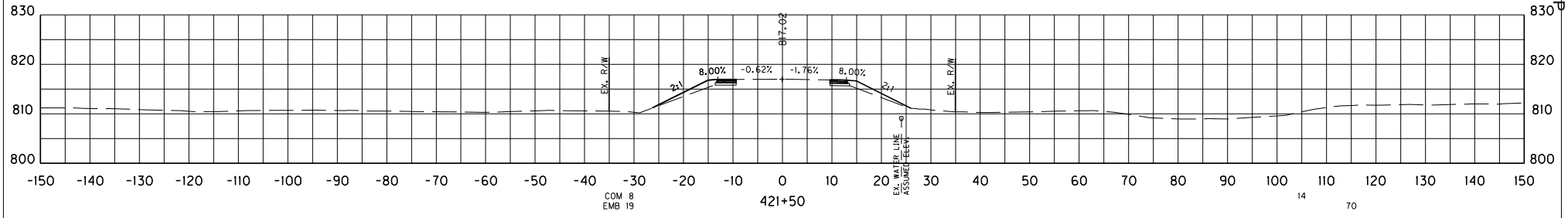


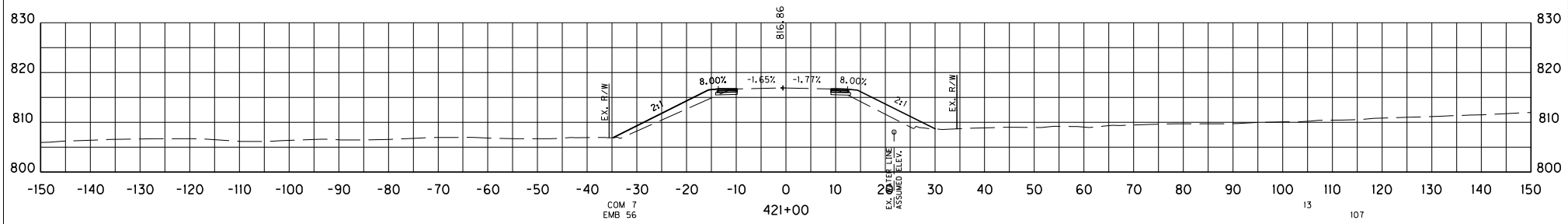
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

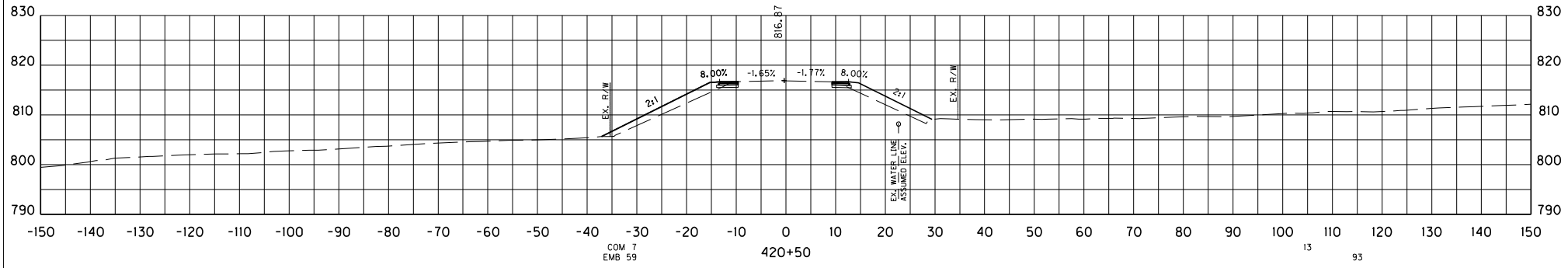
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X213

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.419+00 TO STA.420+00





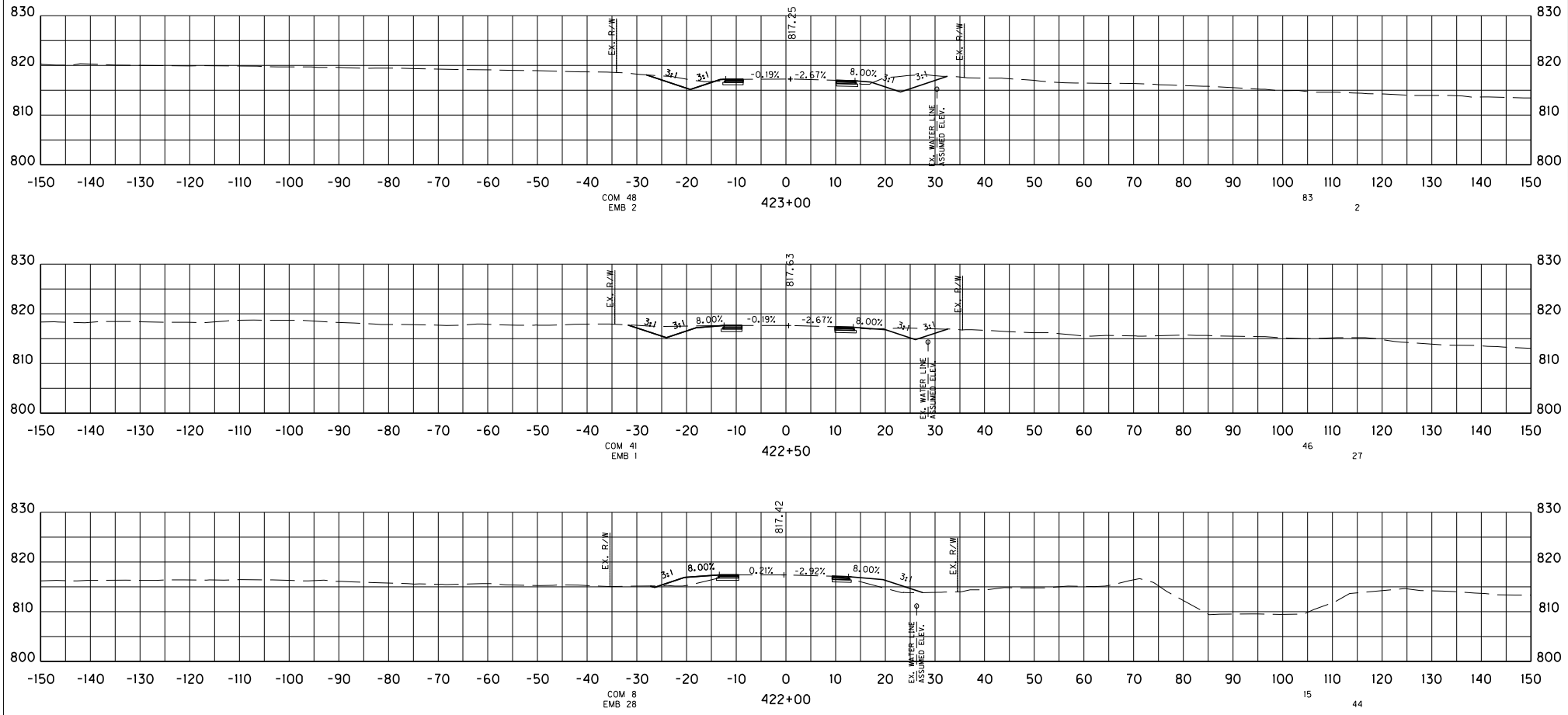


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X214

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.420+50 TO STA.421+50

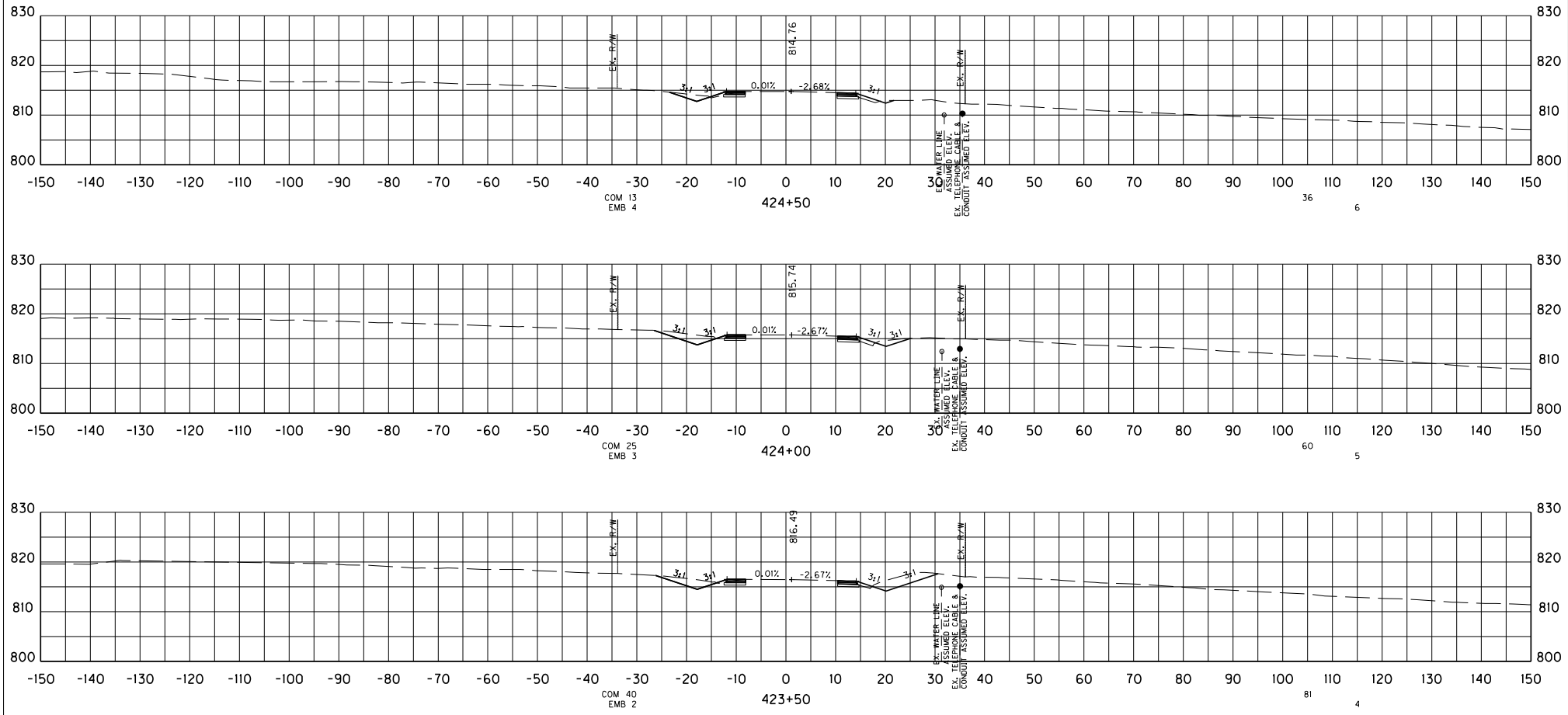


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X215

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.422+00 TO STA.423+00

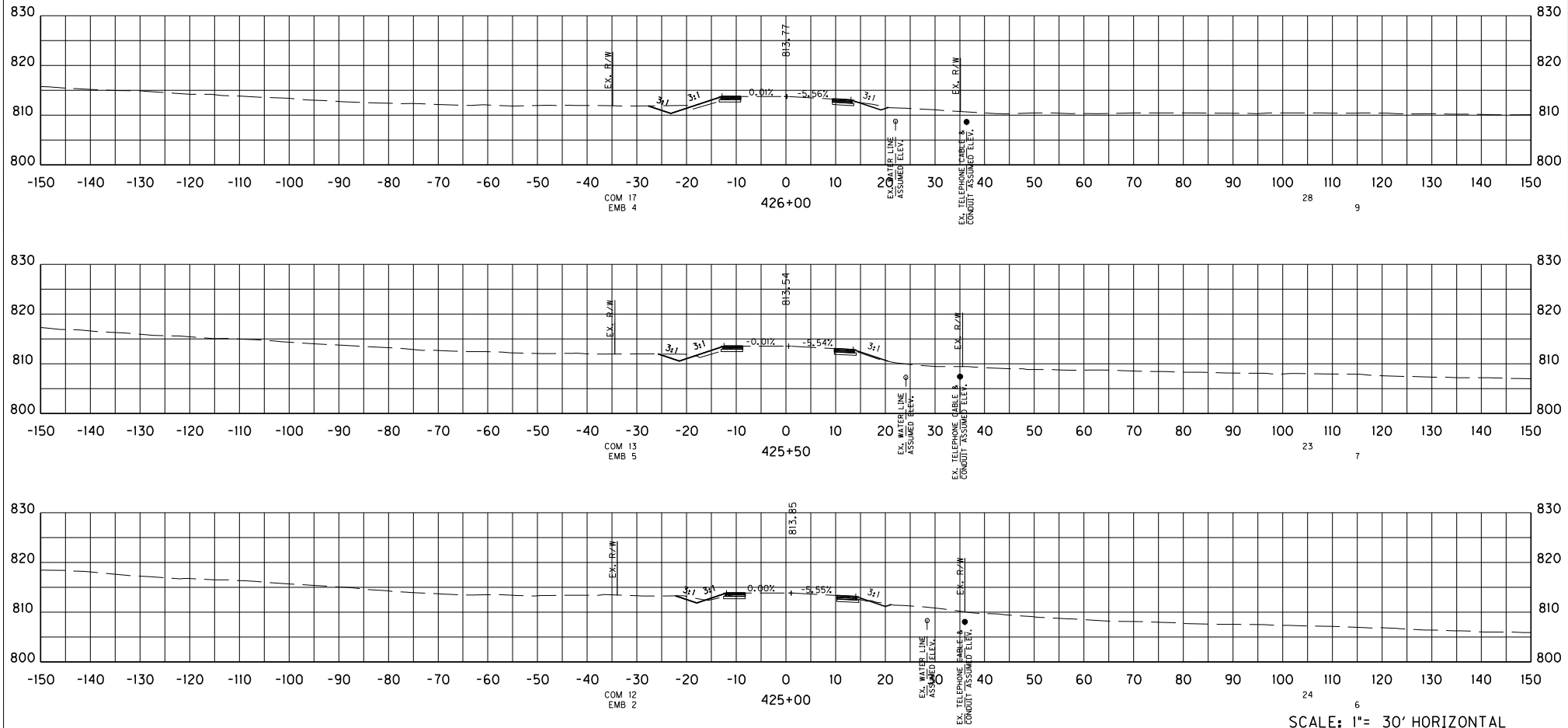


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X216

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.423+50 TO STA.424+50

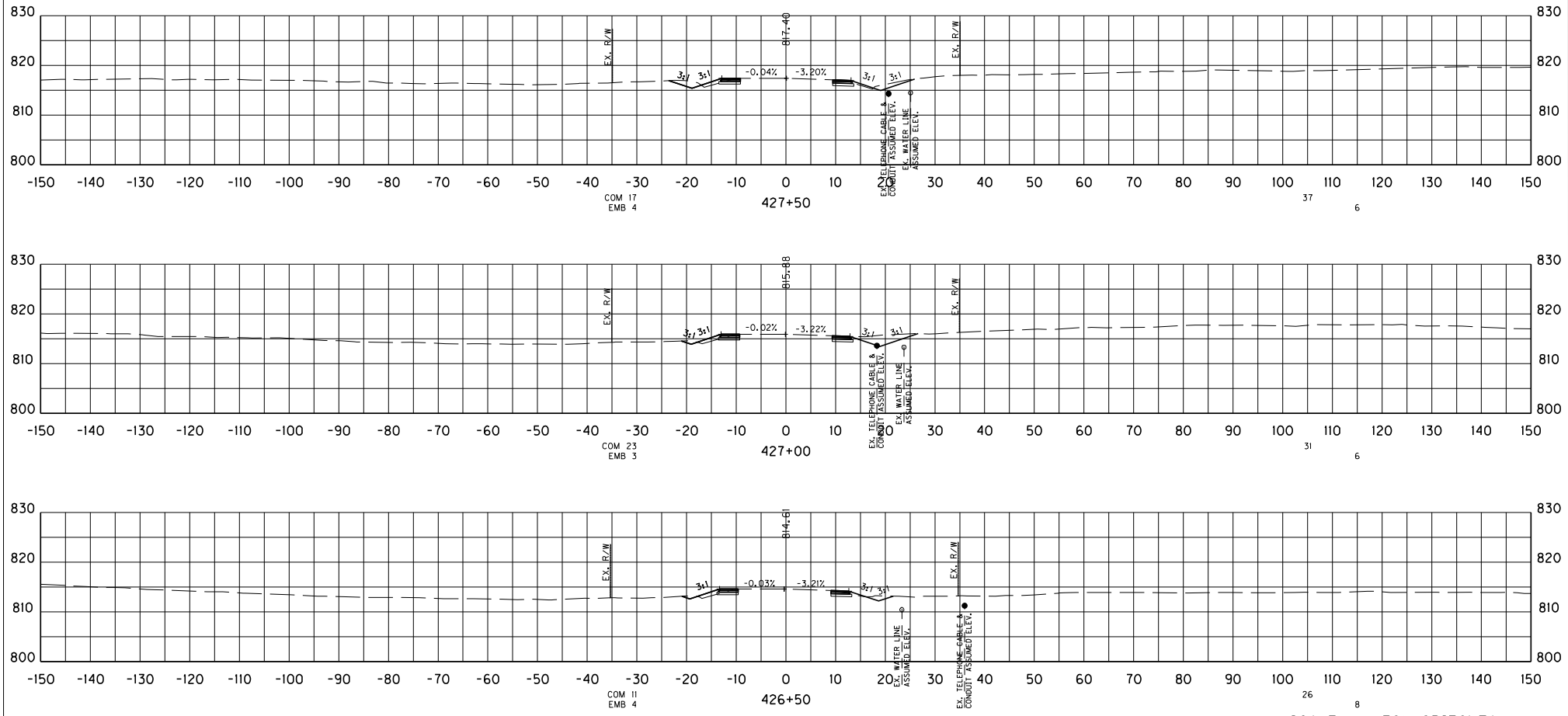


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X217

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.425+00 TO STA.426+00

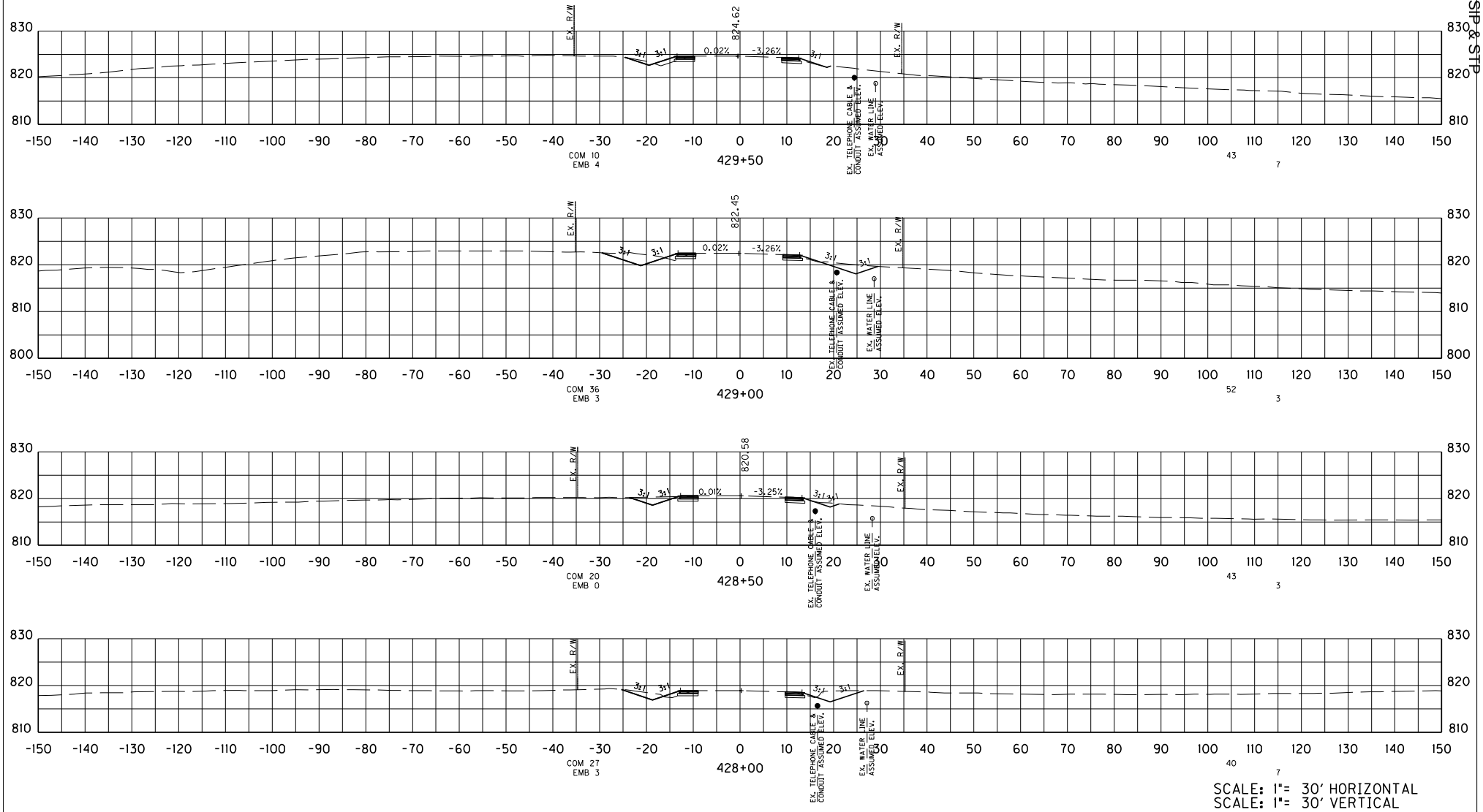


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X218

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.426+50 TO STA.427+50

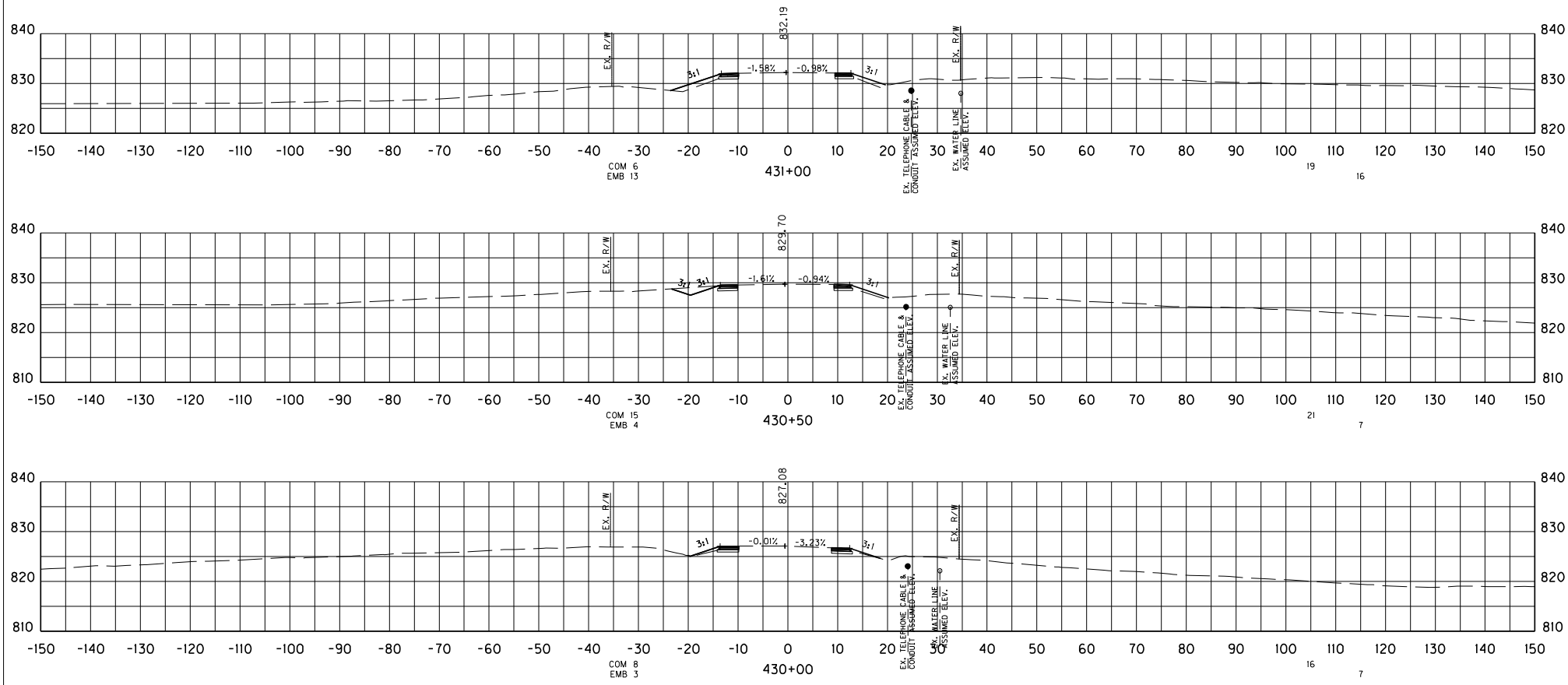


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X219

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.428+00 TO STA.429+50

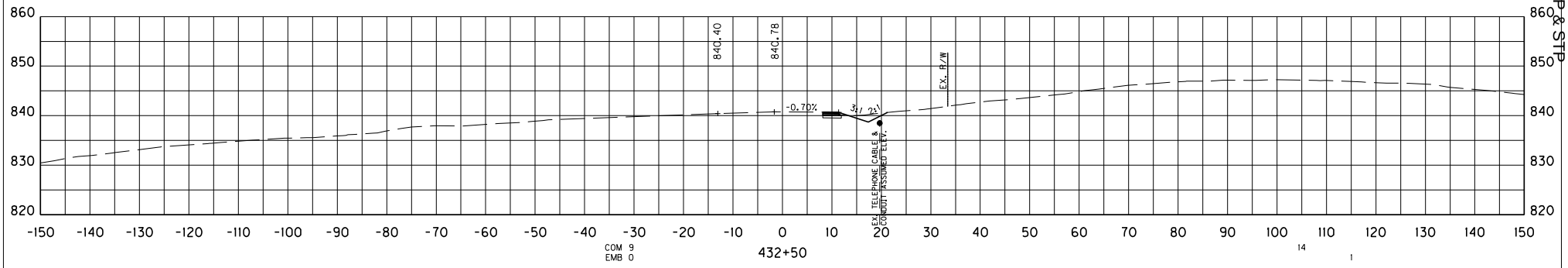


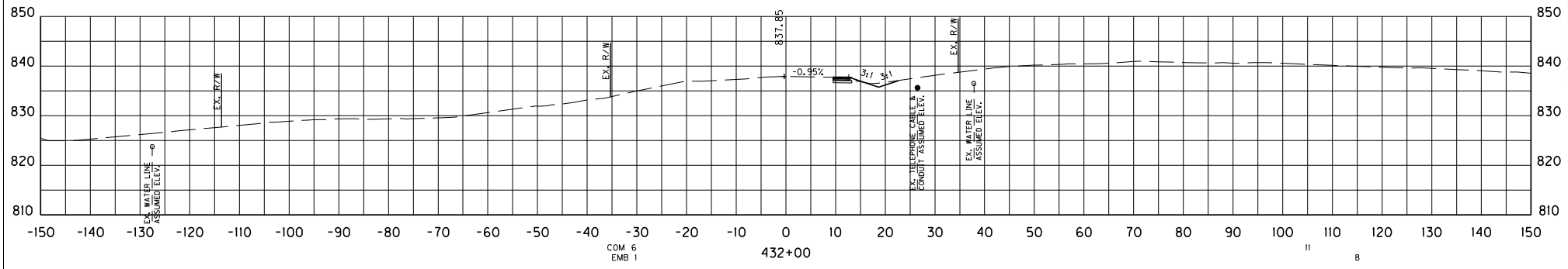
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X220

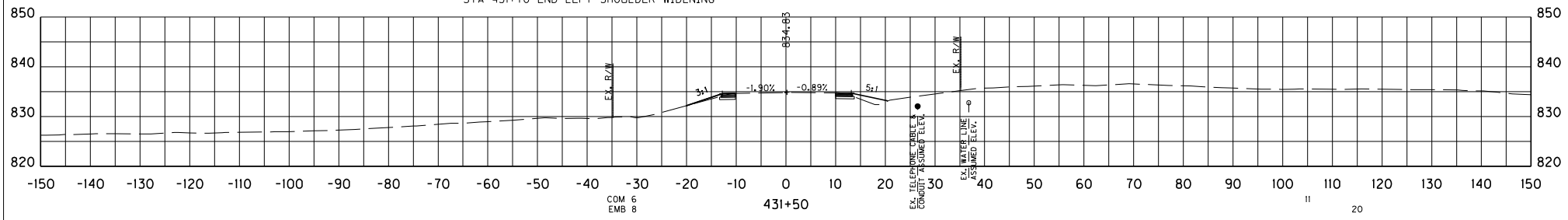
KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.430+00 TO STA.431+00





STA 431+70 END LEFT SHOULDER WIDENING

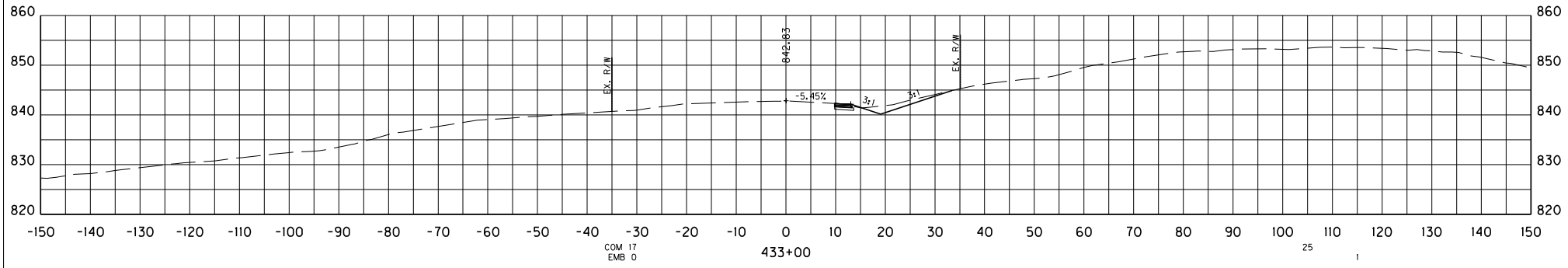


SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X221

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.431+50 TO STA.432+50

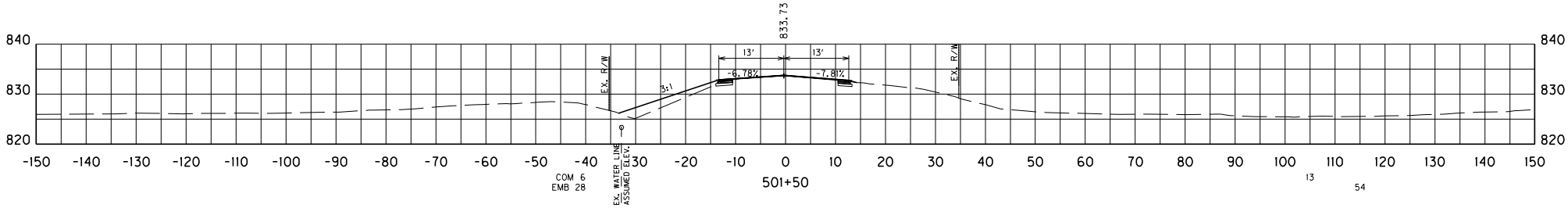


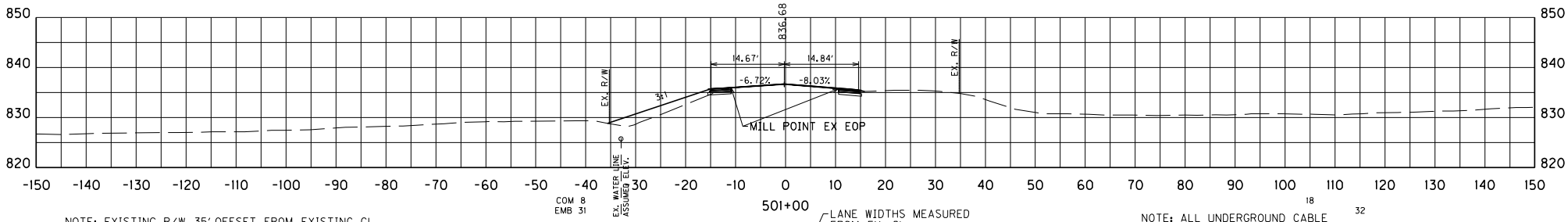
SCALE: 1"= 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X222

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.433+00 TO STA.433+00



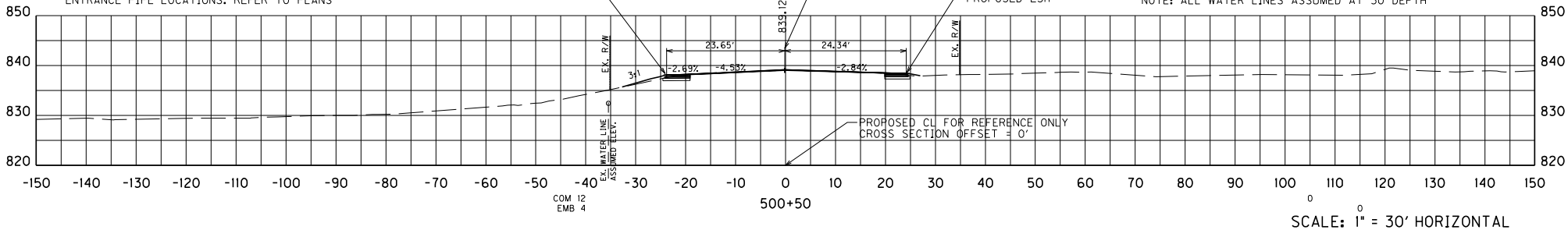


NOTE: EXISTING R/W 35' OFFSET FROM EXISTING CL

NOTE: CROSS SECTIONS DO NOT REFLECT PAVED ENTRANCES & ENTRANCE PIPE LOCATIONS. REFER TO PLANS

NOTE: ALL UNDERGROUND CABLE ASSUMED AT 24" DEPTH (UNLESS NOTED)

NOTE: ALL WATER LINES ASSUMED AT 30" DEPTH

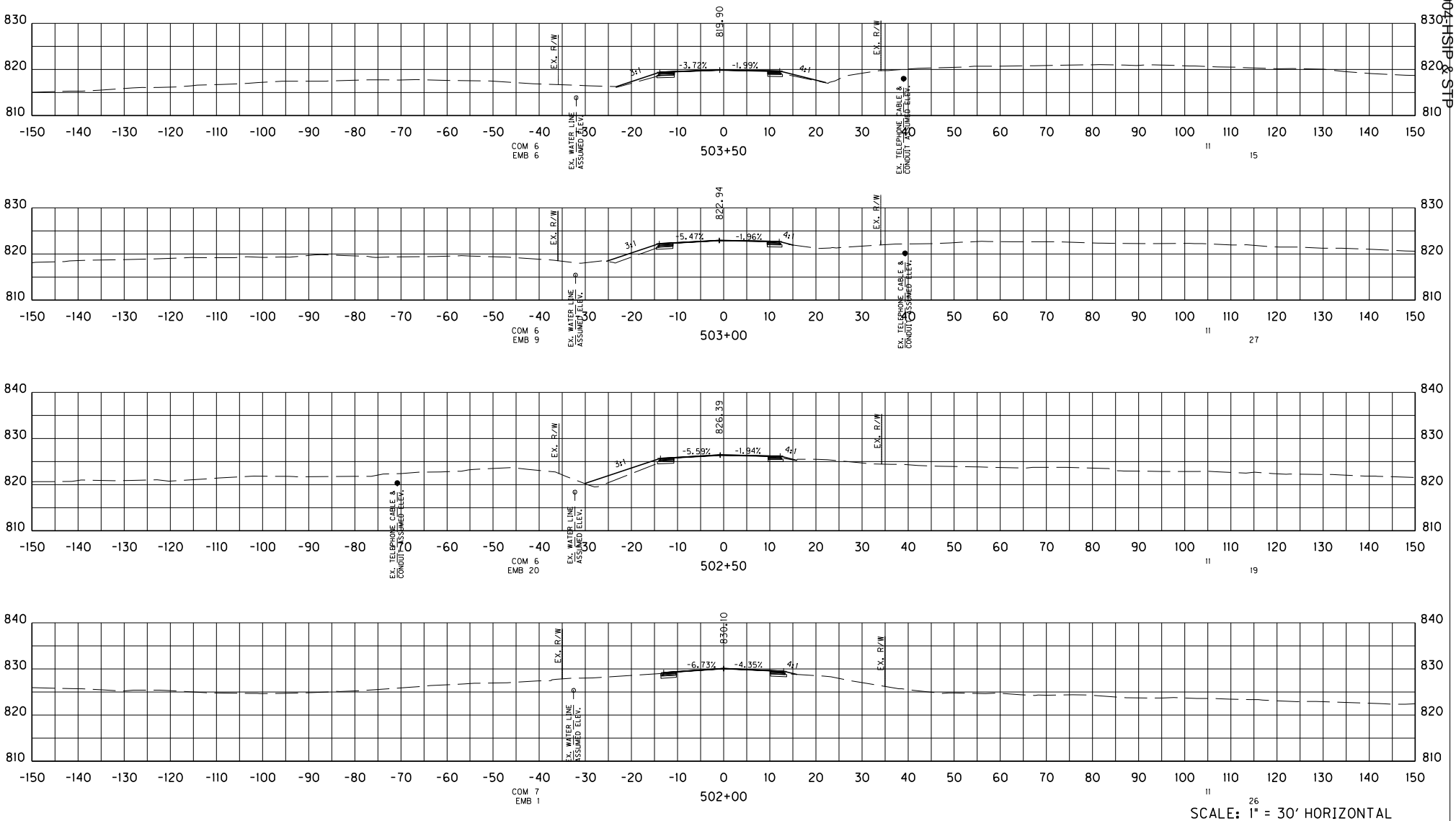


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X223

KY HWY 259 ANNETA RD CROSS SECTIONS SHEET

STA.500+50 TO STA.501+50

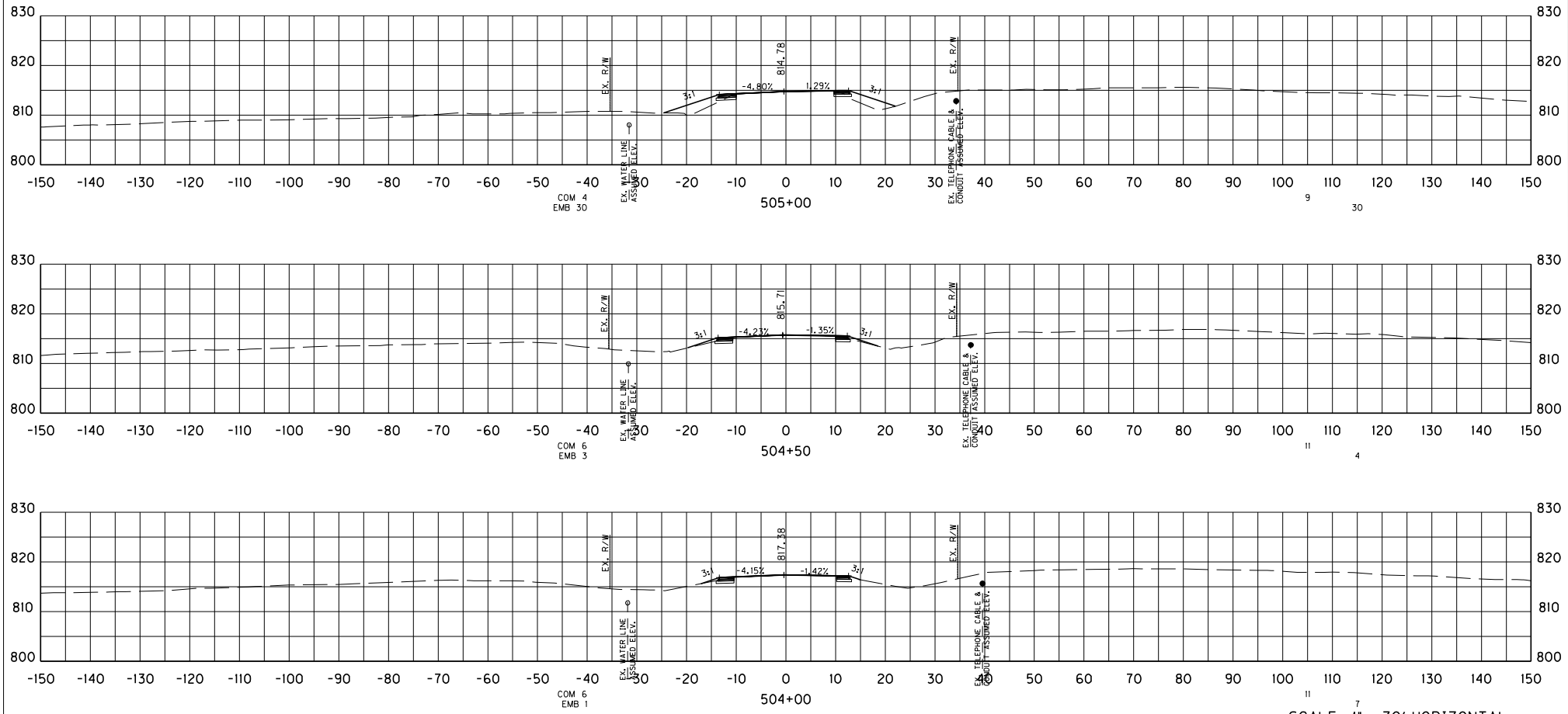


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X224

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.502+00 TO STA.503+50

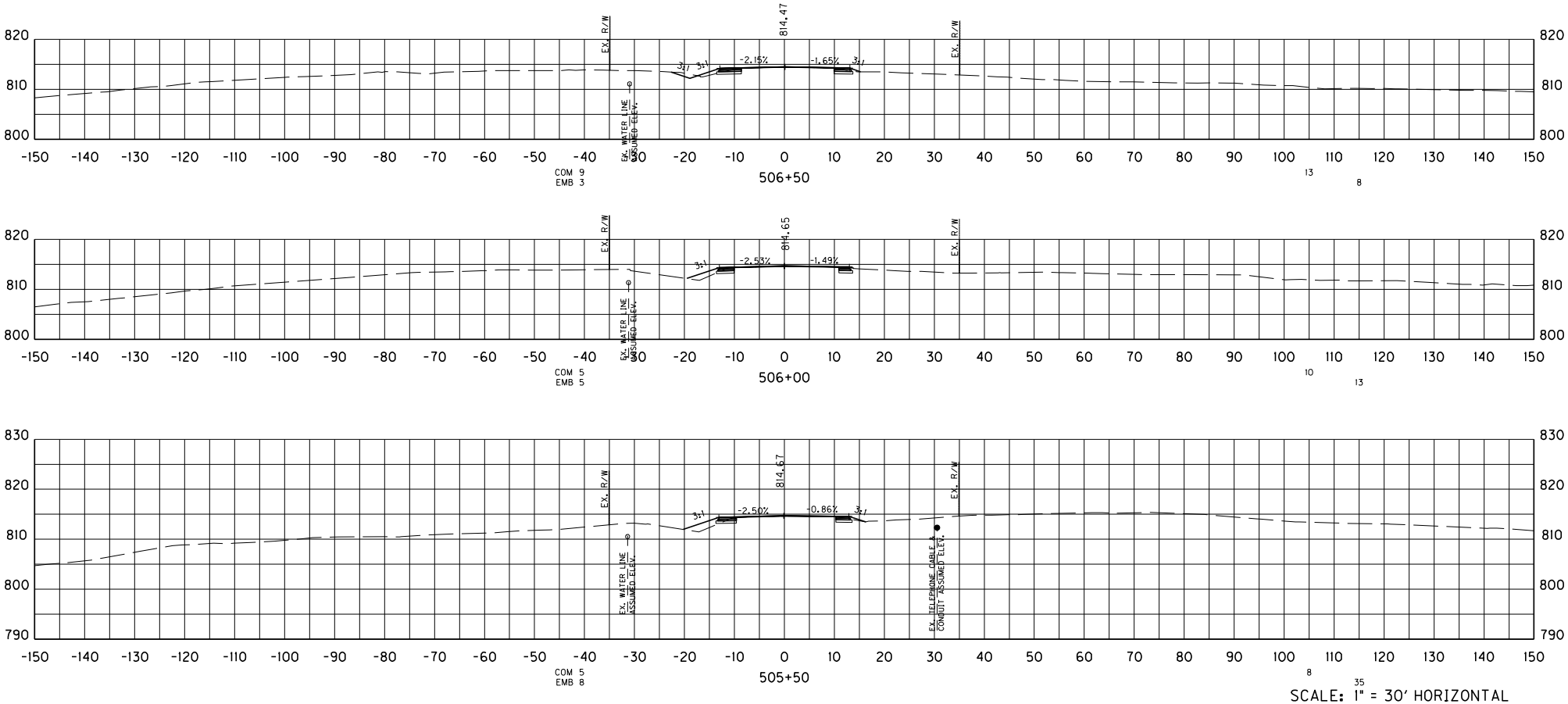


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X225

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.504+00 TO STA.505+00

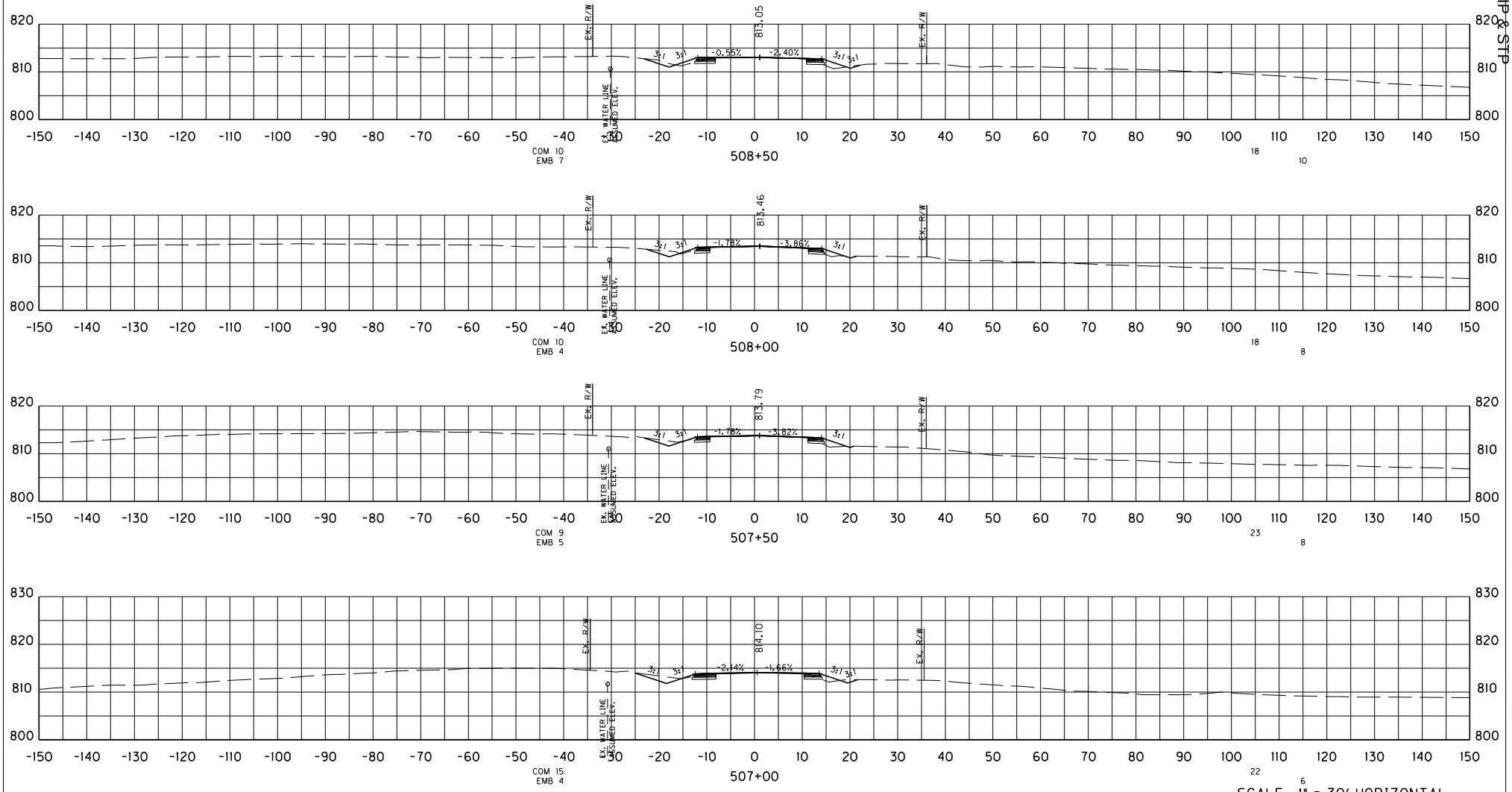


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X226

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.505+50 TO STA.506+50

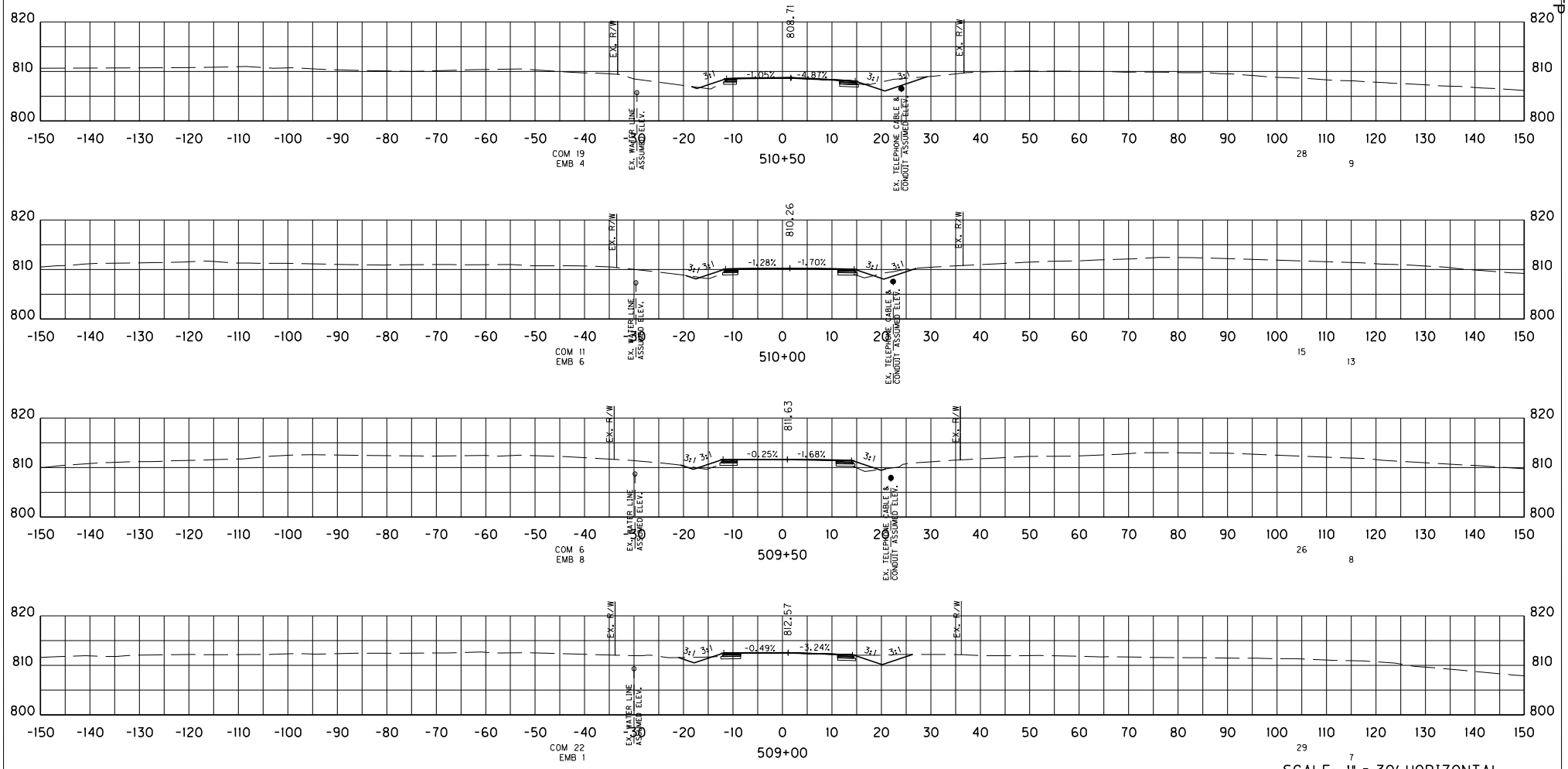


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X227

KY HWY 259 ANNETA RD CROSS SECTIONS SHEET

STA.507+00 TO STA.508+50

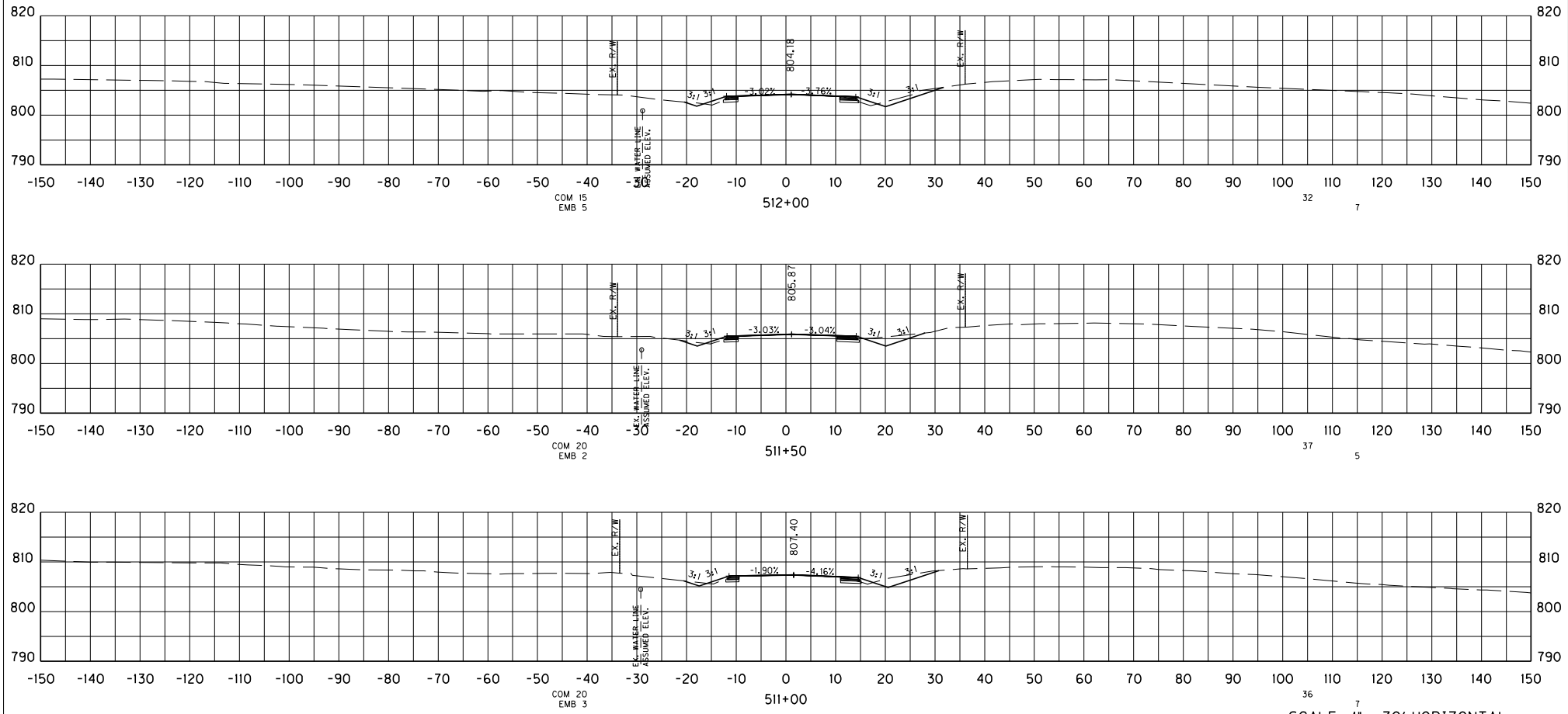


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X228

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.509+00 TO STA.510+50

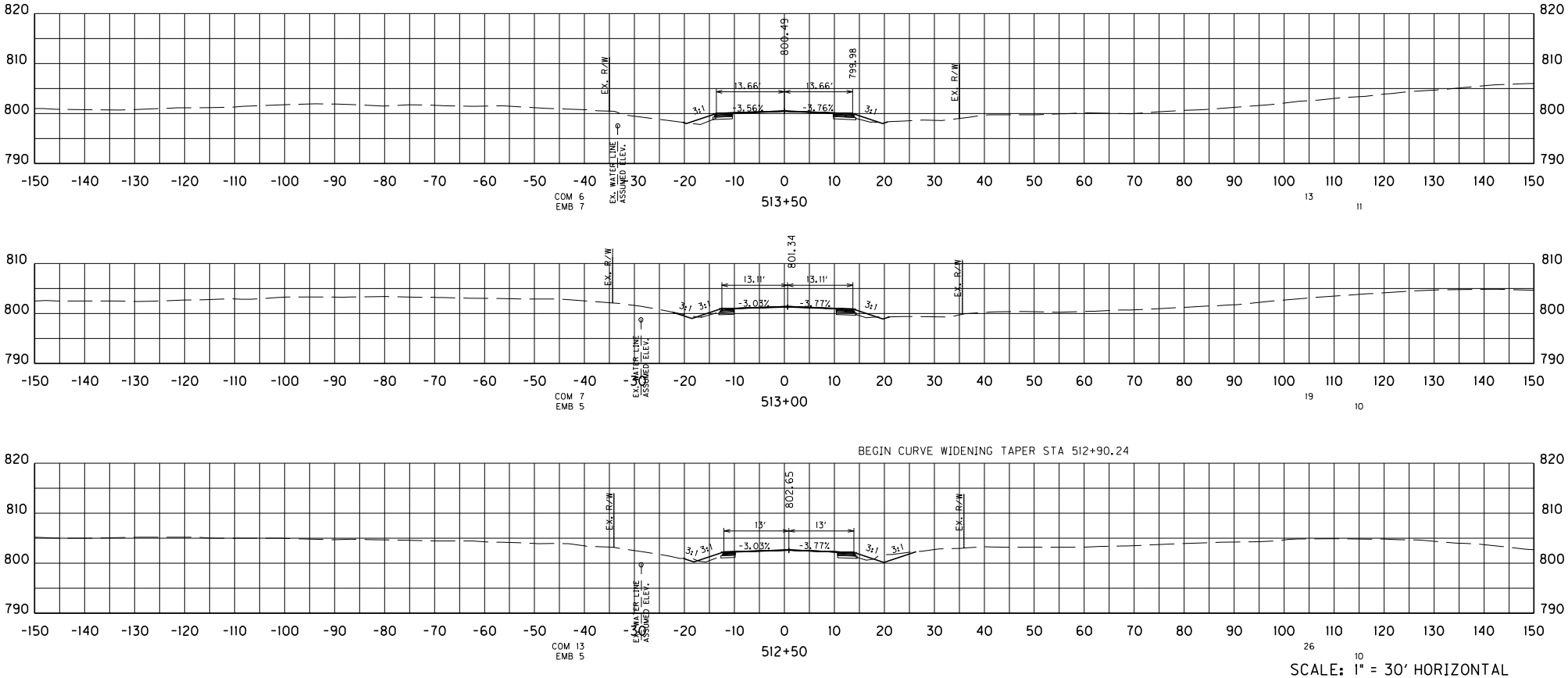


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X229

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.511+00 TO STA.512+00

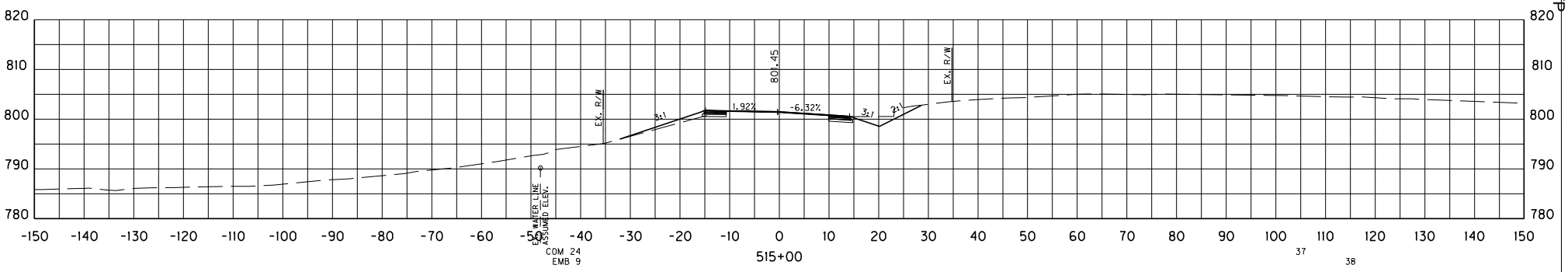


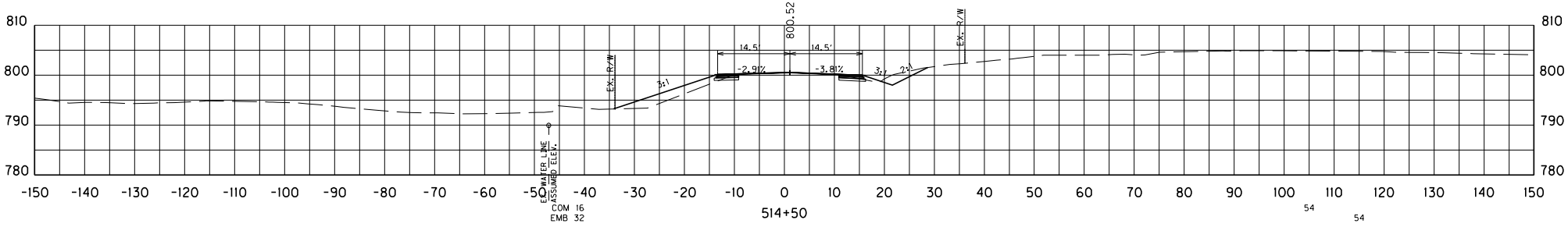
SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X230

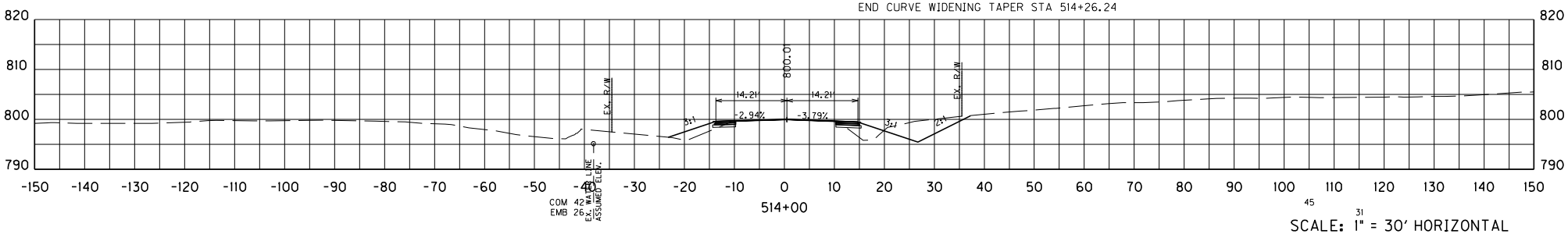
KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.512+50 TO STA.513+50





END CURVE WIDENING TAPER STA 514+26.24

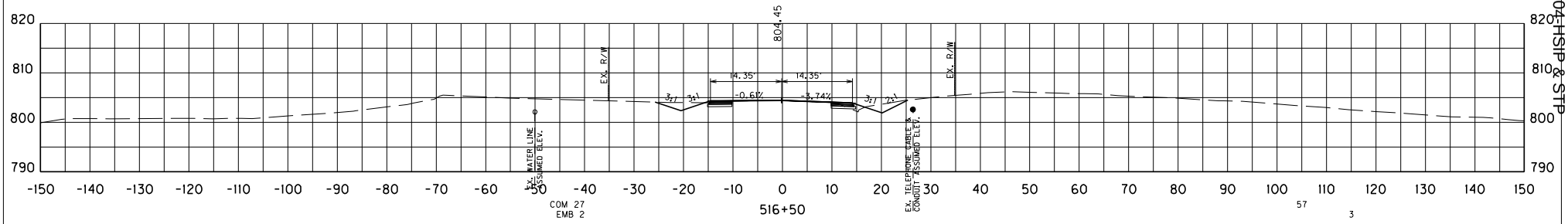


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

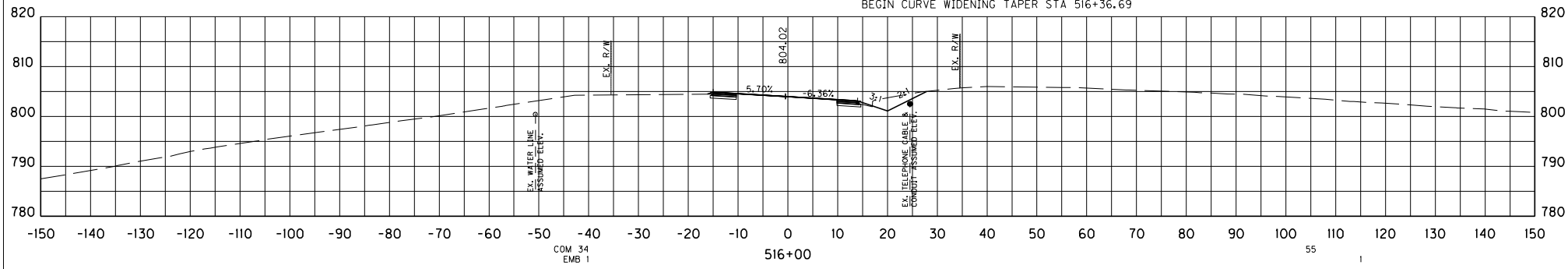
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X231

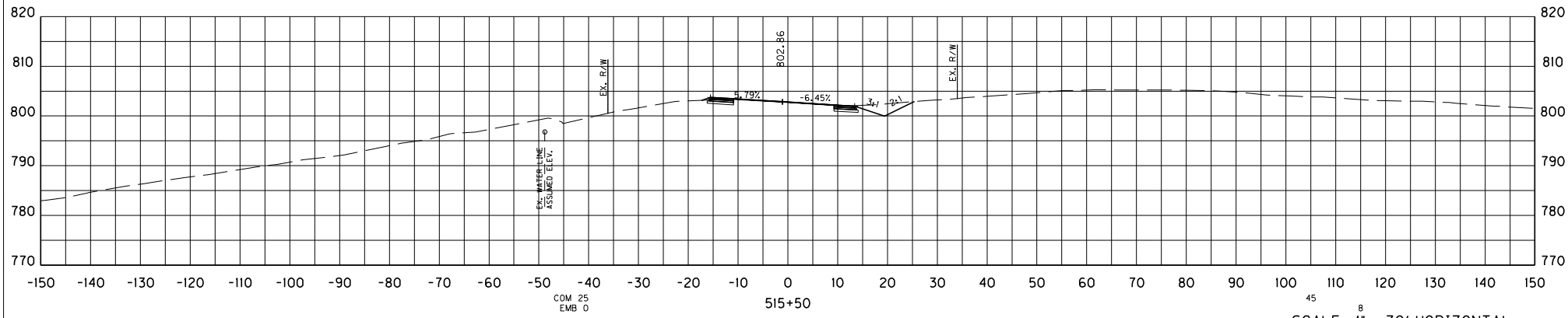
KY HWY 259 ANNETA RD CROSS SECTIONS SHEET

STA.514+00 TO STA.515+00



BEGIN CURVE WIDENING TAPER STA 516+36.69



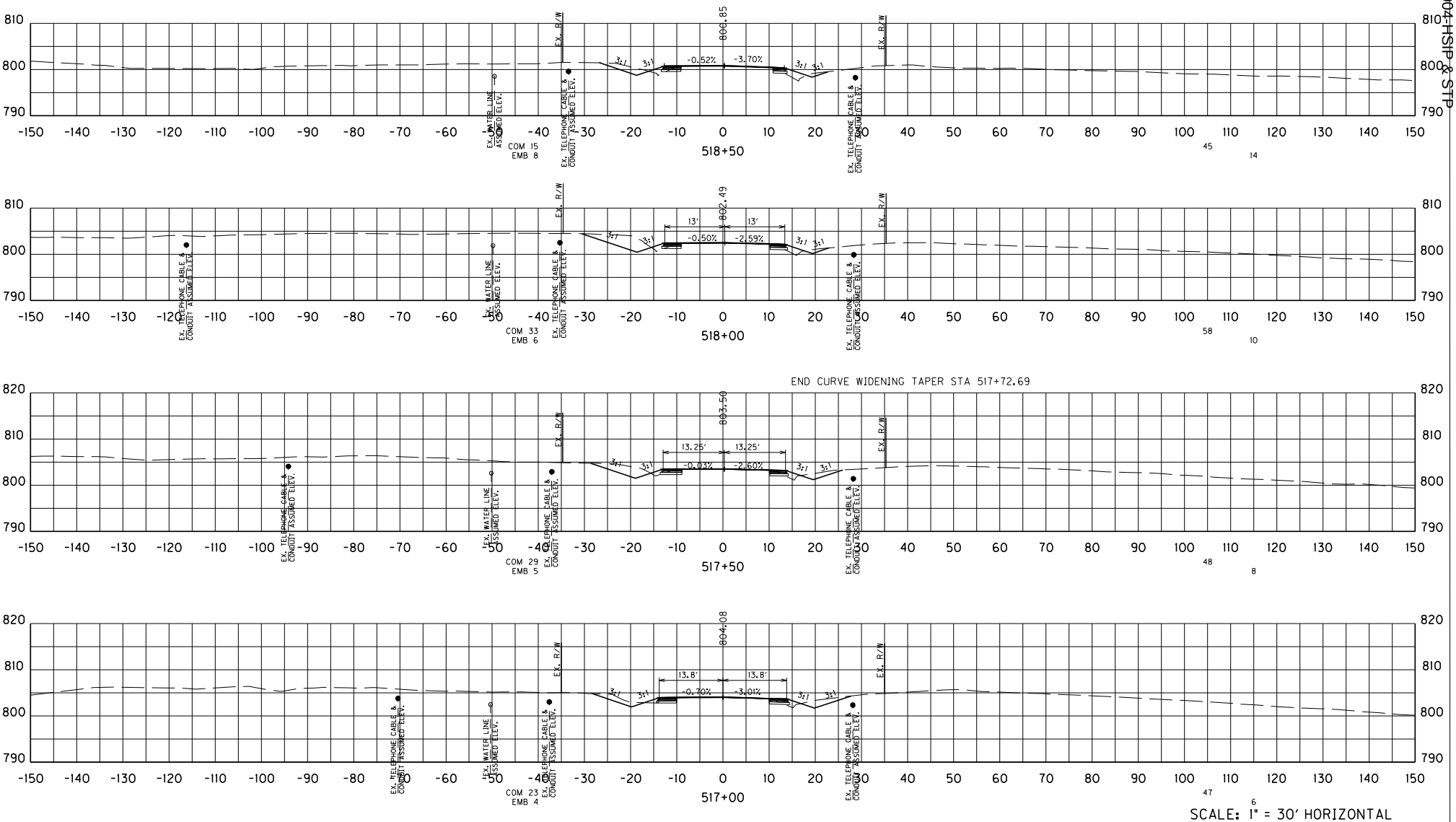


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X232

KY HWY 259 ANNETA RD CROSS SECTIONS SHEET

STA.515+50 TO STA.516+50

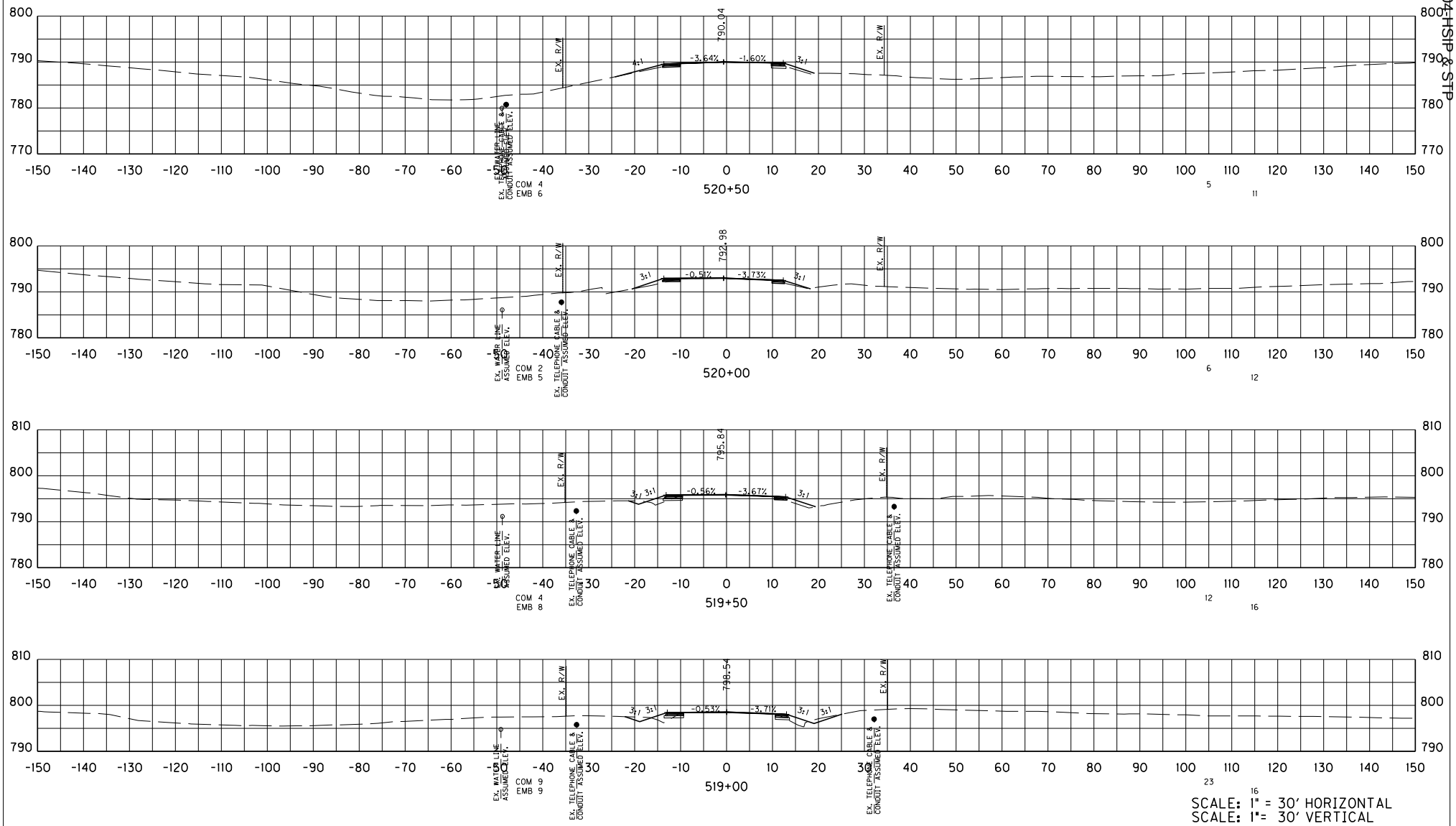


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X233

KY HWY 259 ANNETA RD CROSS SECTIONS SHEET

STA.517+00 TO STA.518+50

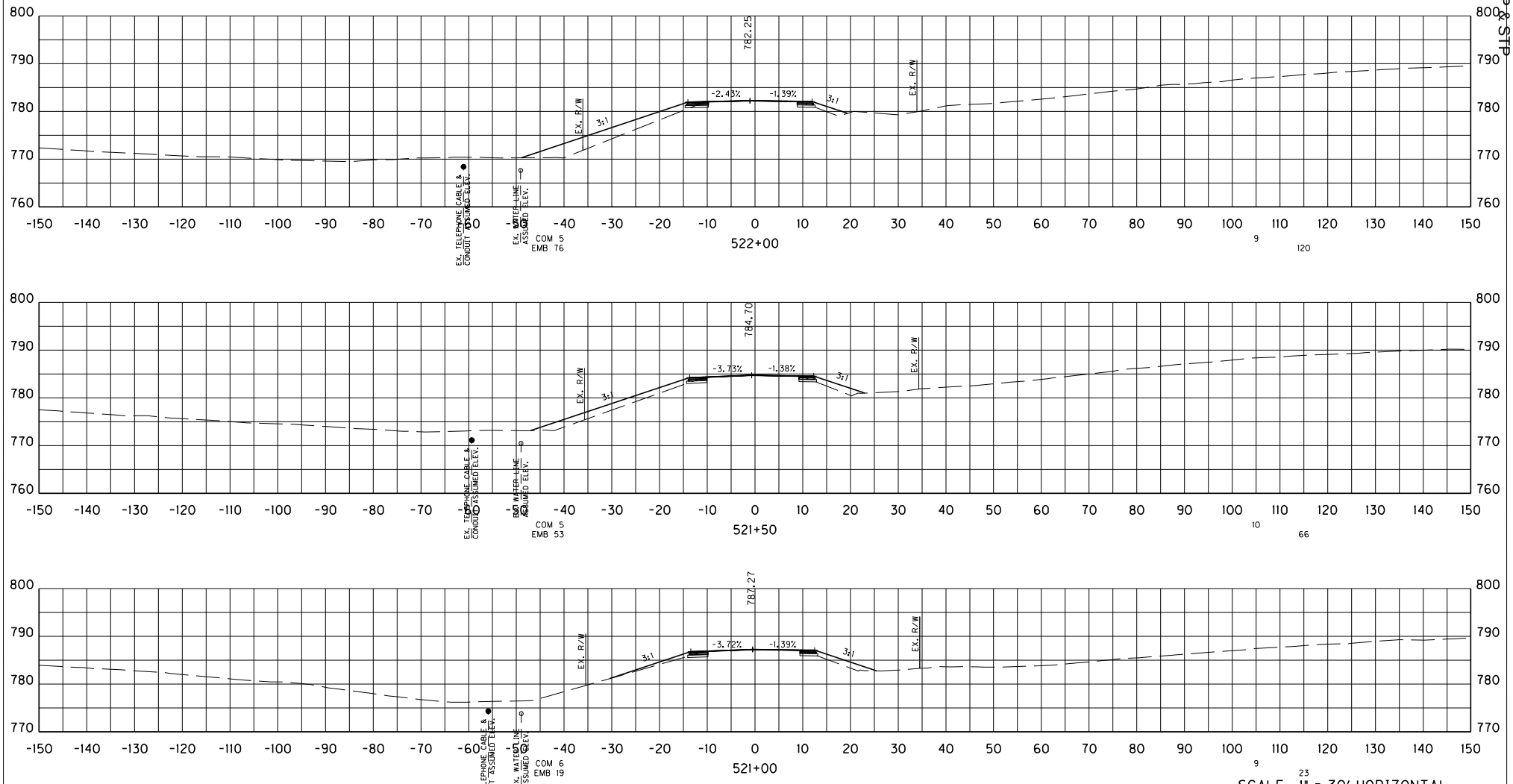


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X234

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.519+00 TO STA.520+50

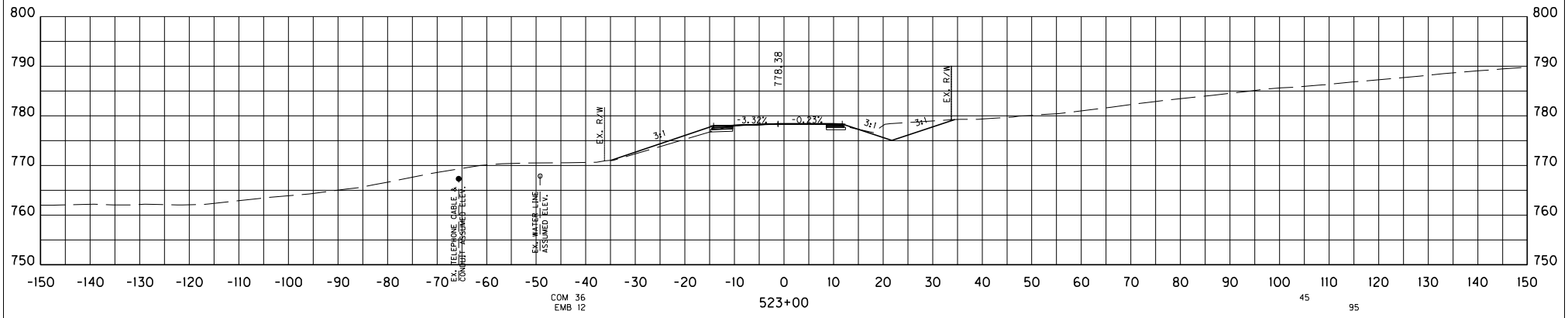


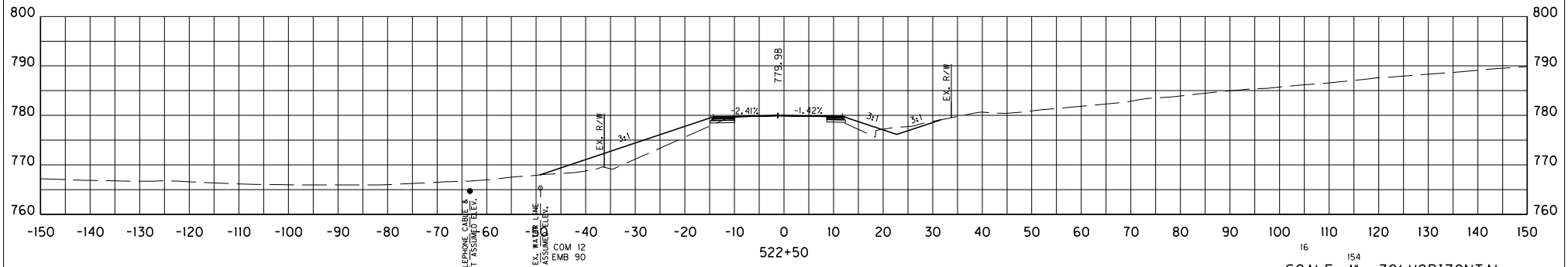
SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X235

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.521+00 TO STA.522+00



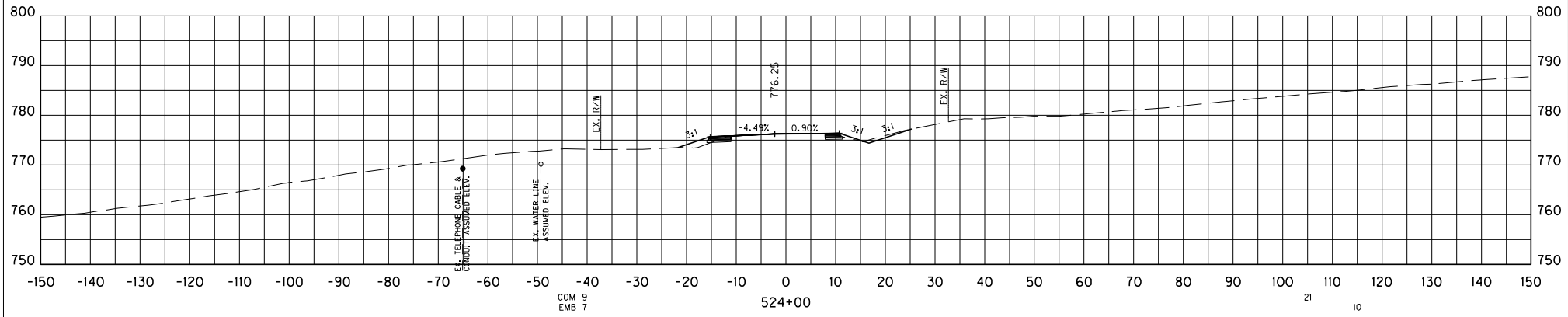


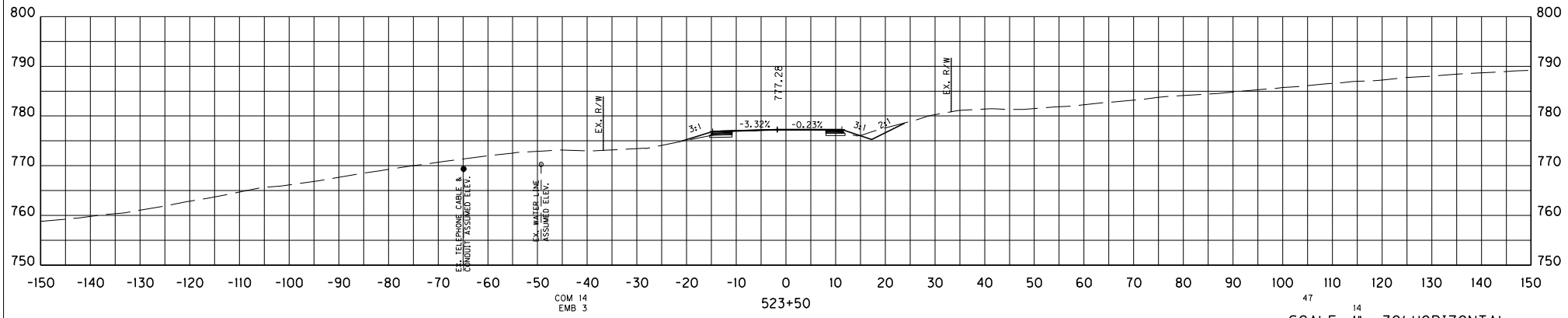
SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X236

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.522+50 TO STA.523+00



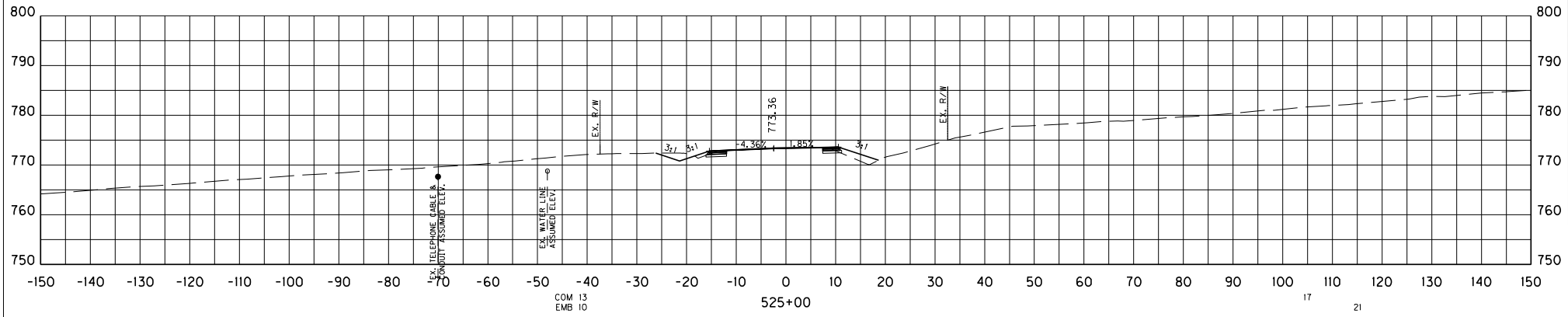


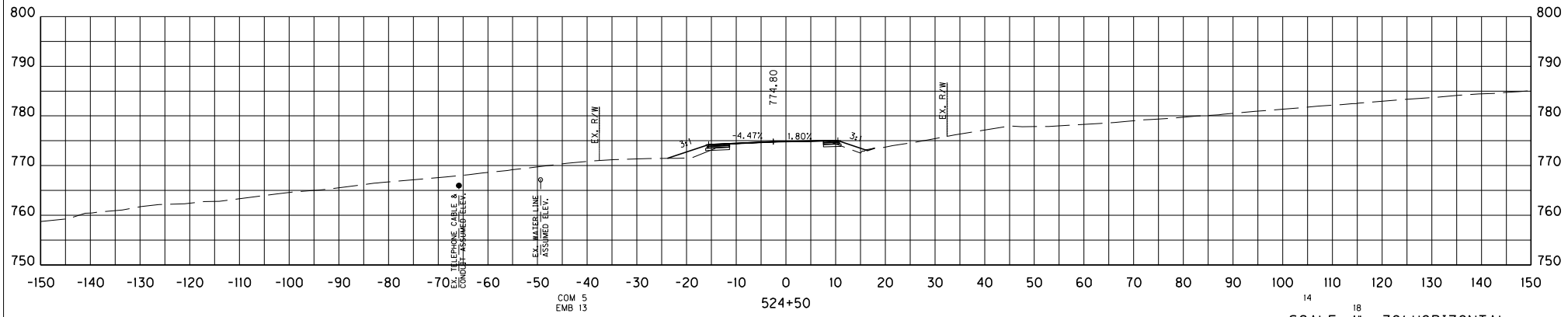
SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X237

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.523+50 TO STA.524+00



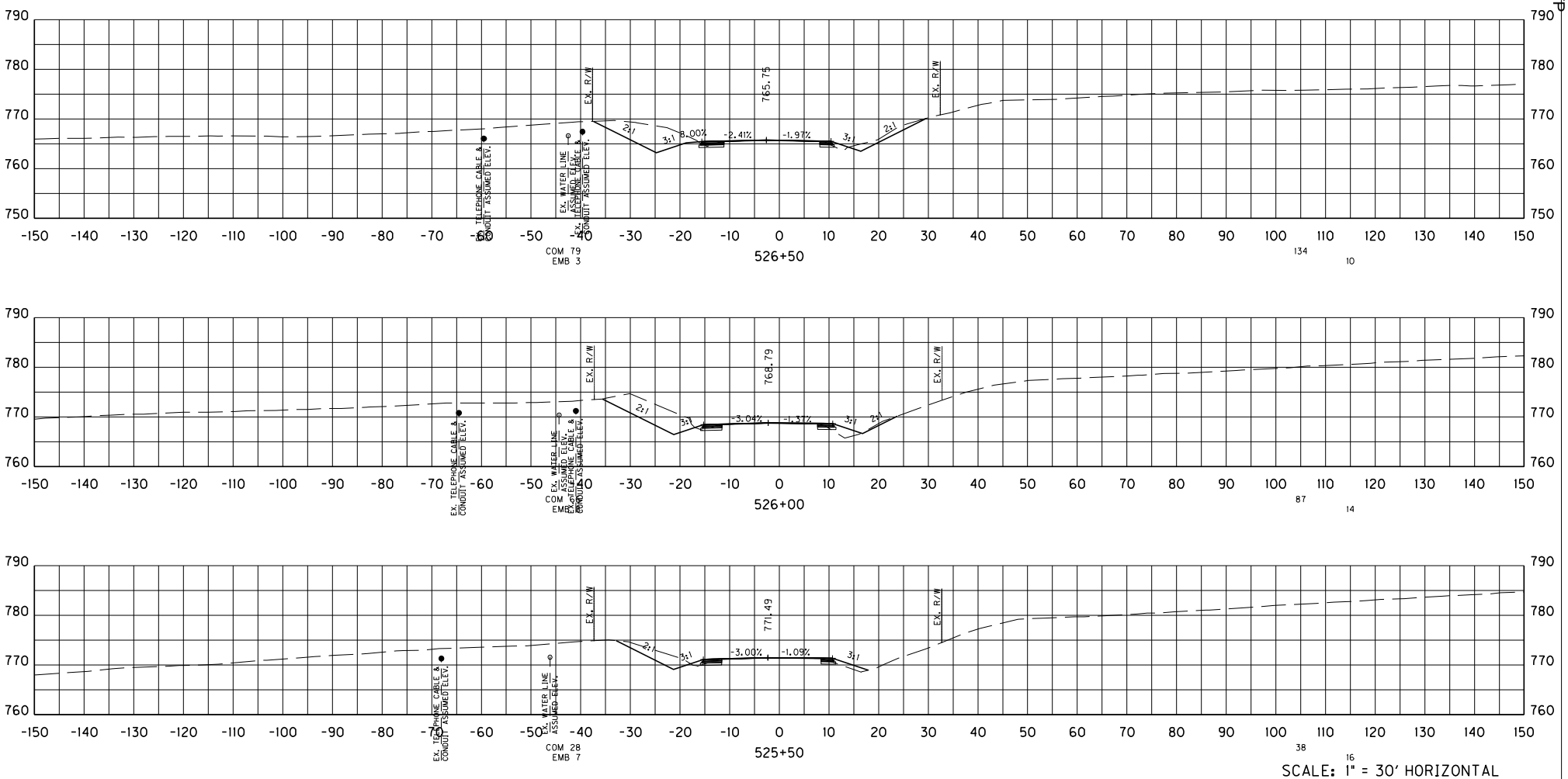


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X238

KY HWY 259 ANNETA RD CROSS SECTIONS SHEET

STA.524+50 TO STA.525+00

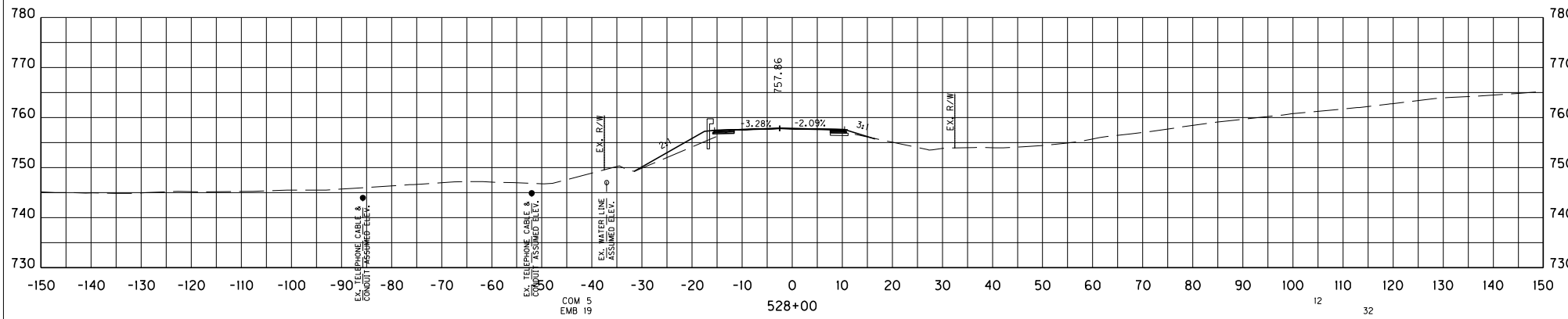


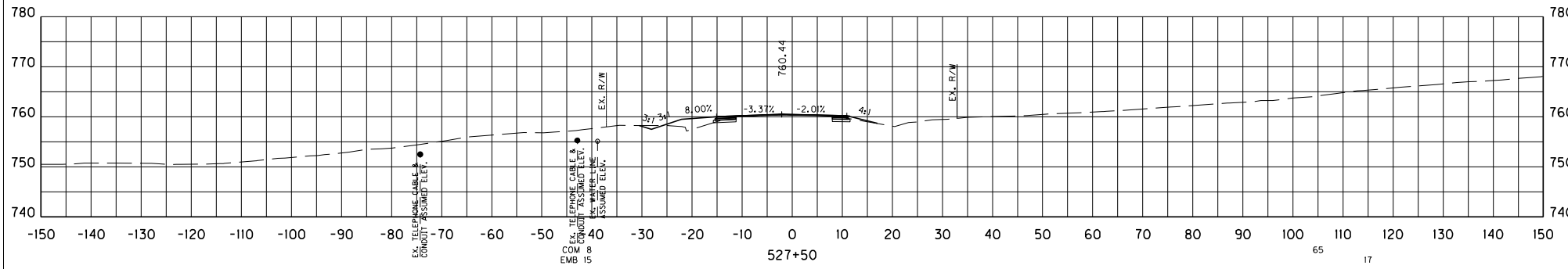
SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

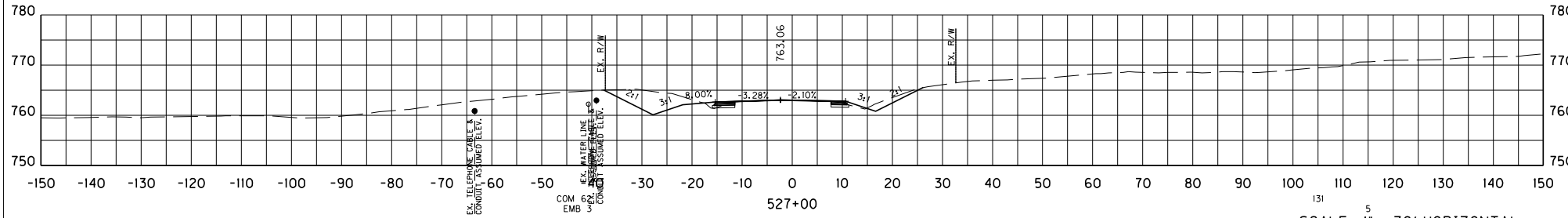
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X239

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.525+50 TO STA.526+50





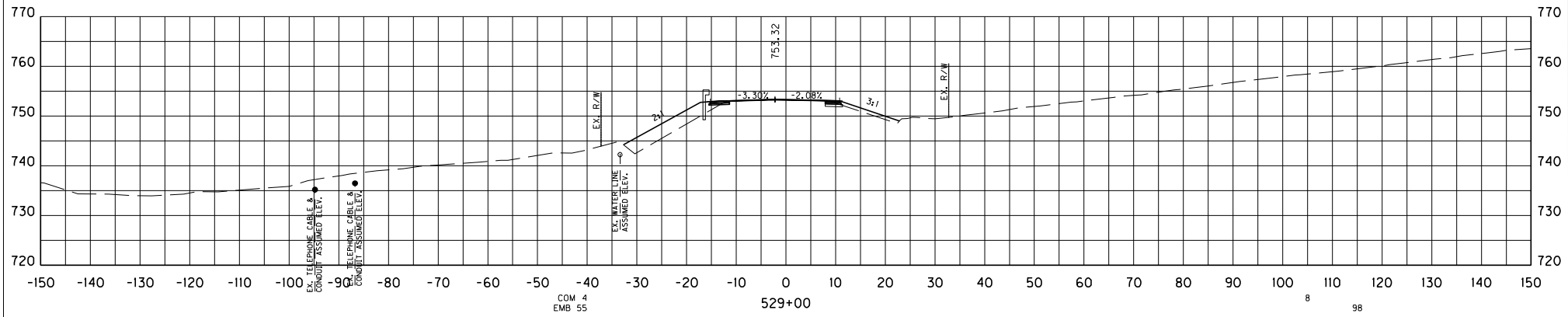


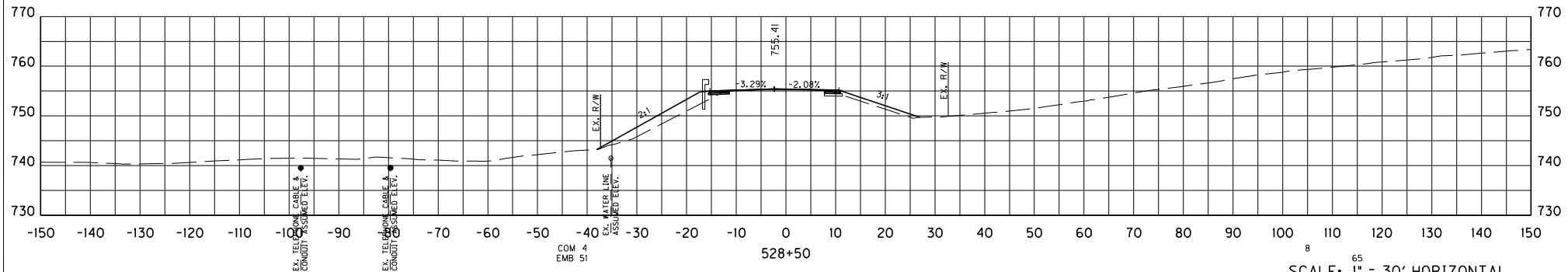
SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X240

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.527+00 TO STA.528+00



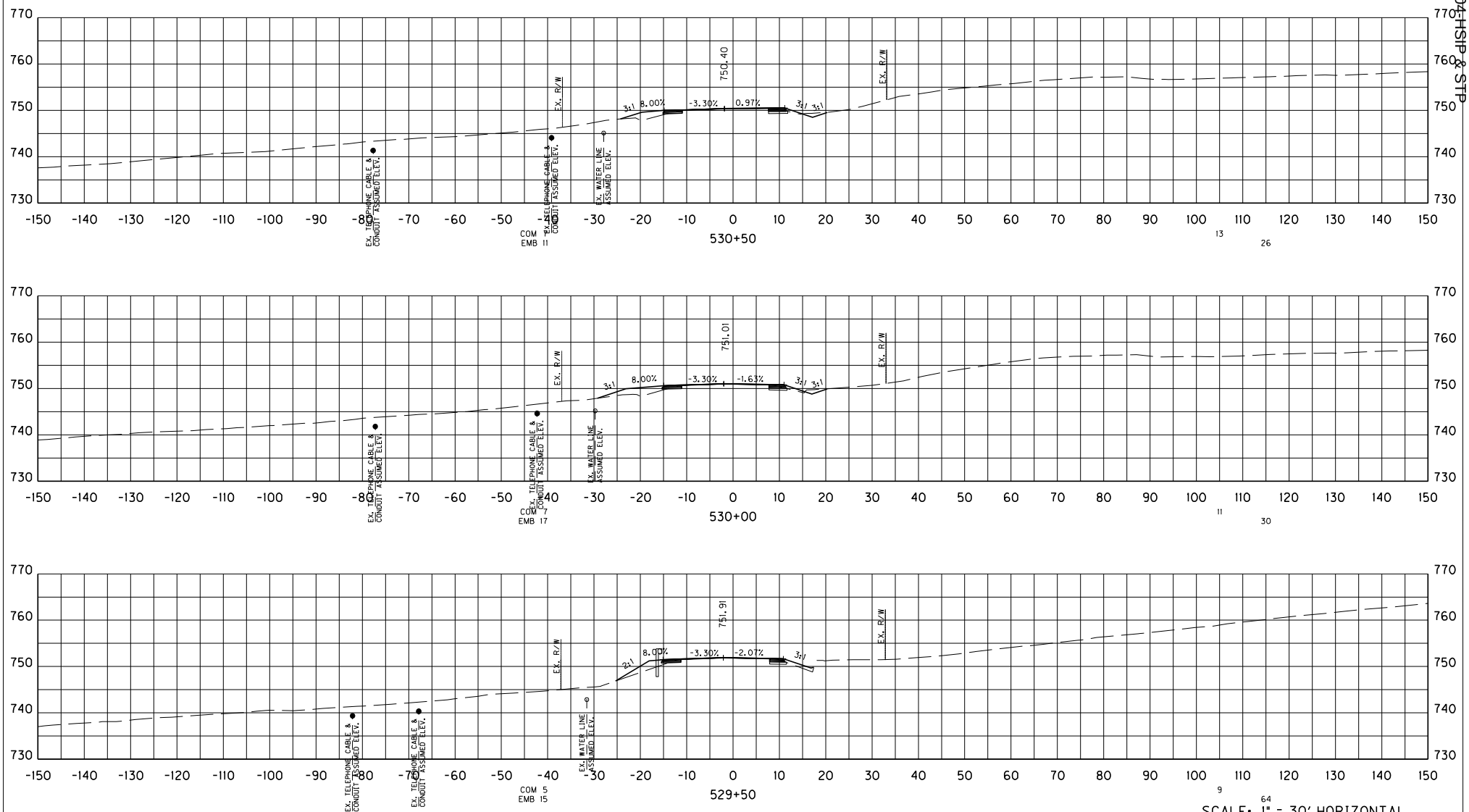


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X241

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.528+50 TO STA.529+00

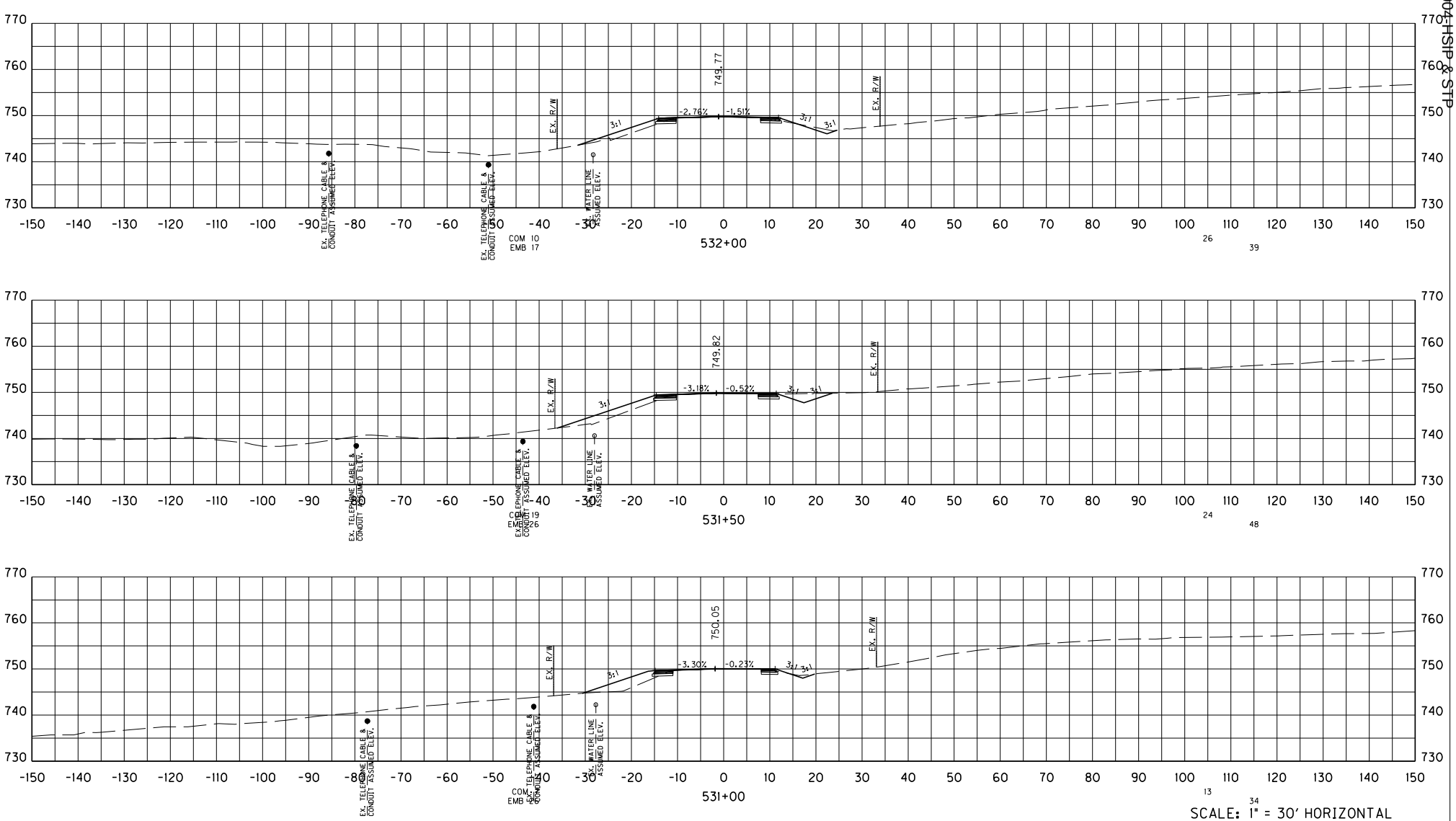


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X242

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.529+50 TO STA.530+50

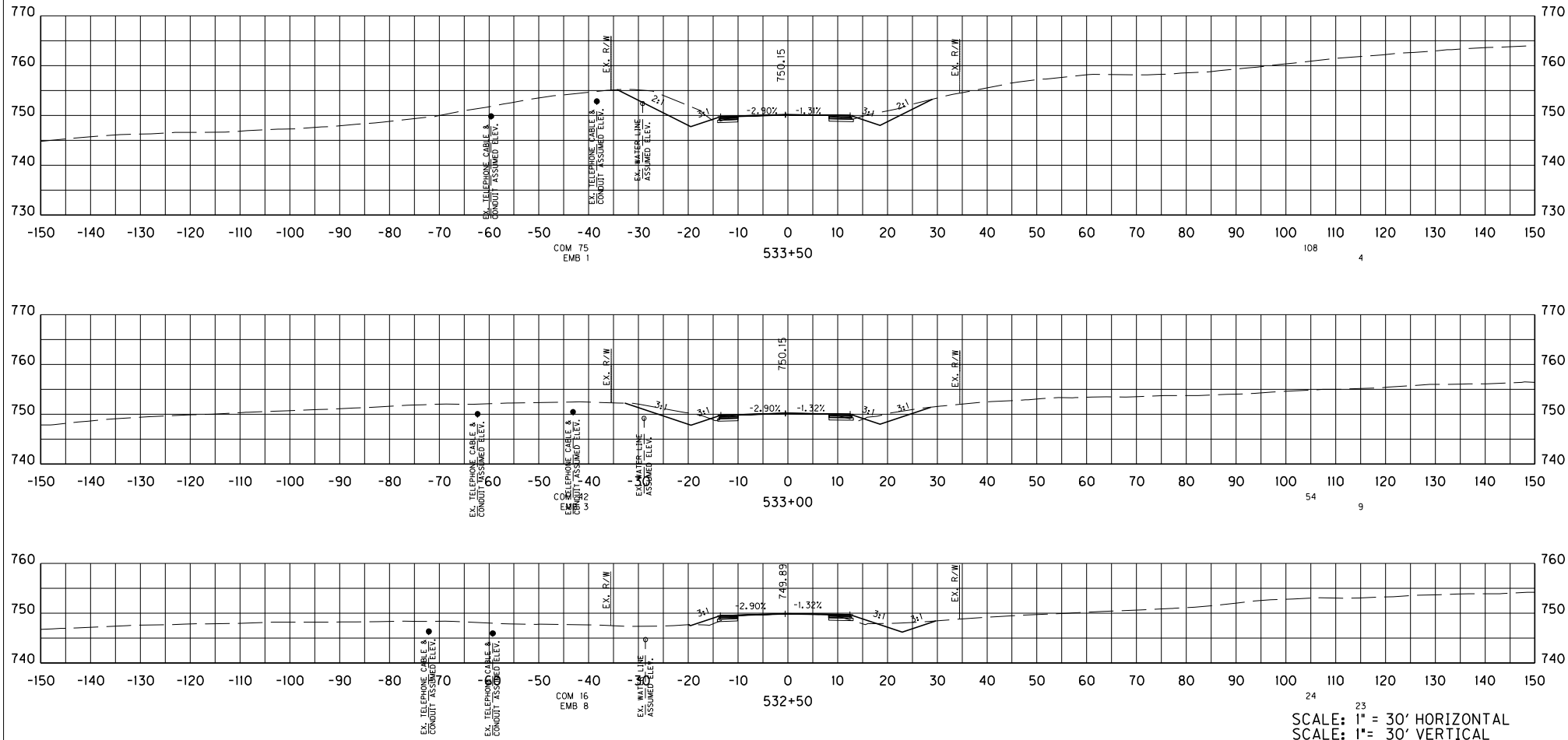


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X243

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.531+00 TO STA.532+00

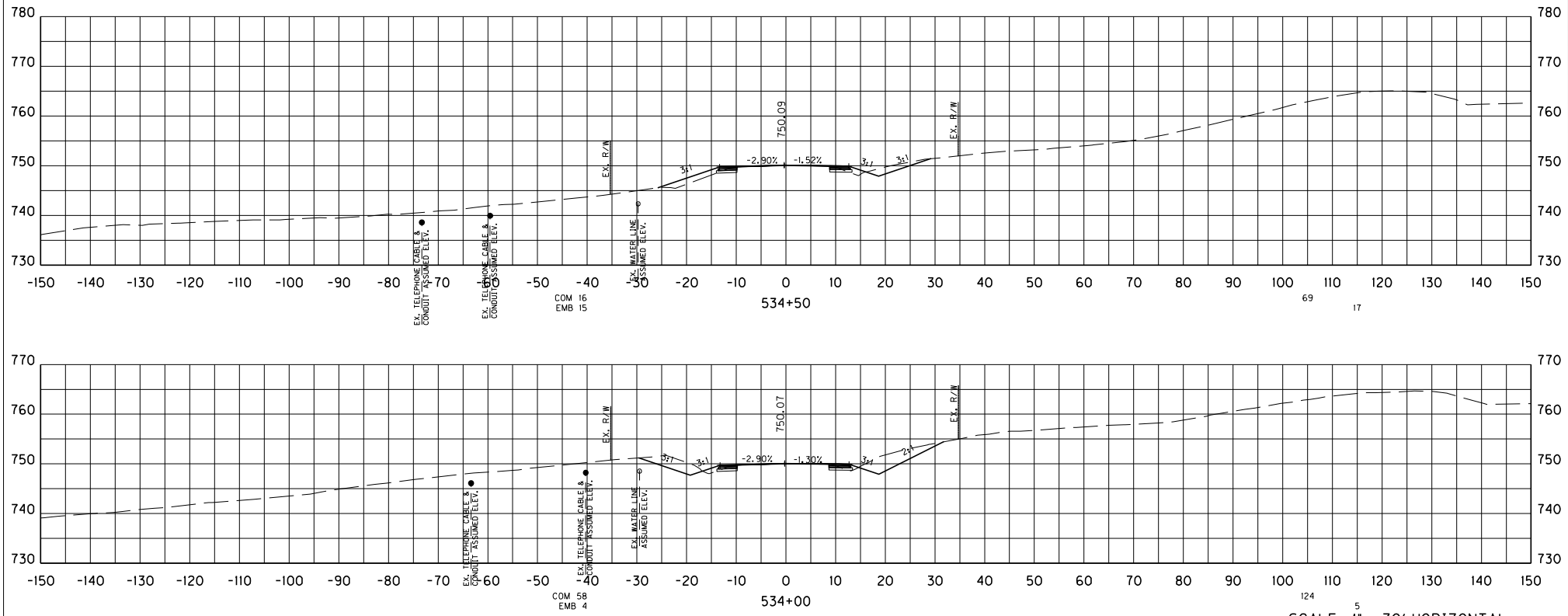


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X244

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.532+50 TO STA.533+50

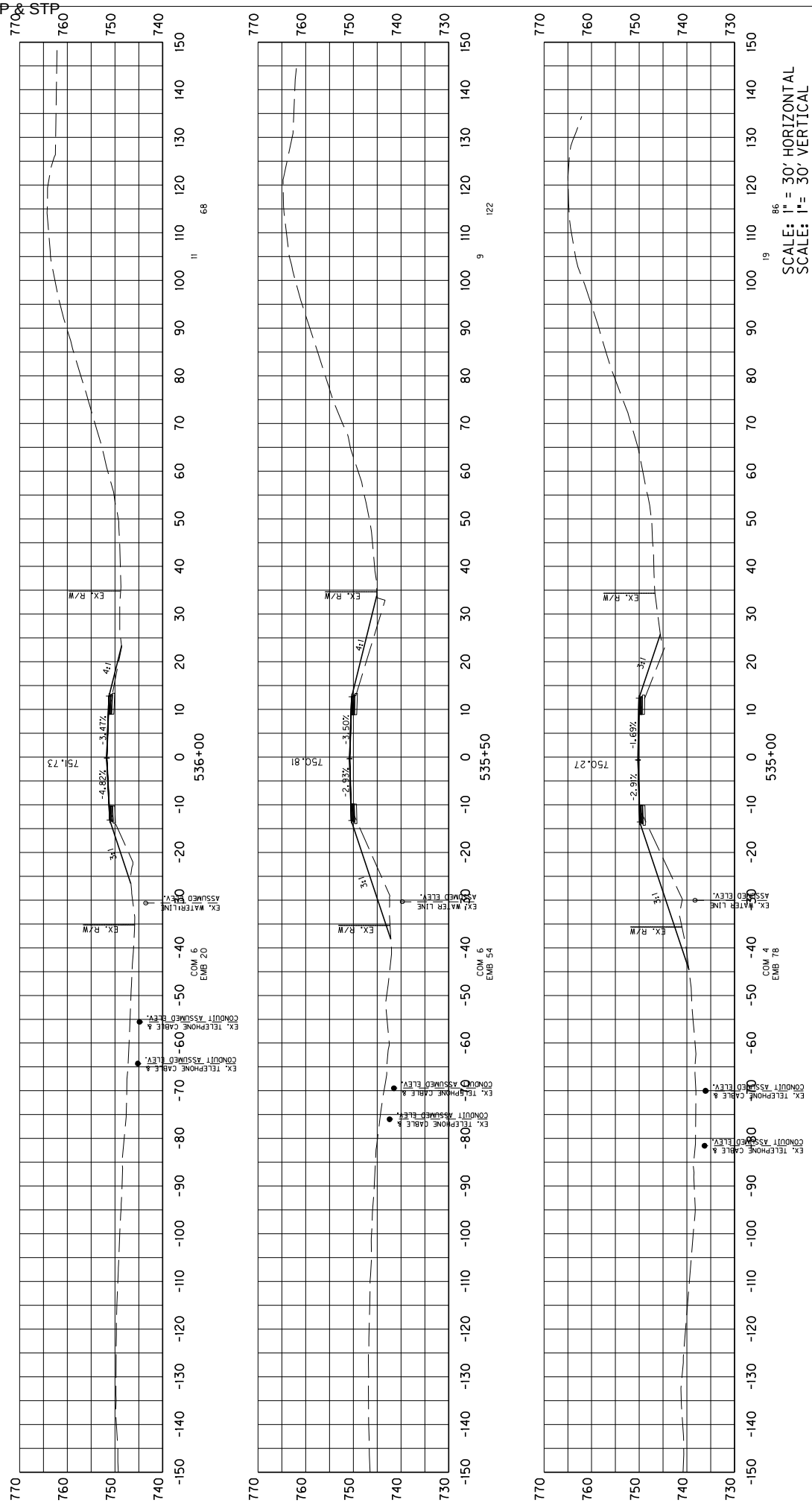


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X245

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

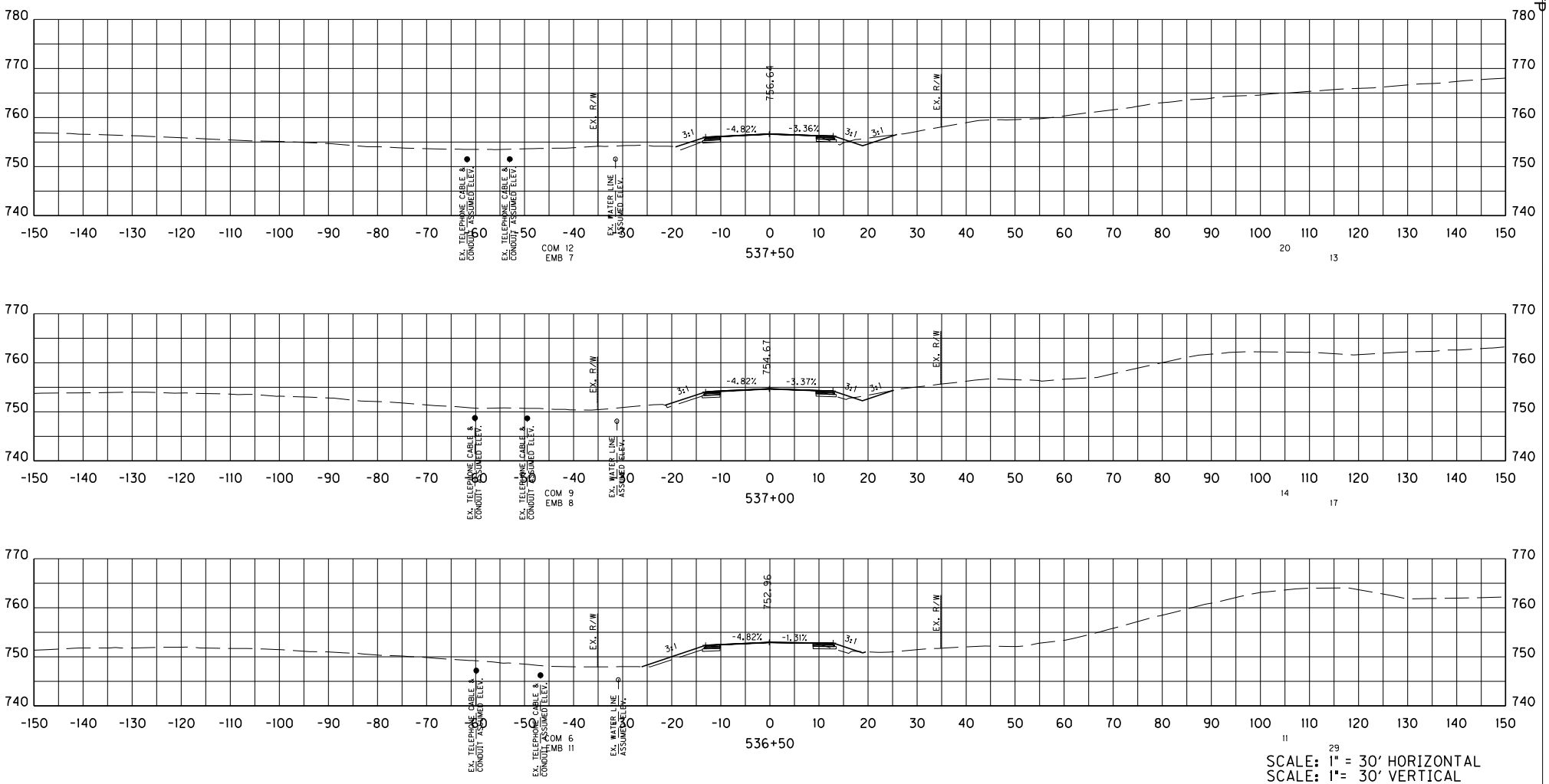
STA.534+00 TO STA.534+50



COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X246

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.535+00 TO STA.536+00

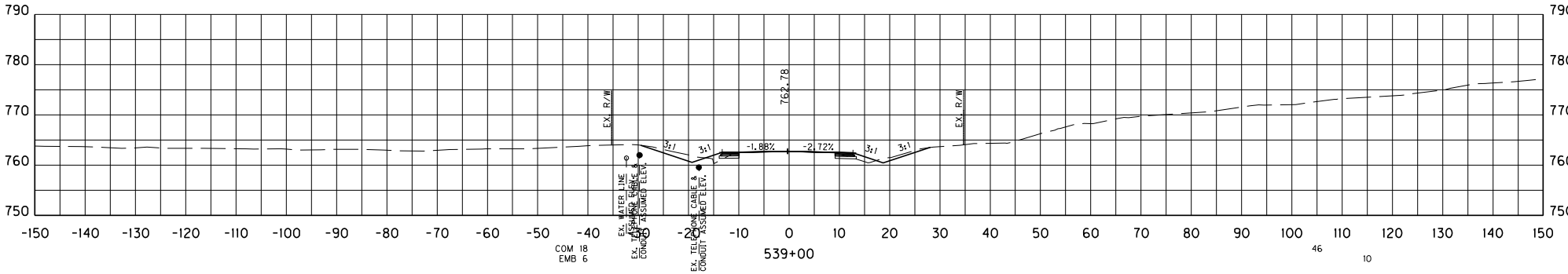


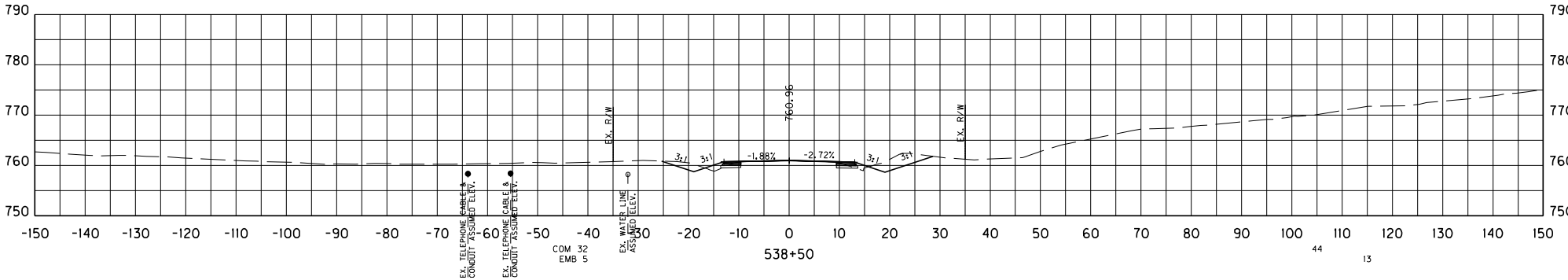
SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

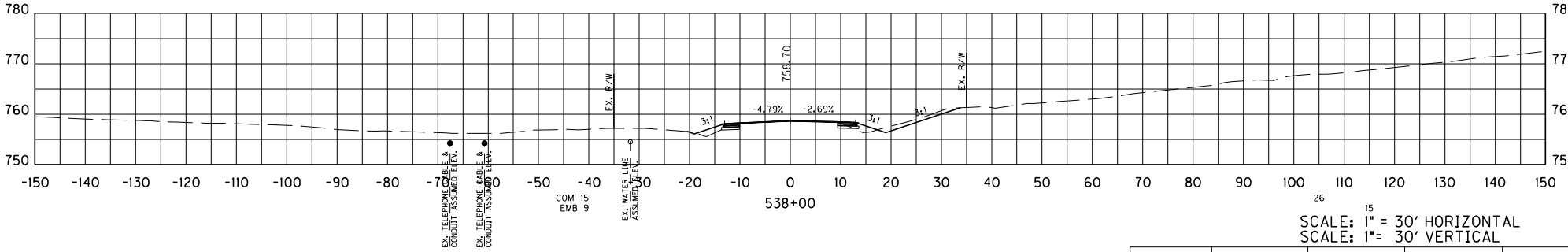
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X247

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.536+50 TO STA.537+50





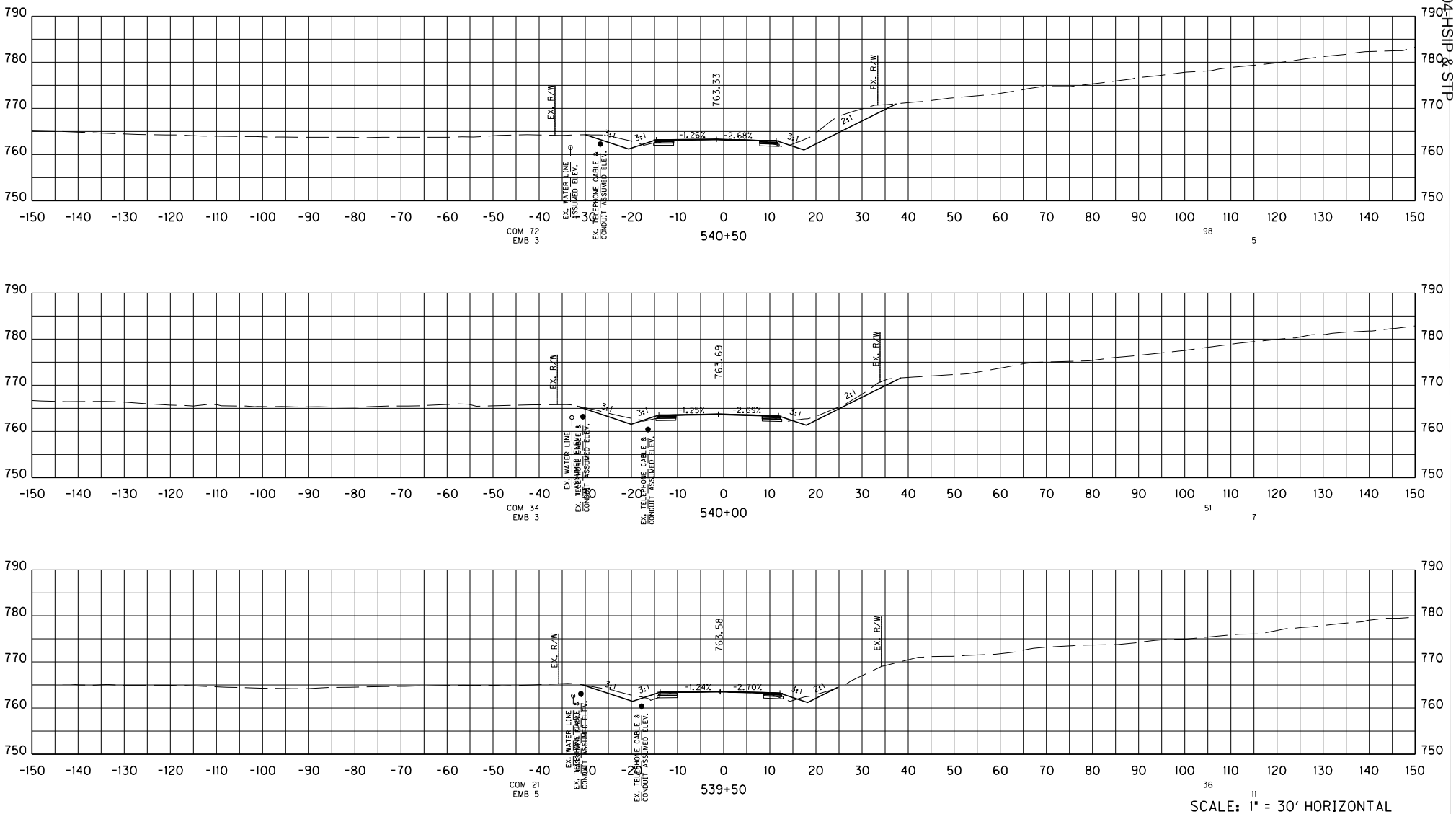


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X248

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.538+00 TO STA.539+00

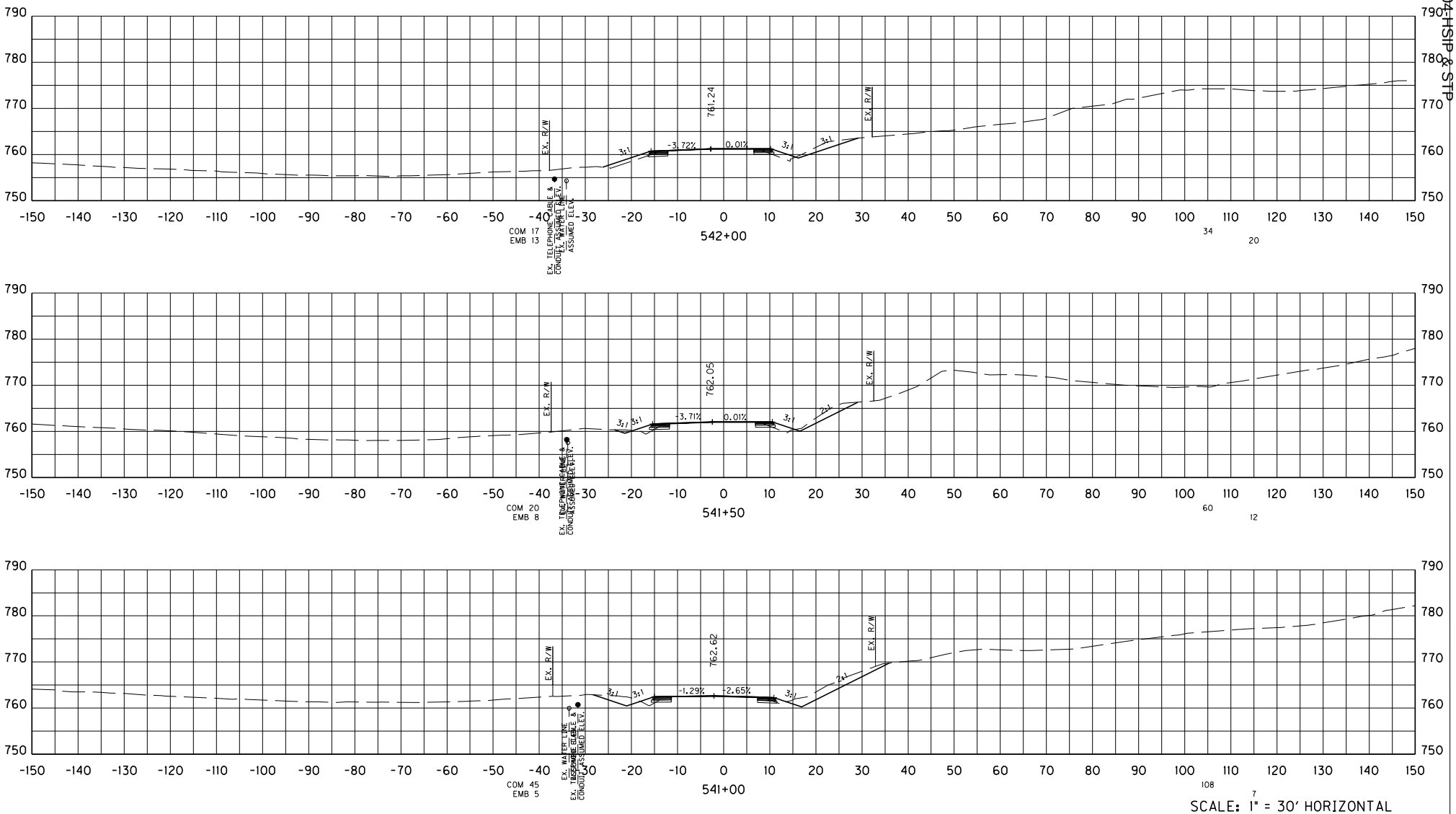


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X249

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.539+50 TO STA.540+50

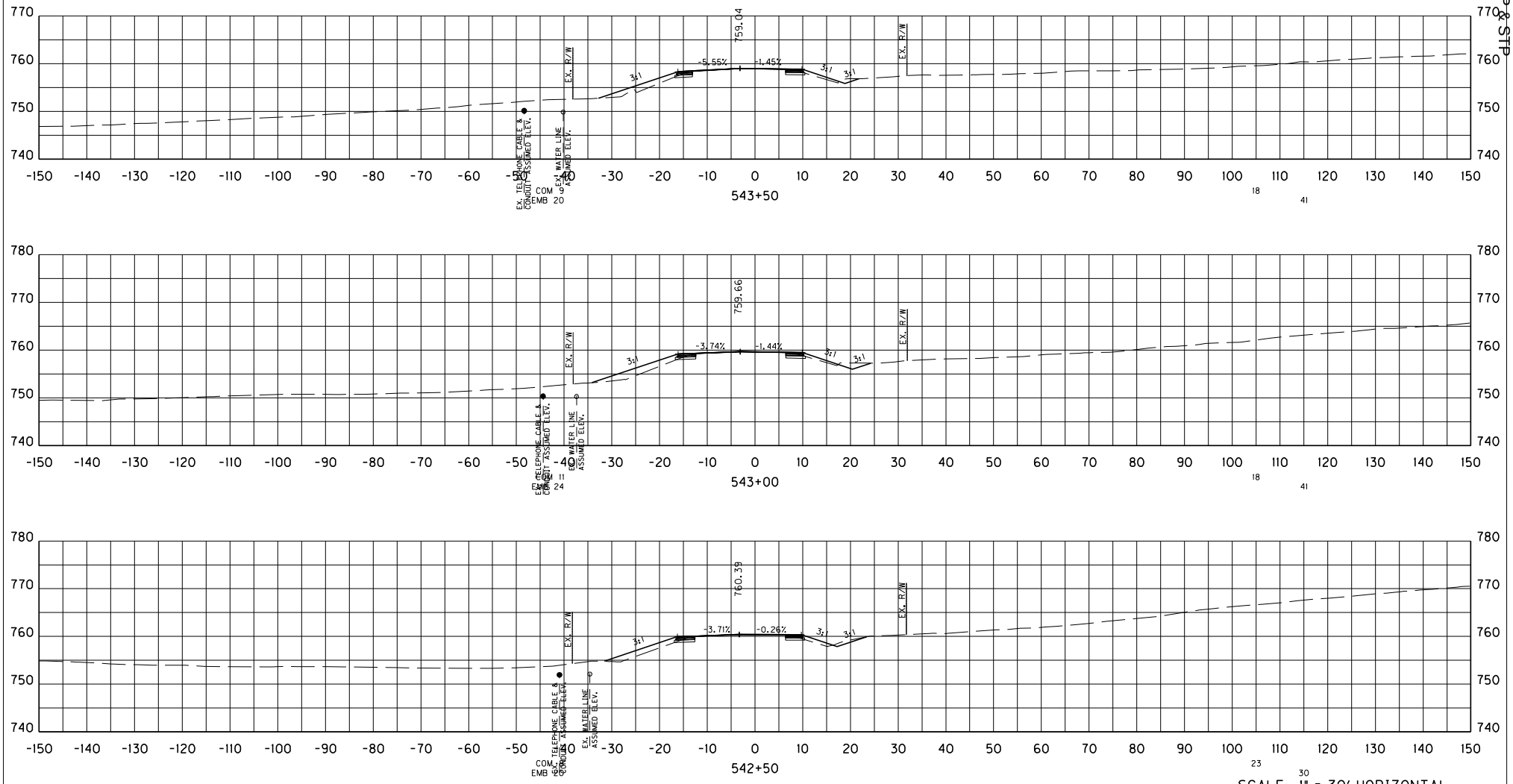


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X250

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.541+00 TO STA.542+00

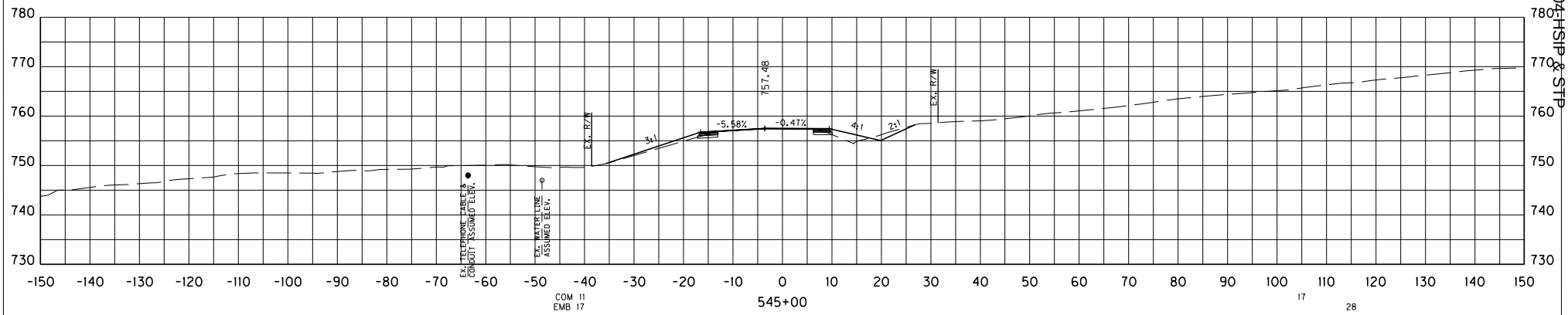


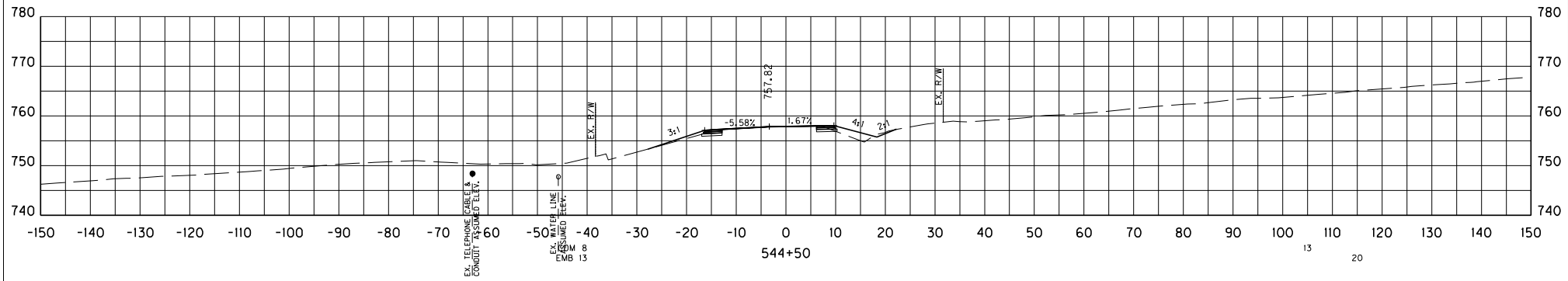
SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

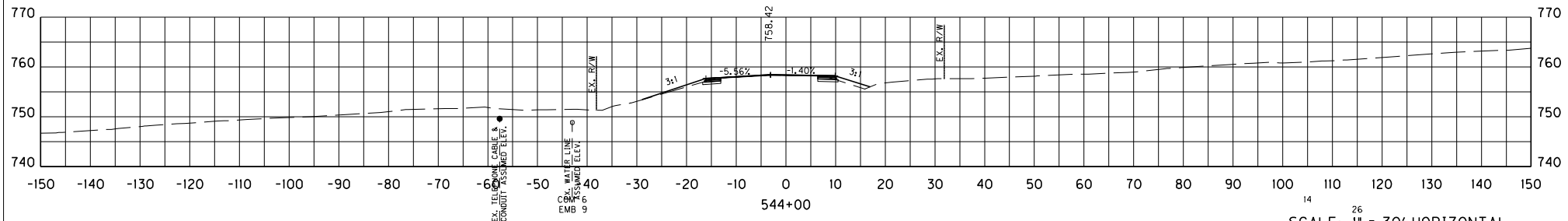
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X251

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.542+50 TO STA.543+50





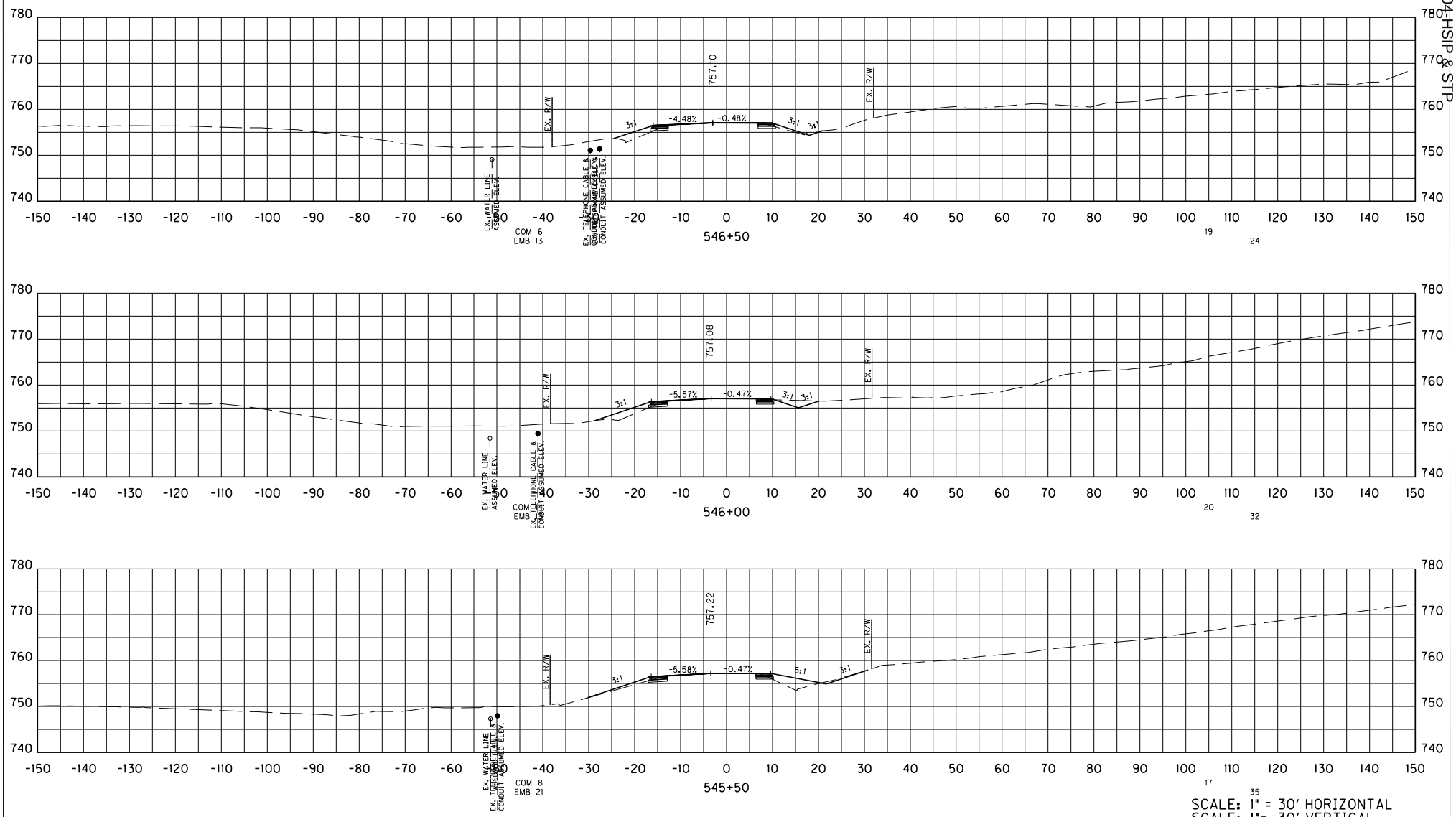


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X252

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.544+00 TO STA.545+00

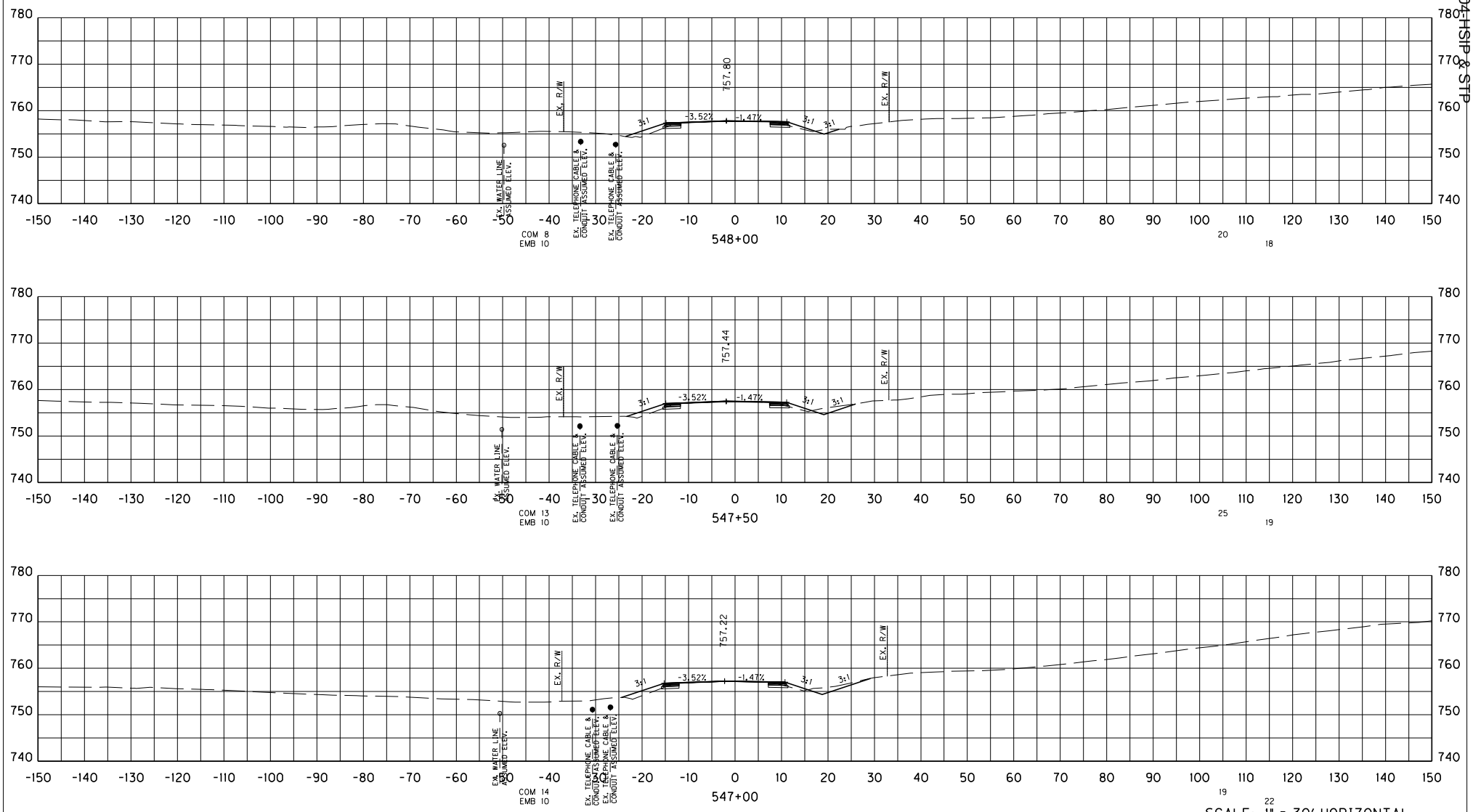


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X253

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.545+50 TO STA.546+50

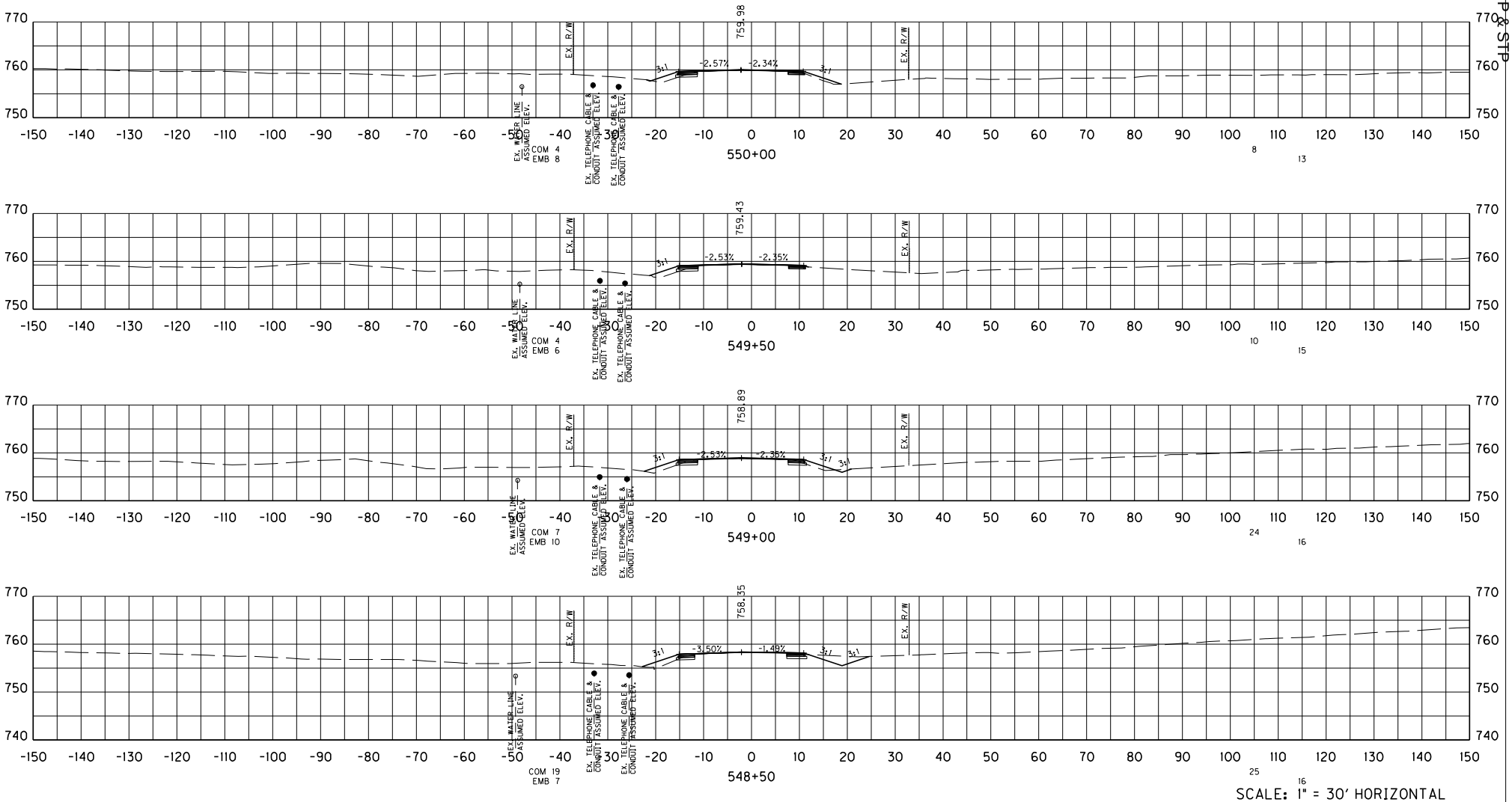


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X254

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.547+00 TO STA.548+00

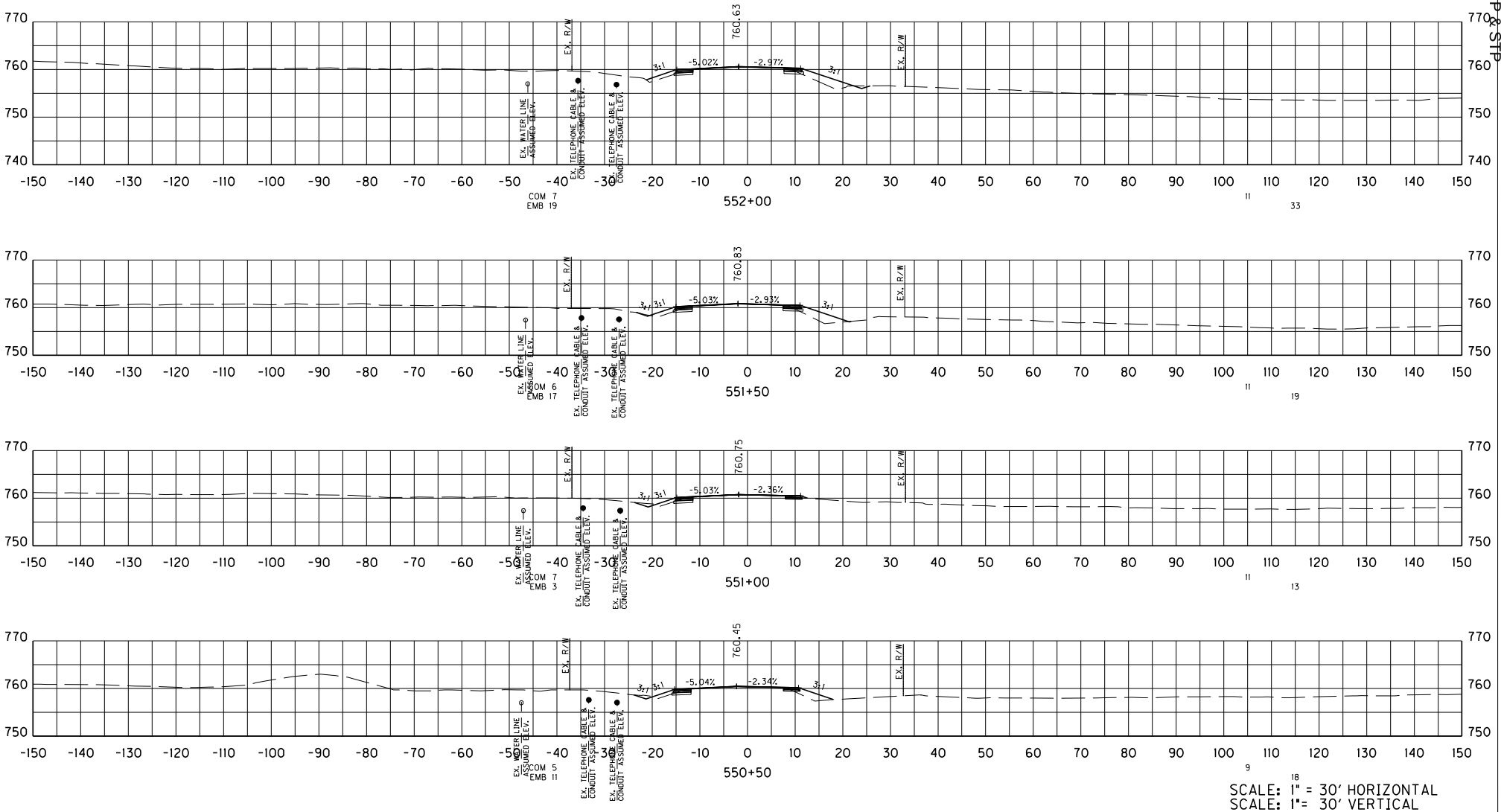


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X255

KY HWY 259 ANNETA RD CROSS SECTIONS SHEET

STA.548+50 TO STA.550+00

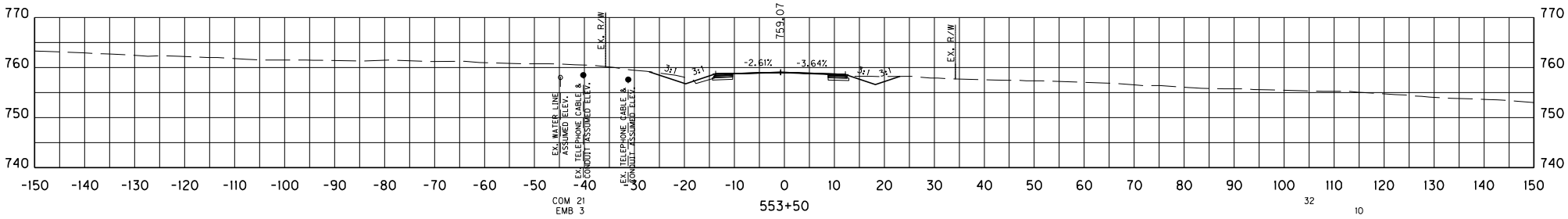


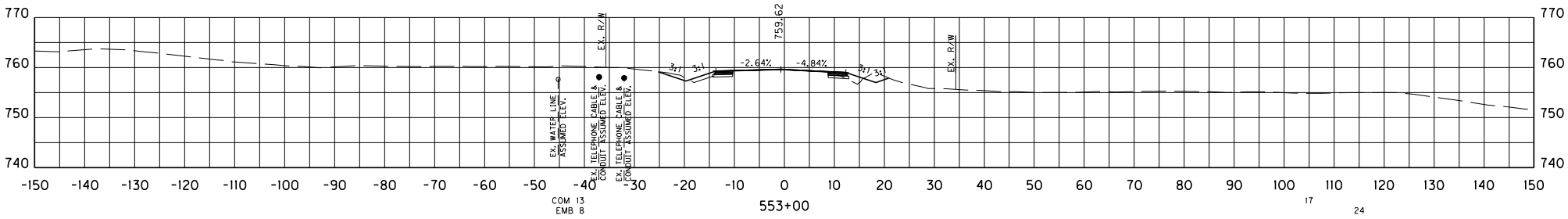
SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

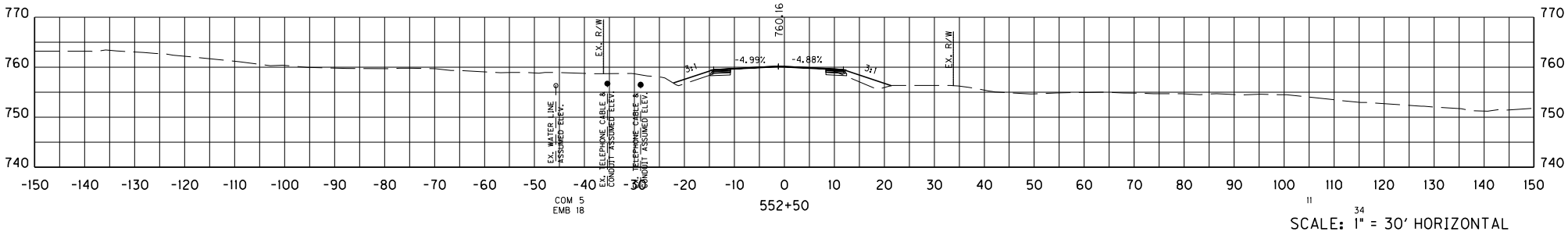
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X256

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.550+50 TO STA.552+00





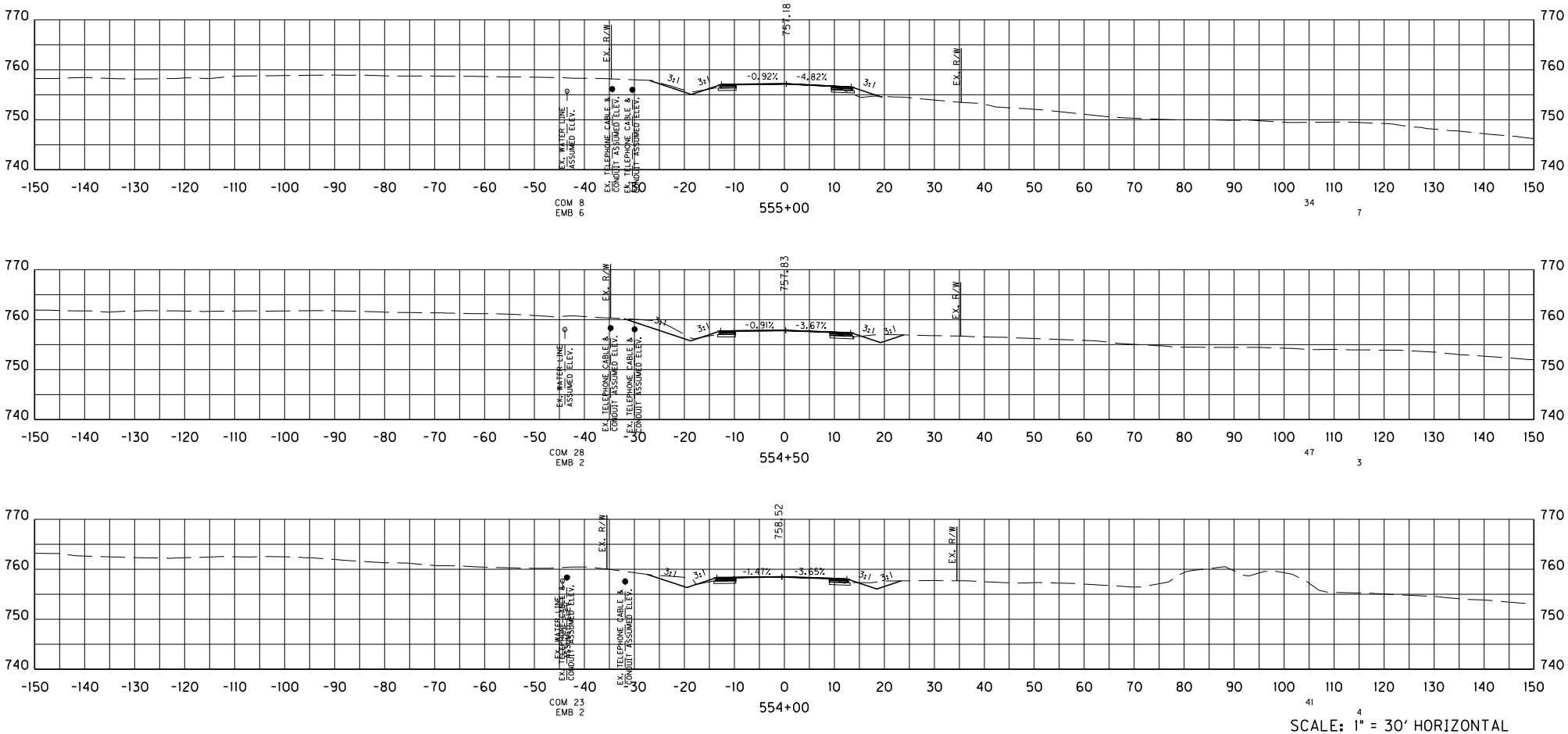


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X257

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.552+50 TO STA.553+50

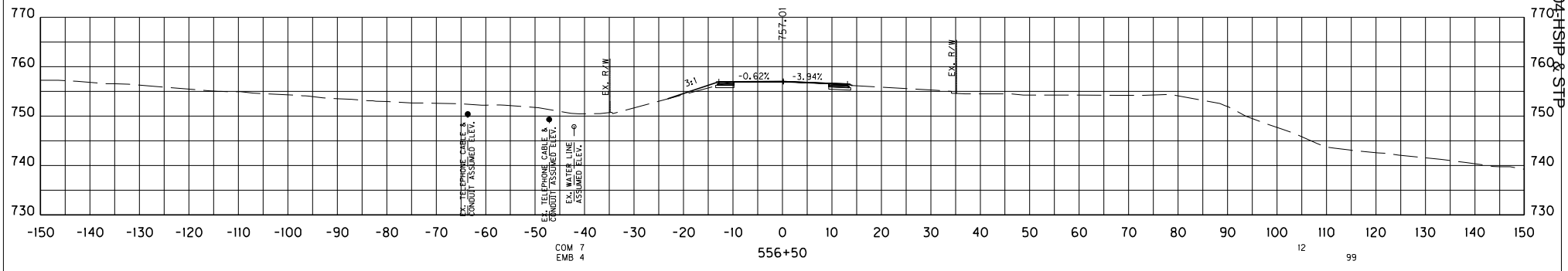


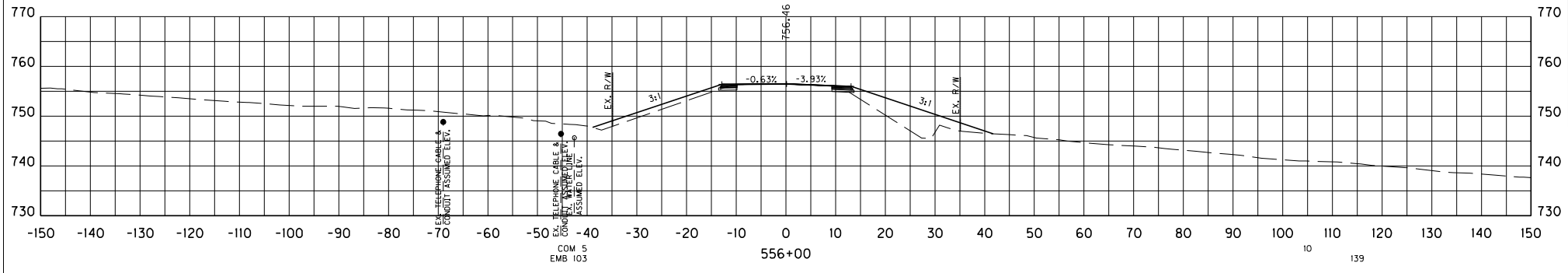
SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

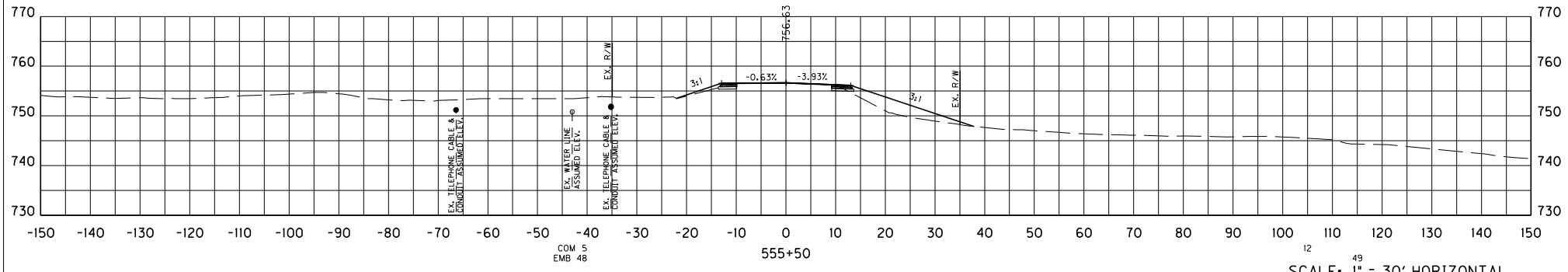
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X258

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.554+00 TO STA.555+00





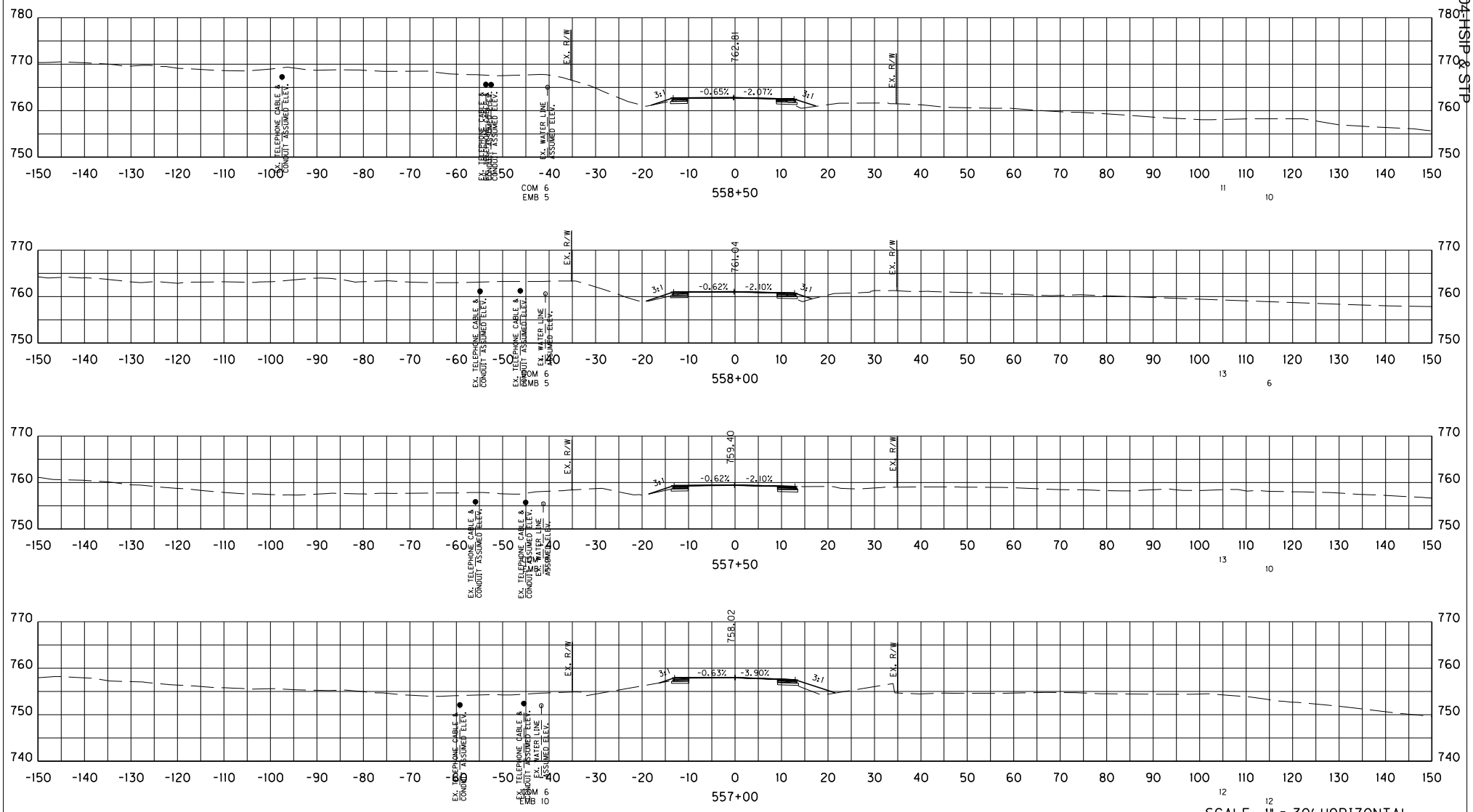


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X259

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.555+50 TO STA.556+50

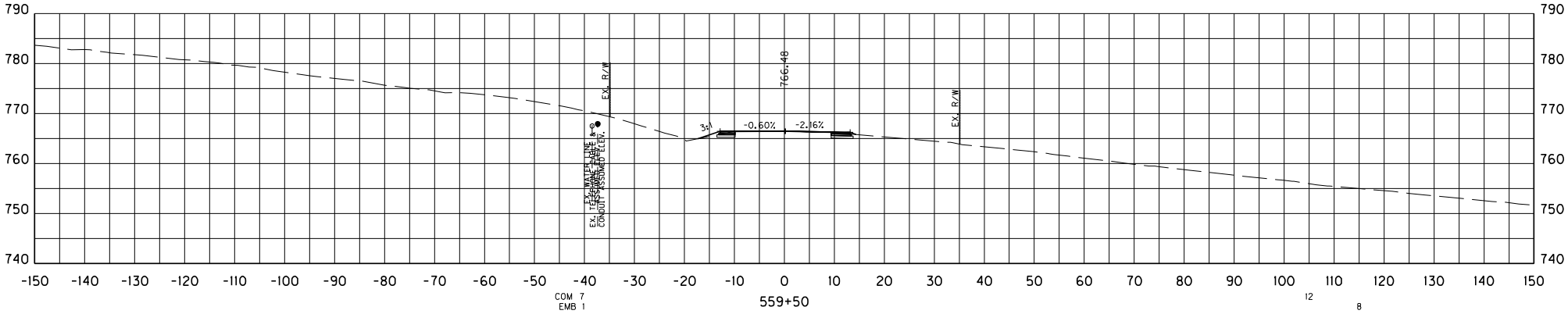


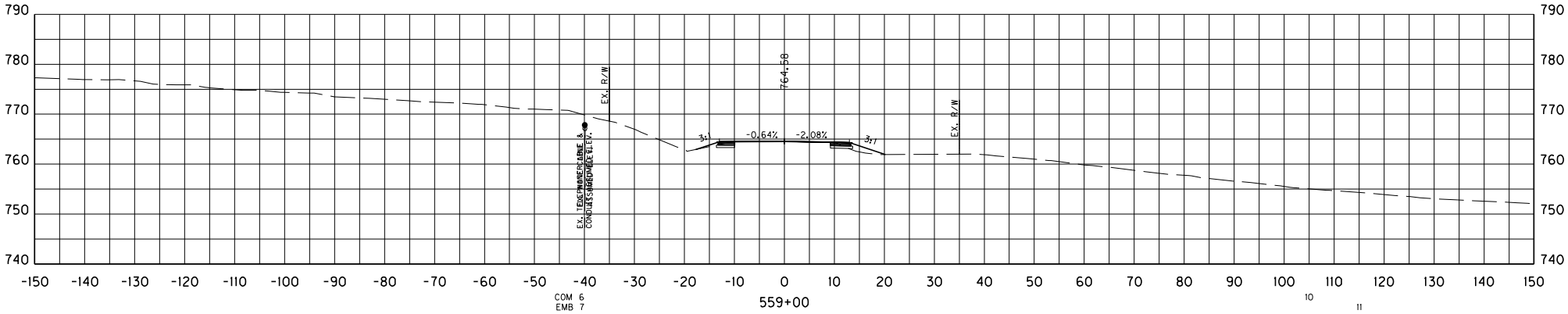
SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X260

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.557+00 TO STA.558+50



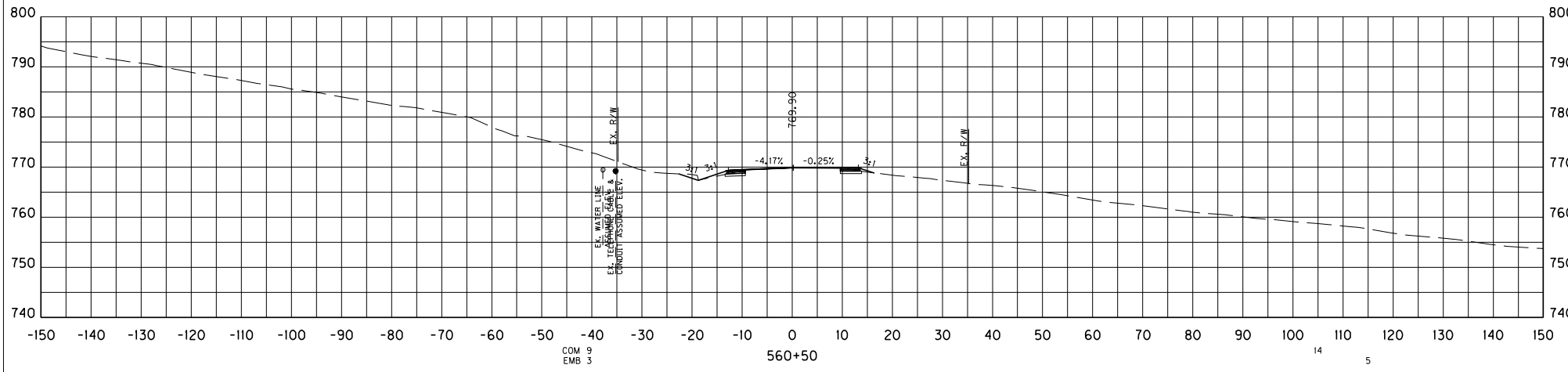


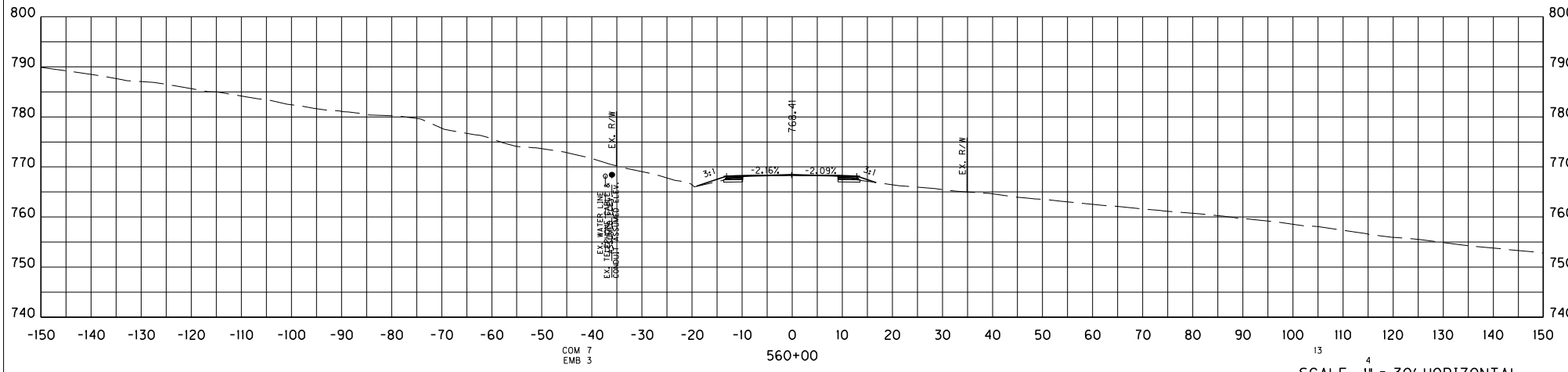
SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X261

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.559+00 TO STA.559+50



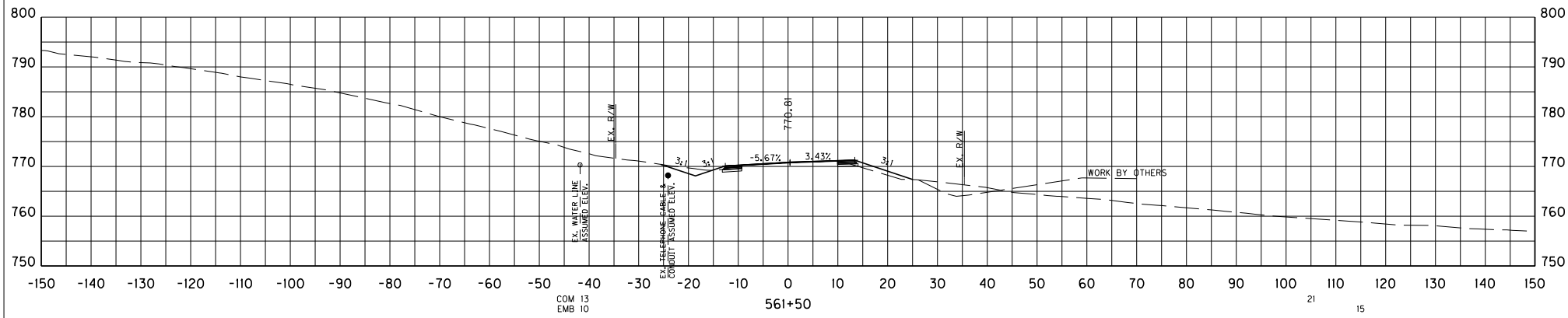


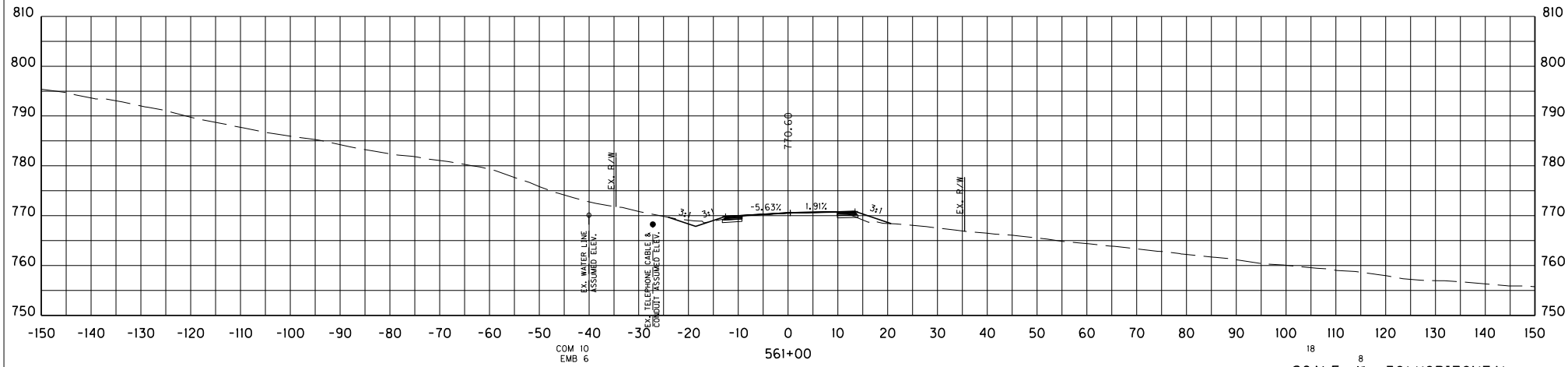
SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X262

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.560+00 TO STA.560+50



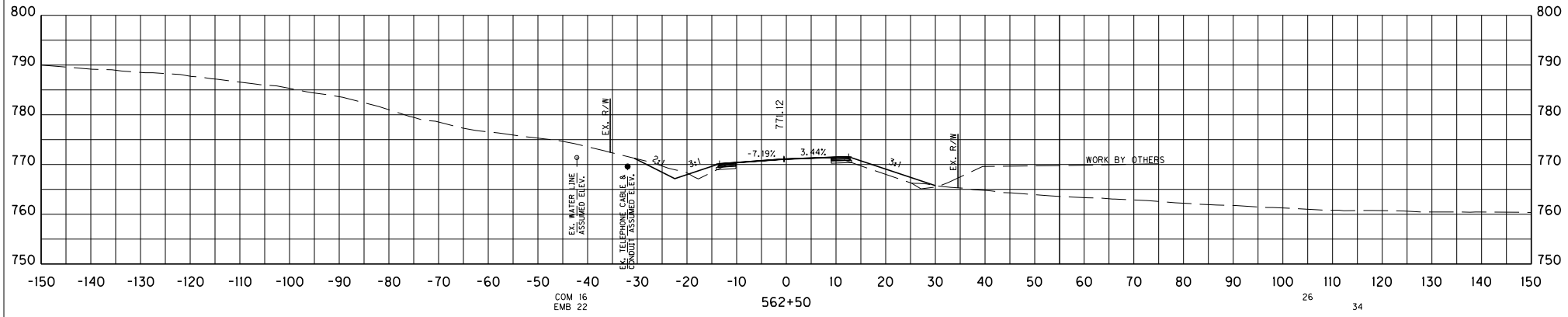


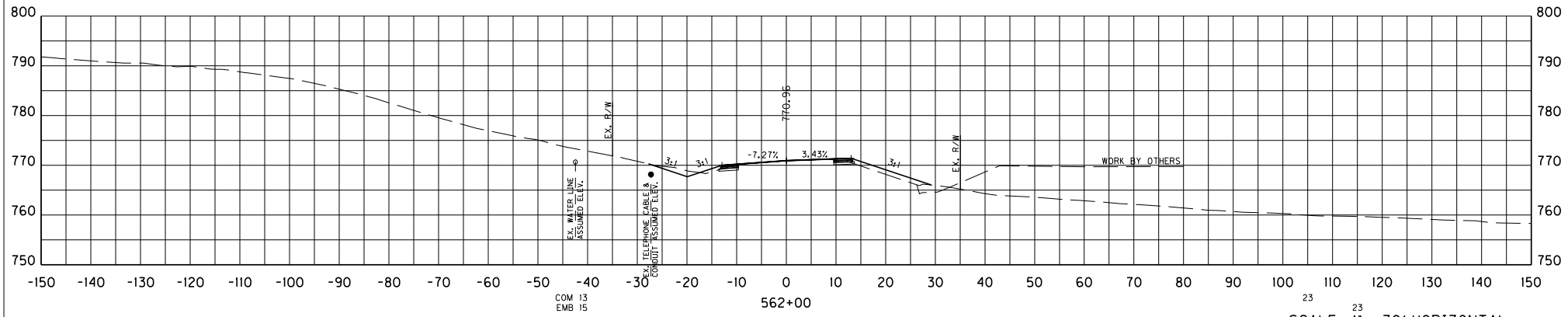
SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X263

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.561+00 TO STA.561+50



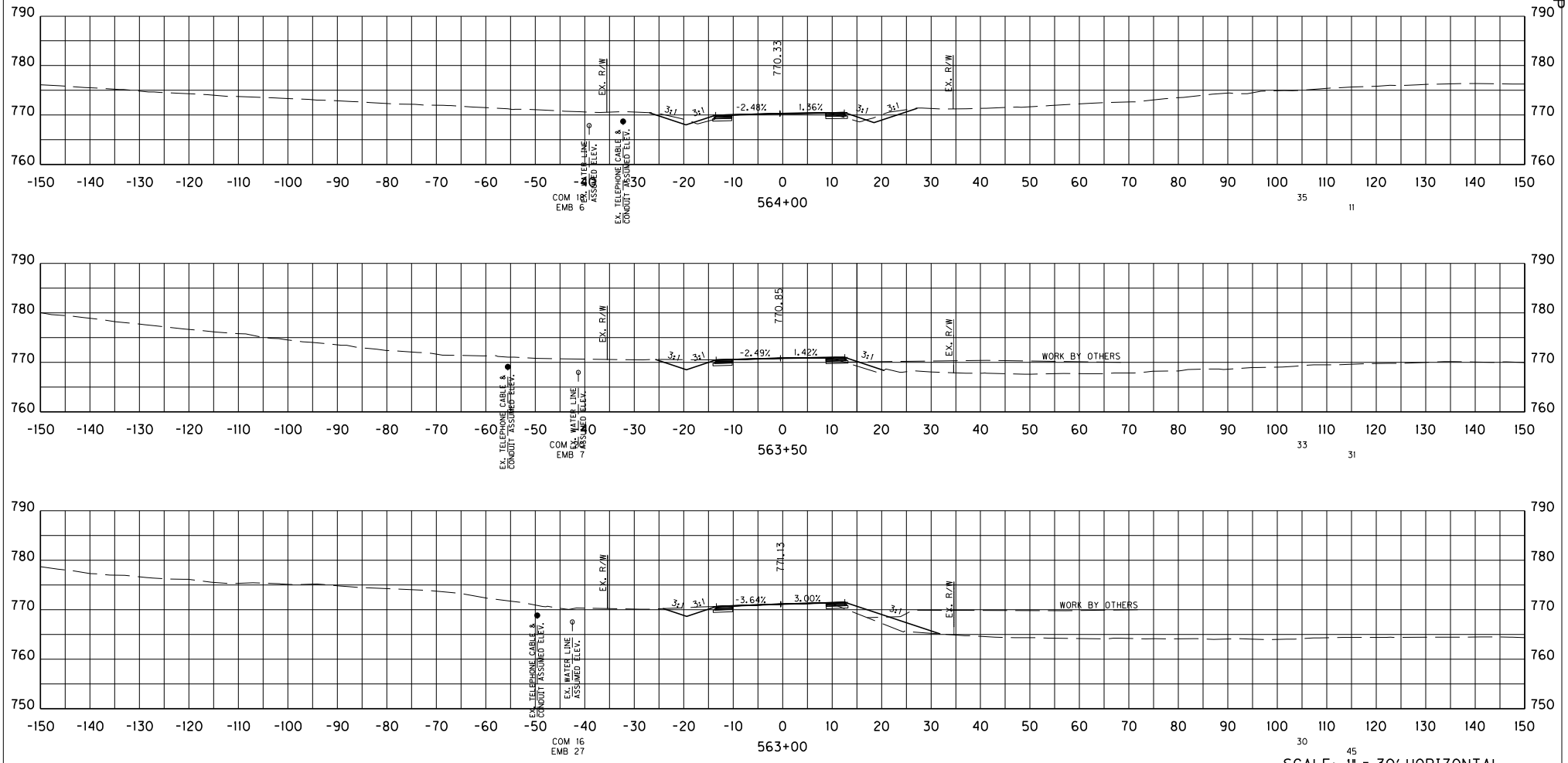


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X264

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.562+00 TO STA.562+50

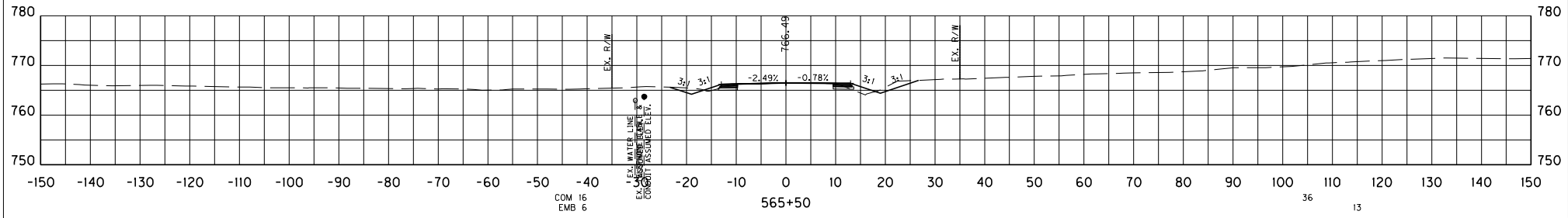


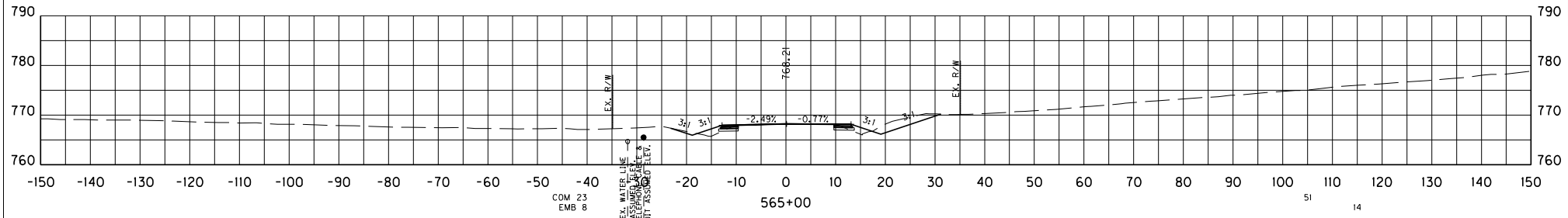
SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

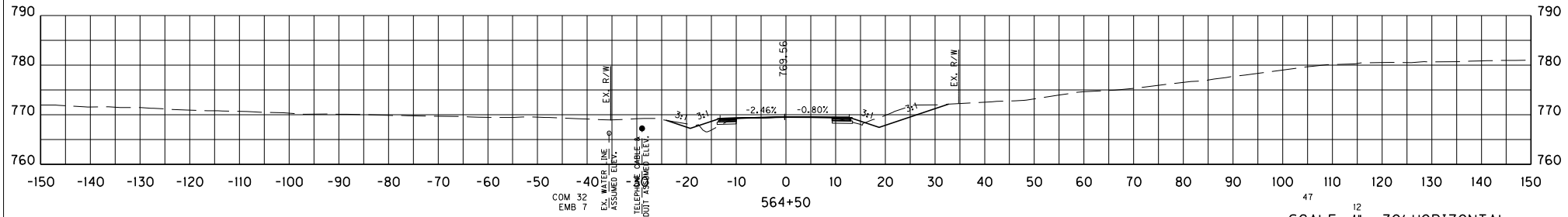
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X265

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.563+00 TO STA.564+00





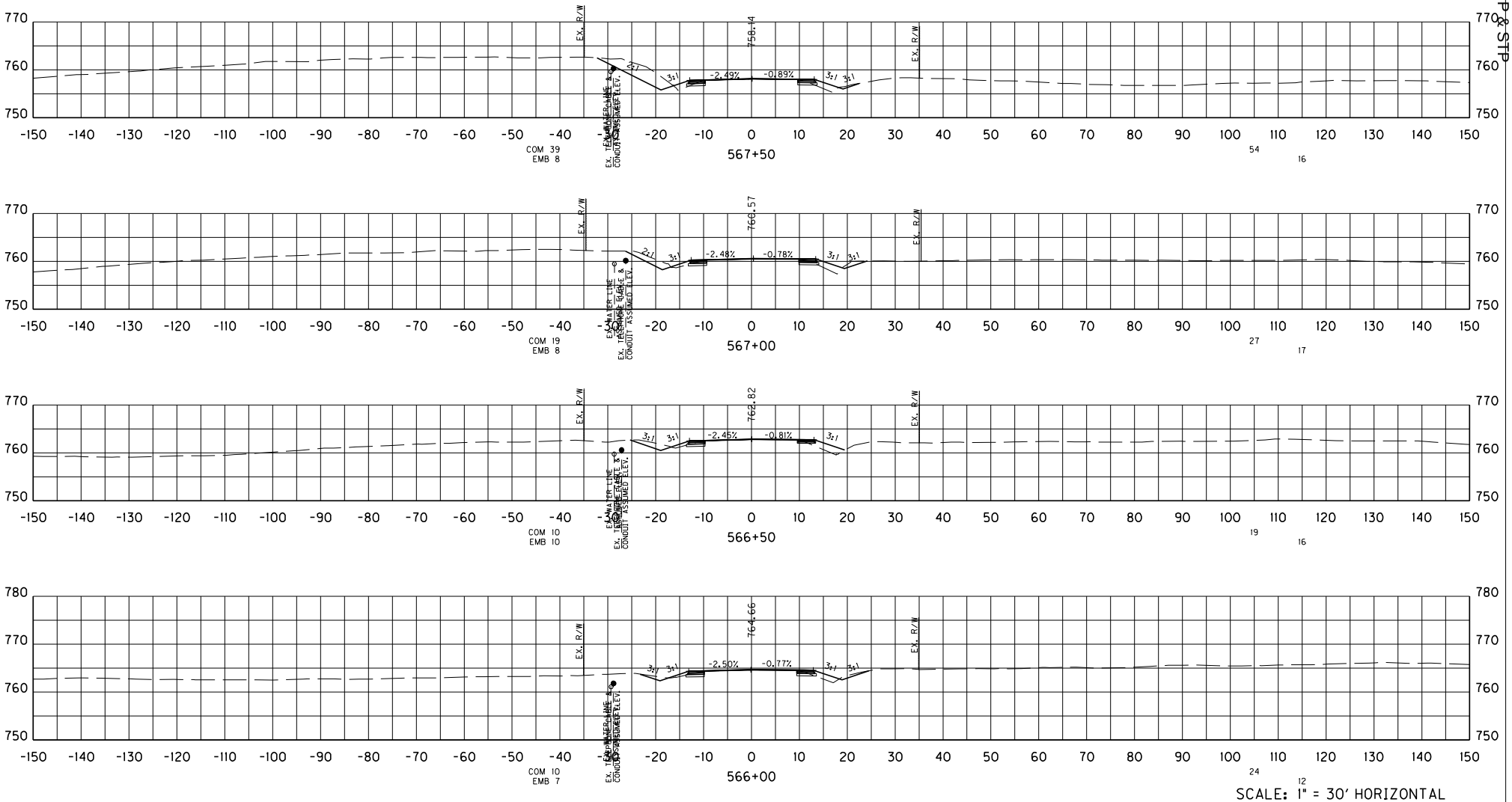


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X266

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.564+50 TO STA.565+50

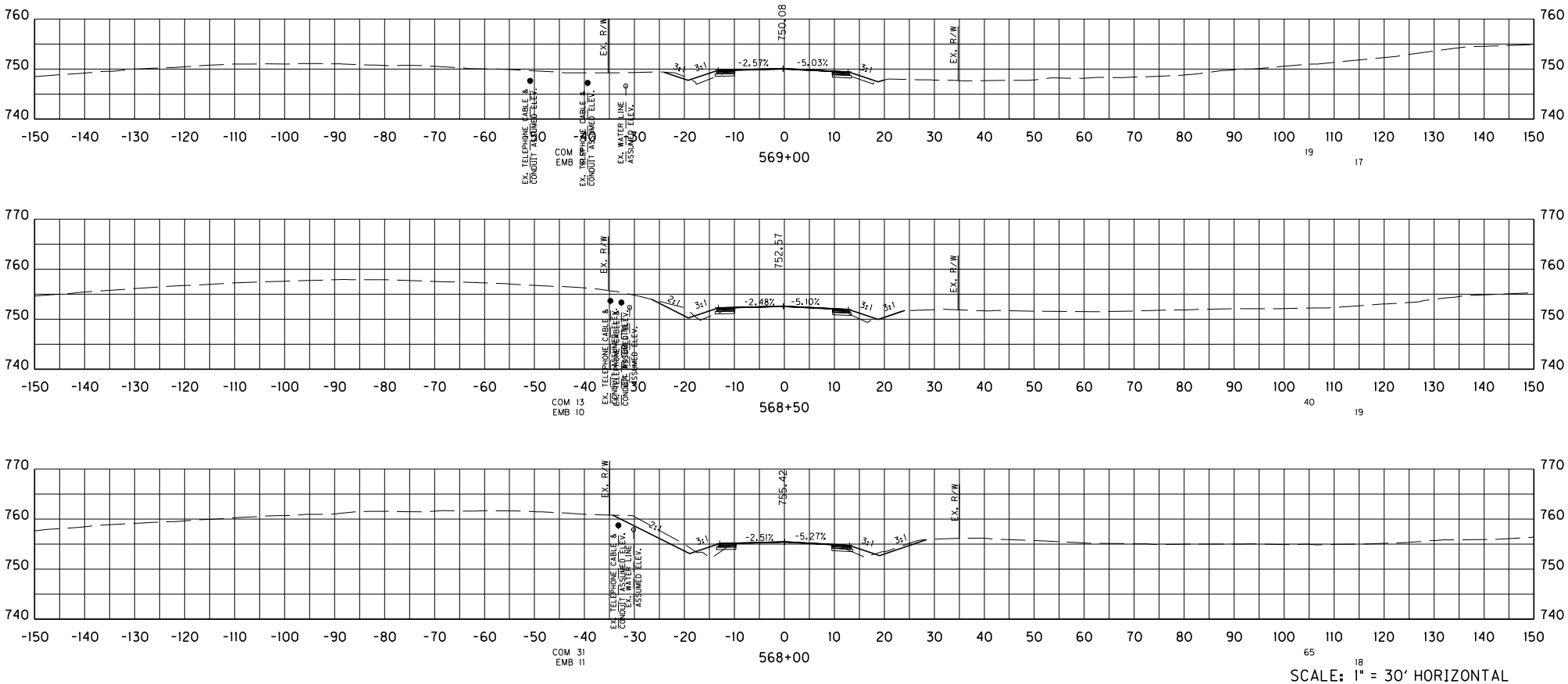


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X267

KY HWY 259 ANNETA RD CROSS SECTIONS SHEET

STA.566+00 TO STA.567+50

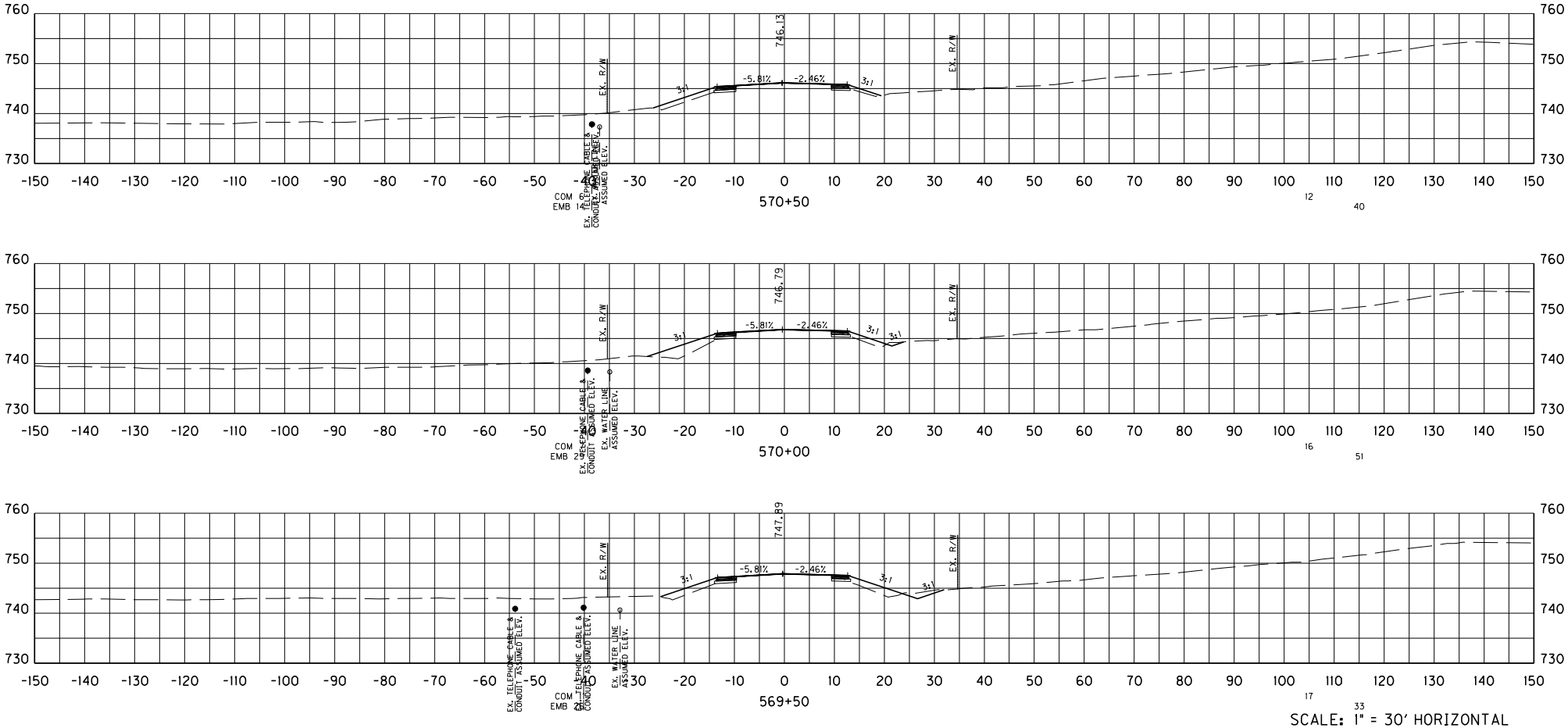


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X268

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.568+00 TO STA.569+00

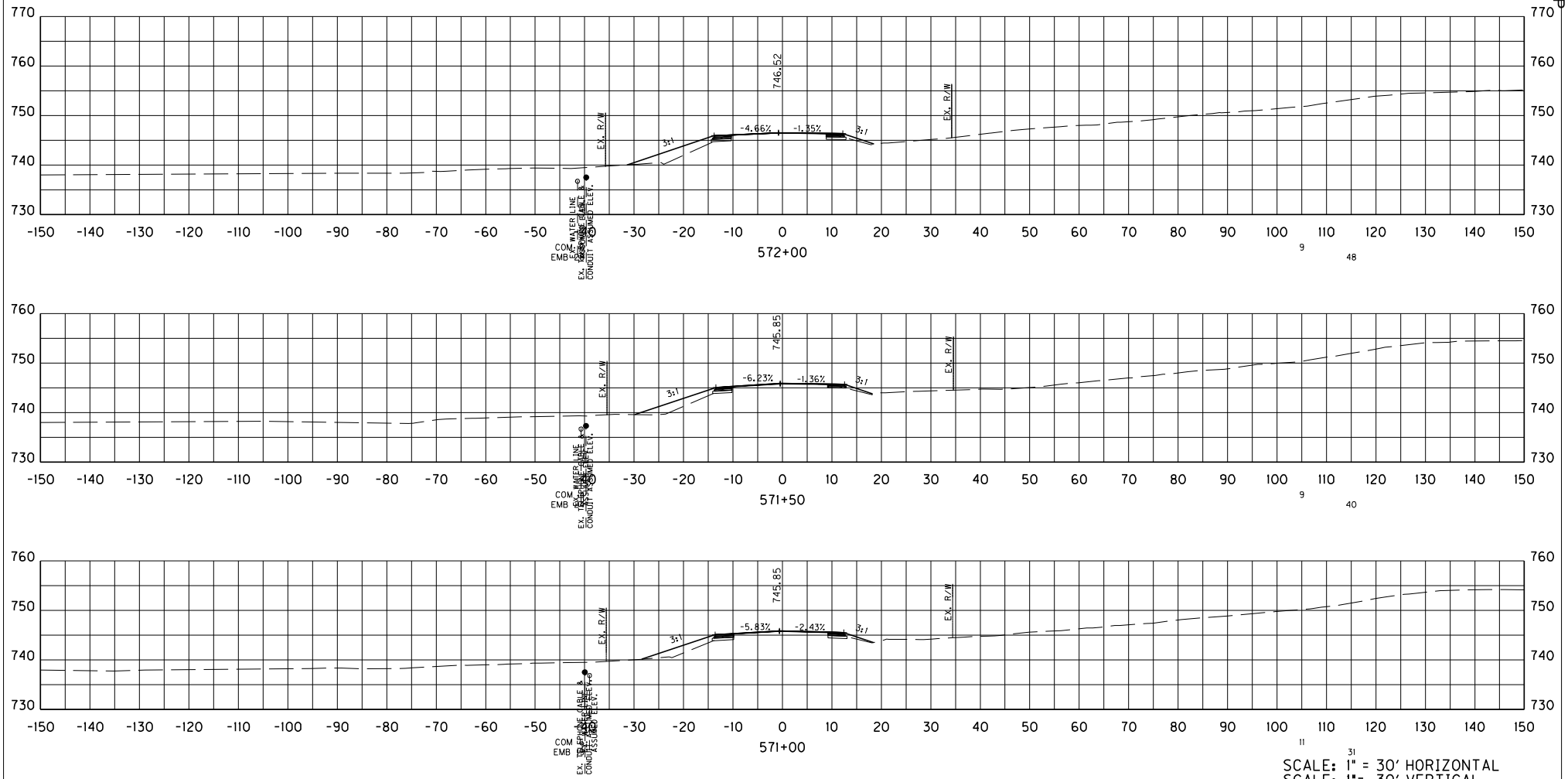


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X269

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.569+50 TO STA.570+50

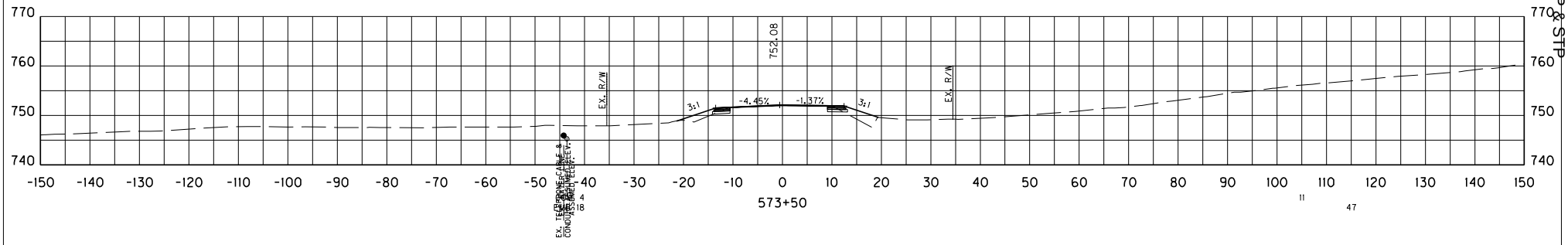


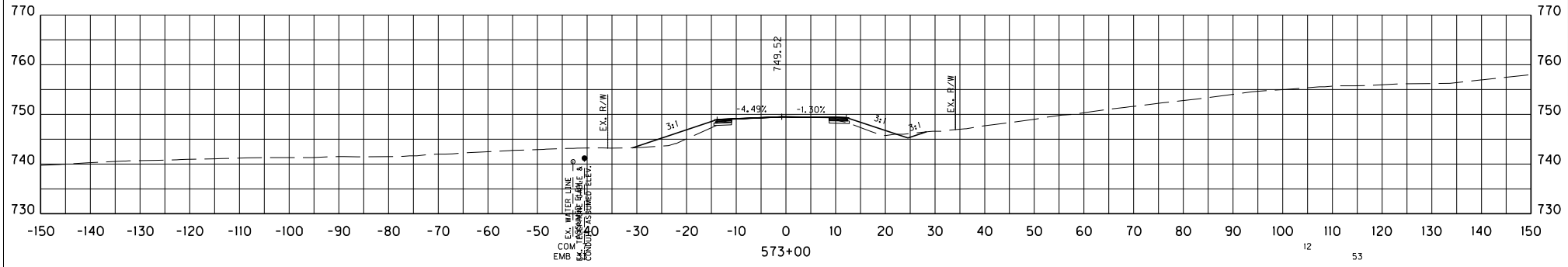
SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

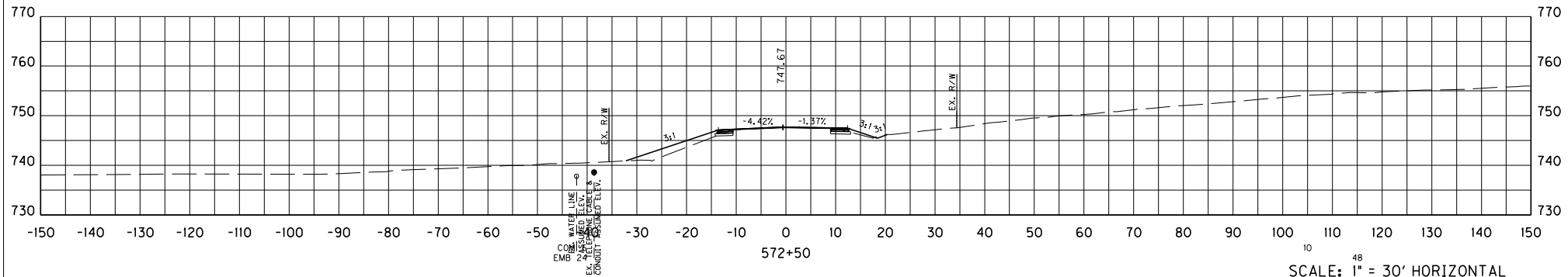
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X270

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.571+00 TO STA.572+00





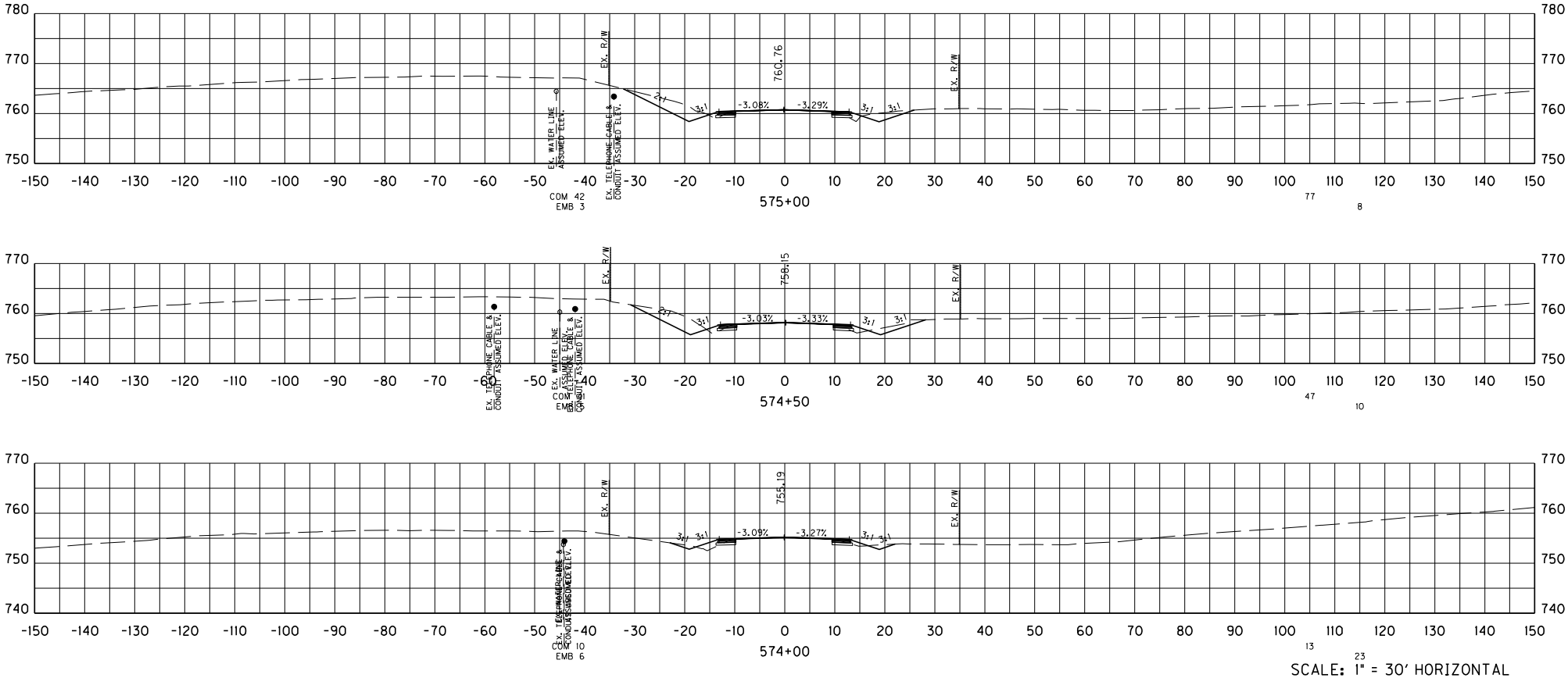


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X271

KY HWY 259 ANNETA RD CROSS SECTIONS SHEET

STA.572+50 TO STA.573+50

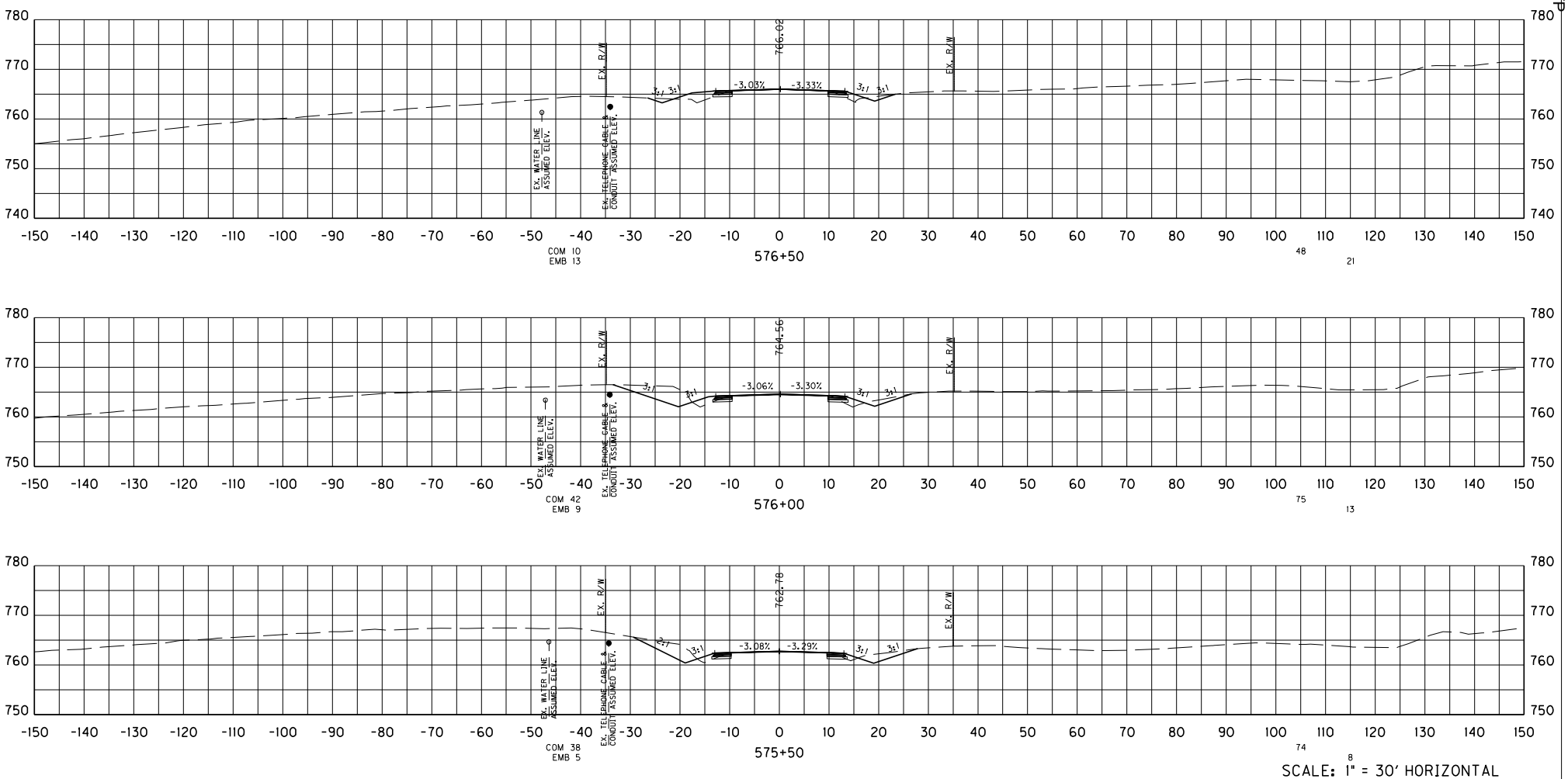


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X272

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.574+00 TO STA.575+00

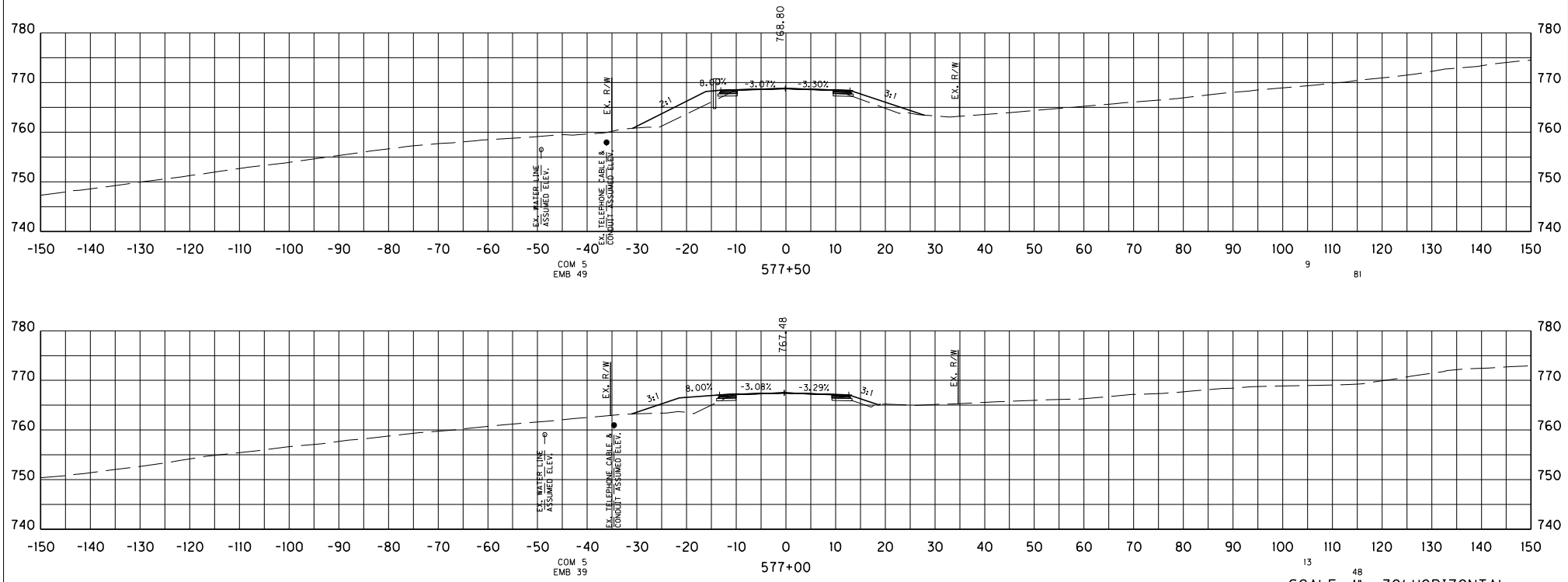


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X273

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.575+50 TO STA.576+50

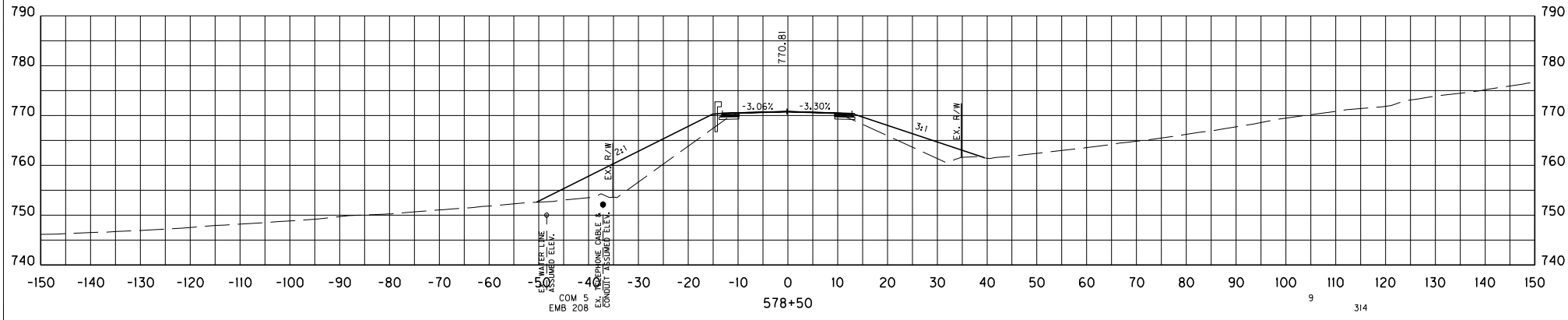


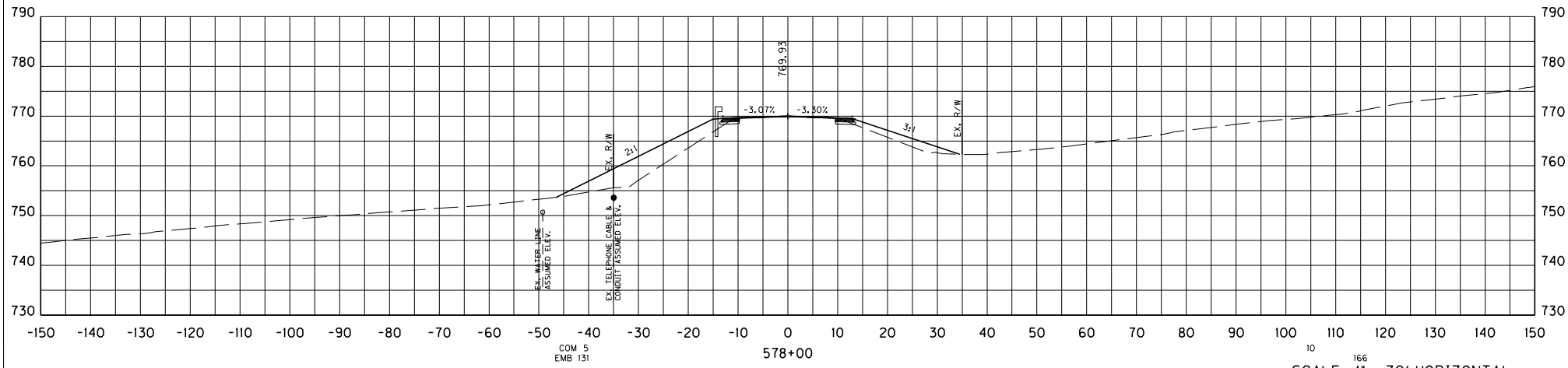
SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X274

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.577+00 TO STA.577+50



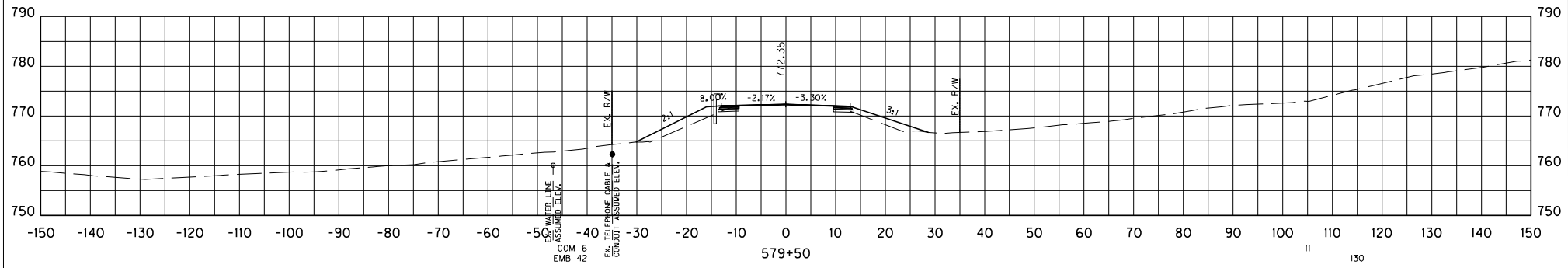


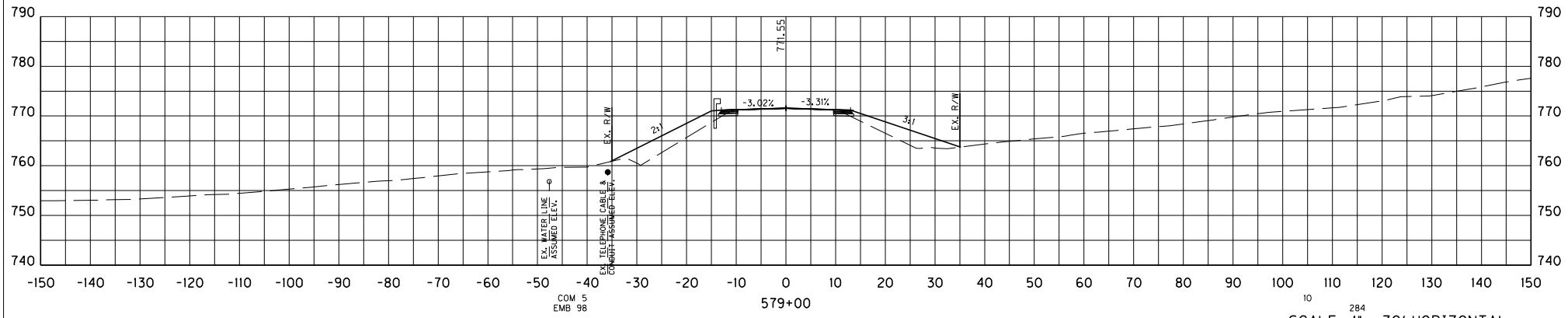
SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X275

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.578+00 TO STA.578+50



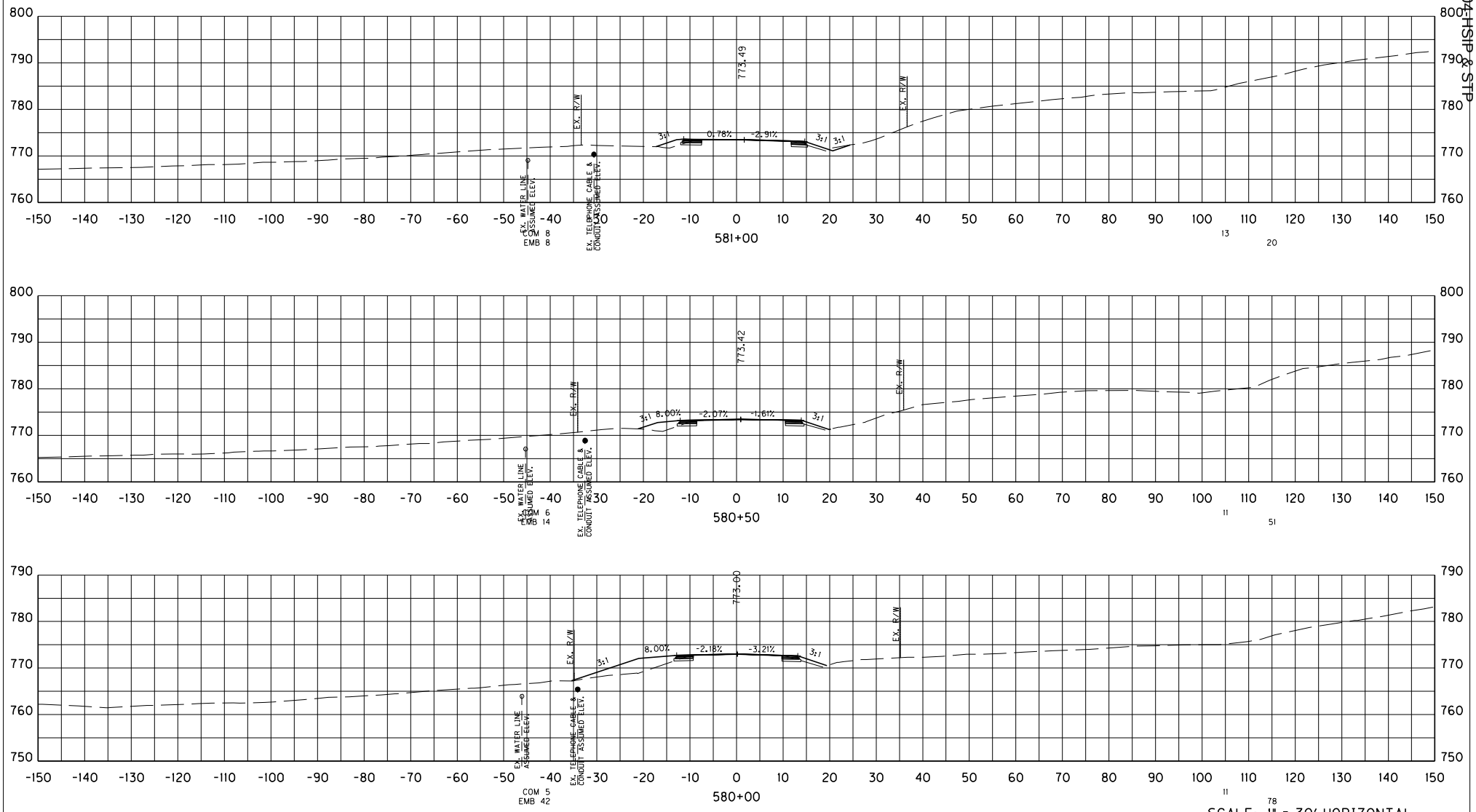


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X276

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.579+00 TO STA.579+50

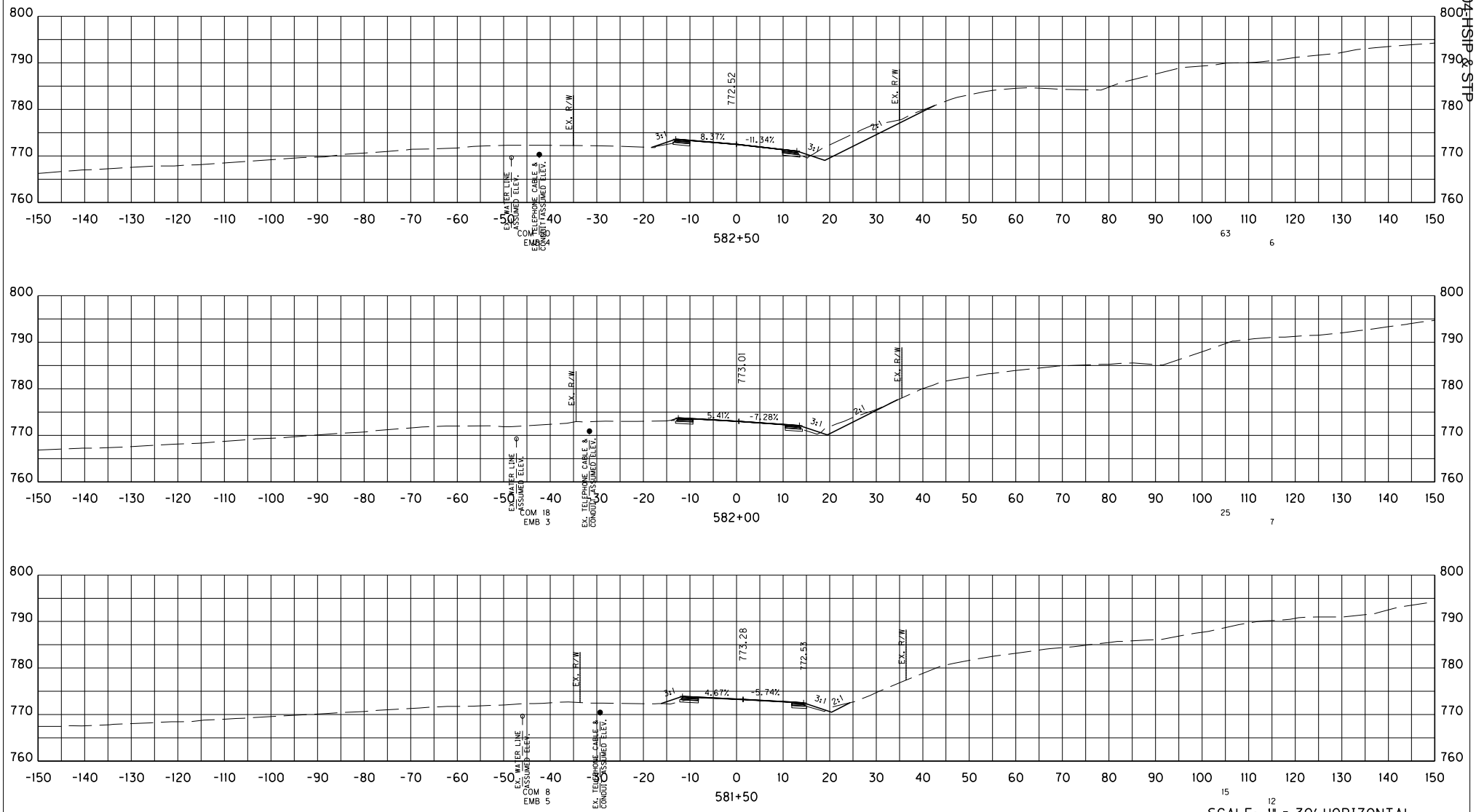


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X277

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.580+00 TO STA.581+00

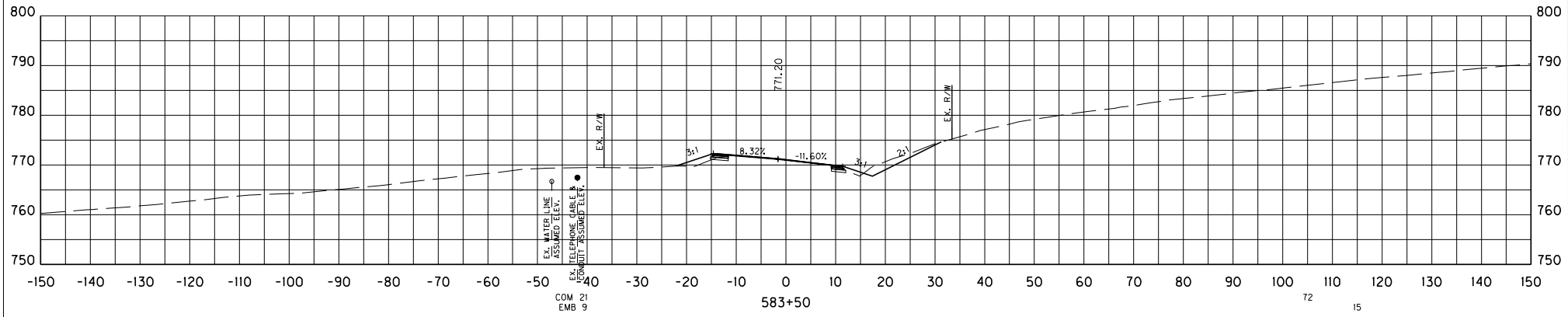


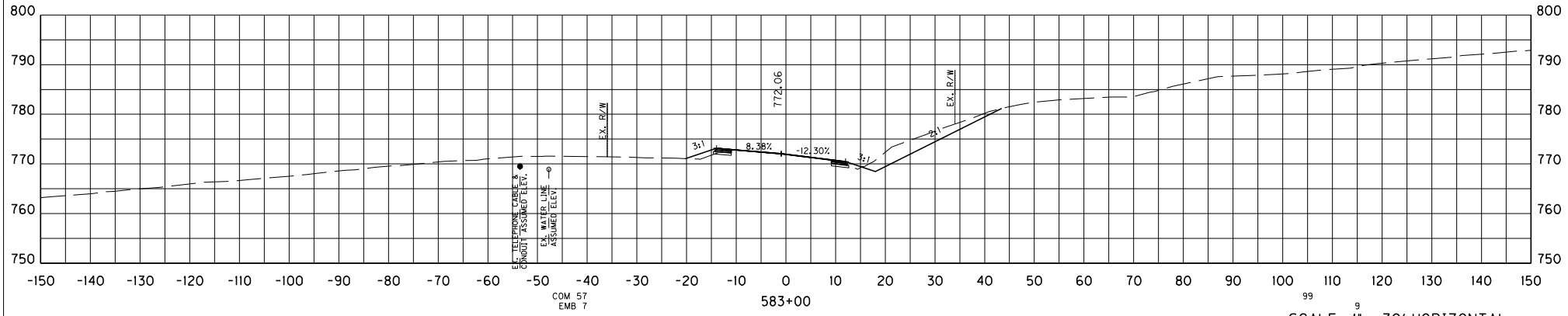
SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X278

KY HWY 259 ANNETA RD CROSS SECTIONS SHEET

STA.581+50 TO STA.582+50



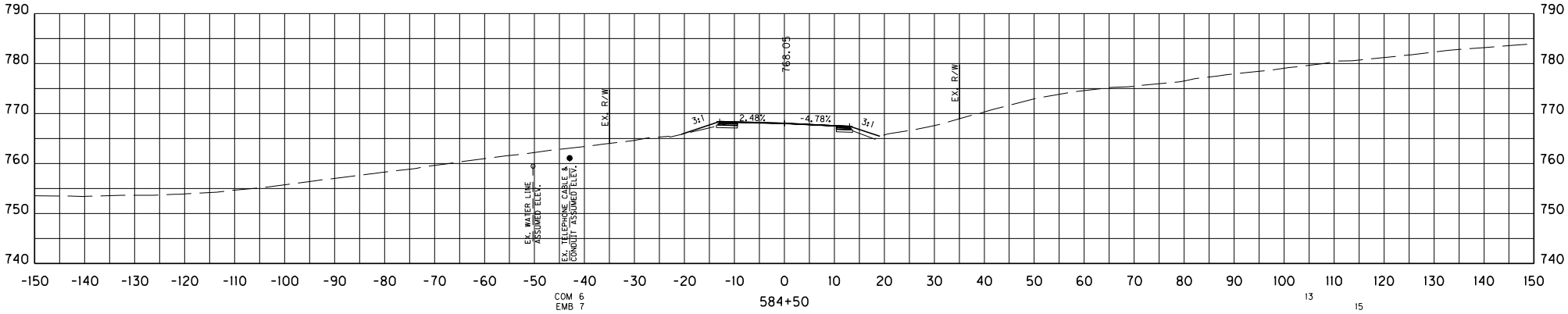


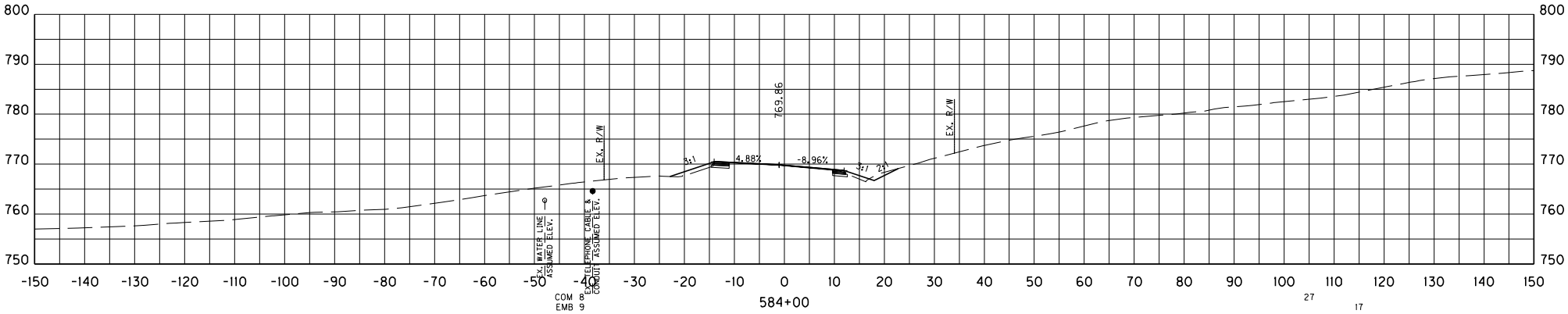
SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X279

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.583+00 TO STA.583+50



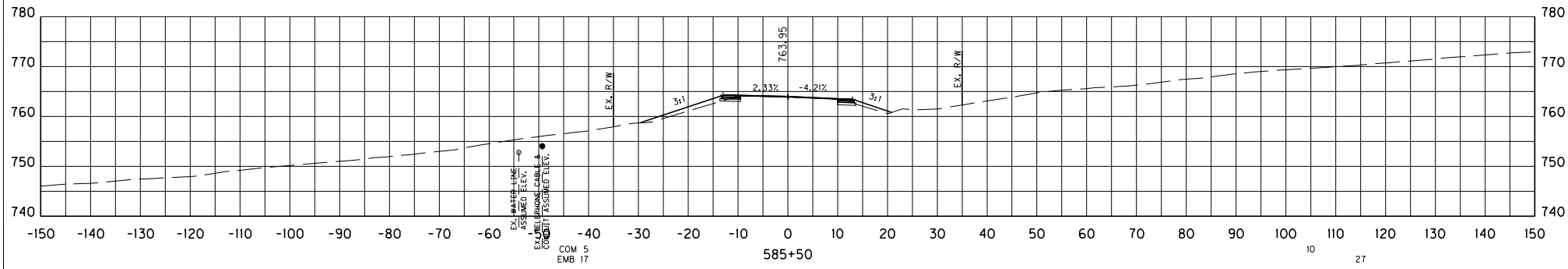


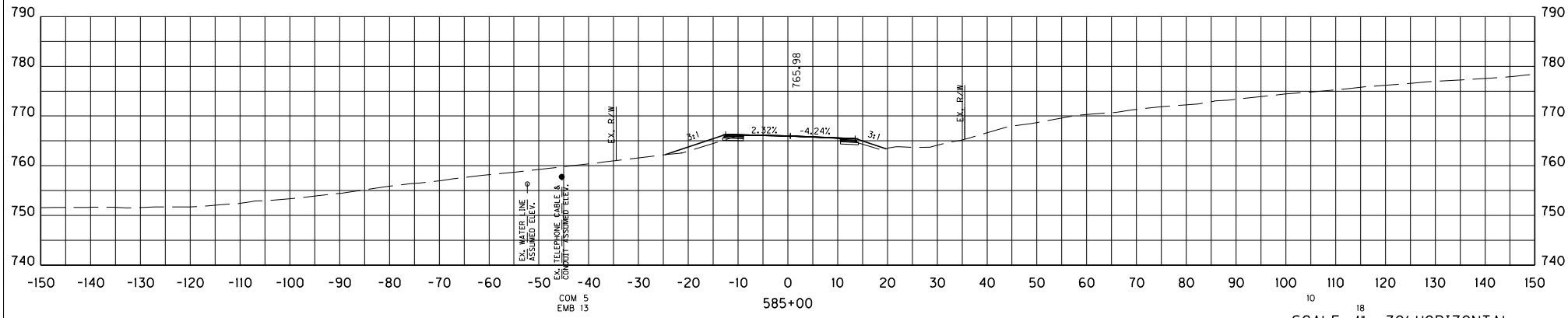
SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X280

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.584+00 TO STA.584+50



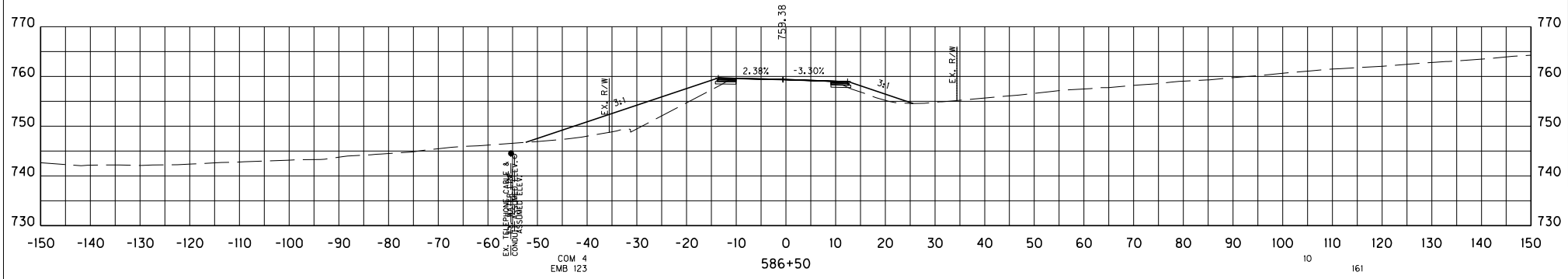


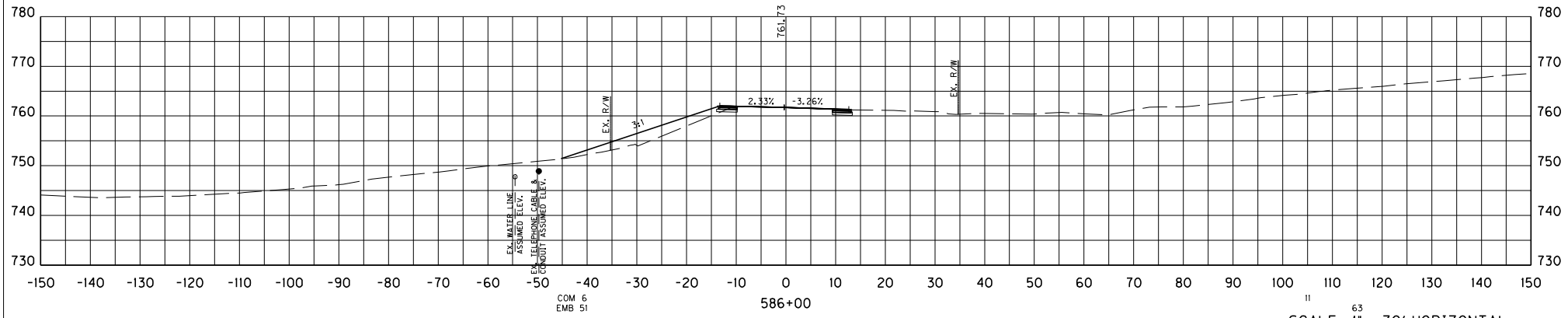
SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X281

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.585+00 TO STA.585+50



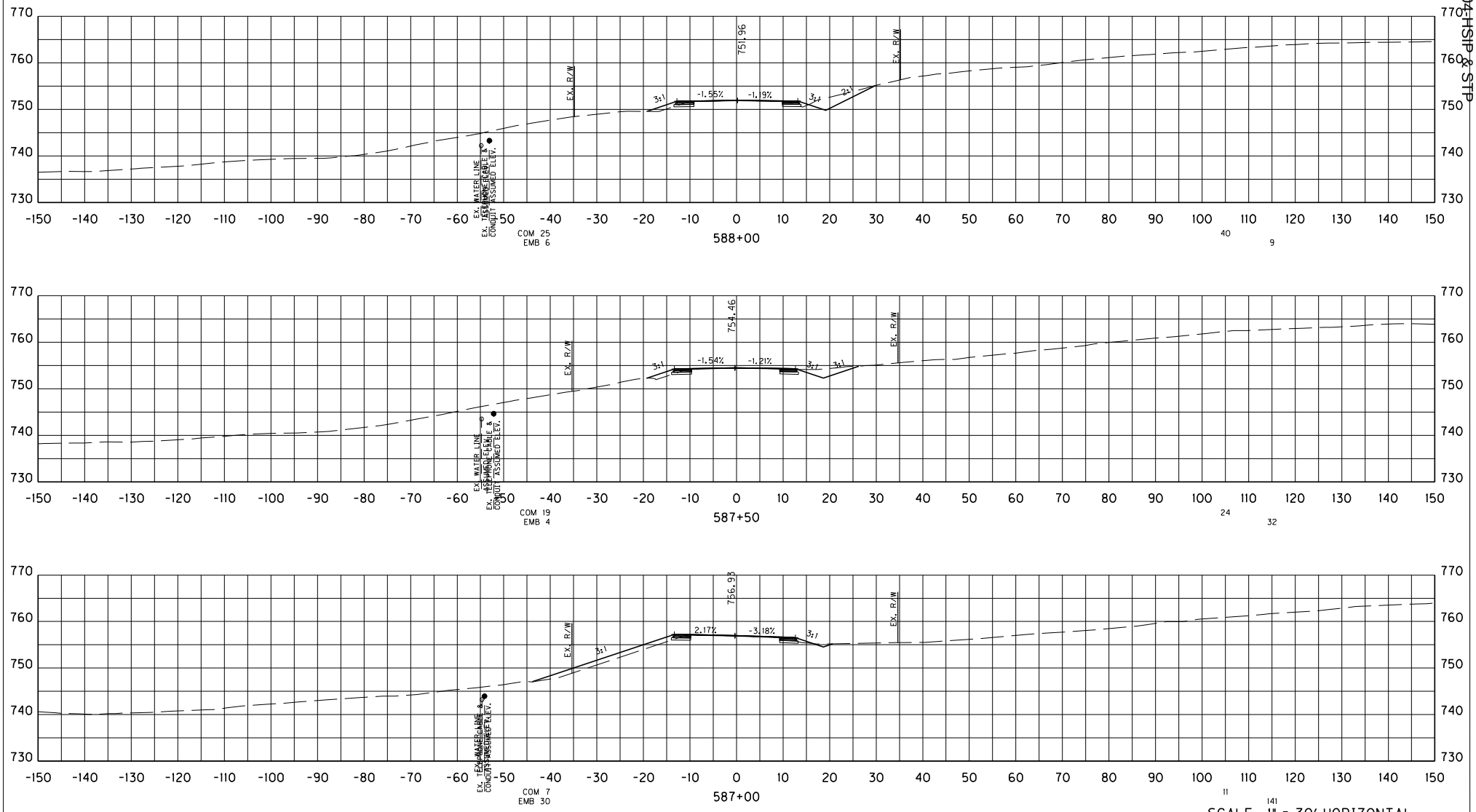


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X282

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.586+00 TO STA.586+50

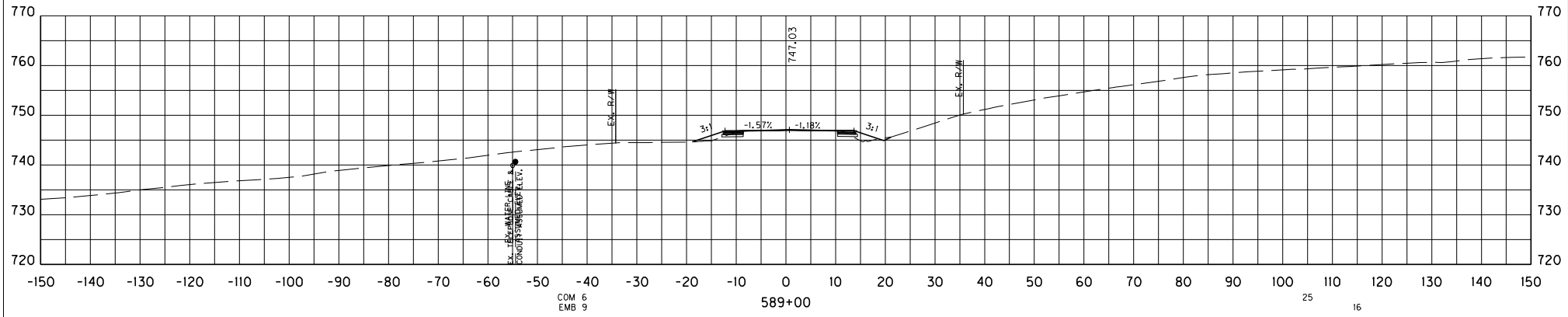


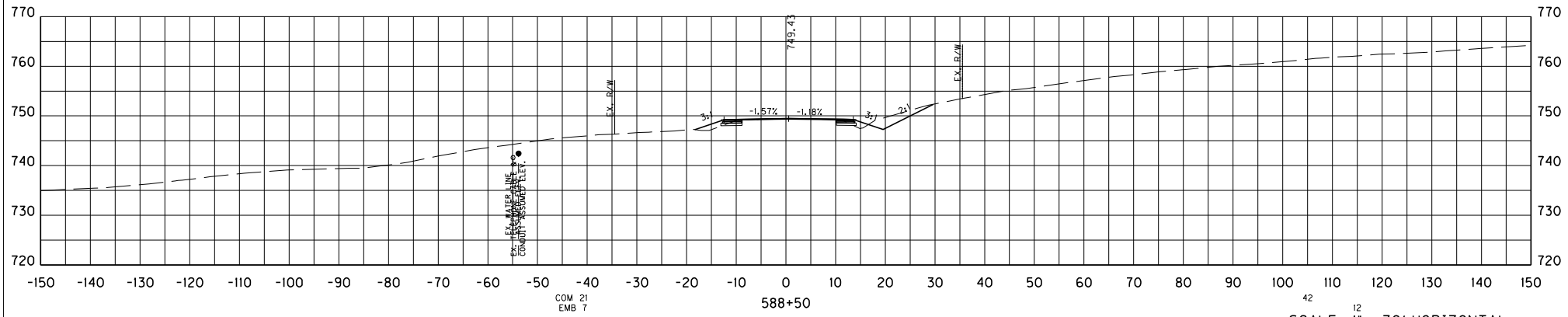
SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X283

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.587+00 TO STA.588+00



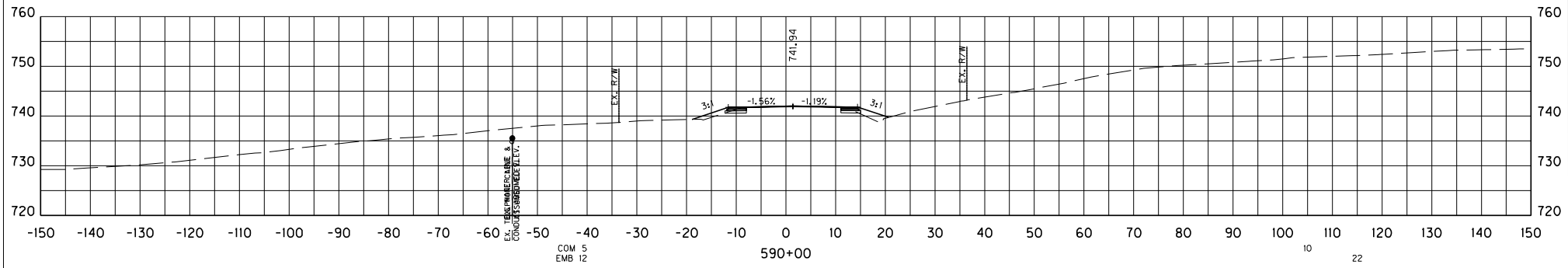


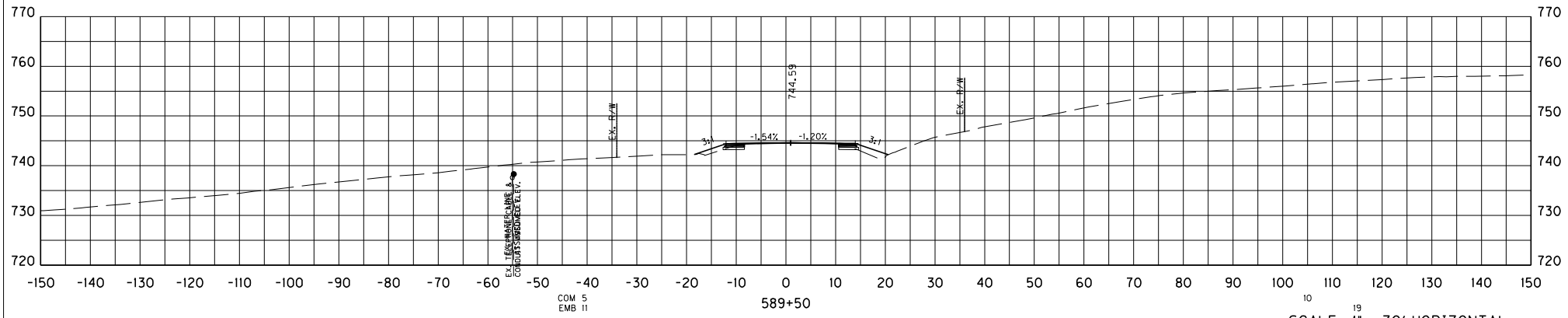
SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X284

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.588+50 TO STA.589+00



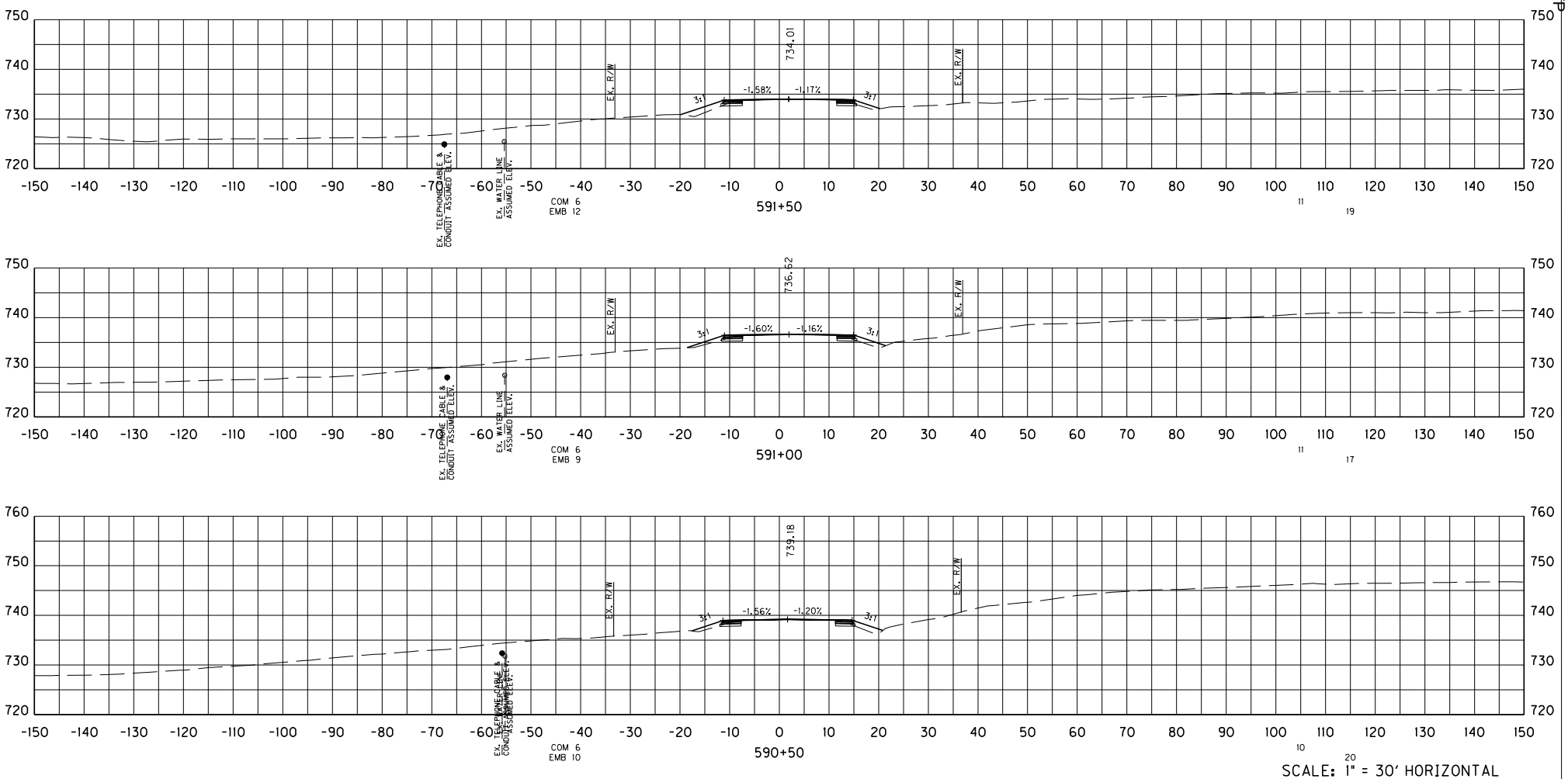


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X285

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.589+50 TO STA.590+00

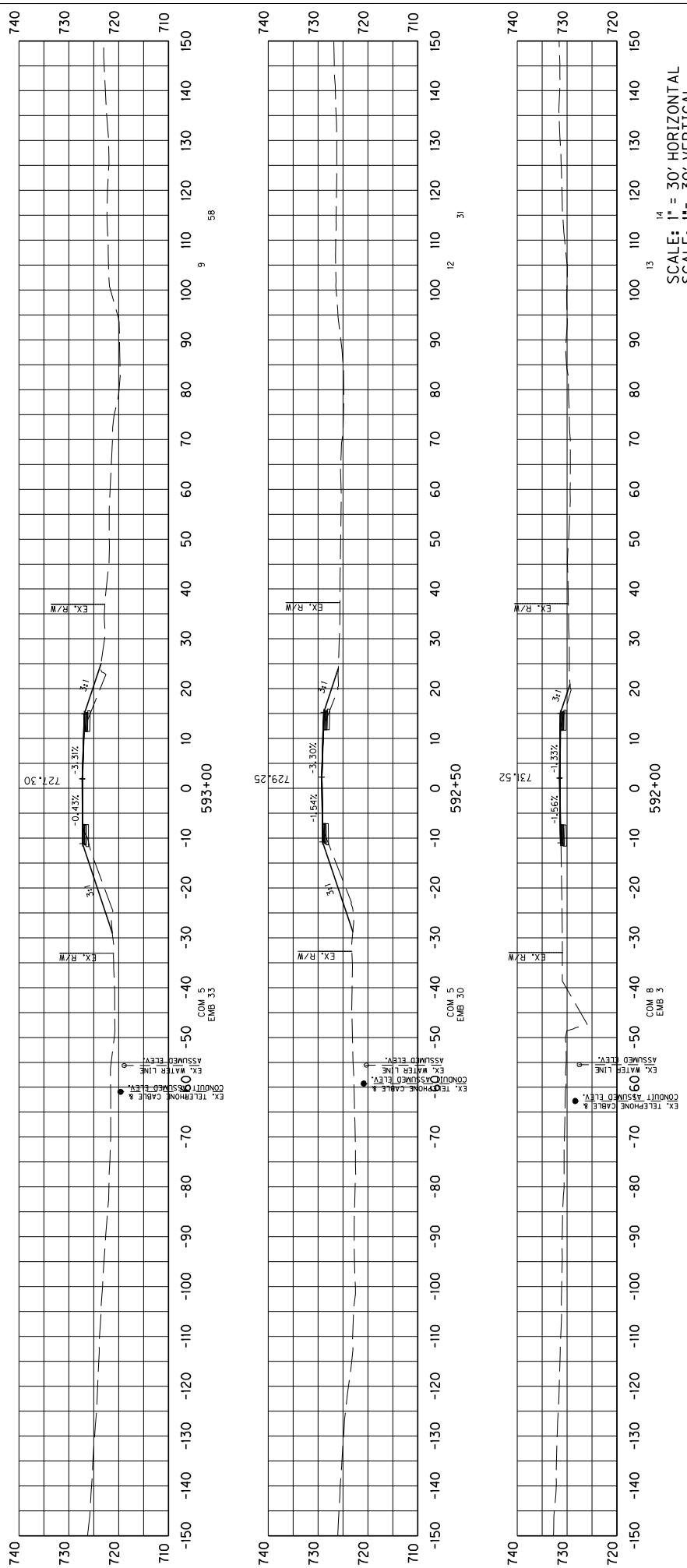


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X286

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

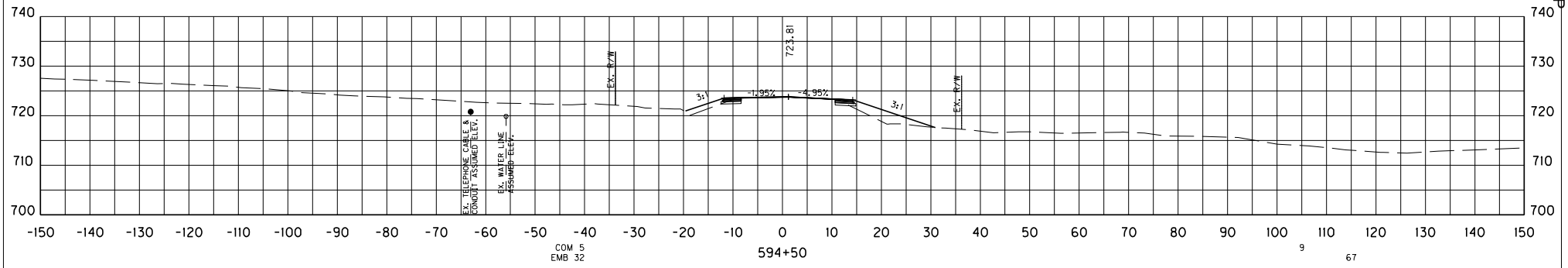
STA.590+50 TO STA.591+50

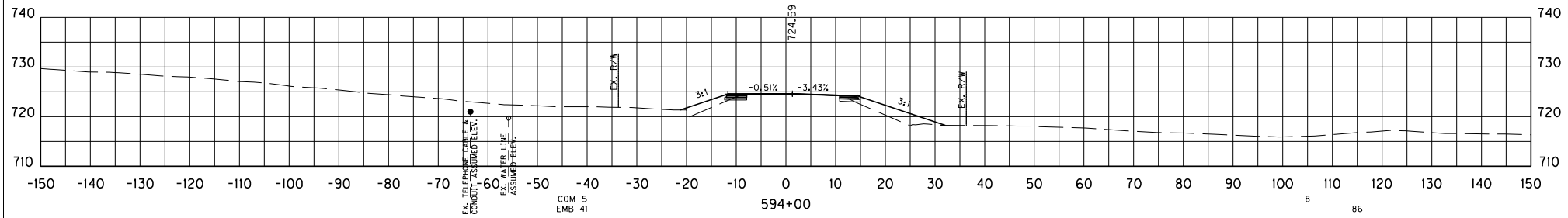


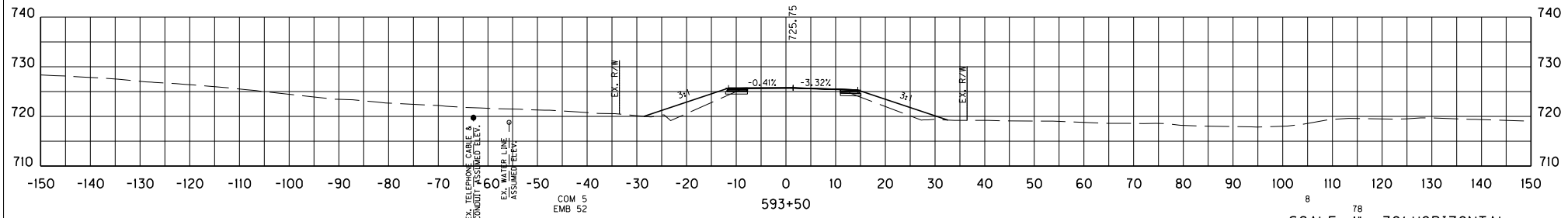
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X287

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.592+00 TO STA.593+00





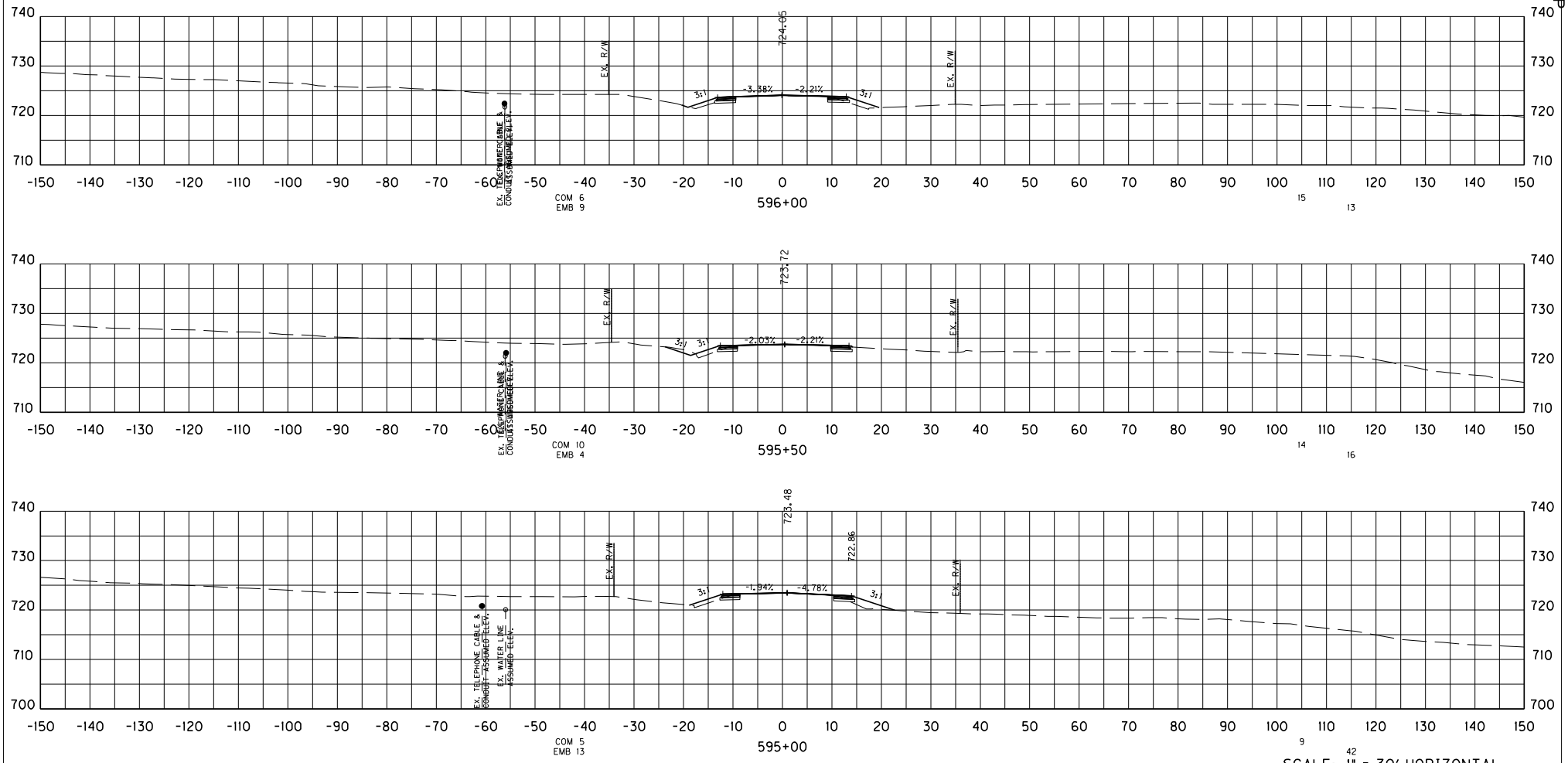


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X288

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.593+50 TO STA.594+50

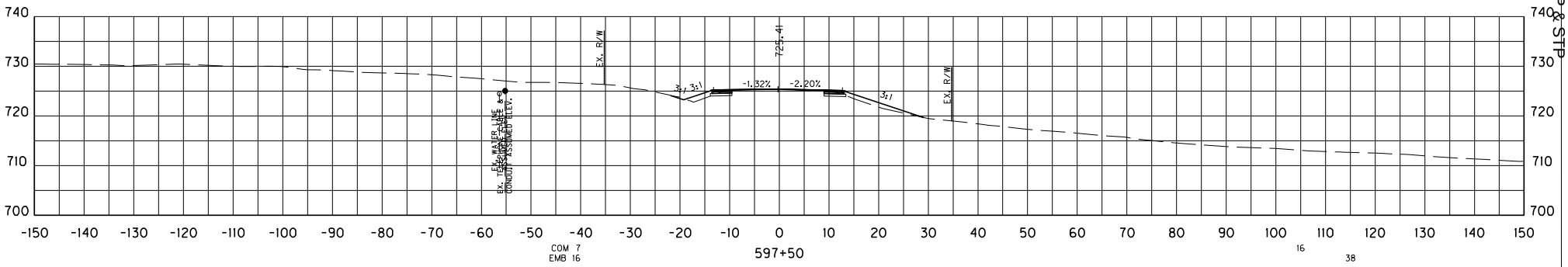


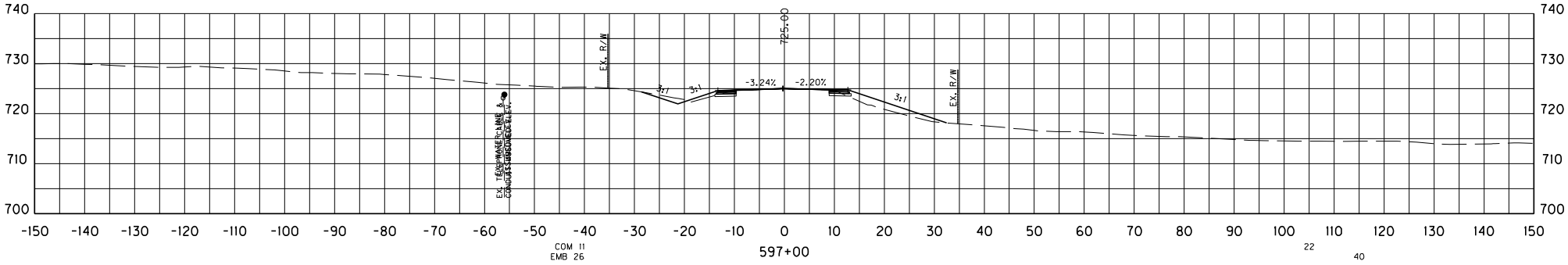
SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

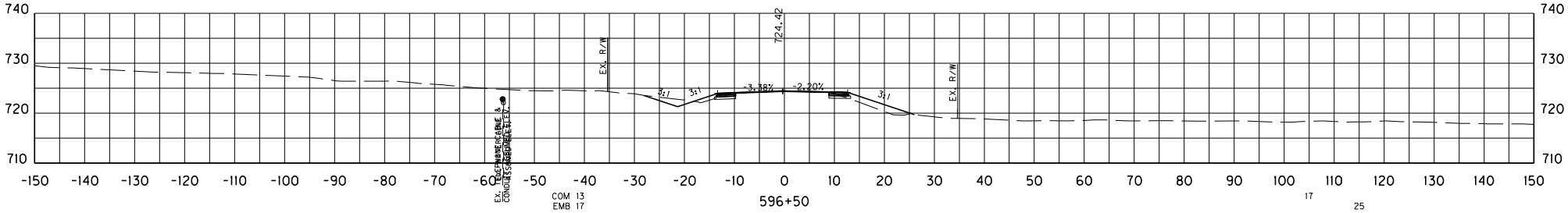
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X289

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.595+00 TO STA.596+00





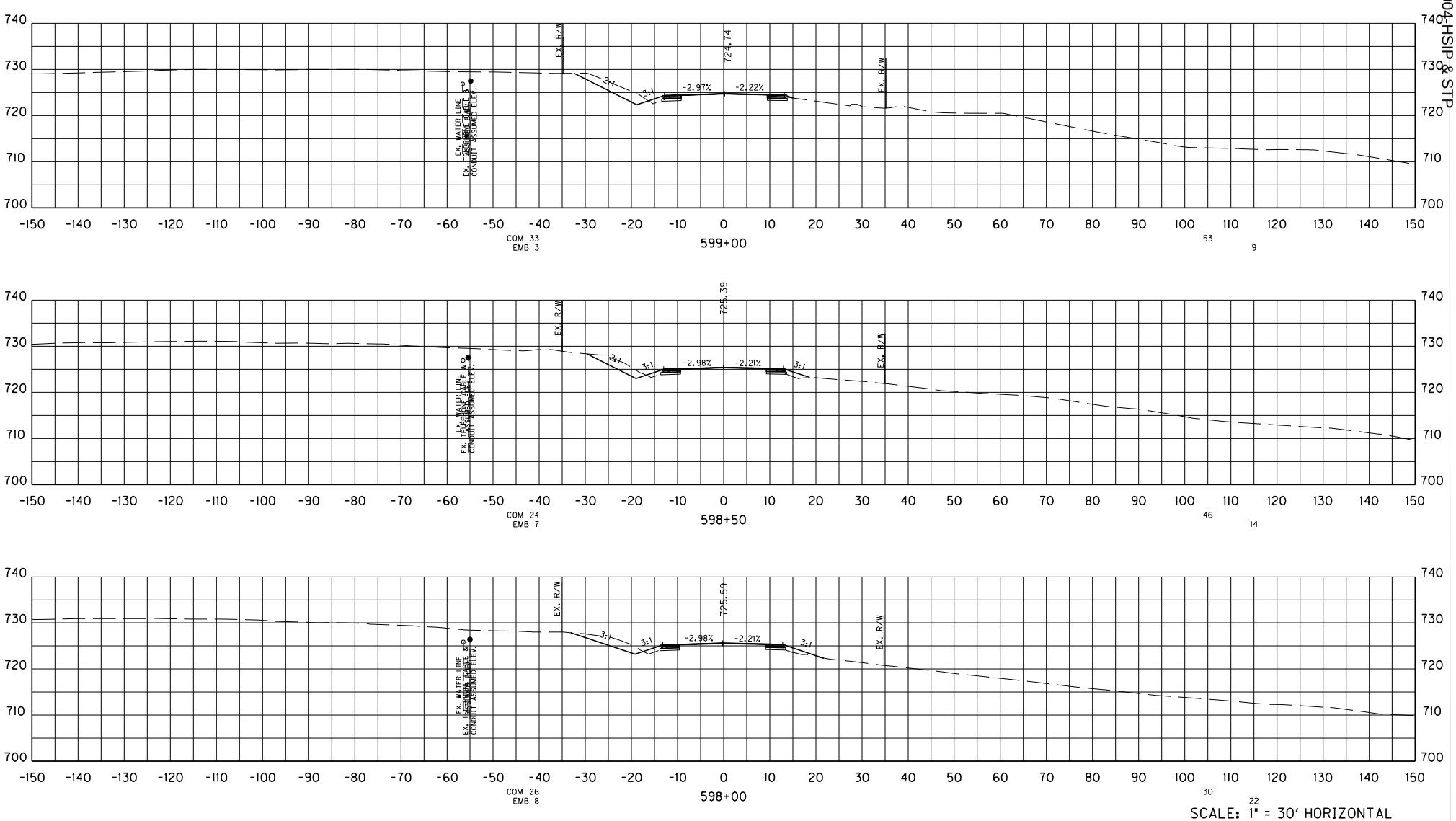


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X290

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.596+50 TO STA.597+50

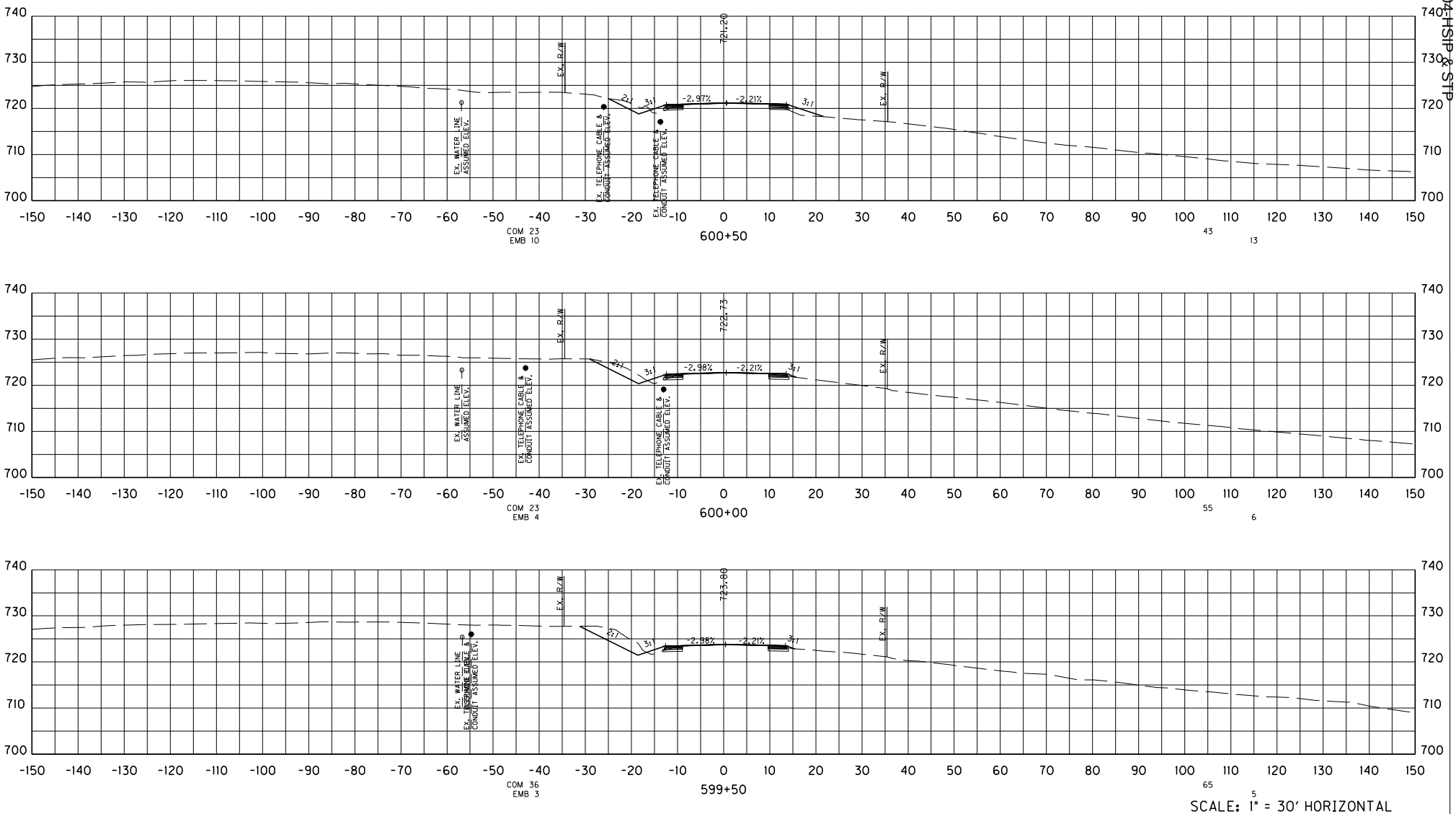


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X291

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.598+00 TO STA.599+00

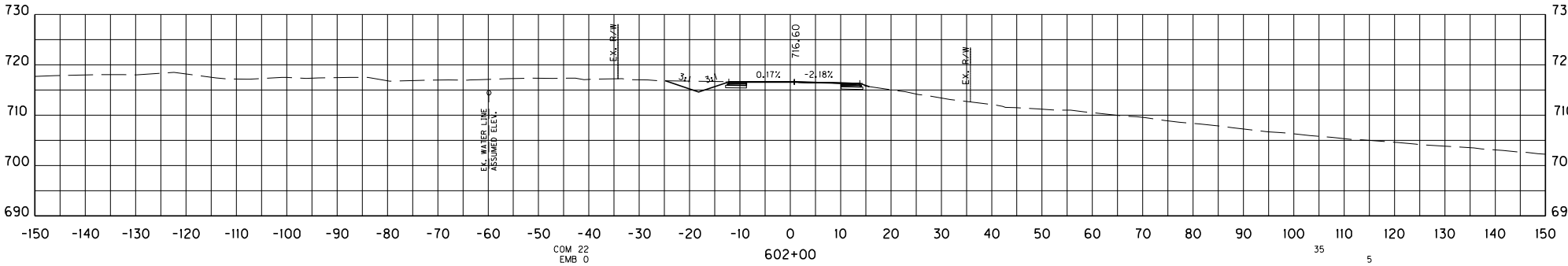


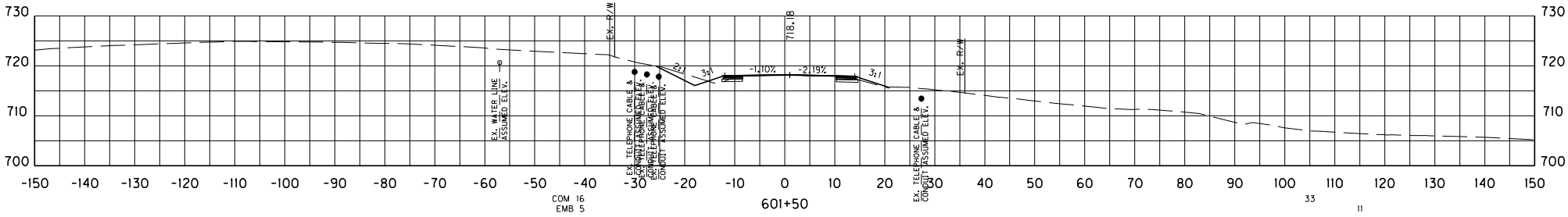
SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

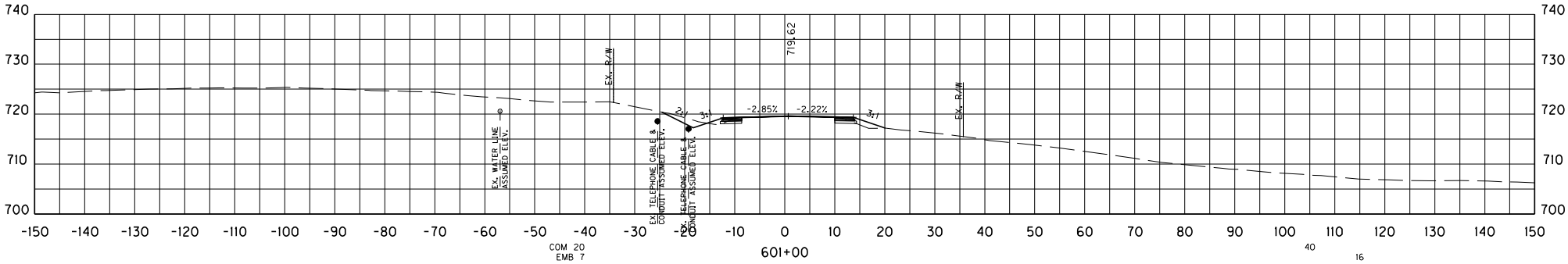
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X292

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.599+50 TO STA.600+50





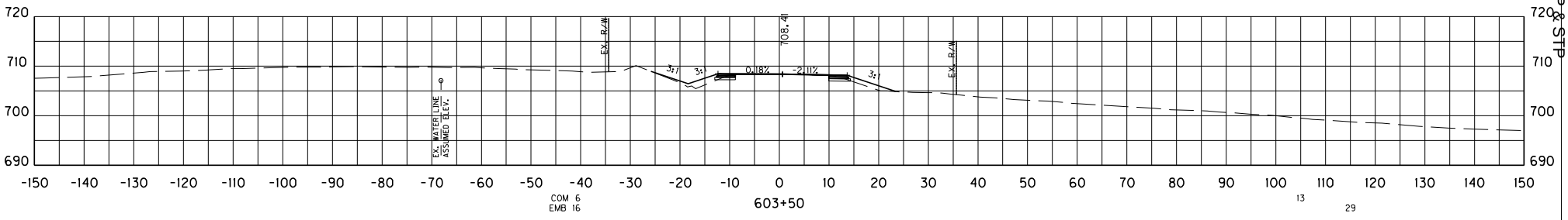


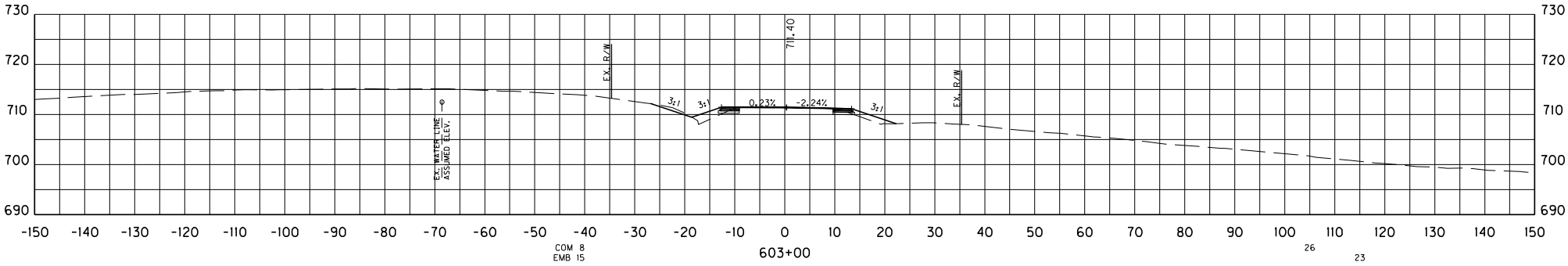
SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

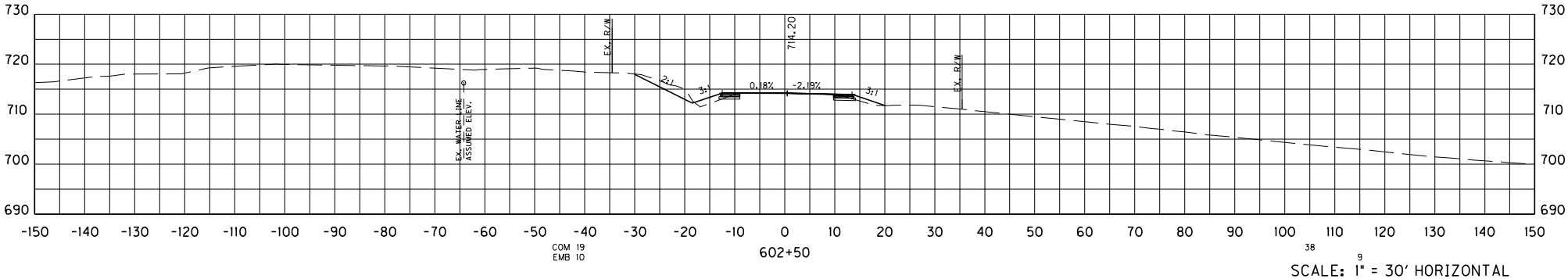
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X293

KY HWY 259 ANNETA RD CROSS SECTIONS SHEET

STA.601+00 TO STA.602+00





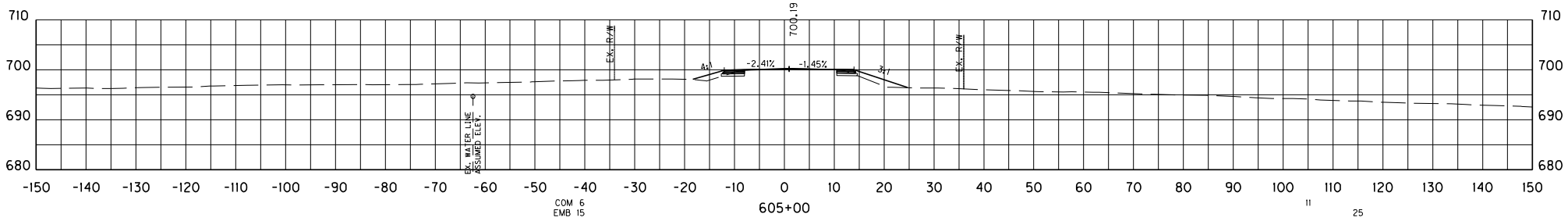


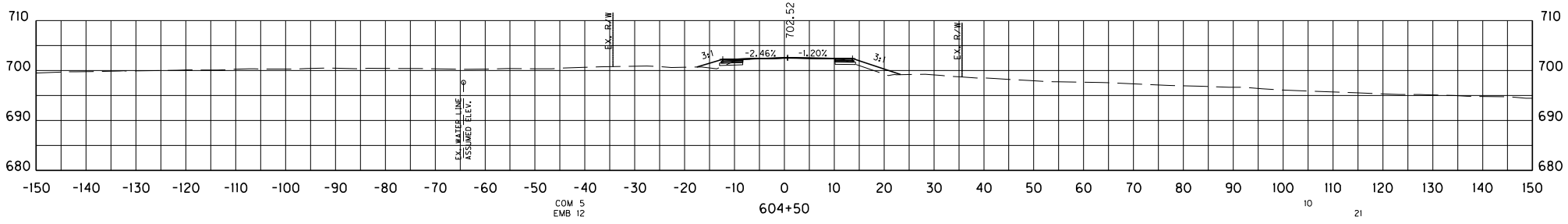
SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

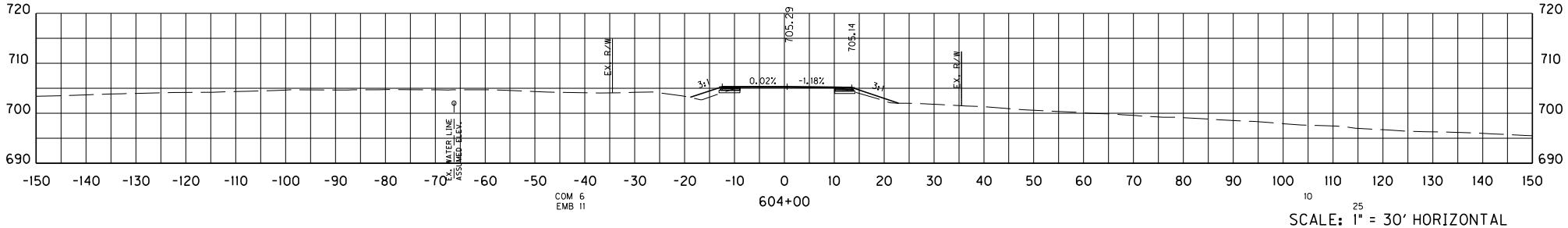
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X294

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.602+50 TO STA.603+50





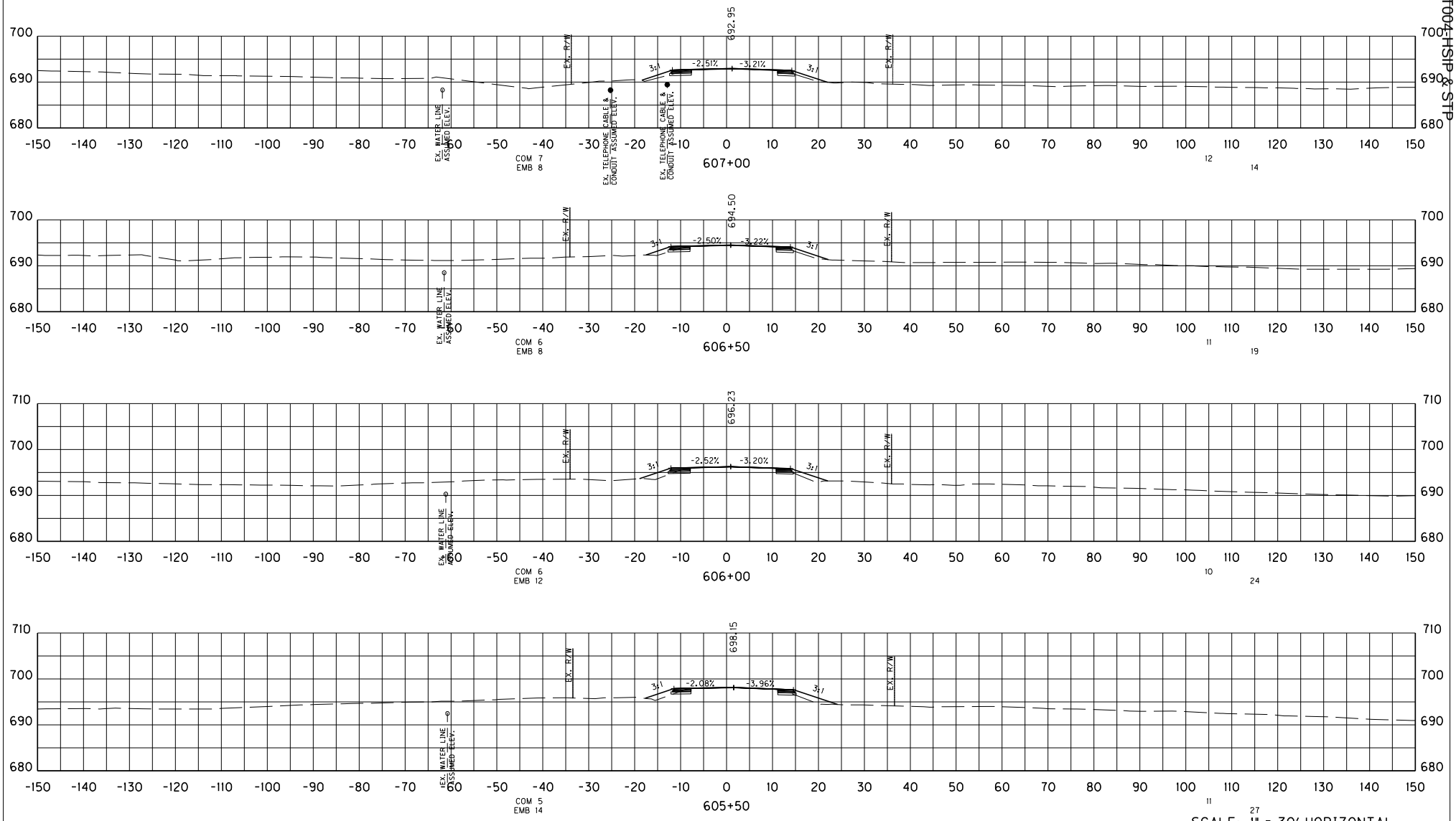


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X295

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.604+00 TO STA.605+00

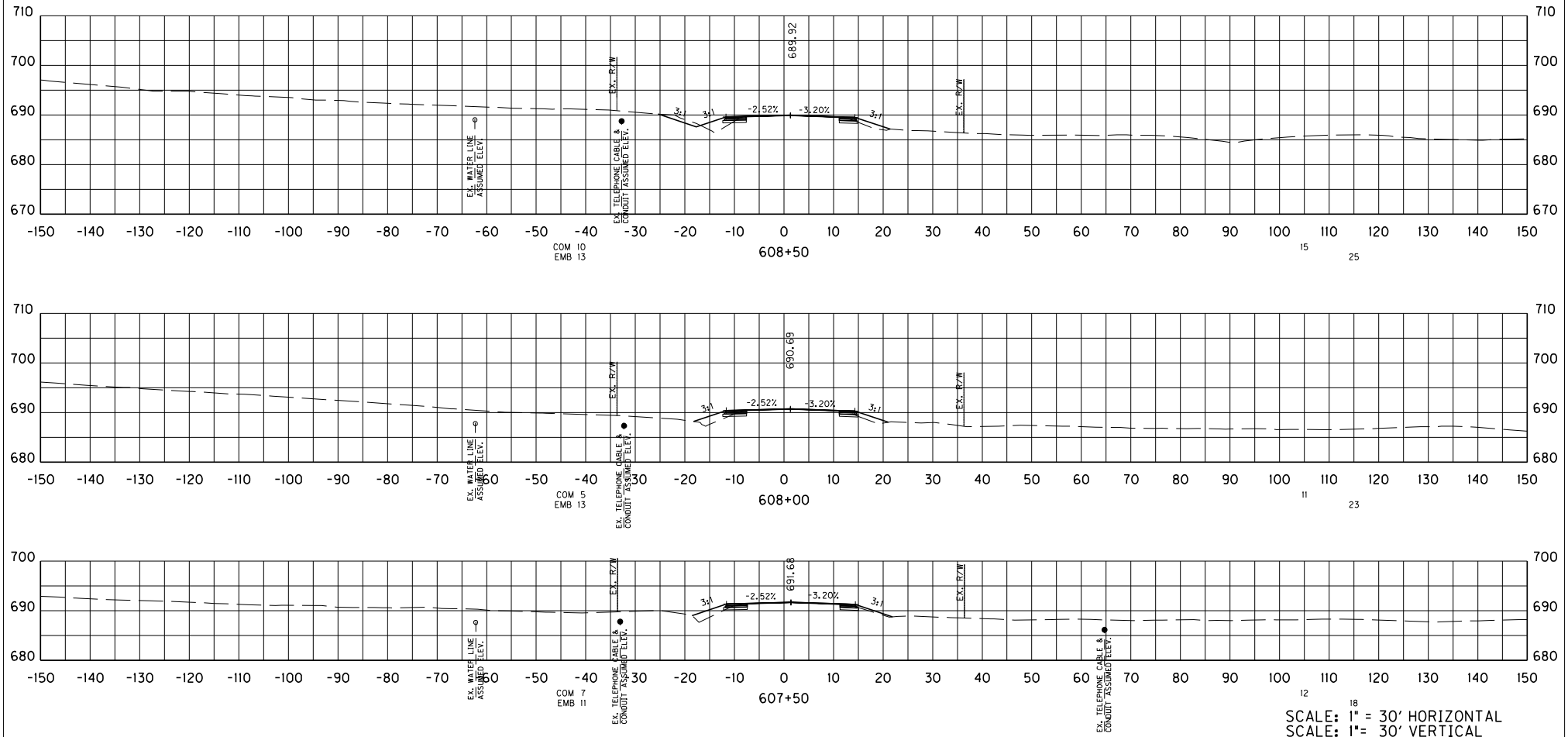


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X296

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.605+50 TO STA.607+00

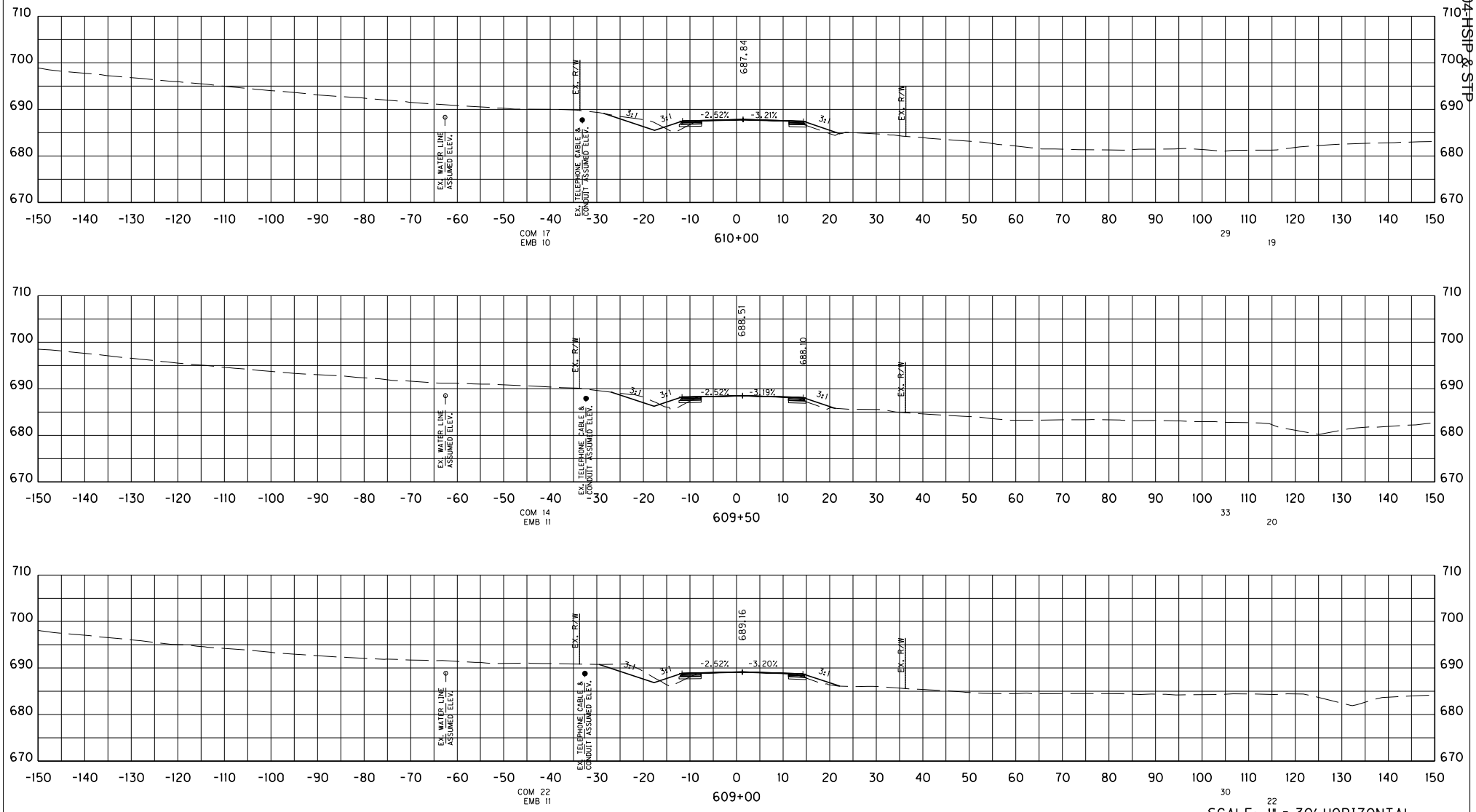


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X297

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.607+50 TO STA.608+50

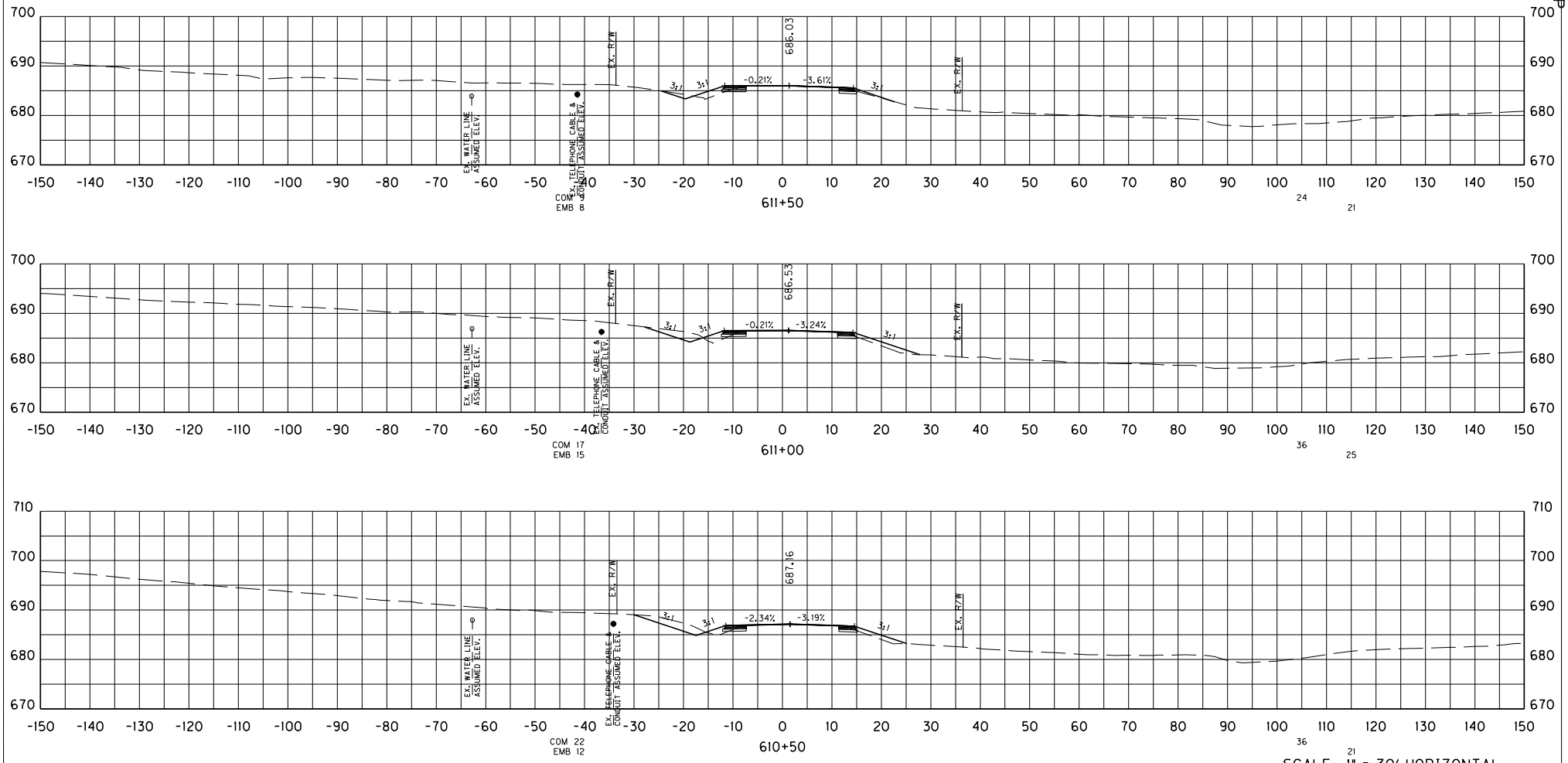


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X298

KY HWY 259 ANNETA RD CROSS SECTIONS SHEET

STA.609+00 TO STA.610+00

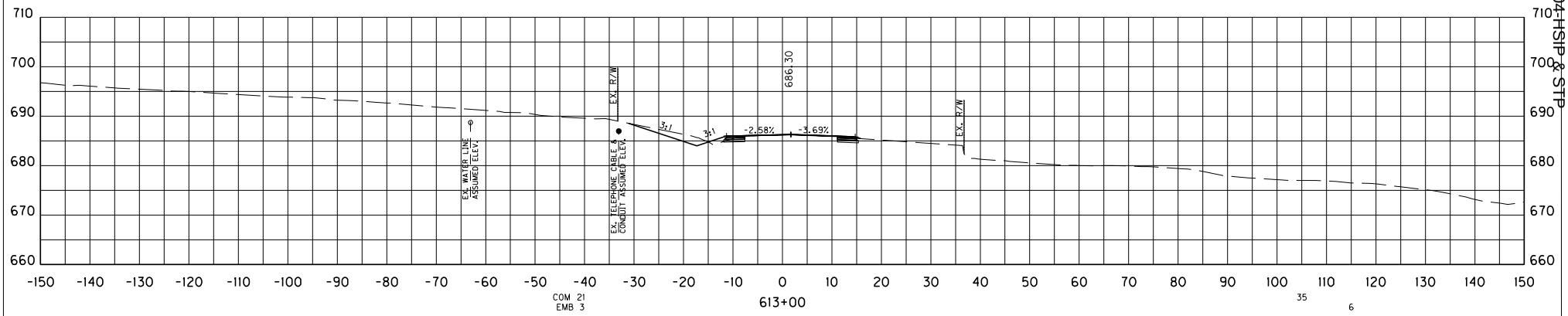


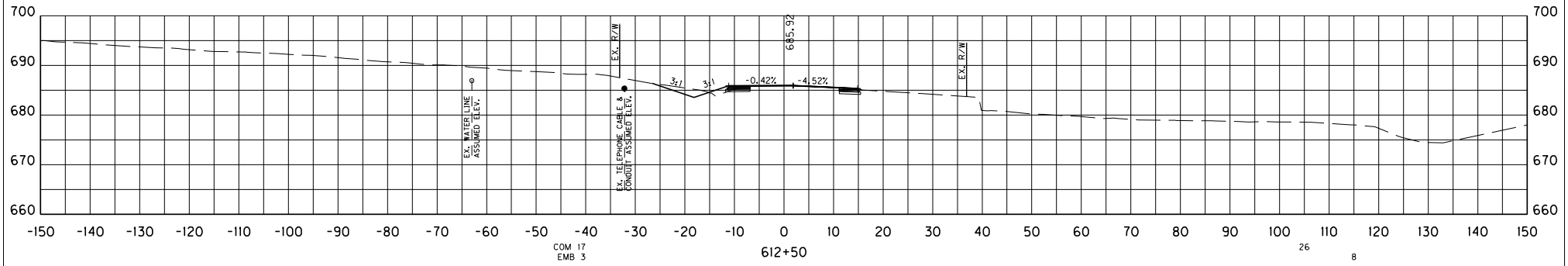
SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

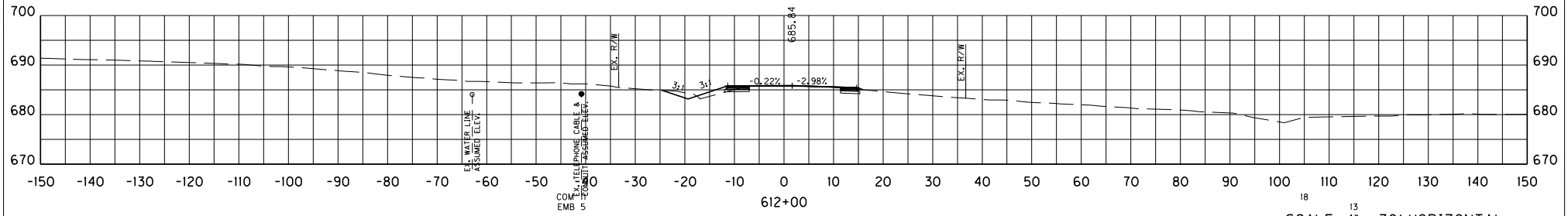
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X299

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.610+50 TO STA.611+50





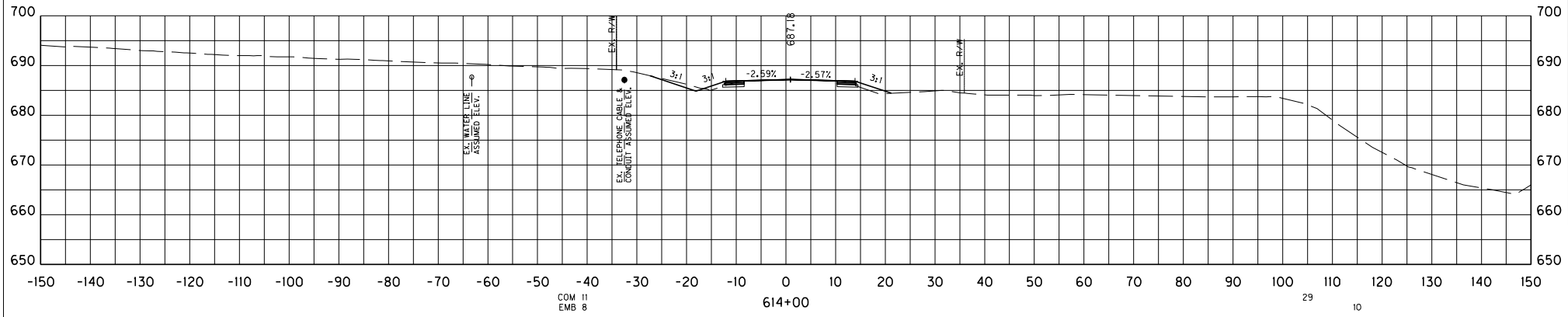


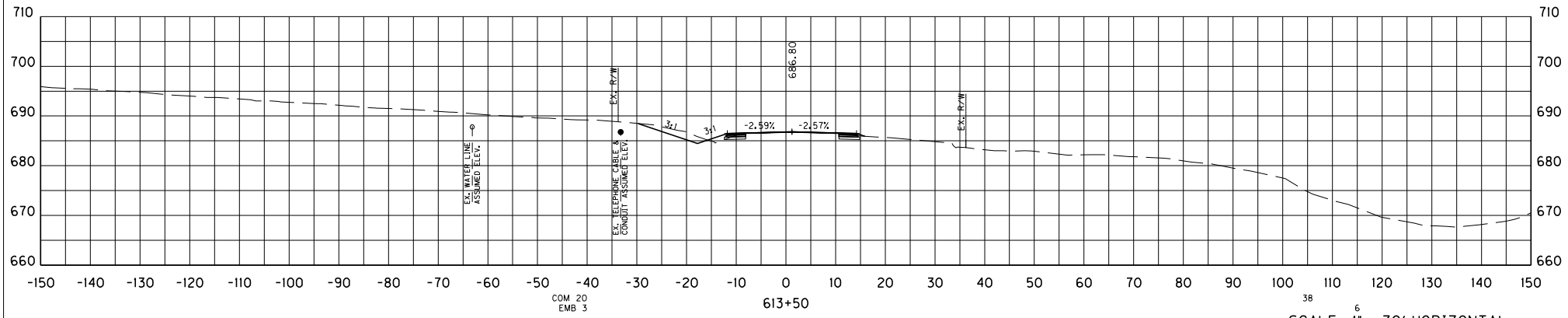
SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X300

KY HWY 259 ANNETA RD CROSS SECTIONS SHEET

STA.612+00 TO STA.613+00



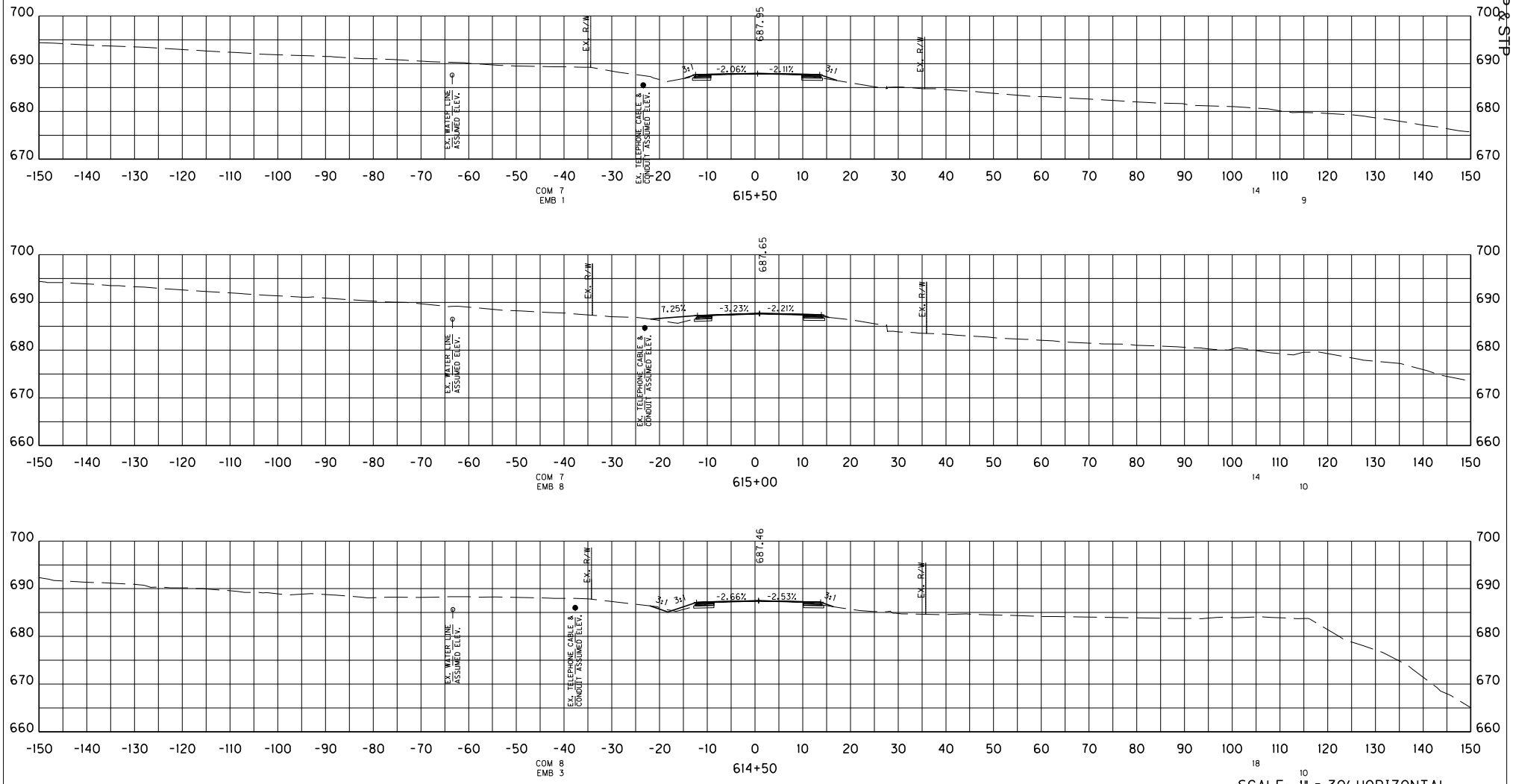


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X301

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.613+50 TO STA.614+00

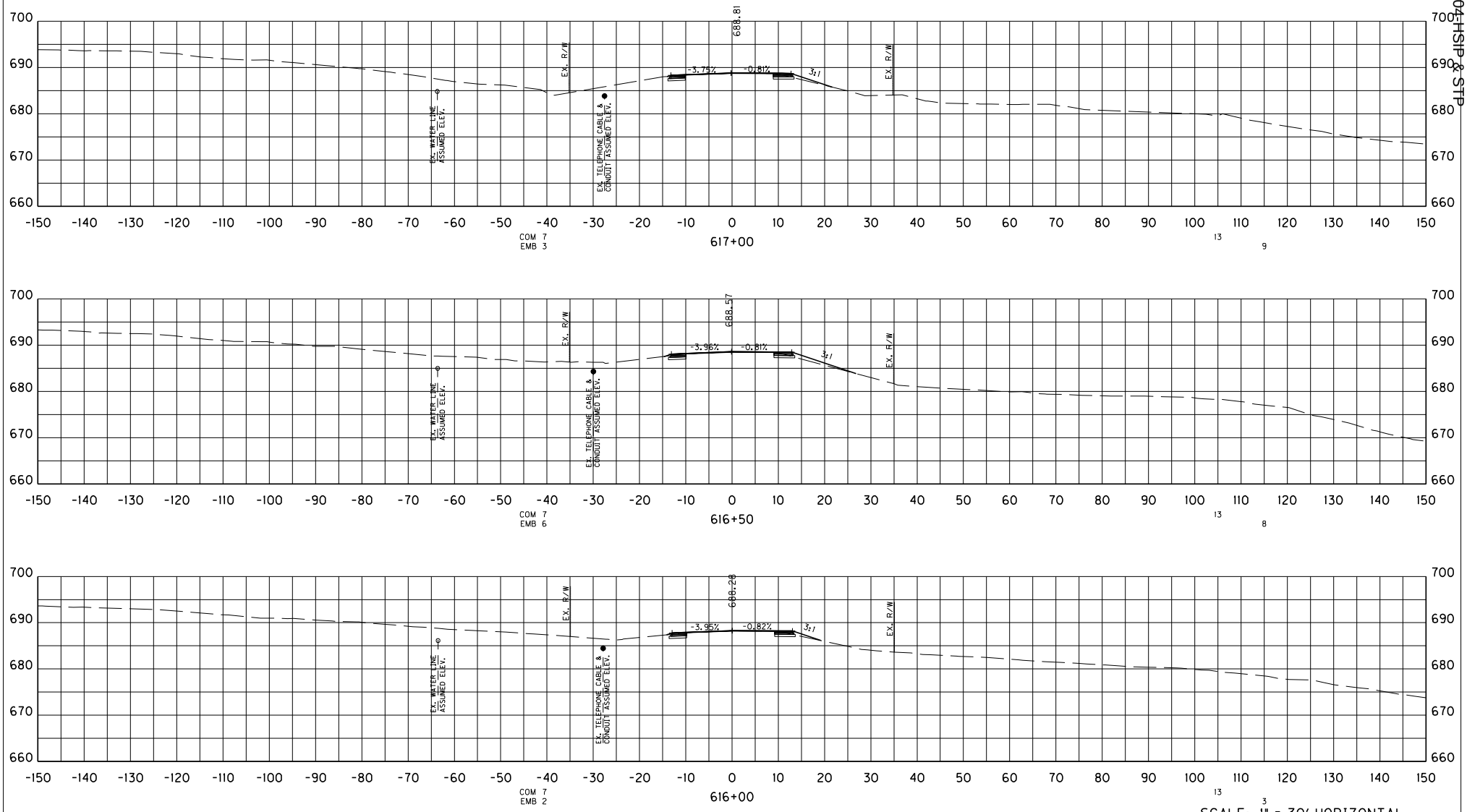


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X302

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.614+50 TO STA.615+50

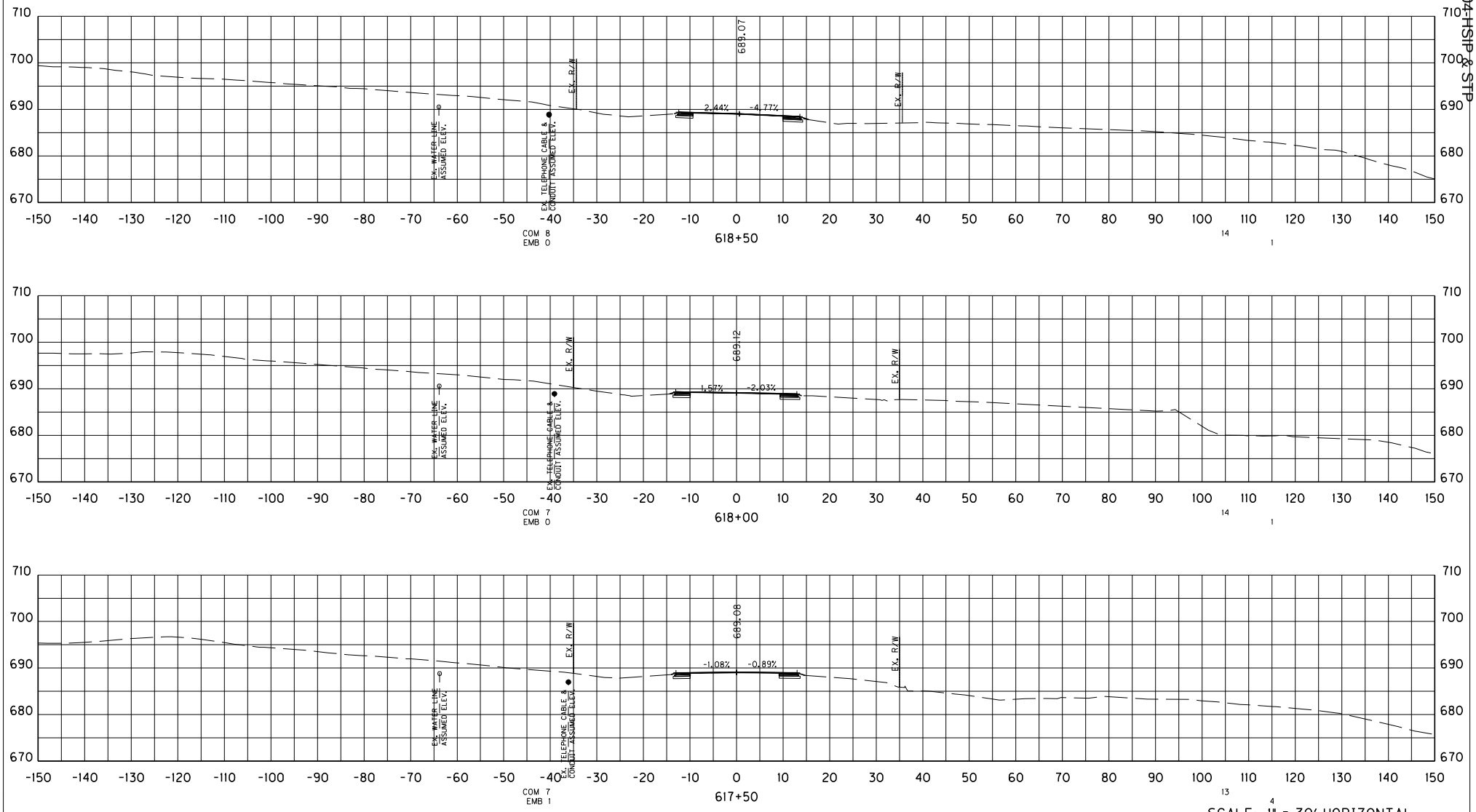


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X303

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.616+00 TO STA.617+00

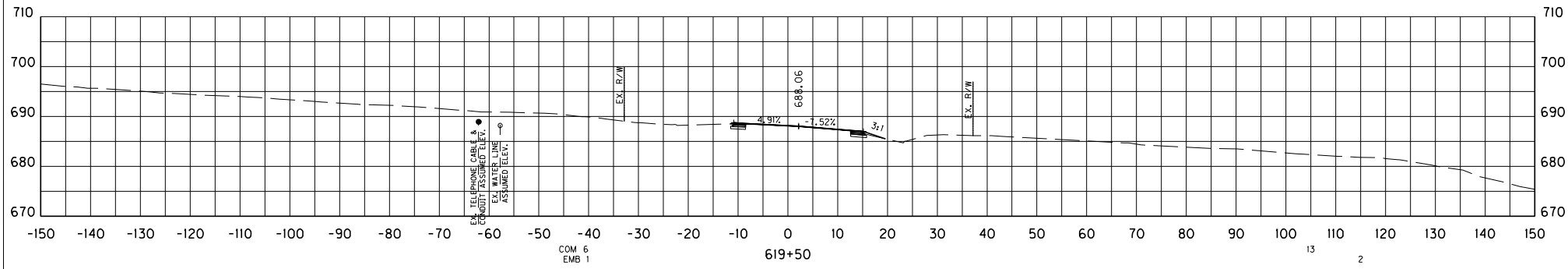


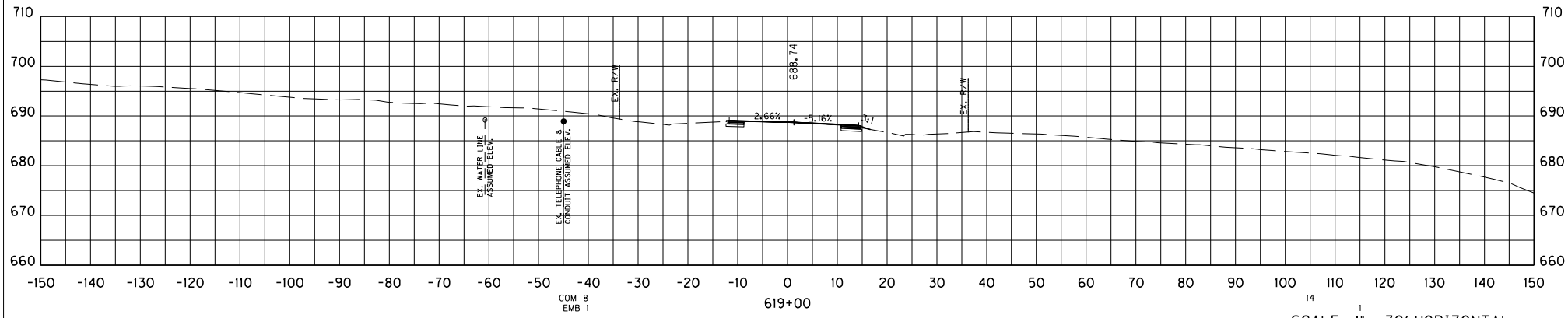
SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X304

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.617+50 TO STA.618+50



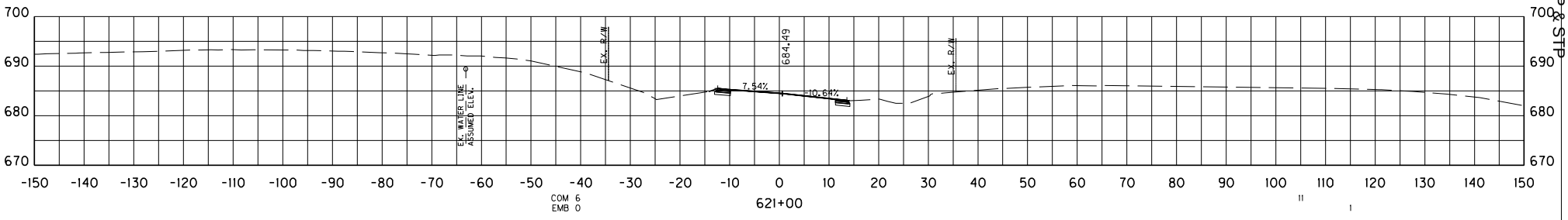


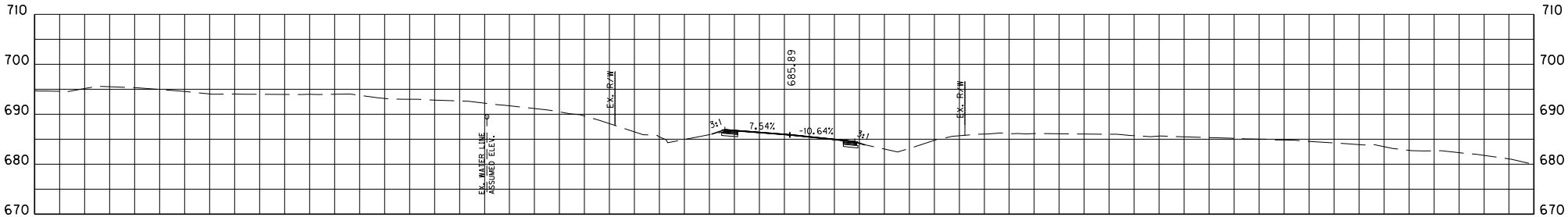
SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

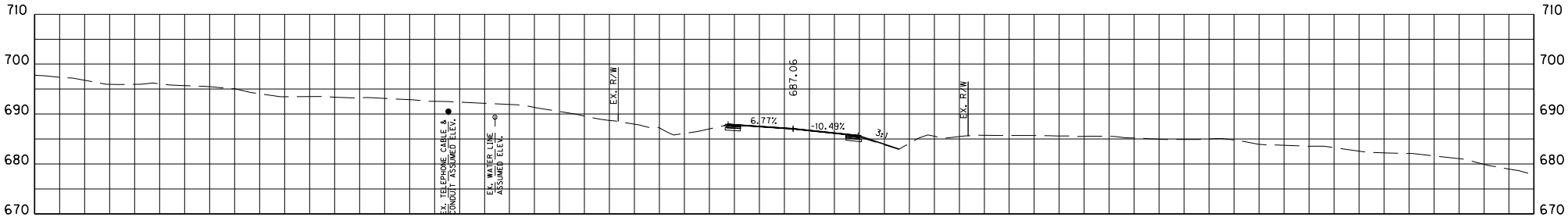
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X305

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.619+00 TO STA.619+50





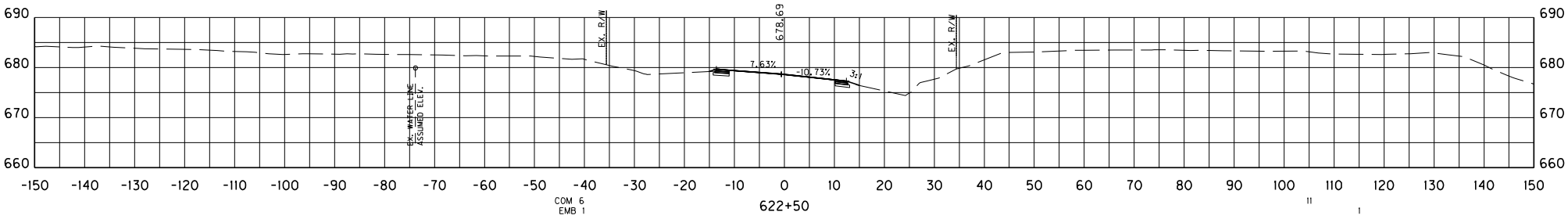


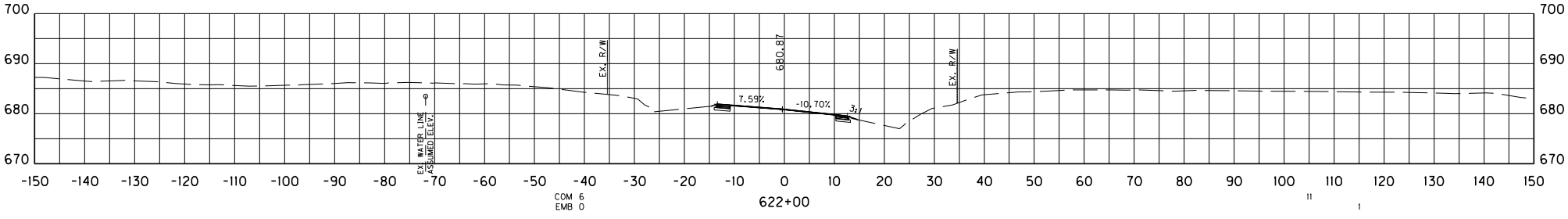
SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

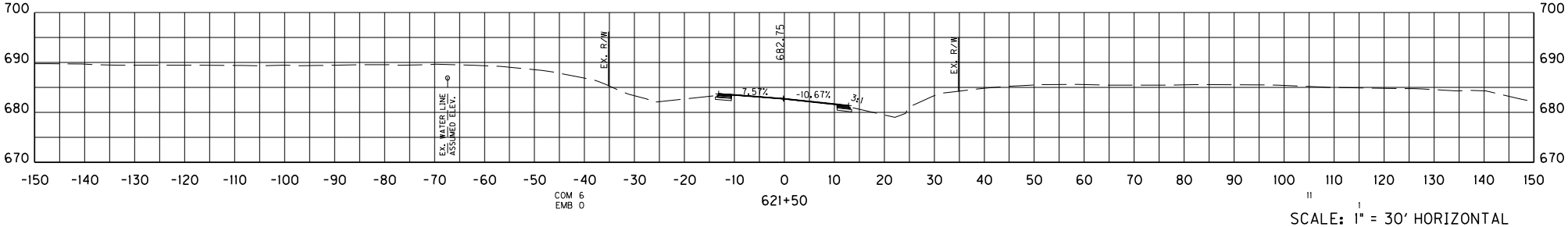
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X306

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.620+00 TO STA.621+00





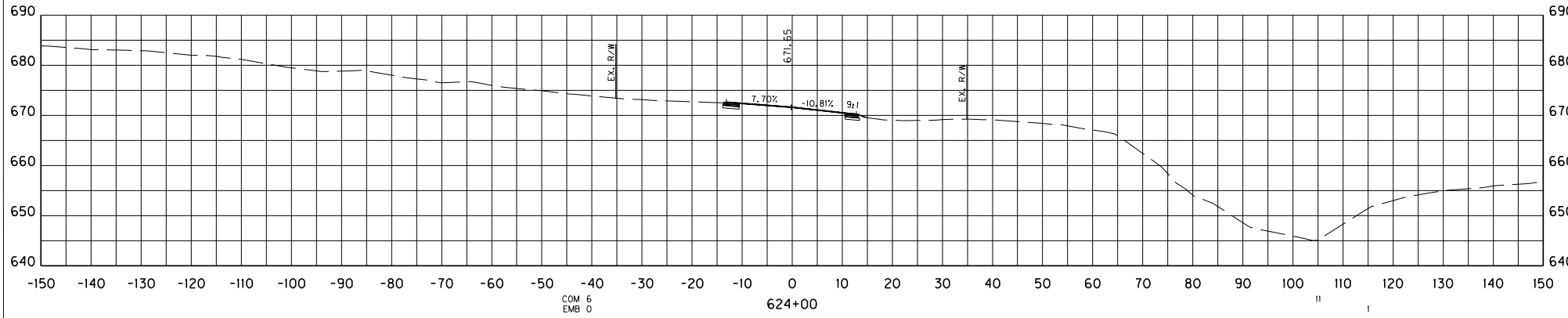


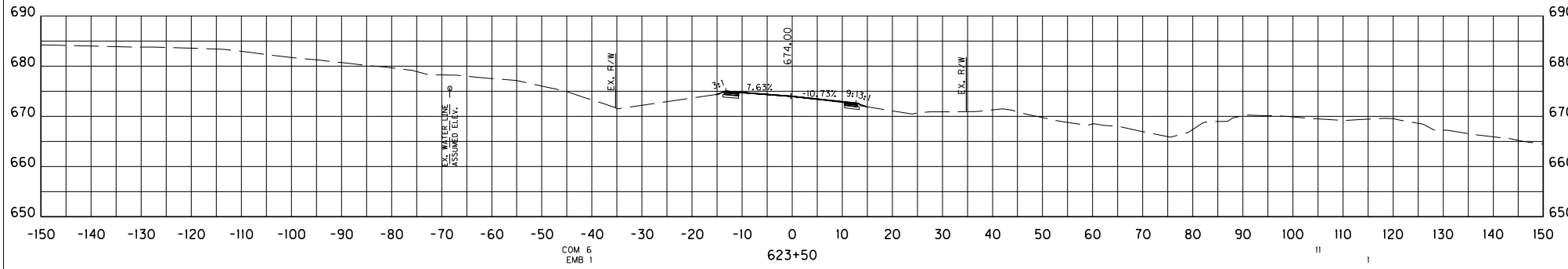
SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

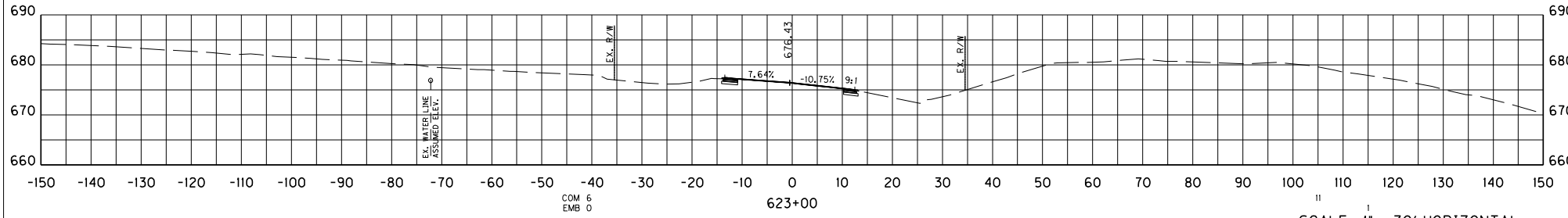
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X307

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.621+50 TO STA.622+50





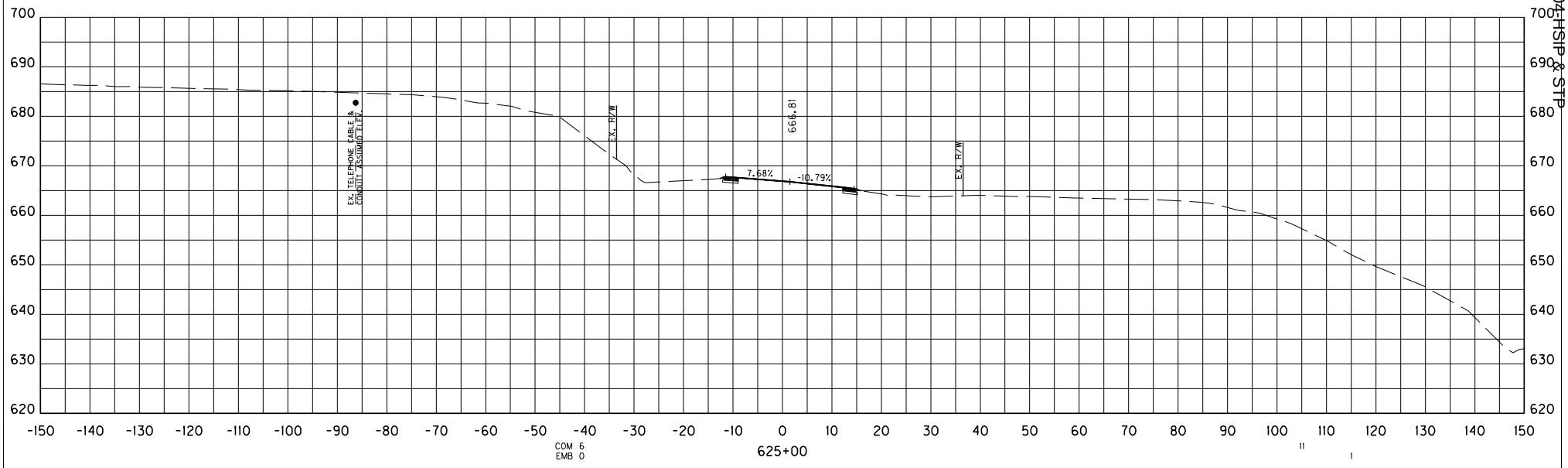


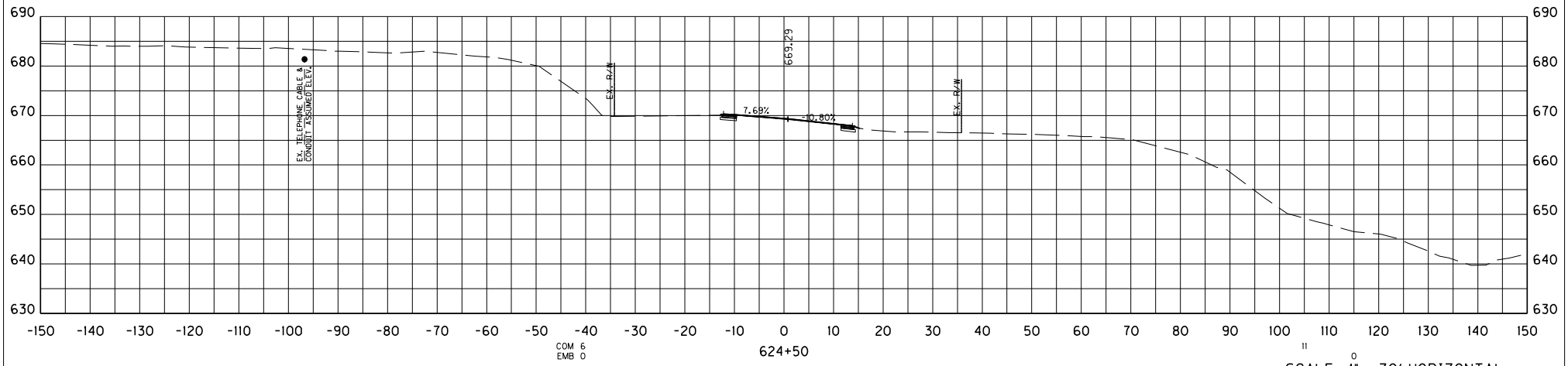
SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X308

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.623+00 TO STA.624+00



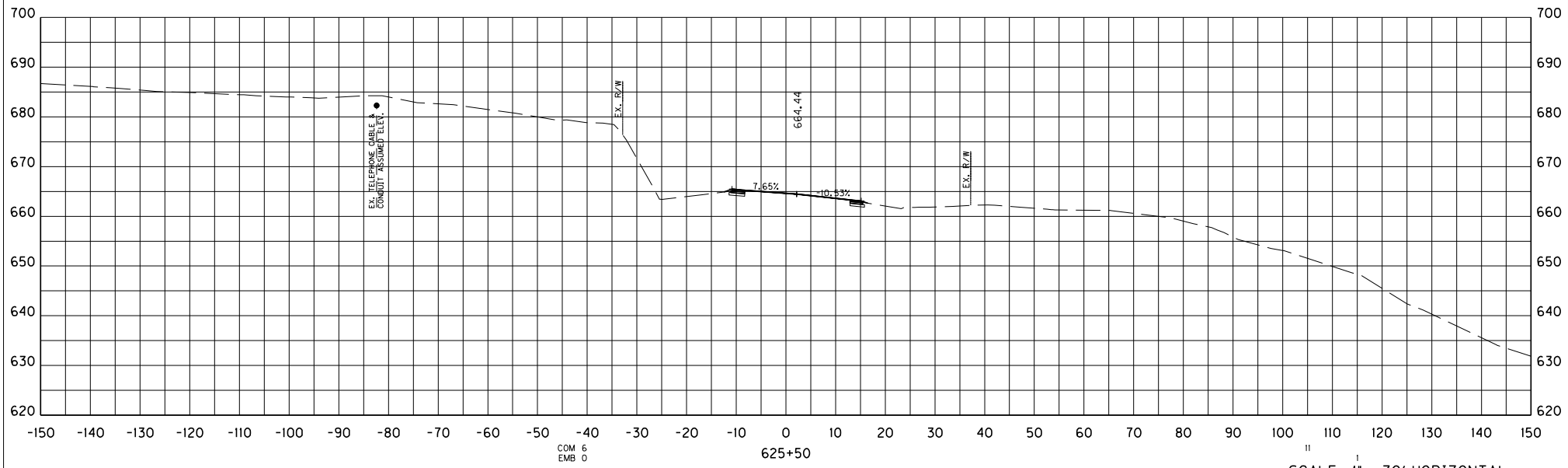


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X309

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.624+50 TO STA.625+00

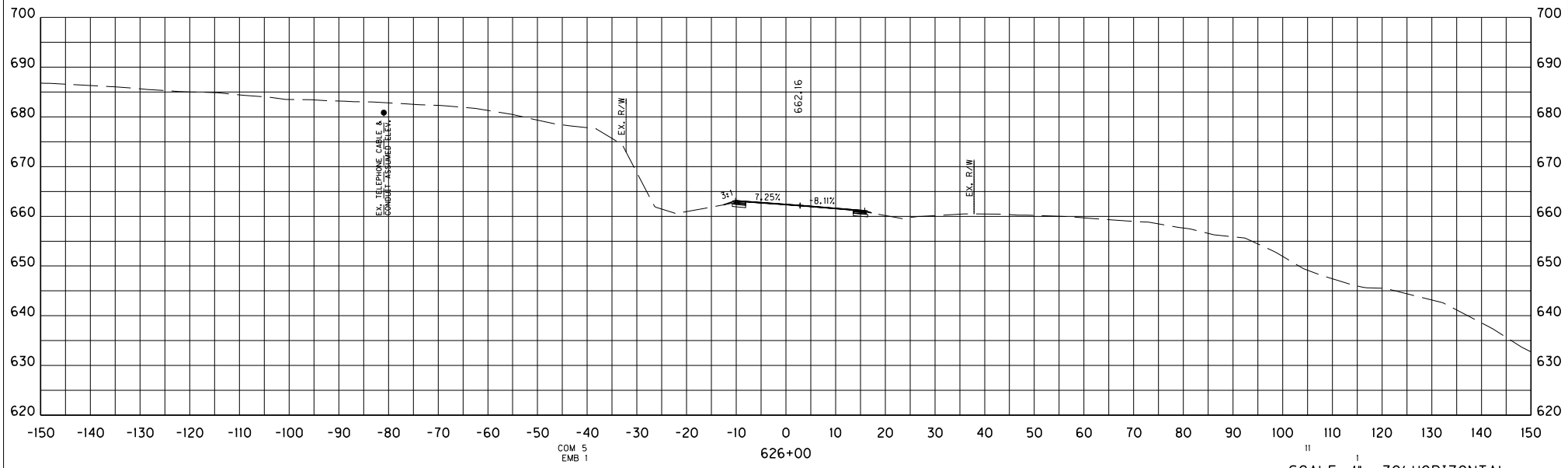


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X310

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.625+50 TO STA.625+50

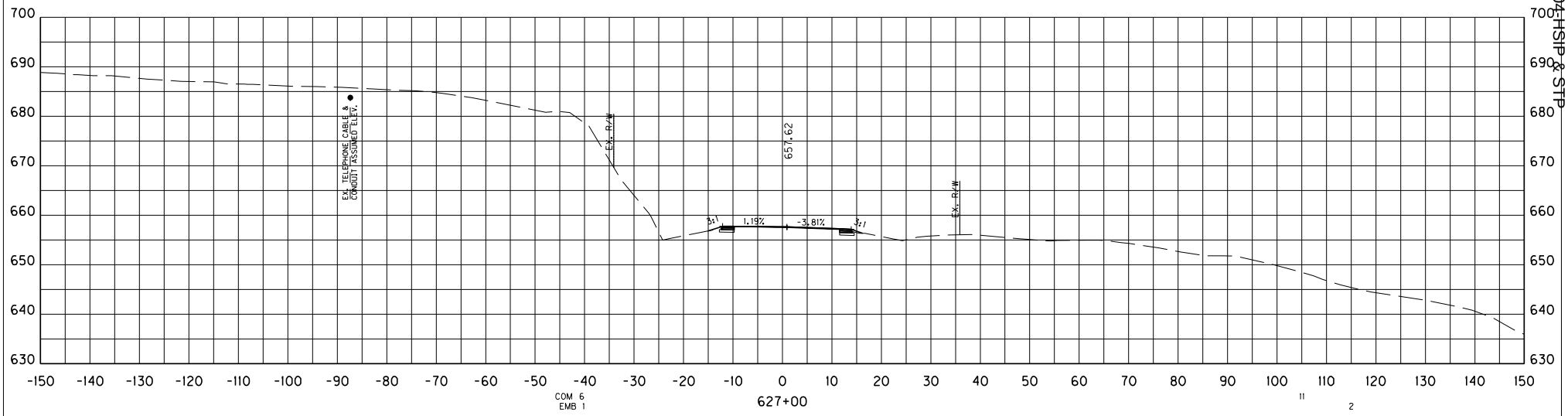


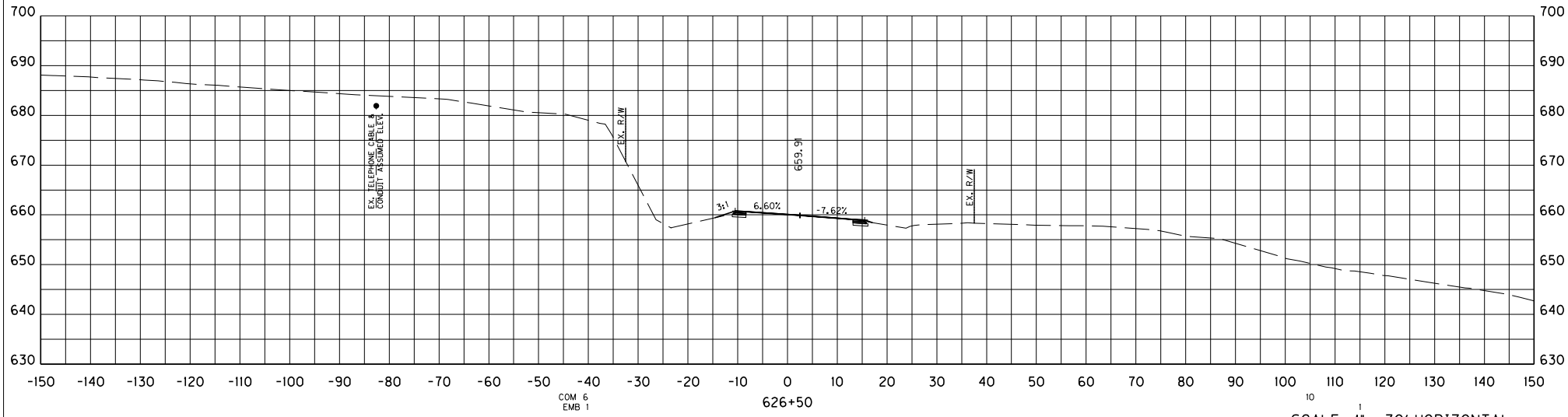
SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X311

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.626+00 TO STA.626+00



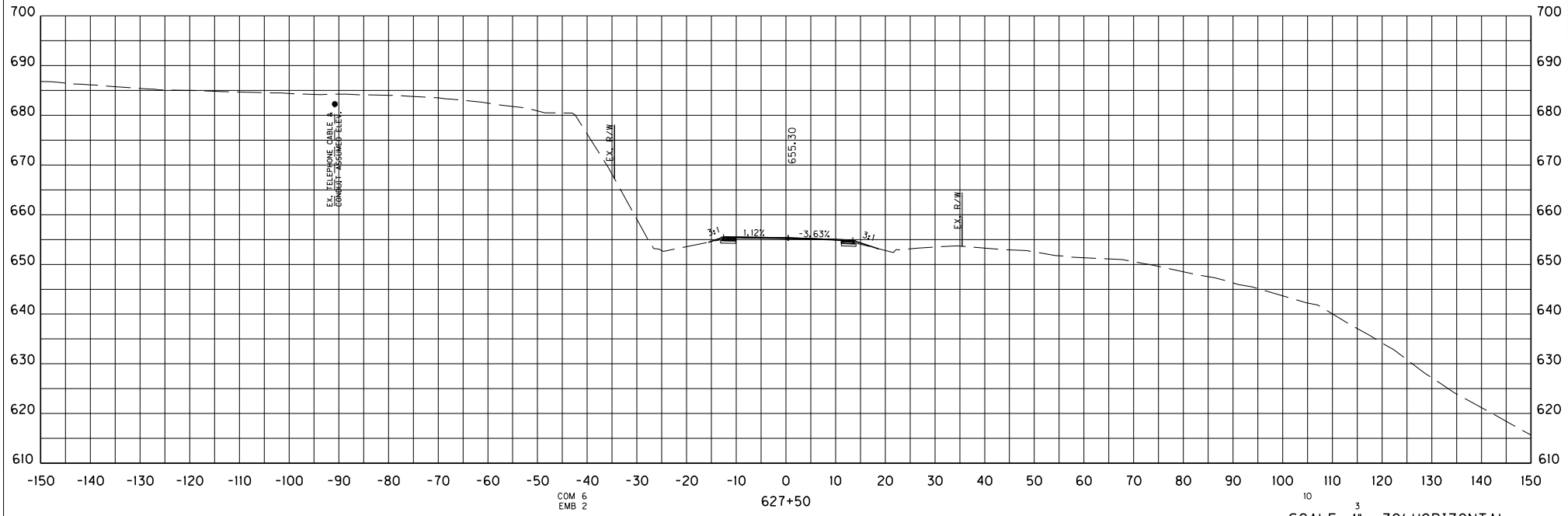


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X312

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.626+50 TO STA.627+00

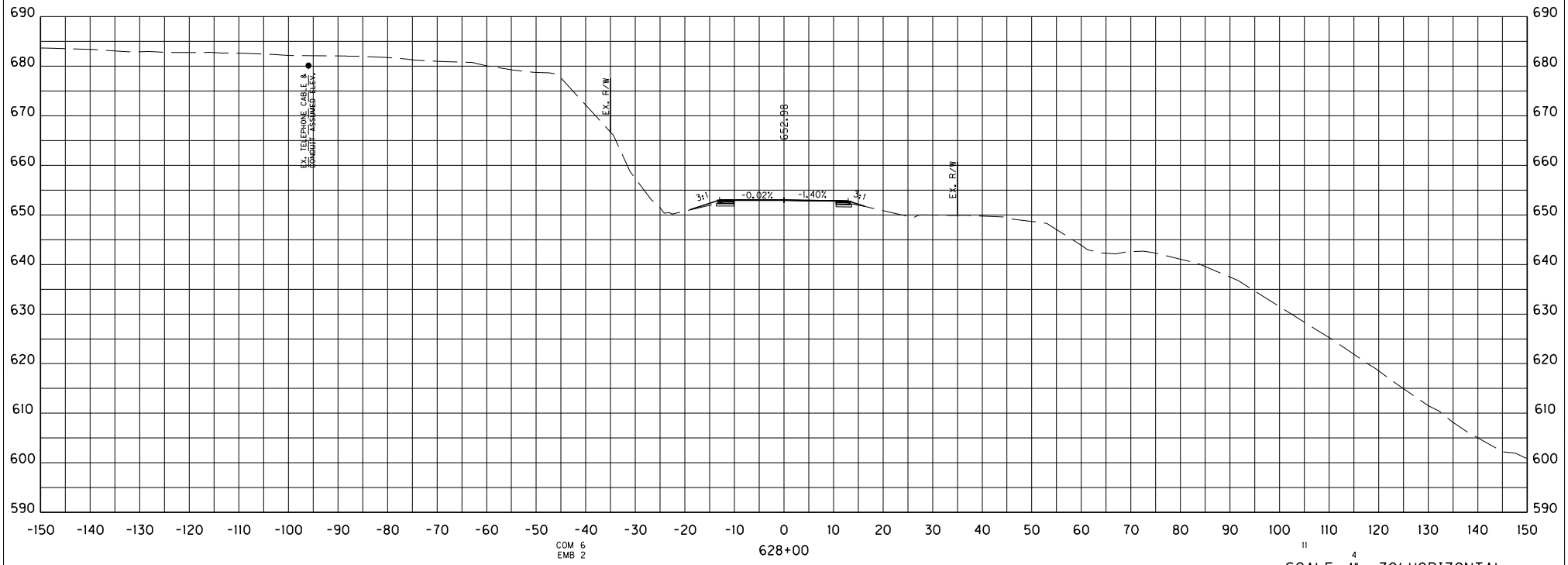


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X313

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.627+50 TO STA.627+50

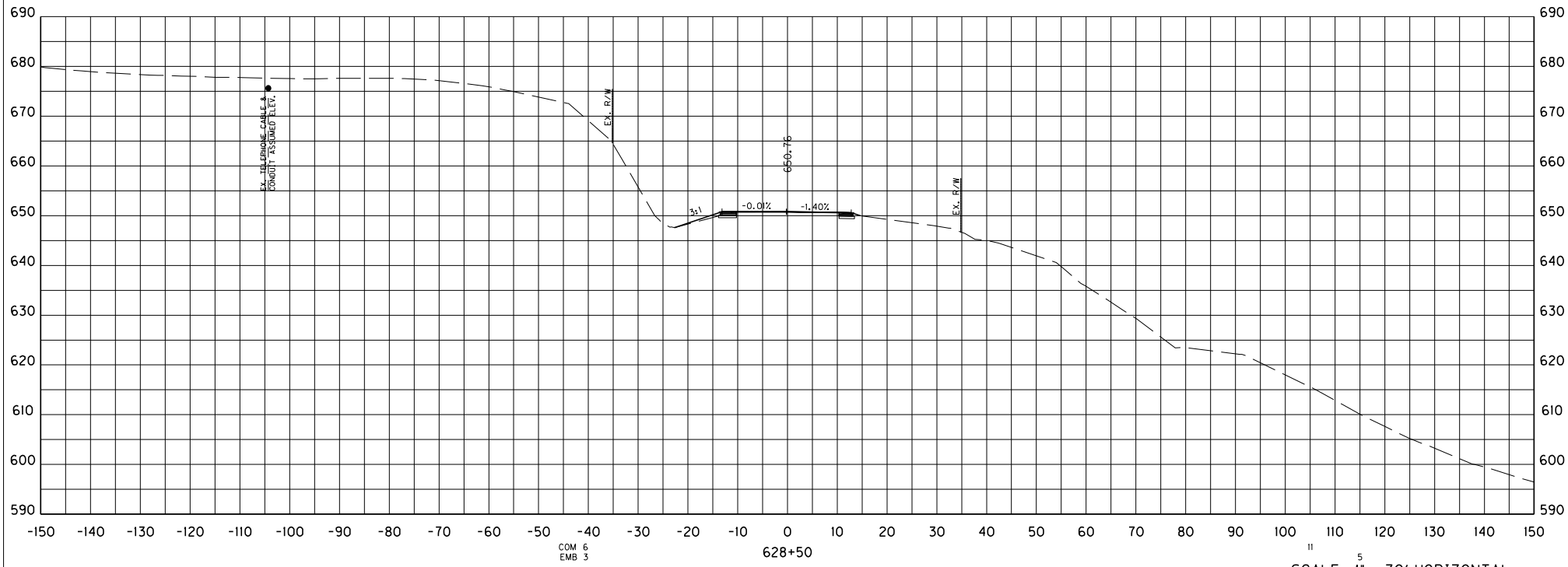


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X314

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.628+00 TO STA.628+00

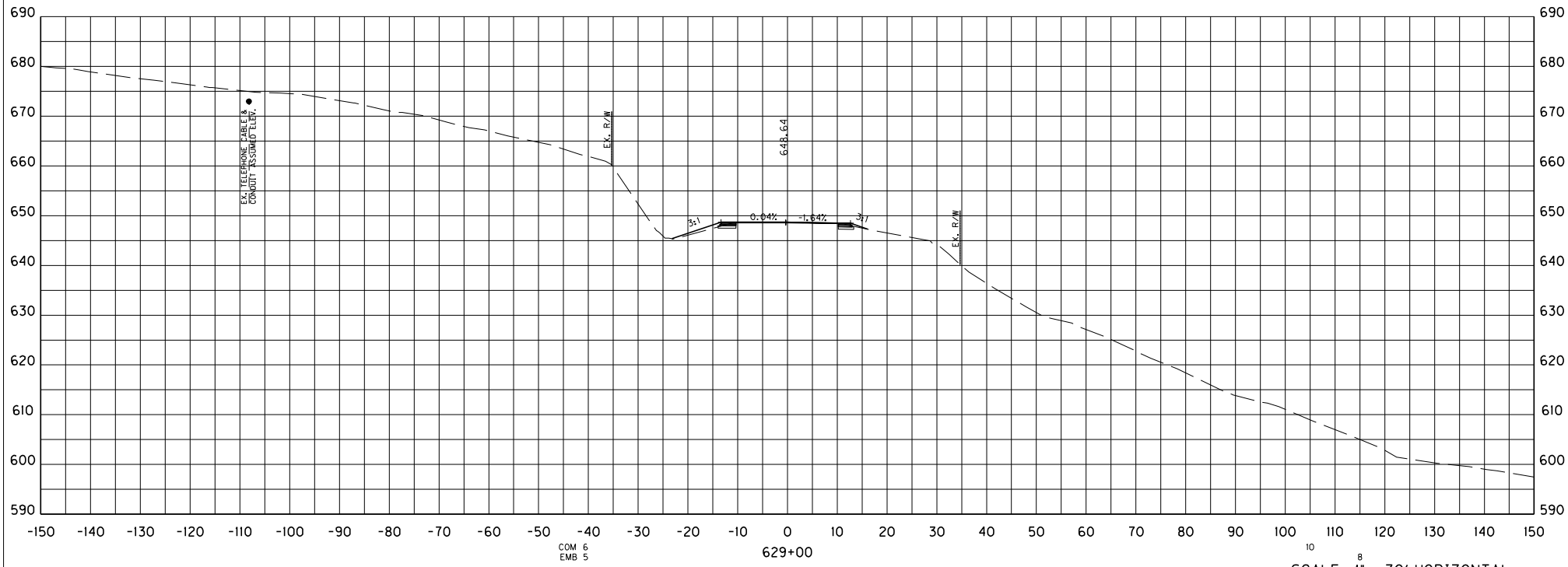


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X315

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.628+50 TO STA.628+50

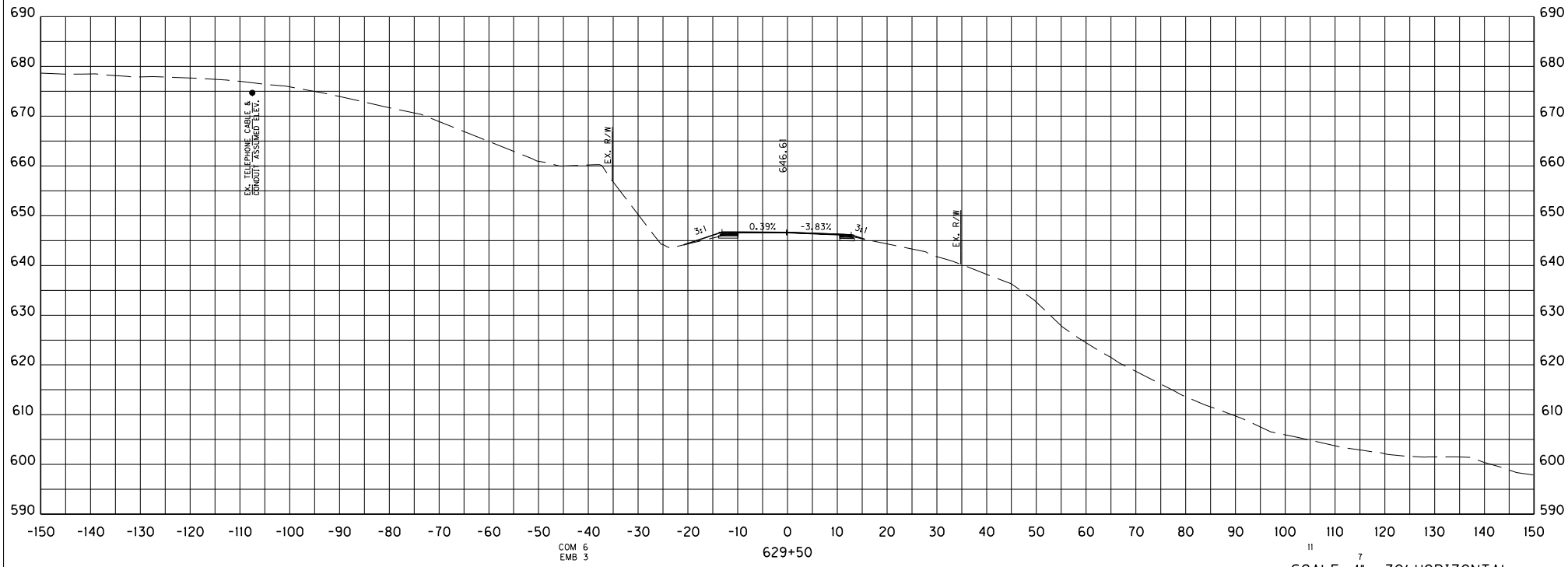


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X316

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.629+00 TO STA.629+00

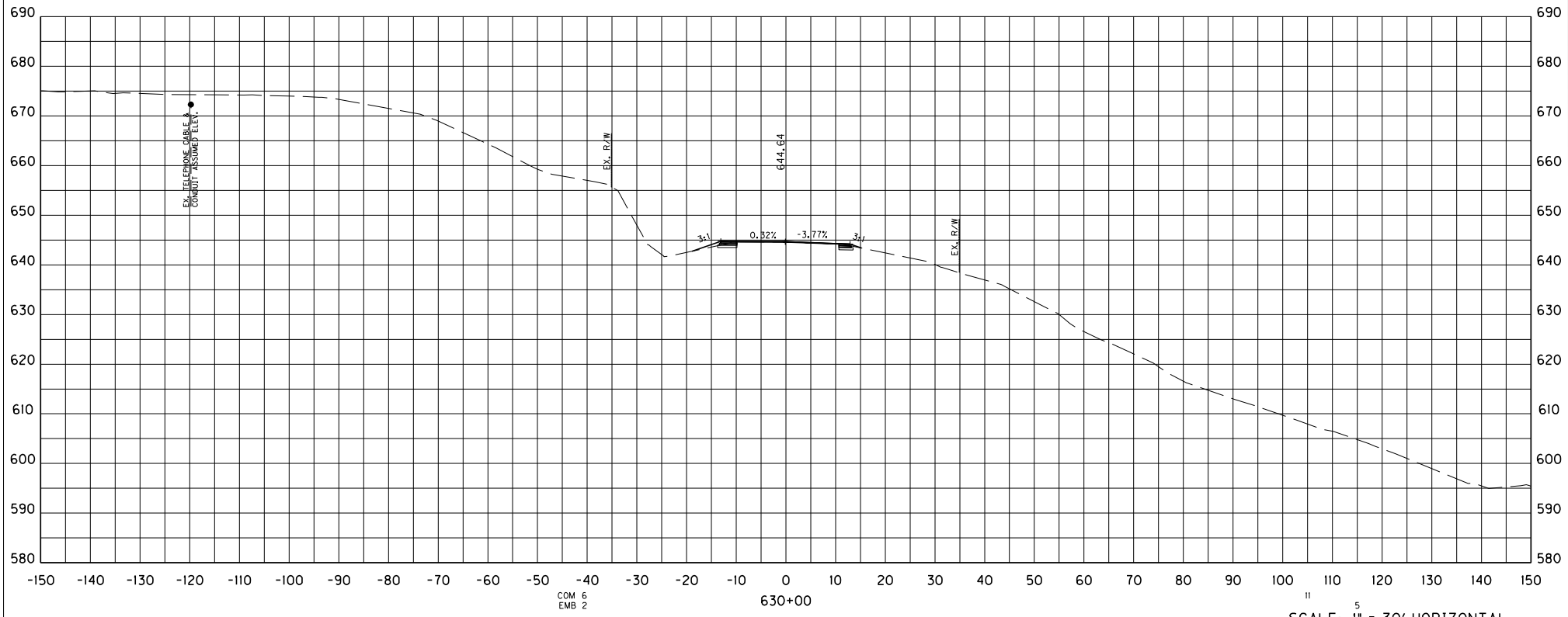


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X317

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.629+50 TO STA.629+50

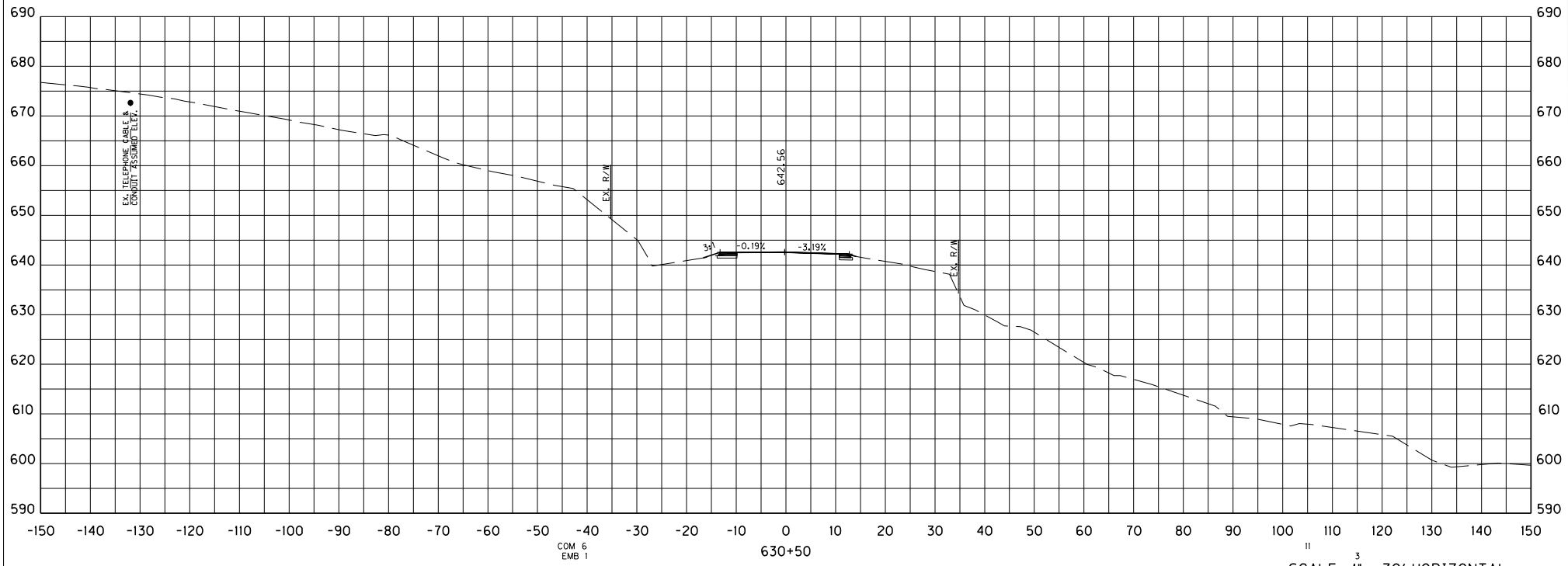


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X318

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.630+00 TO STA.630+00

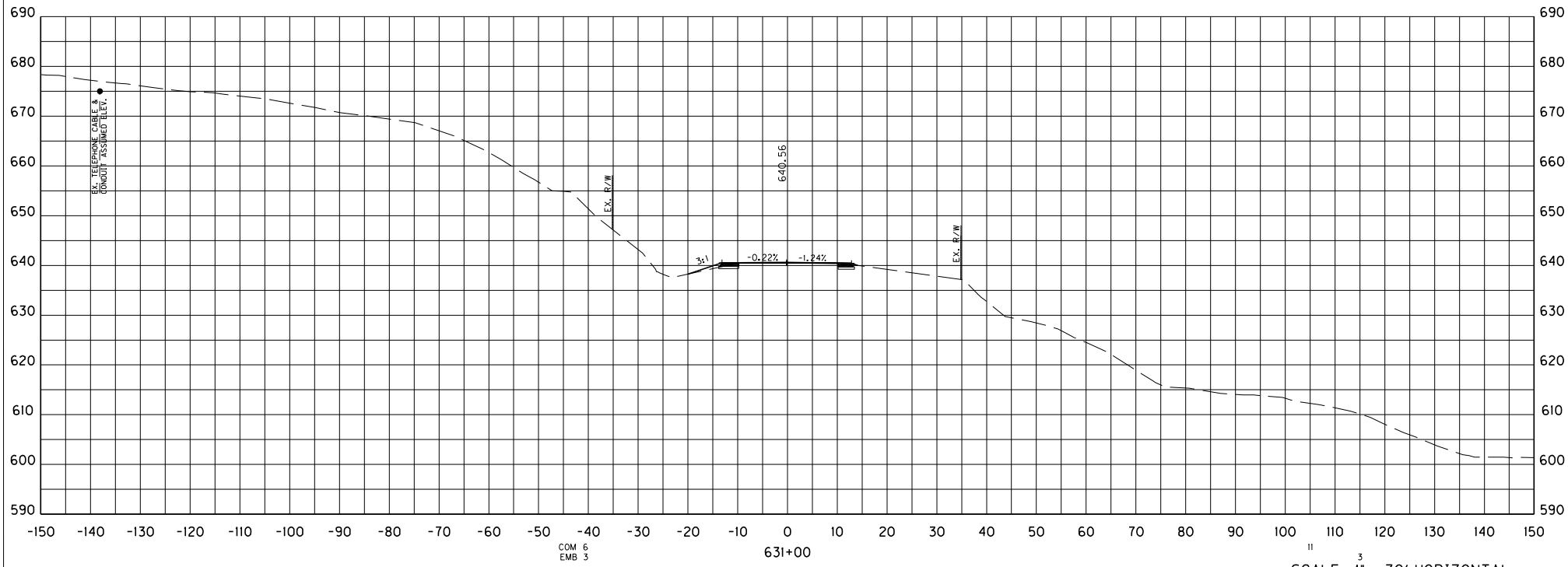


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X319

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.630+50 TO STA.630+50

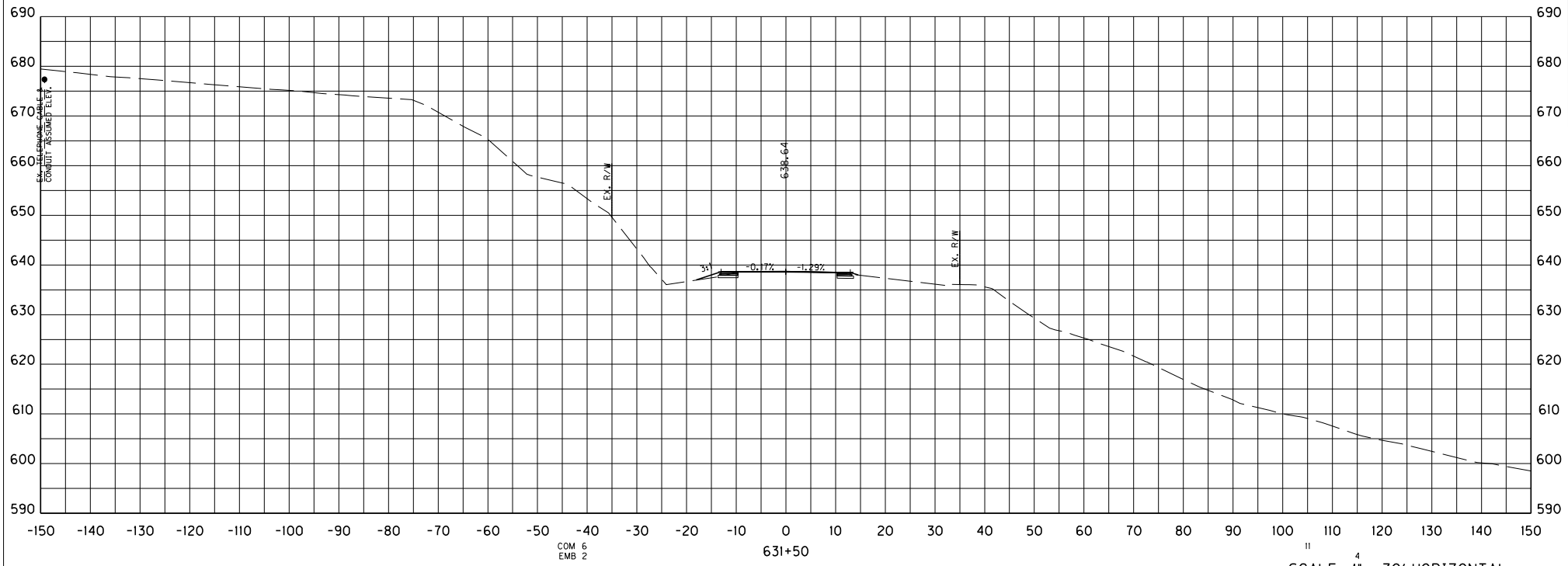


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X320

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.631+00 TO STA.631+00

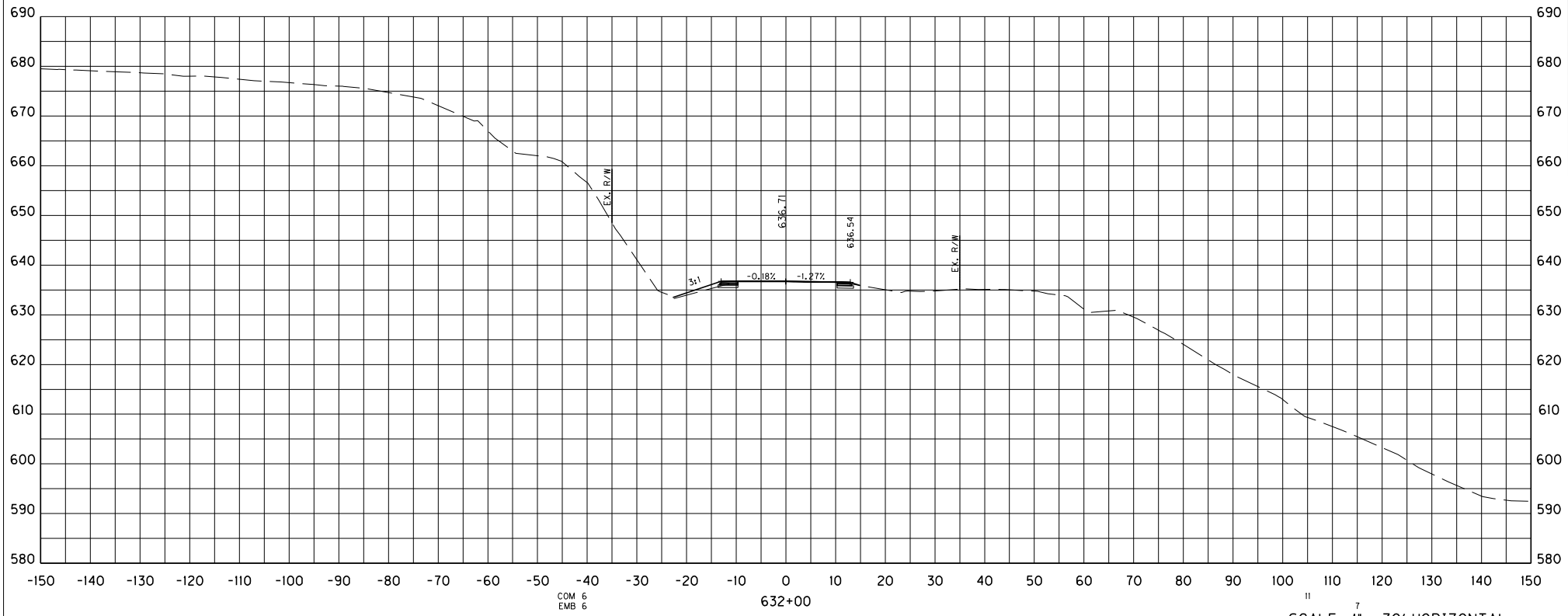


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X321

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.631+50 TO STA.631+50

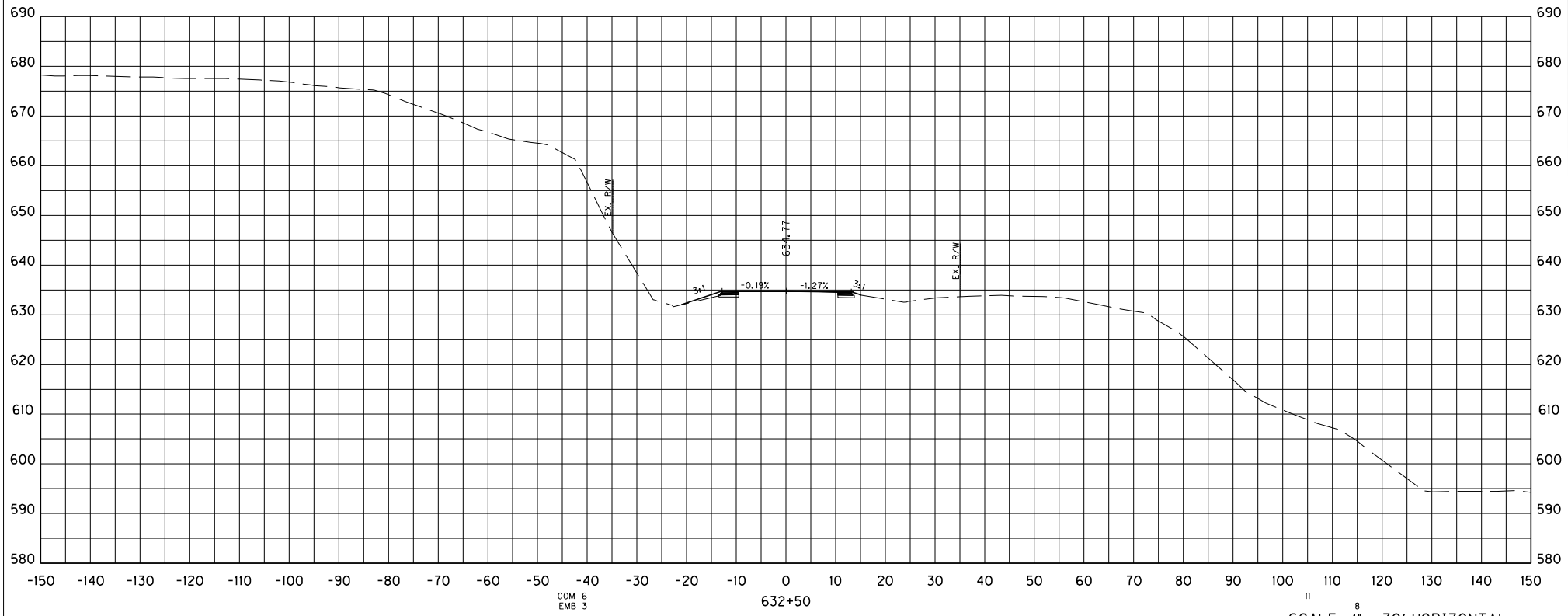


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X322

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.632+00 TO STA.632+00

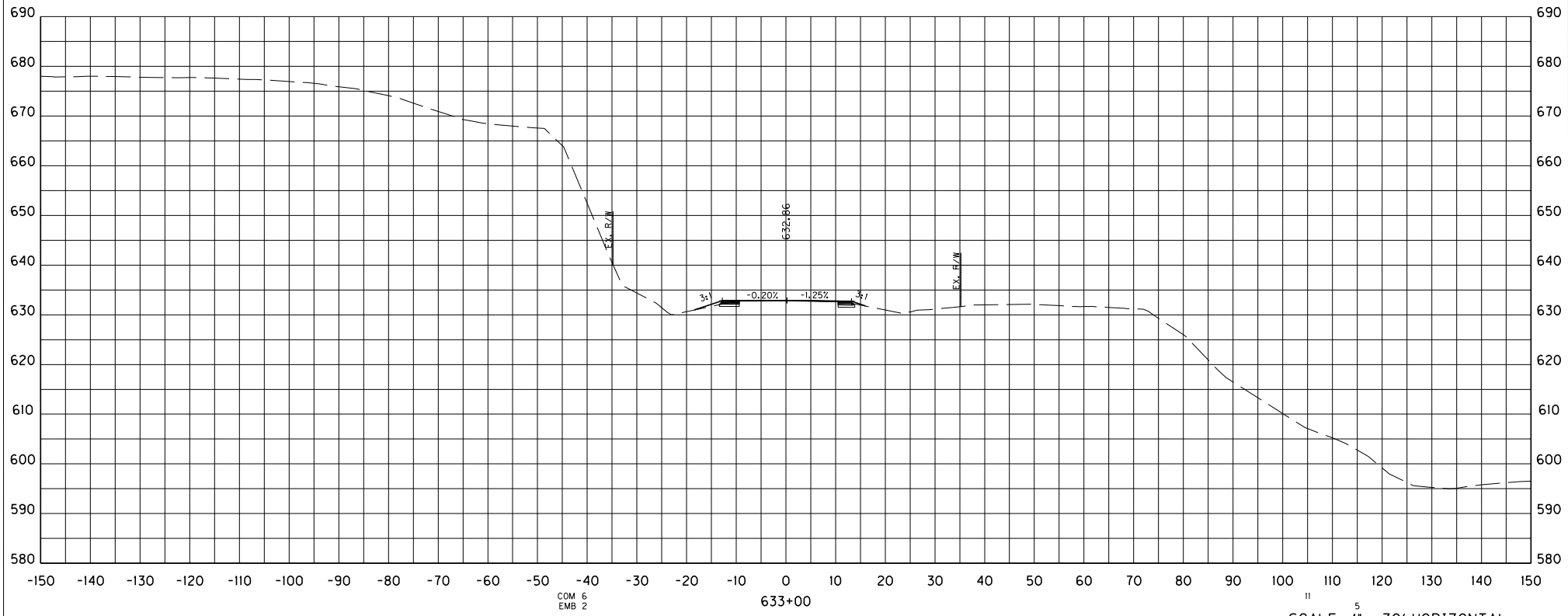


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X323

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.632+50 TO STA.632+50

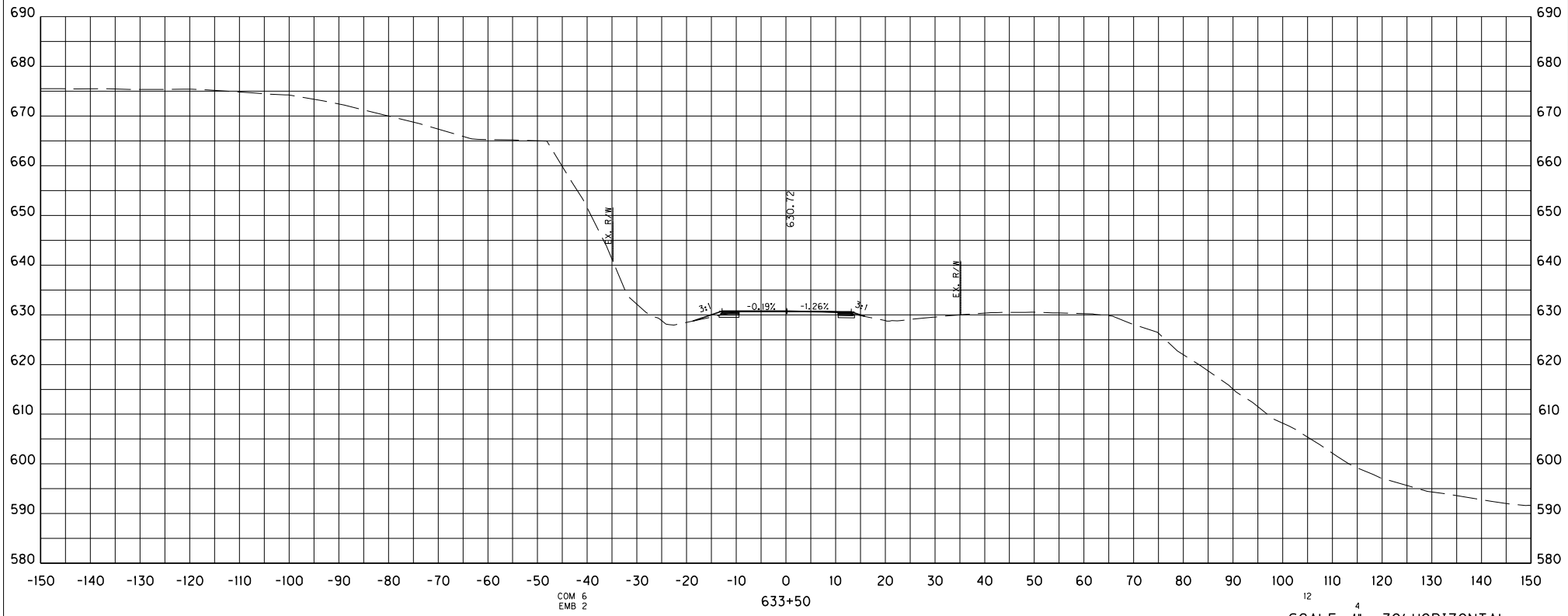


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X324

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.633+00 TO STA.633+00

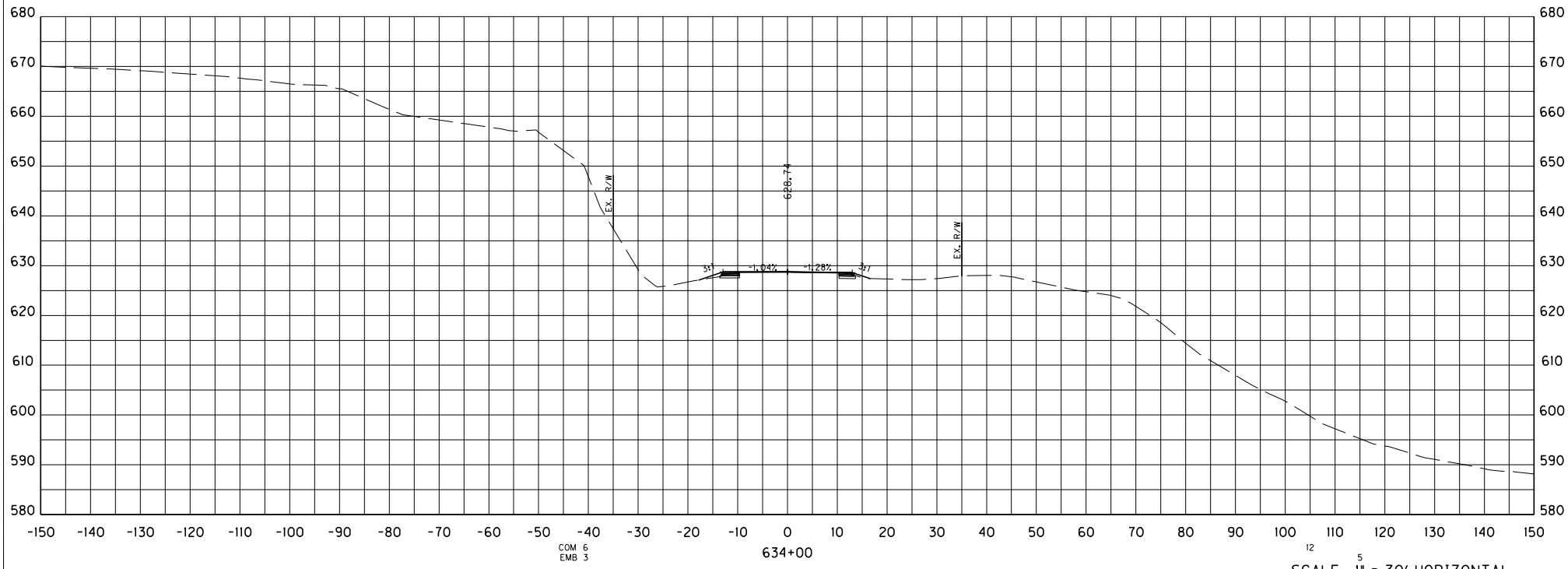


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X325

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.633+50 TO STA.633+50

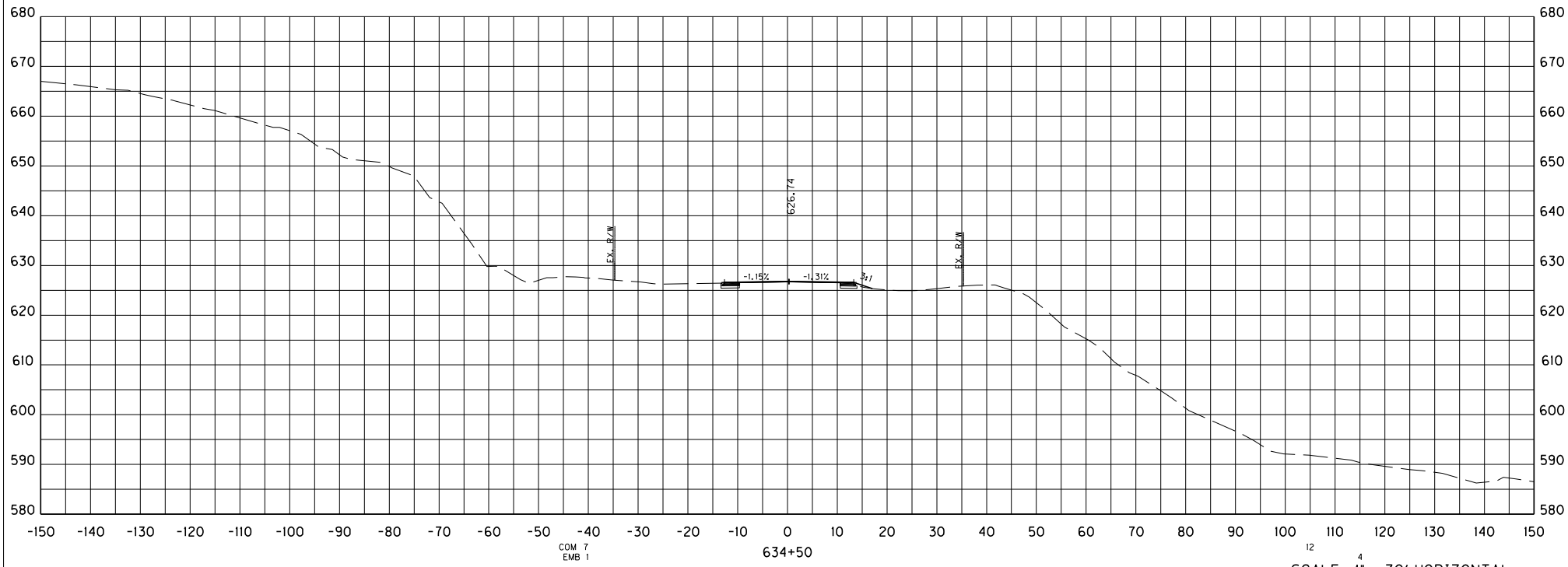


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X326

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.634+00 TO STA.634+00

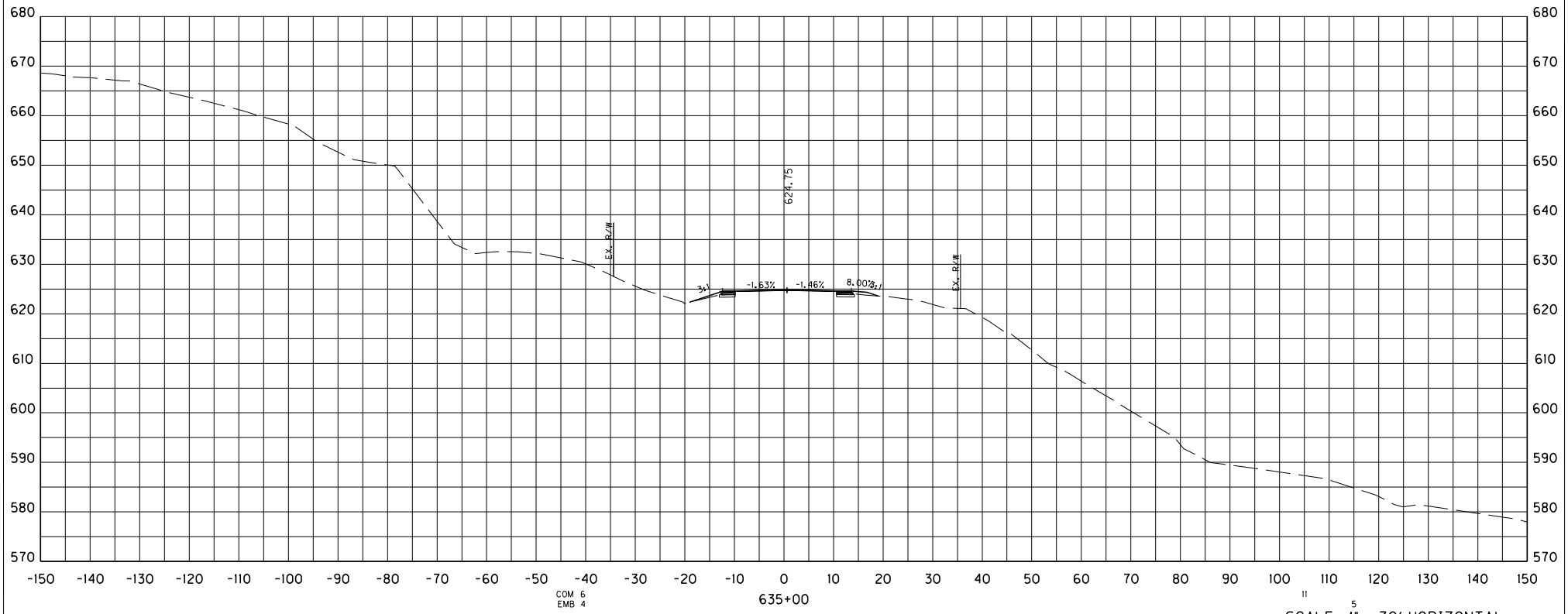


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X327

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.634+50 TO STA.634+50

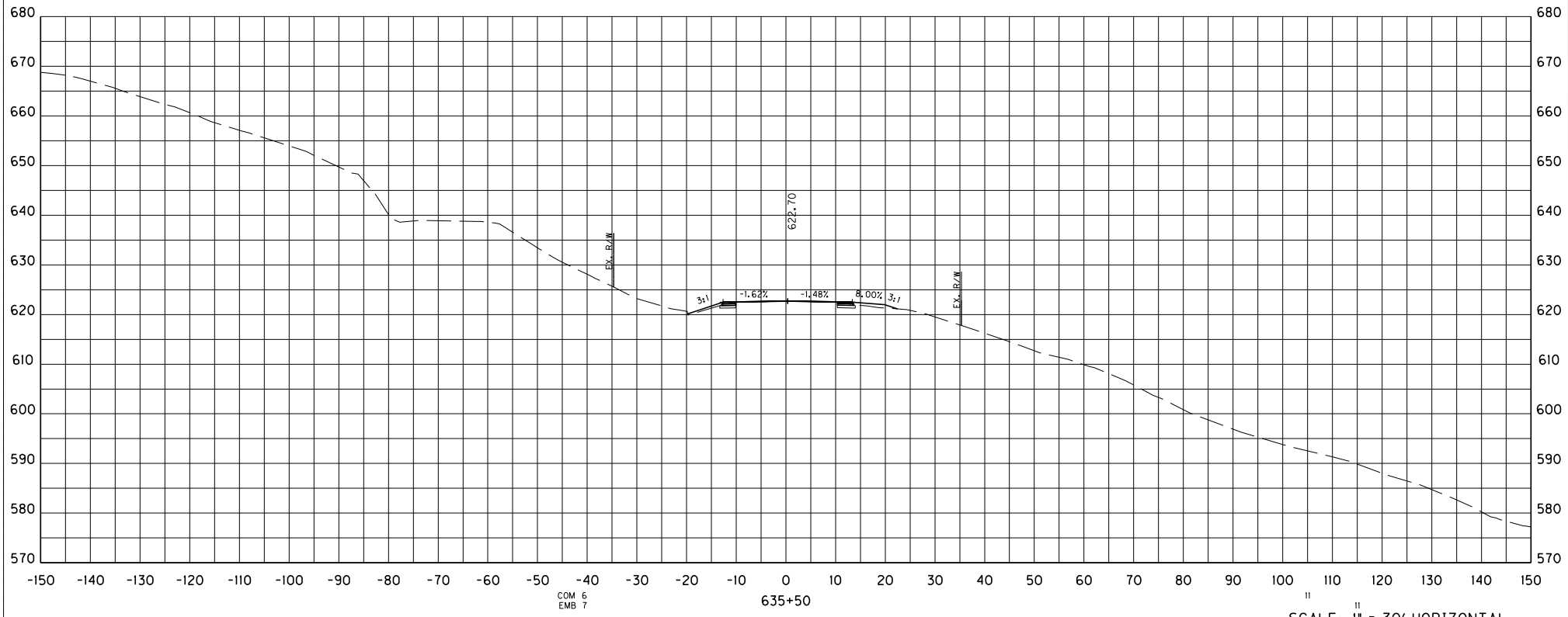


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X328

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.635+00 TO STA.635+00

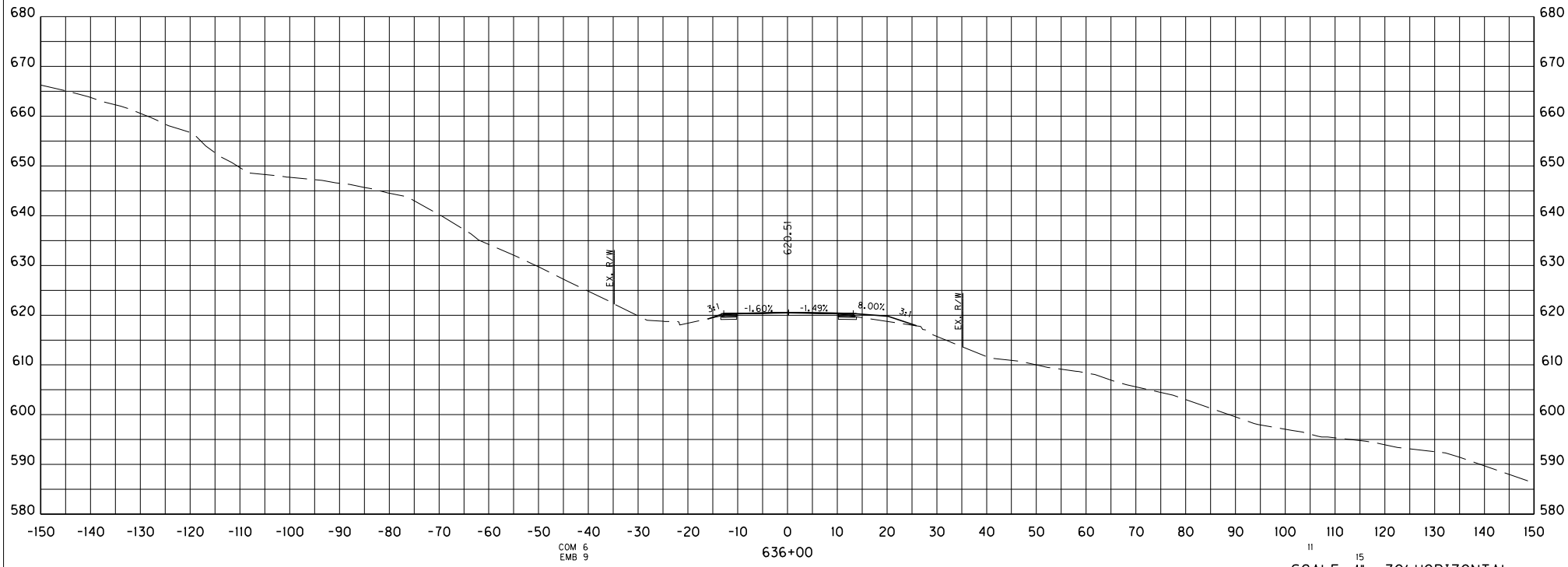


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X329

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.635+50 TO STA.635+50

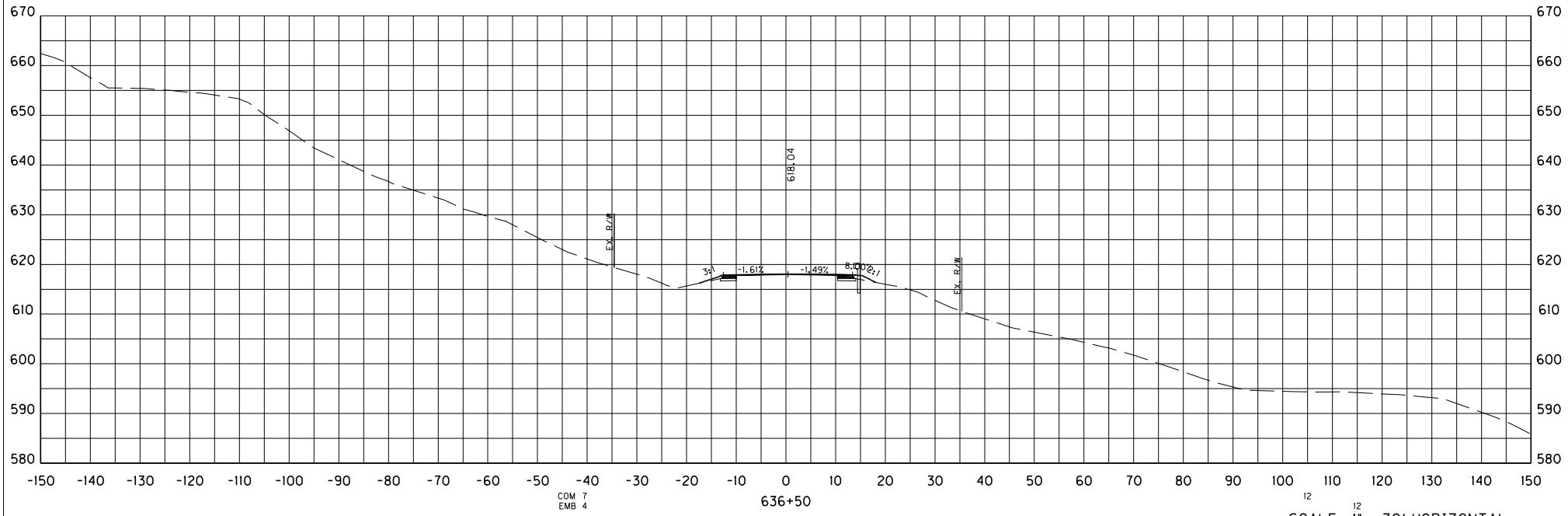


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X330

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.636+00 TO STA.636+00

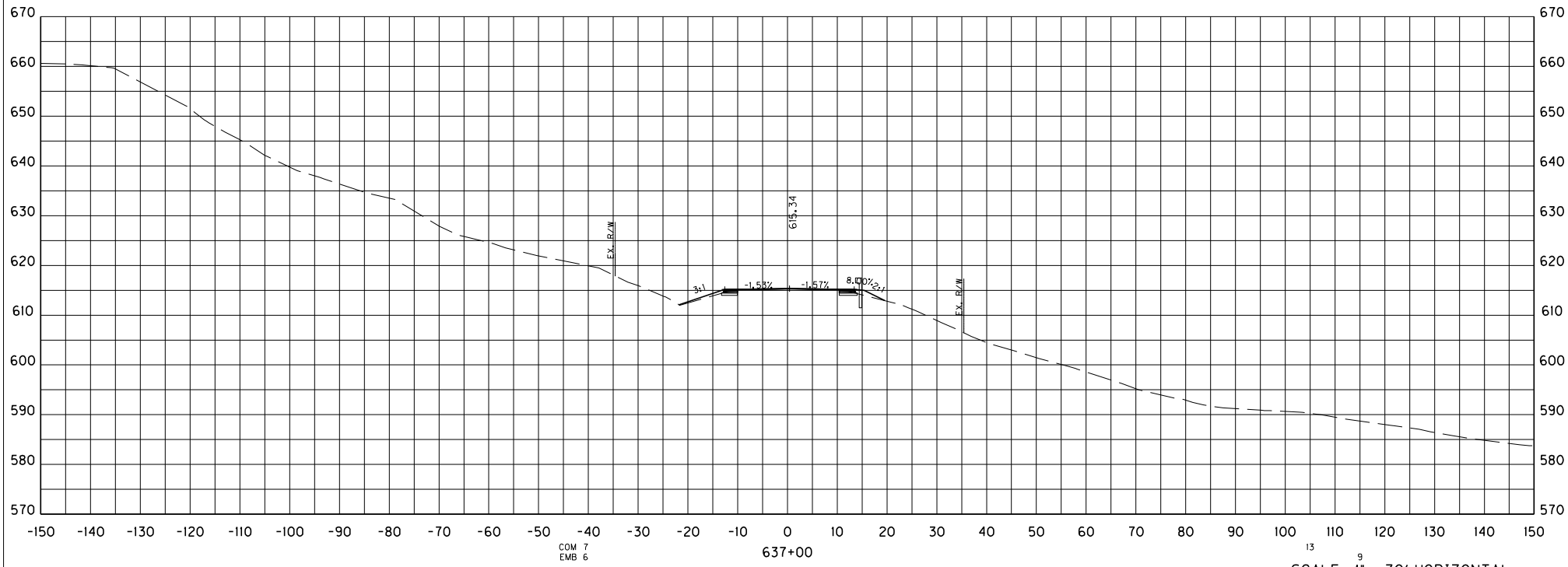


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X331

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.636+50 TO STA.636+50

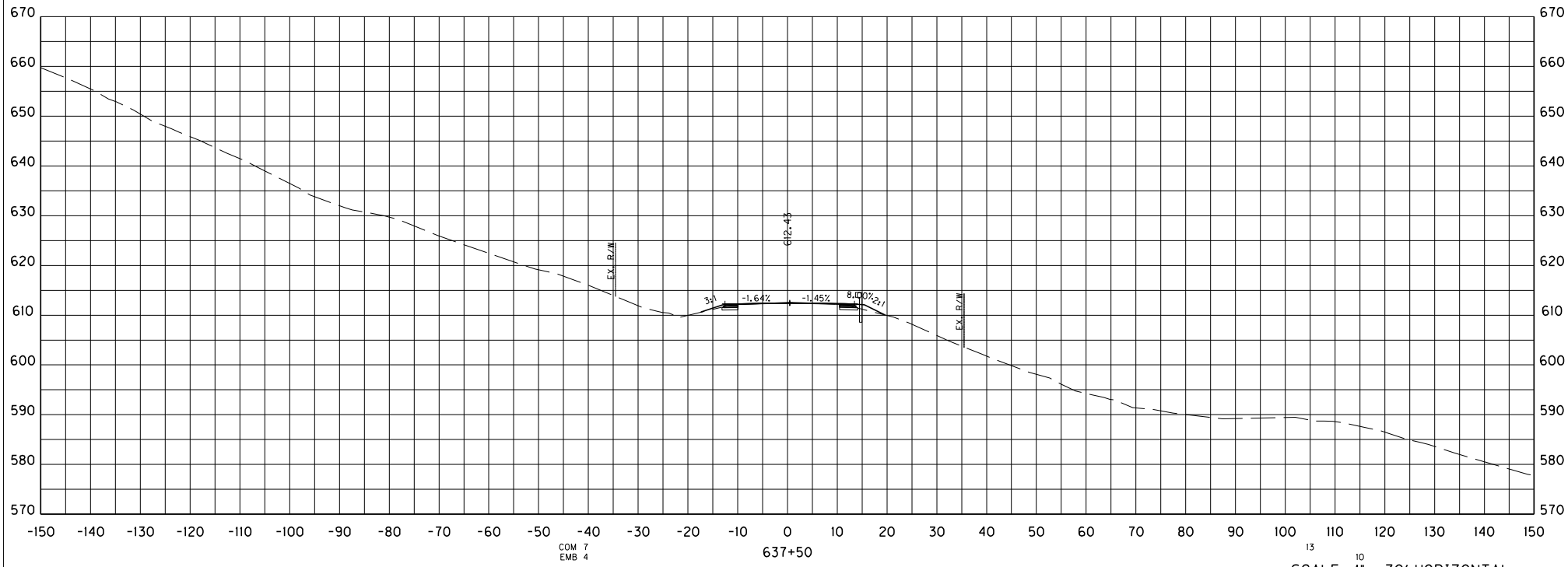


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X332

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.637+00 TO STA.637+00

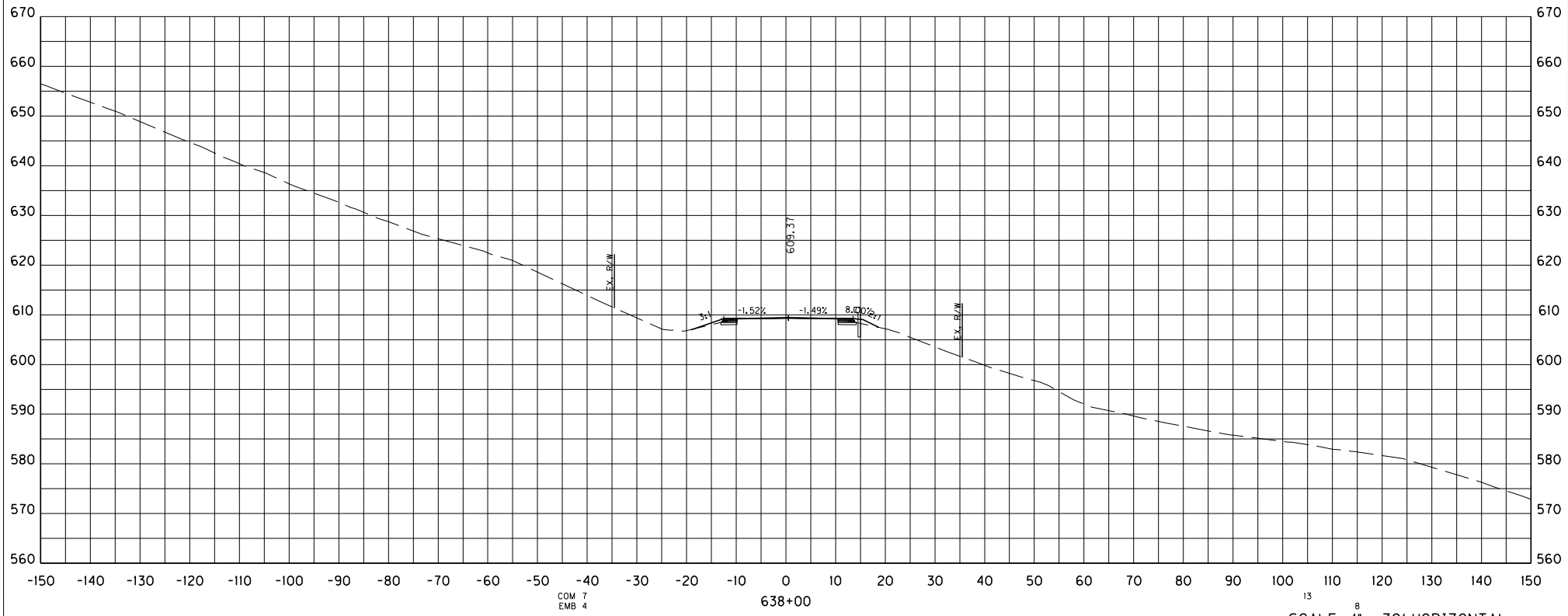


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X333

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.637+50 TO STA.637+50

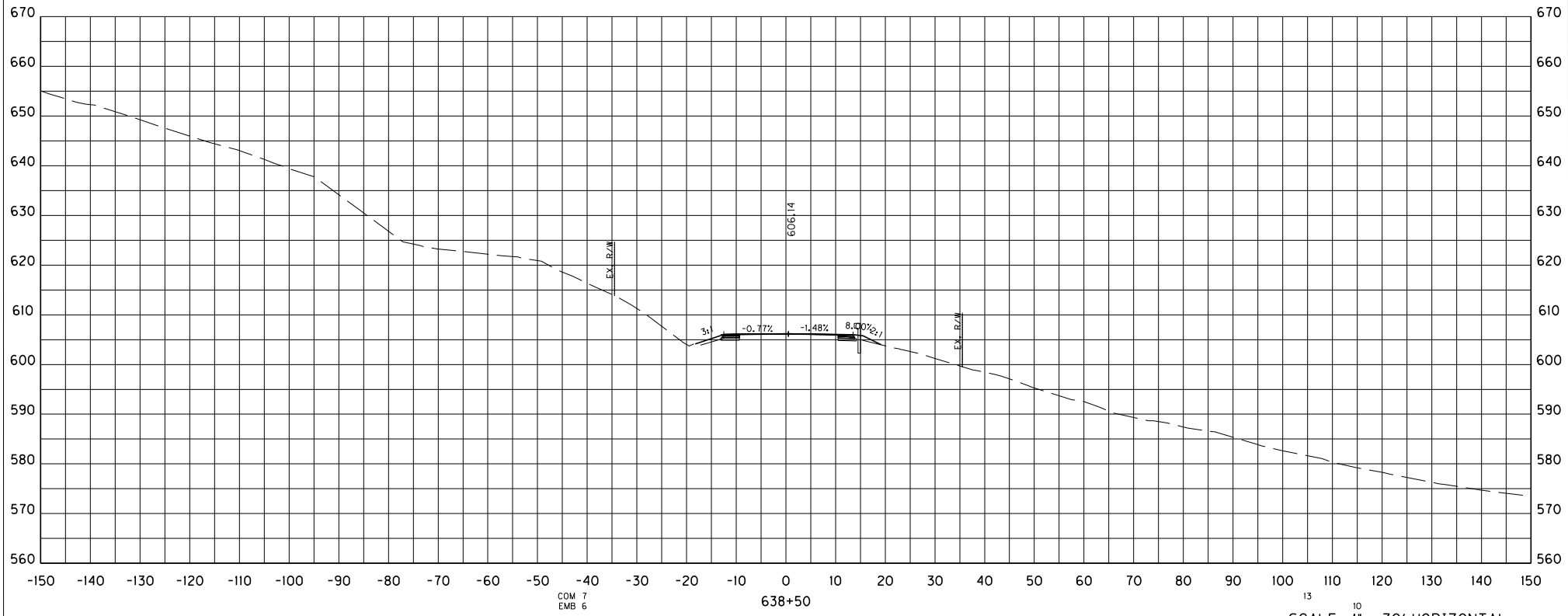


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X334

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.638+00 TO STA.638+00

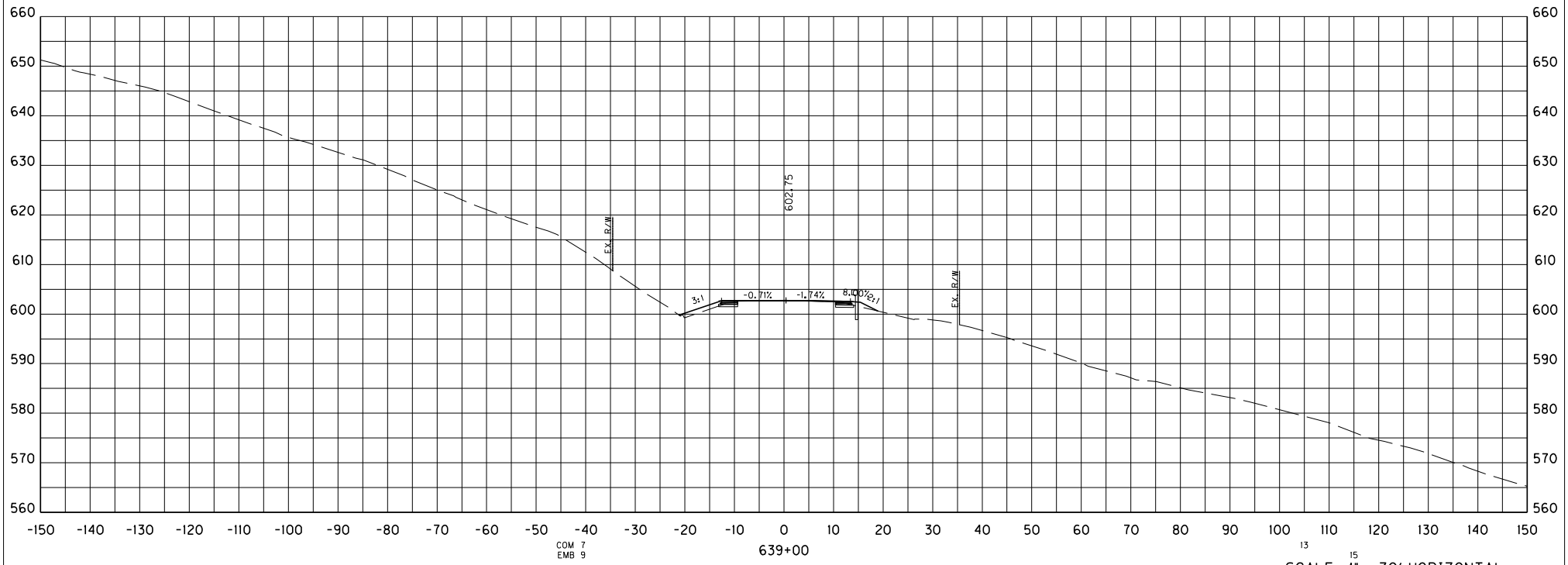


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X335

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.638+50 TO STA.638+50

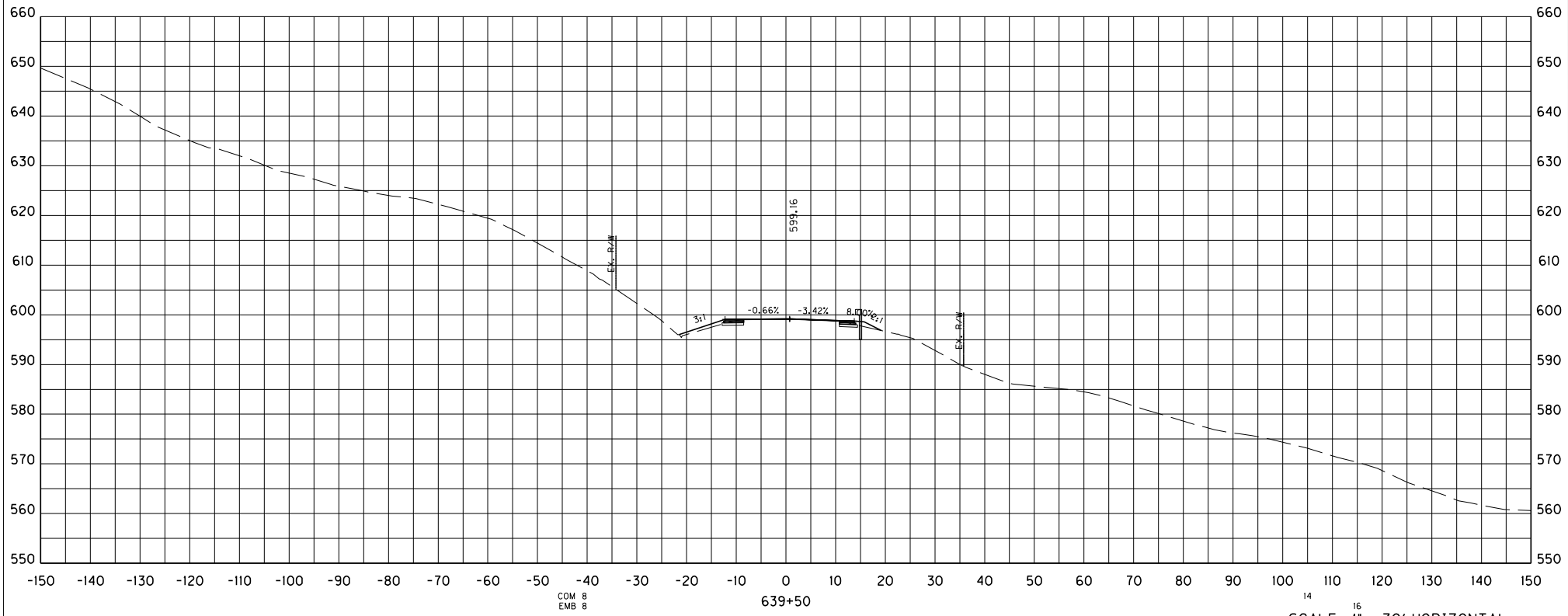


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X336

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.639+00 TO STA.639+00

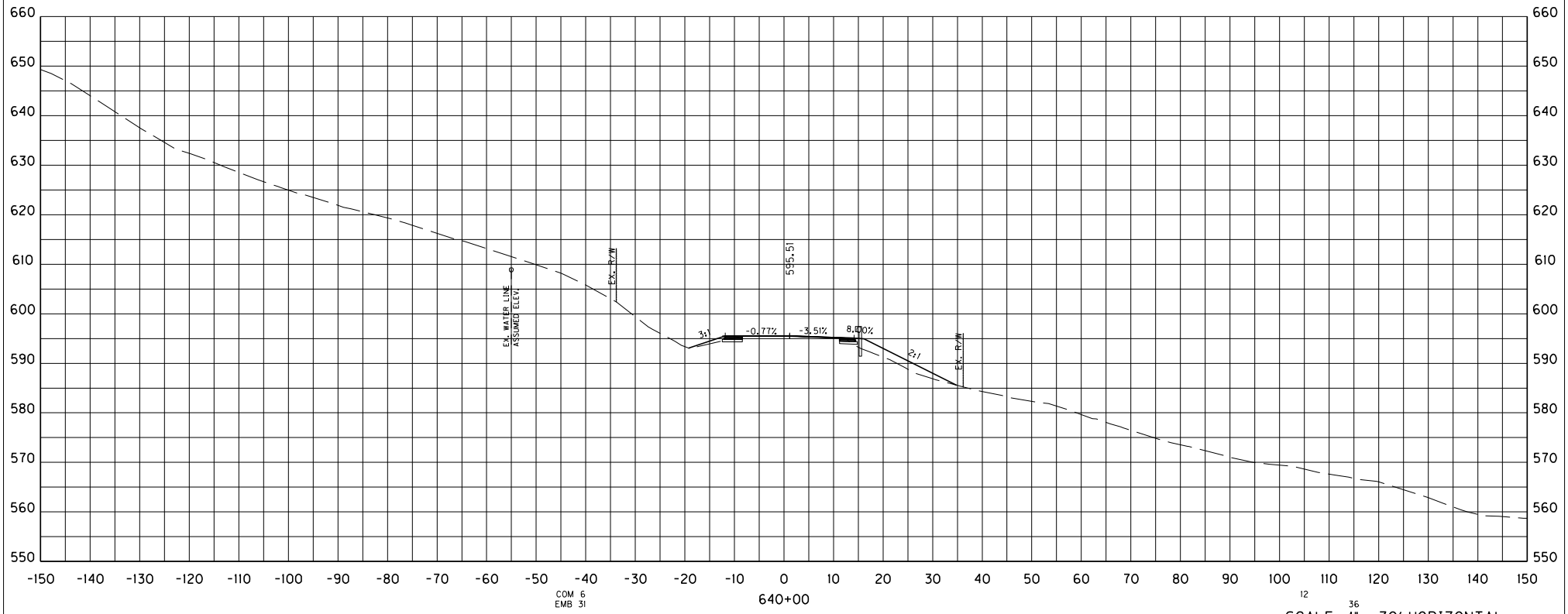


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X337

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.639+50 TO STA.639+50

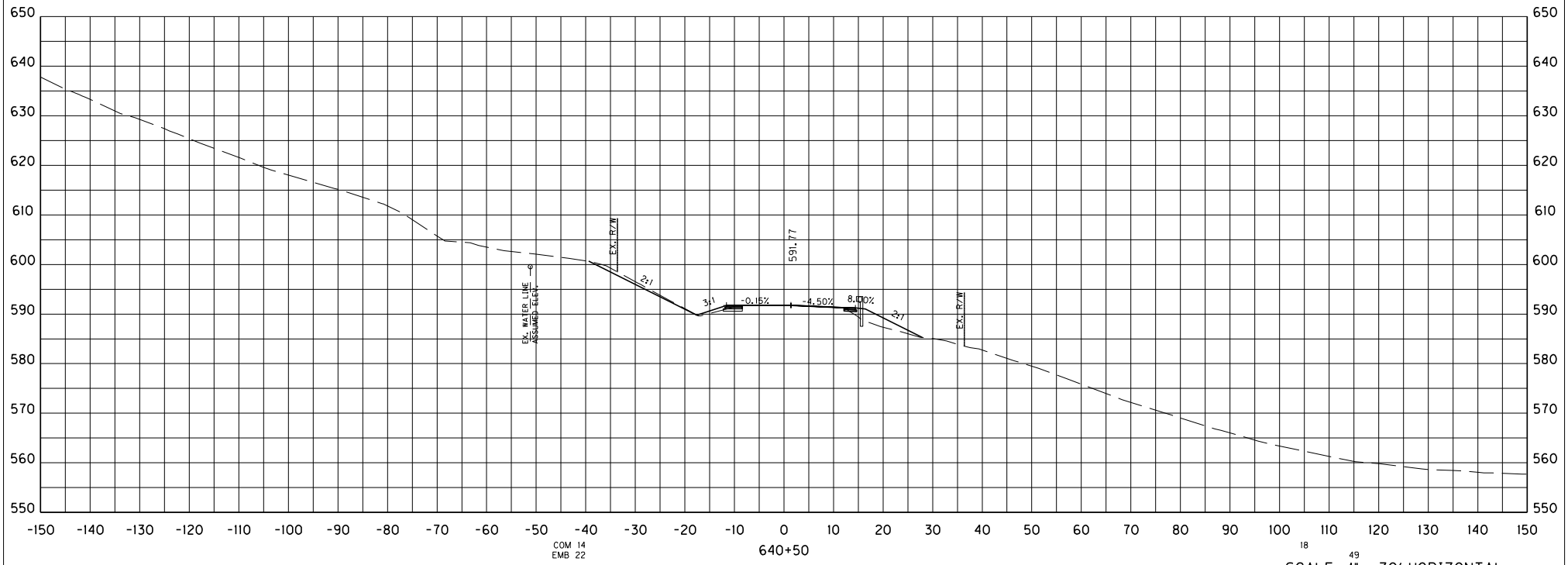


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X338

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.640+00 TO STA.640+00

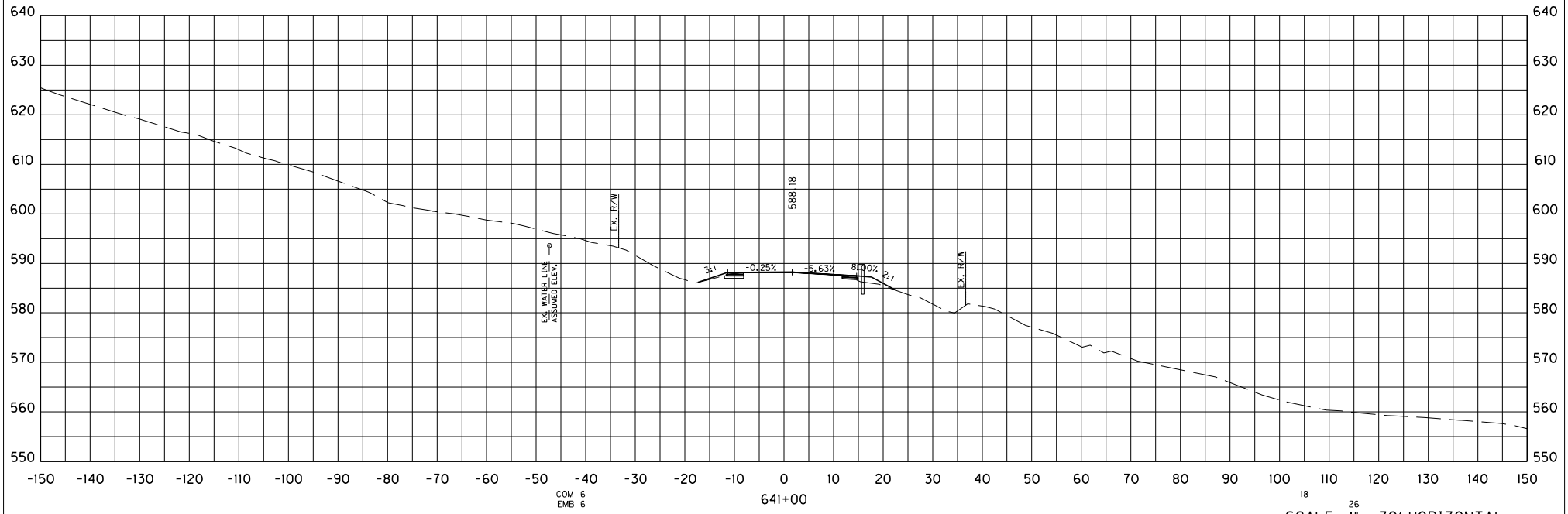


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X339

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.640+50 TO STA.640+50

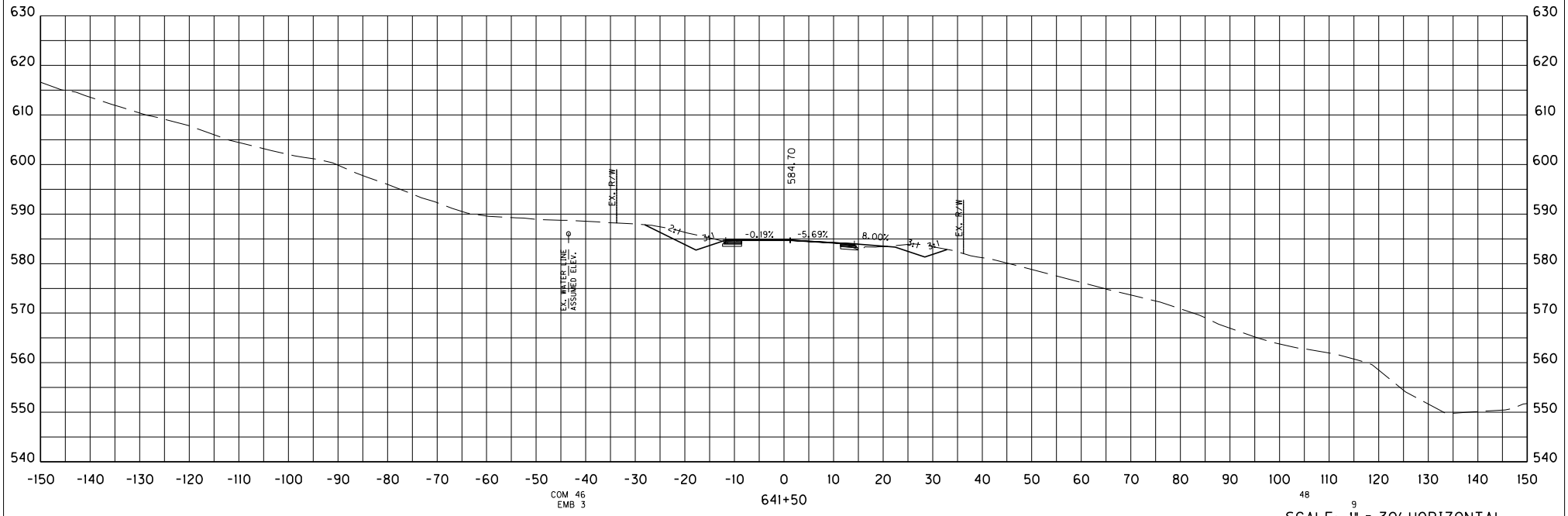


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X340

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.641+00 TO STA.641+00

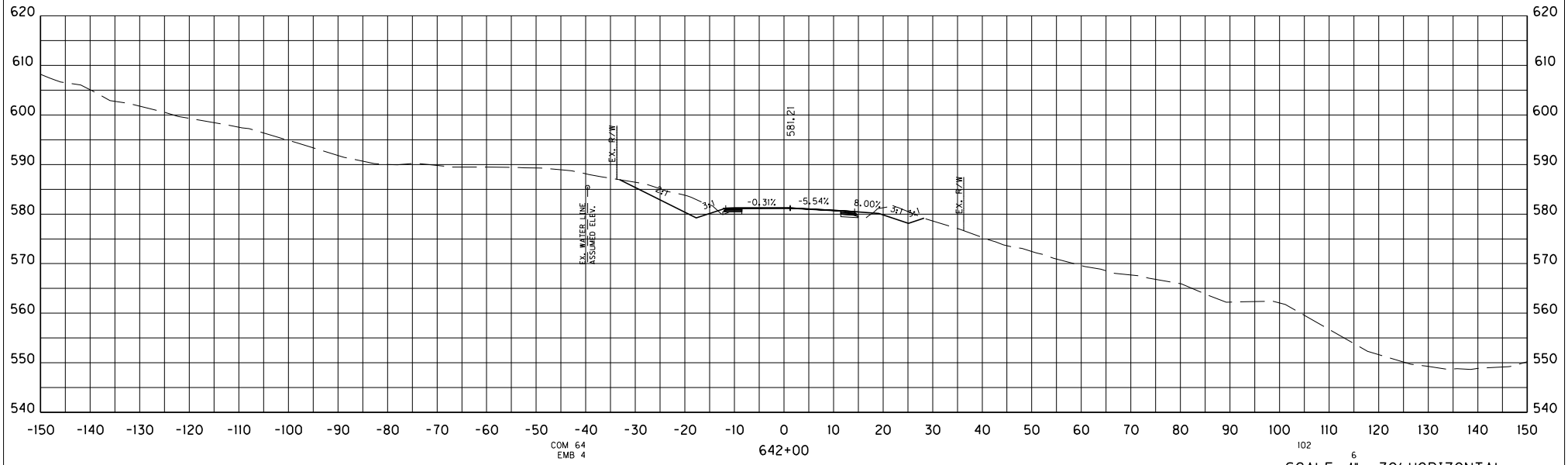


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X341

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.641+50 TO STA.641+50

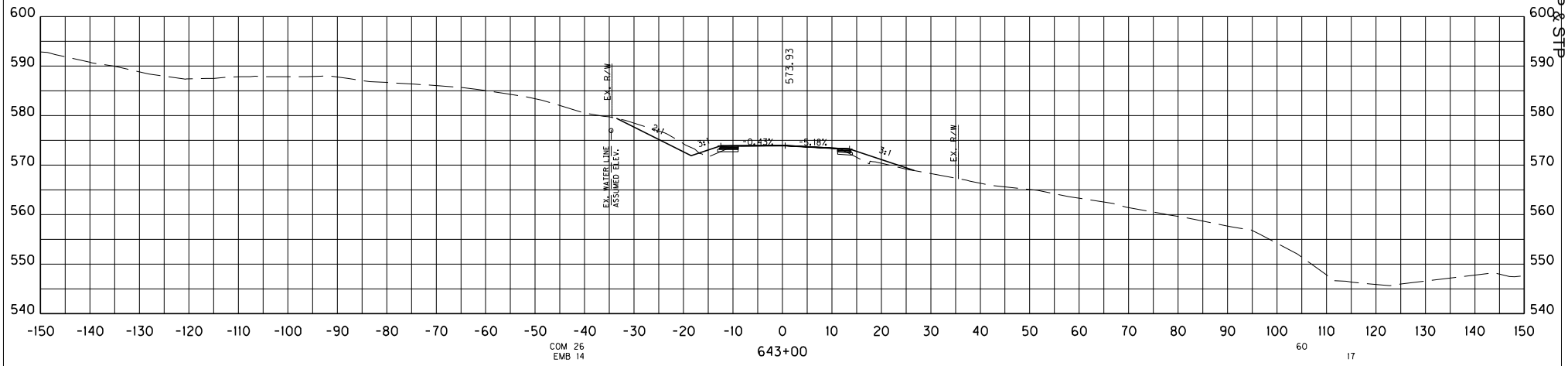


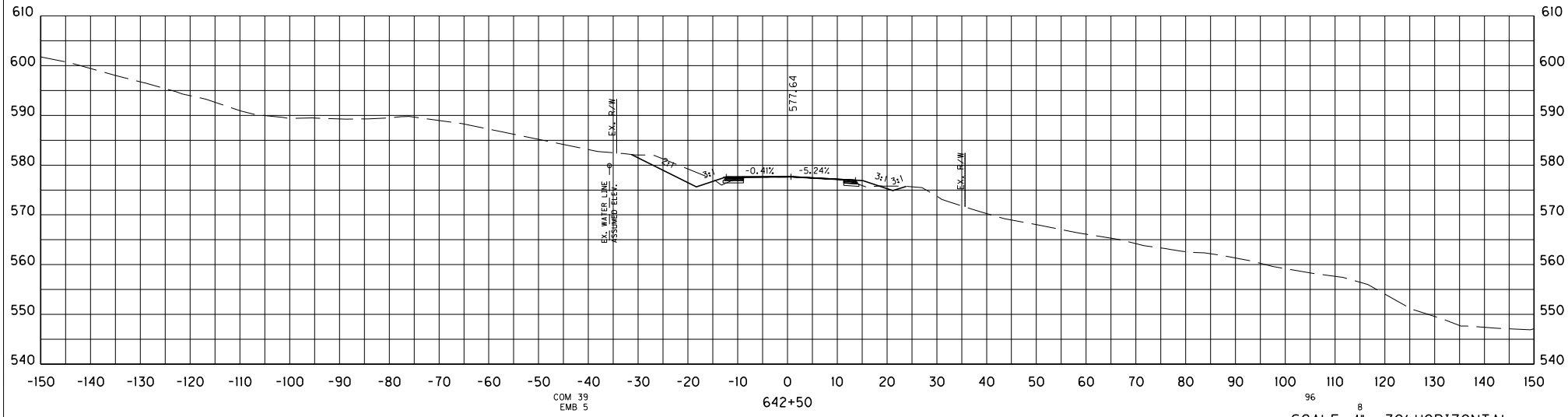
SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X342

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.642+00 TO STA.642+00



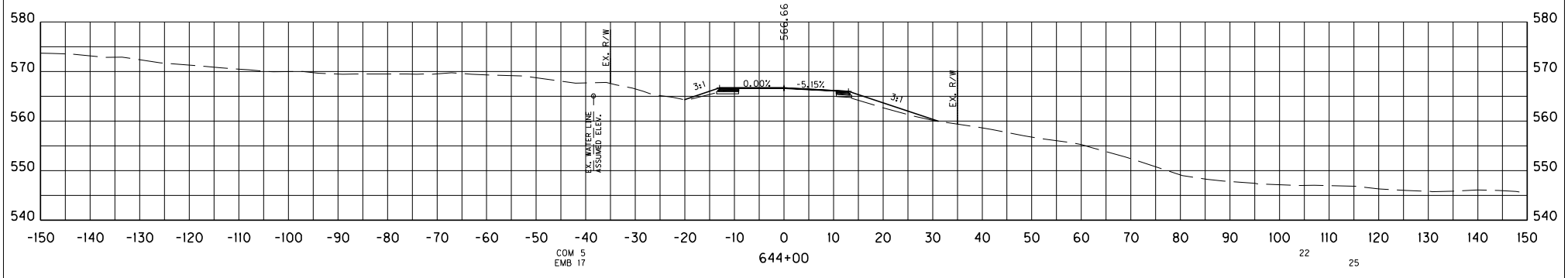


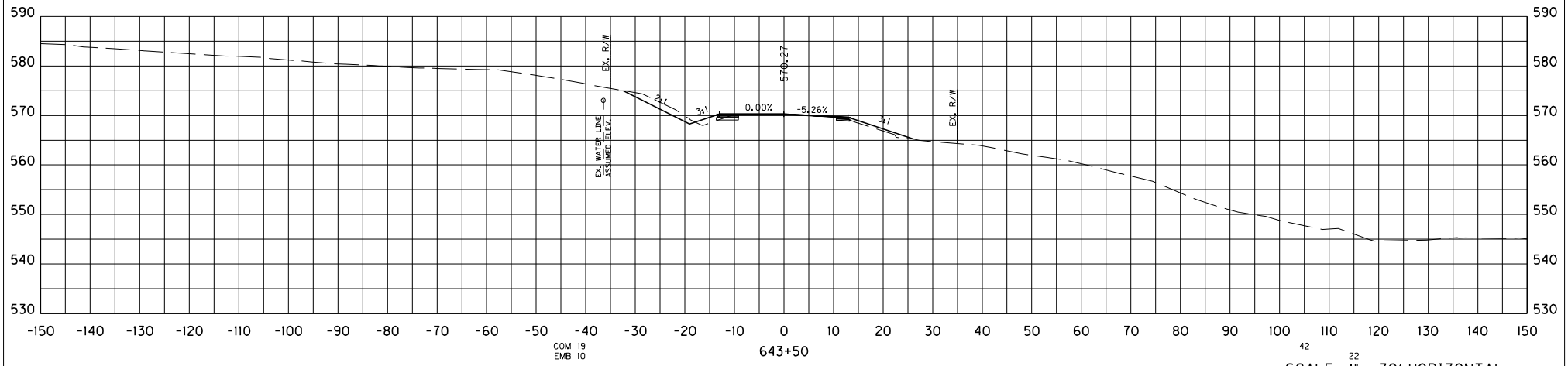
SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X343

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.642+50 TO STA.643+00



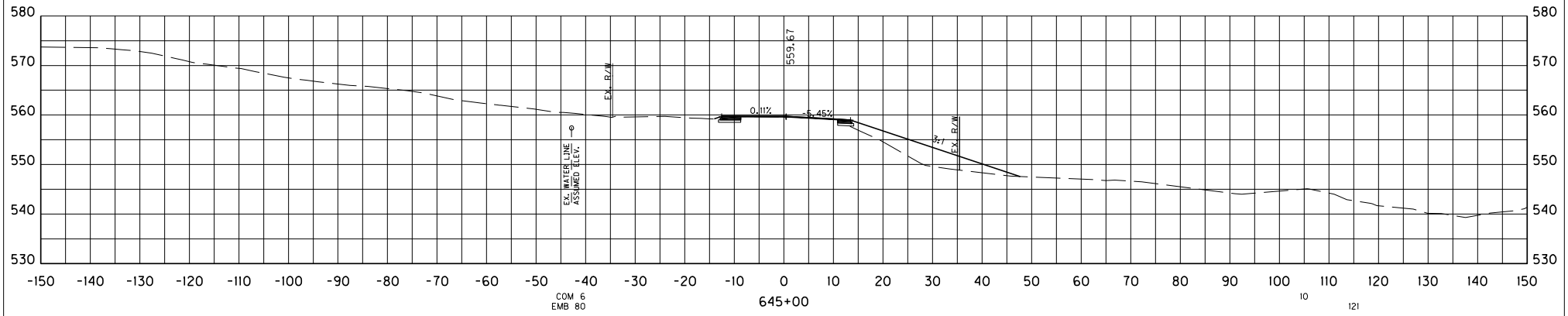


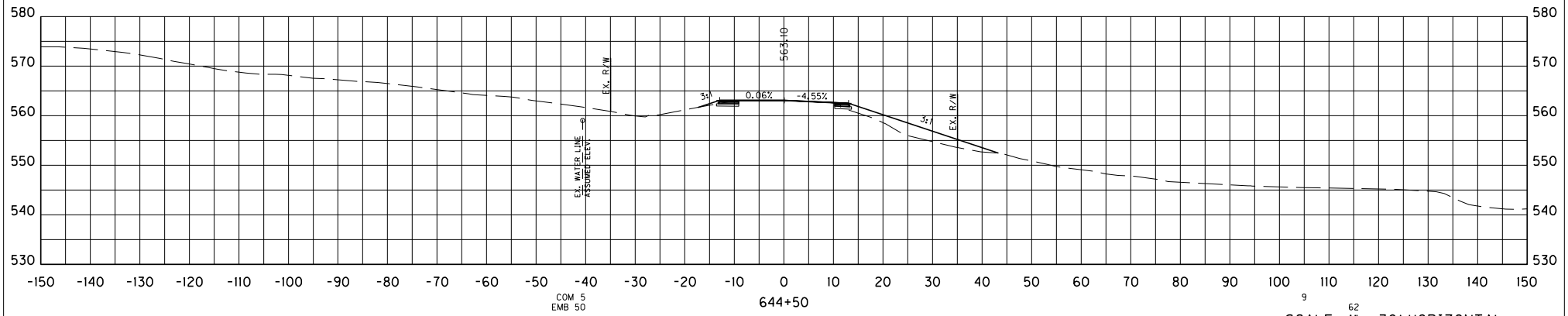
SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X344

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.643+50 TO STA.644+00



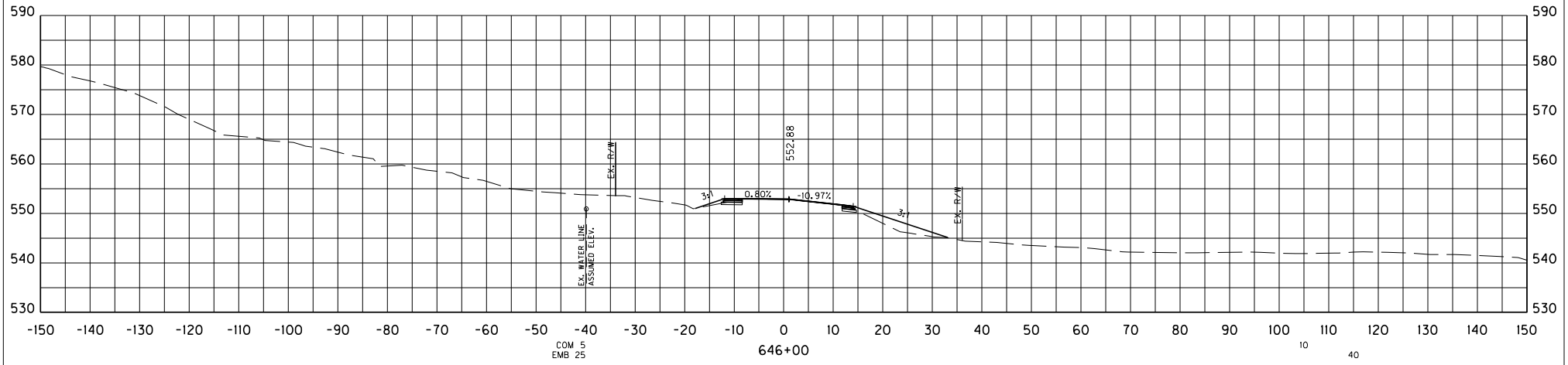


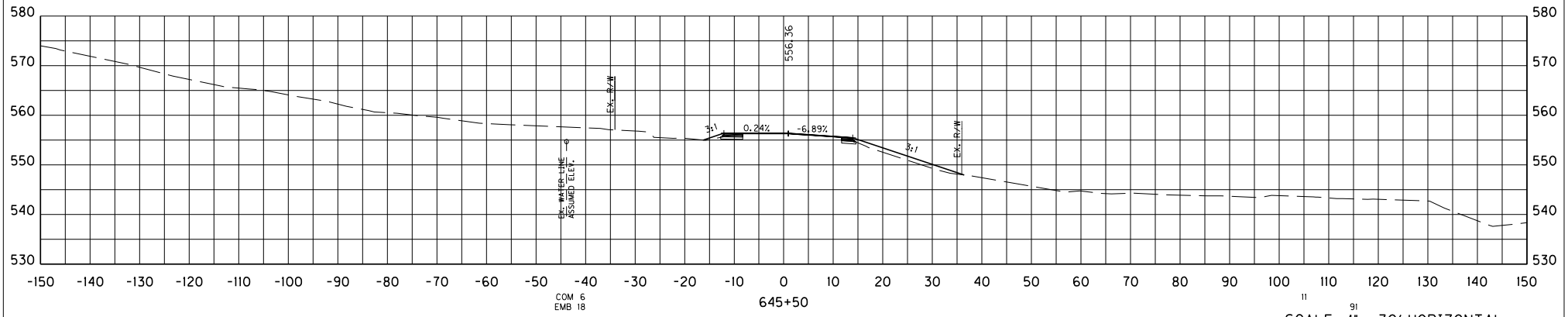
SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X345

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.644+50 TO STA.645+00



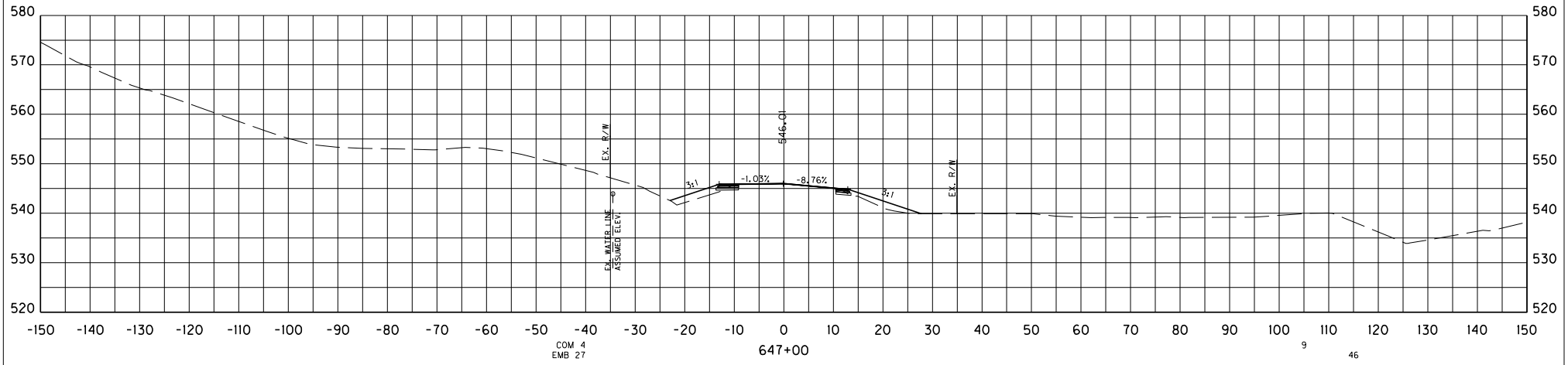


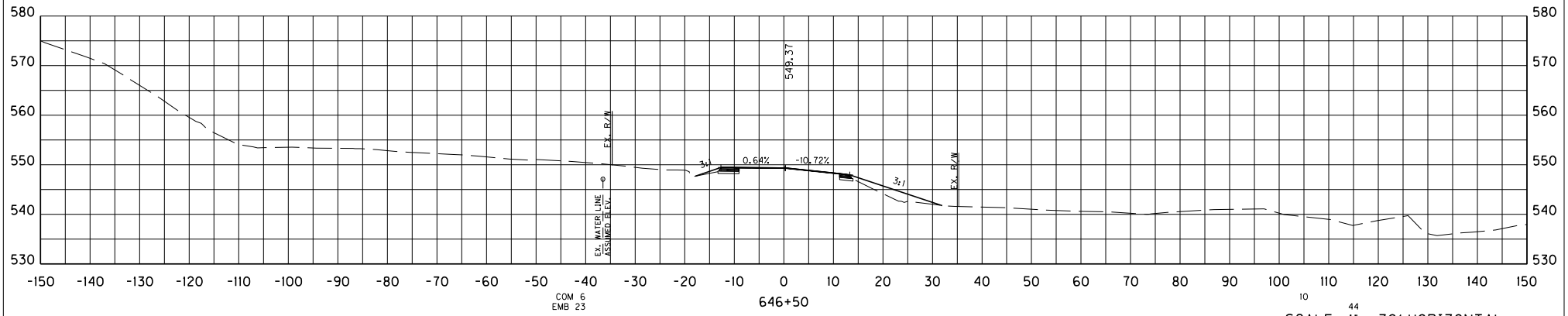
SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X346

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.645+50 TO STA.646+00



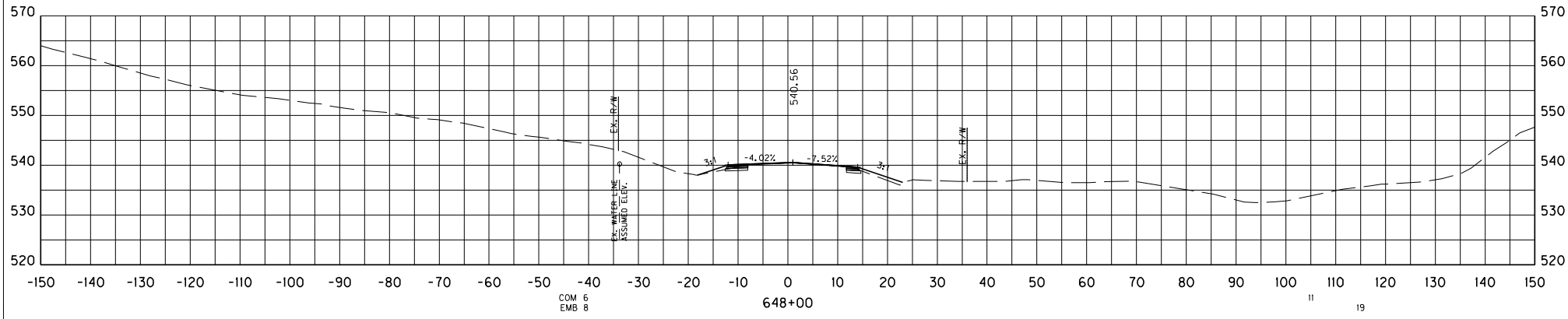


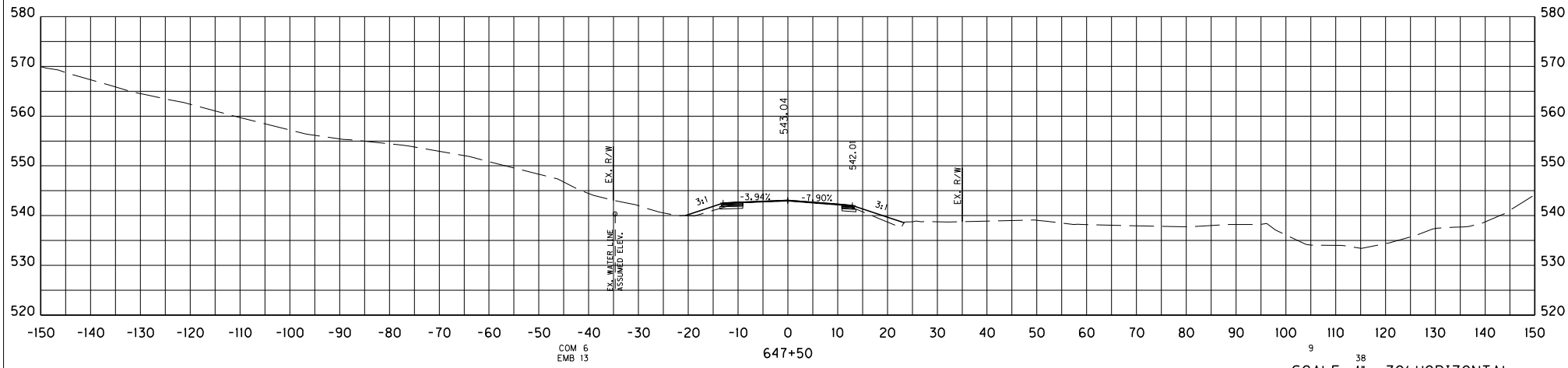
SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X347

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.646+50 TO STA.647+00



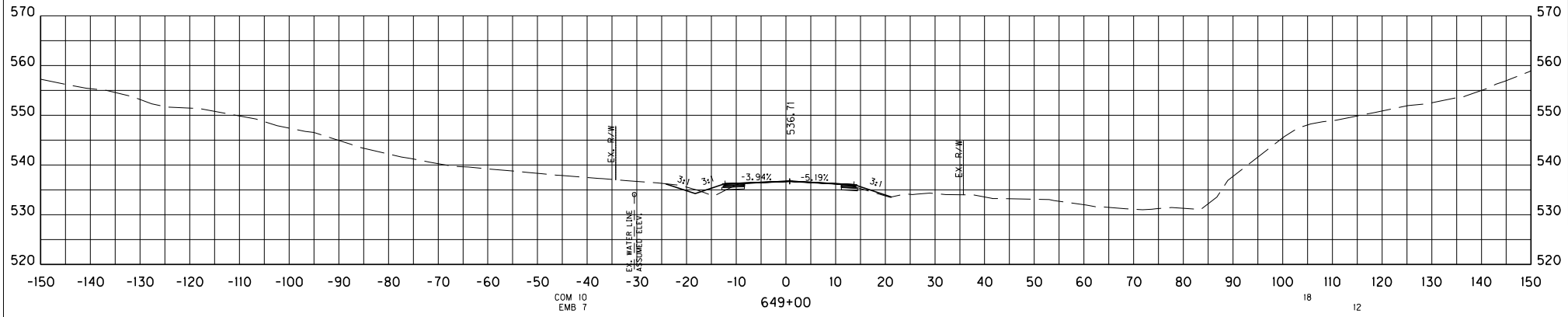


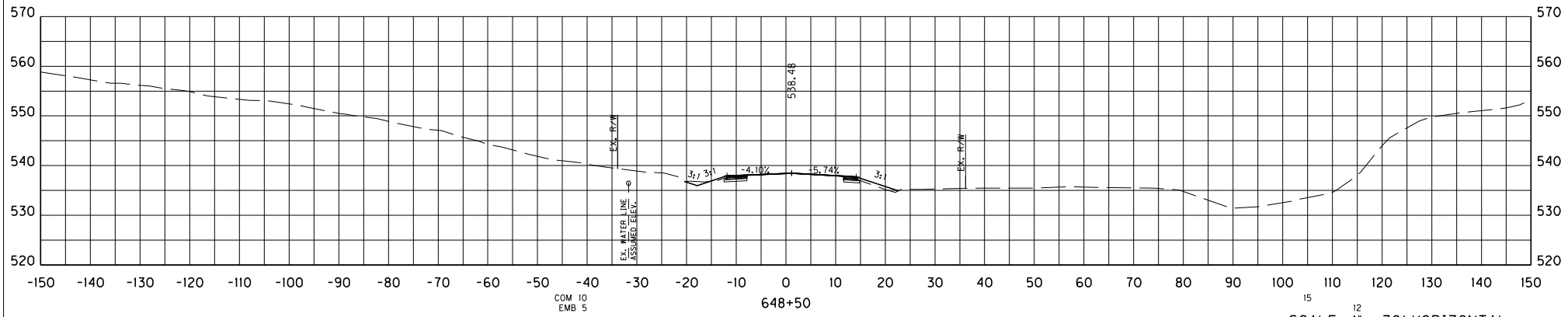
SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X348

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.647+50 TO STA.648+00



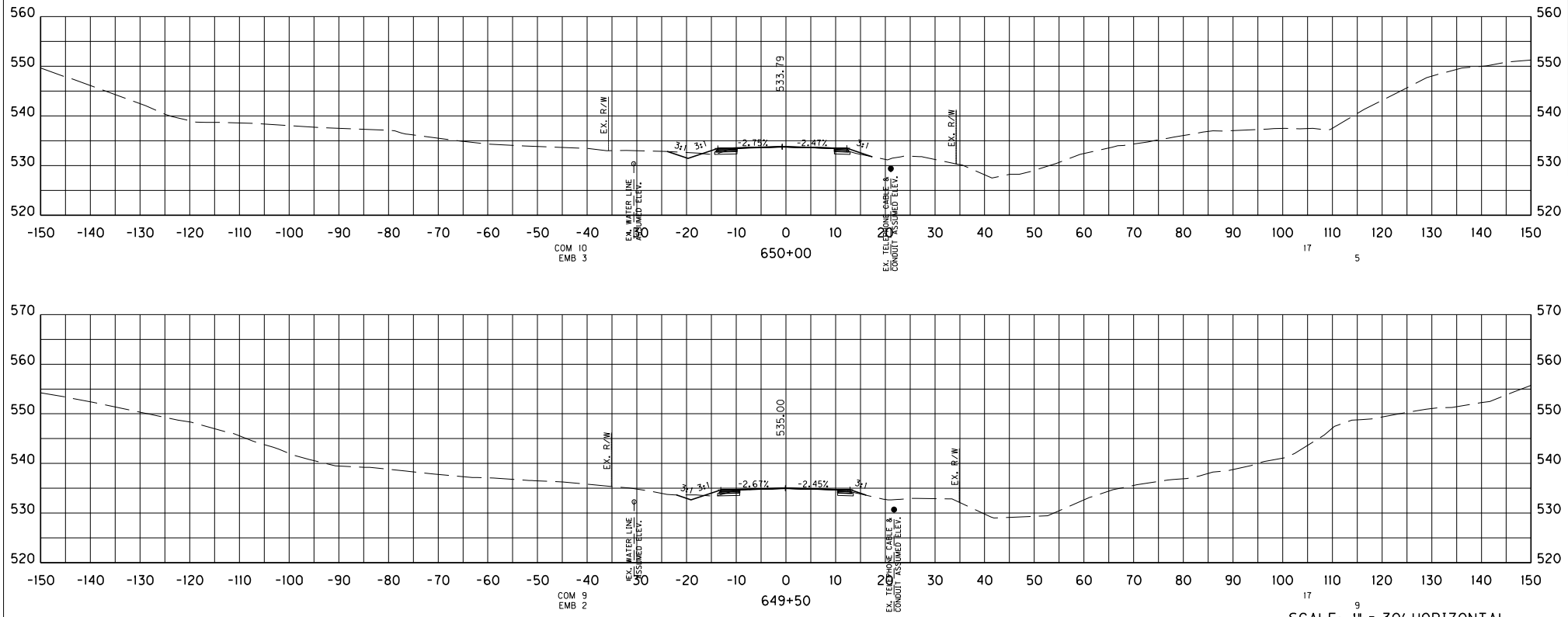


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X349

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.648+50 TO STA.649+00

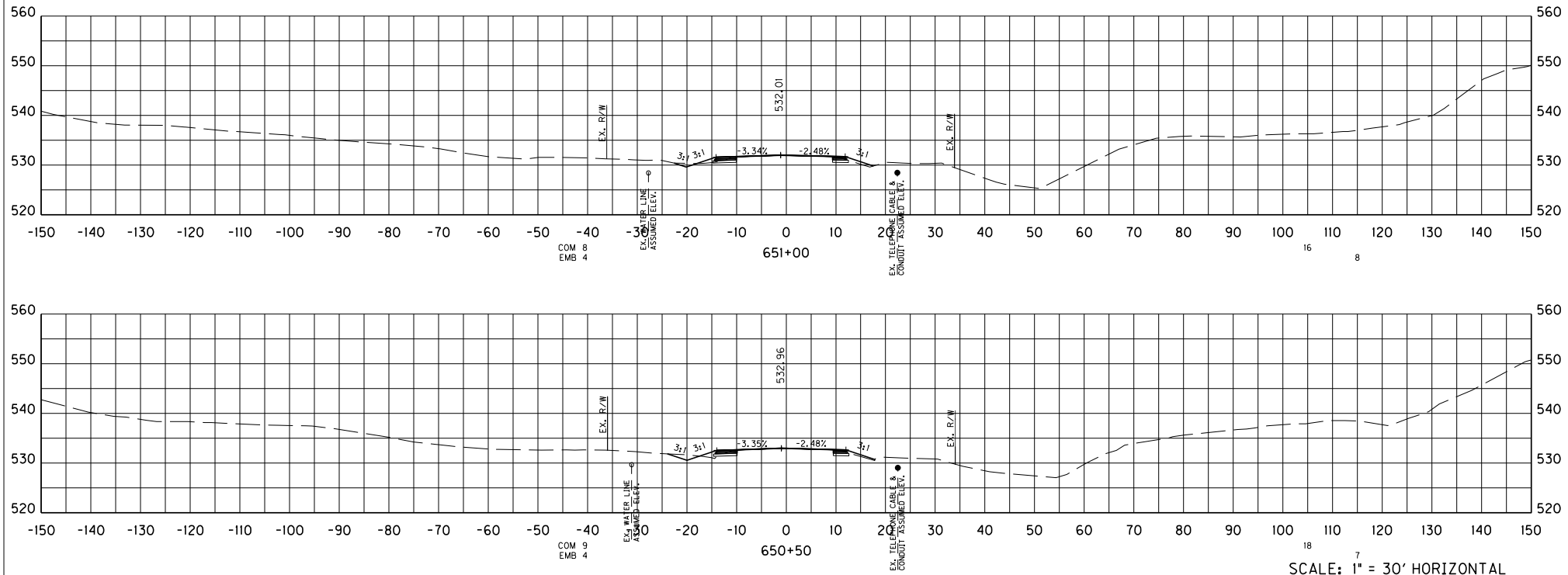


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X350

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.649+50 TO STA.650+00

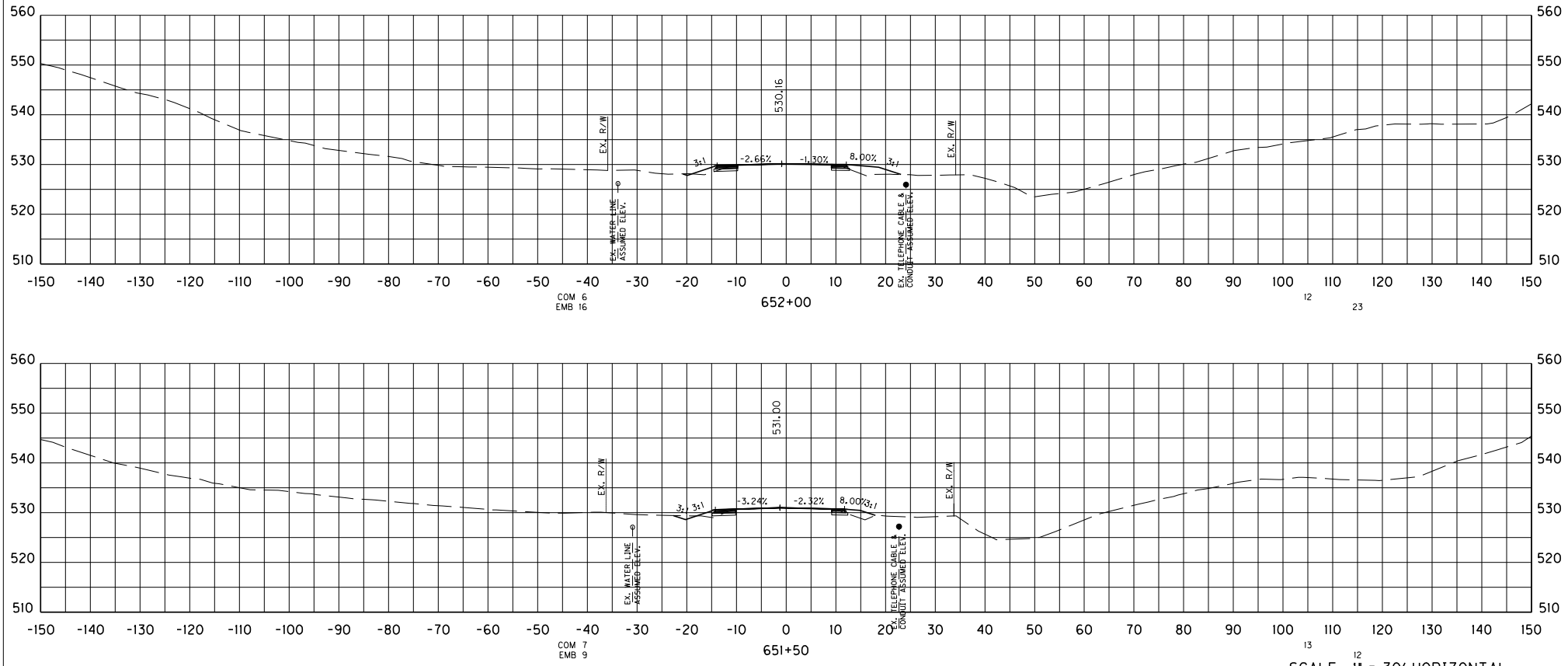


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X351

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.650+50 TO STA.651+00

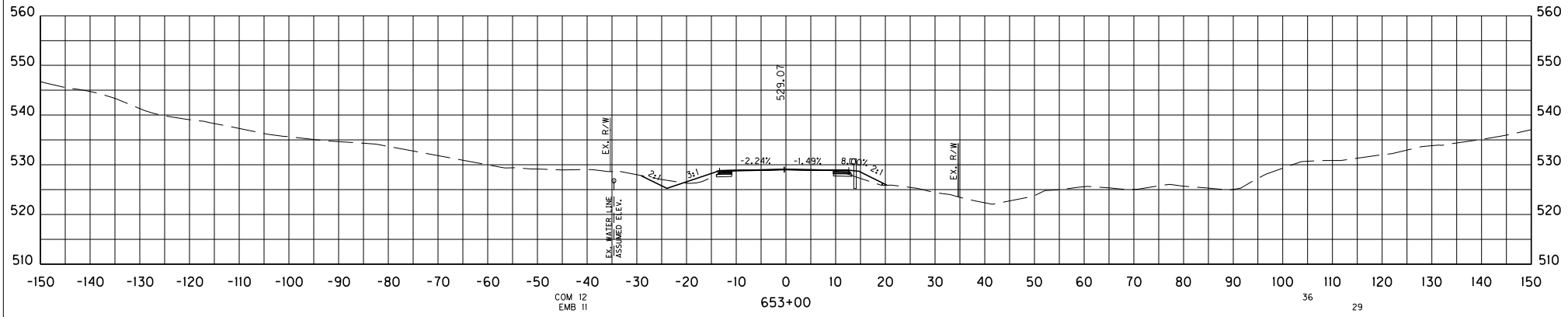


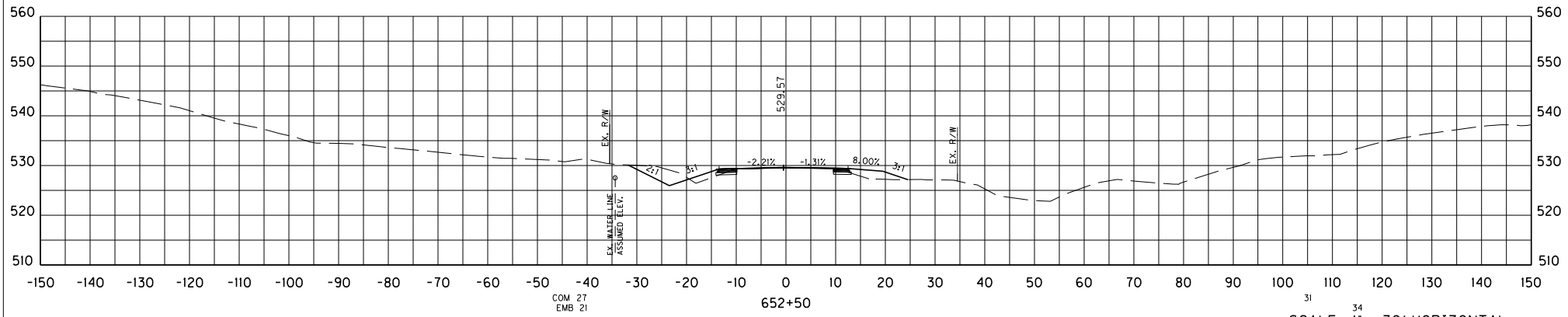
SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X352

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.651+50 TO STA.652+00



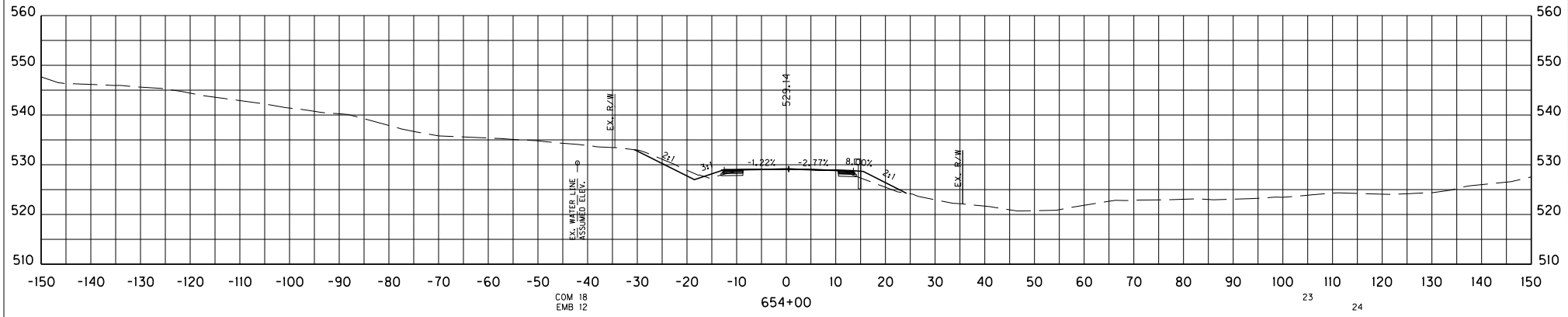


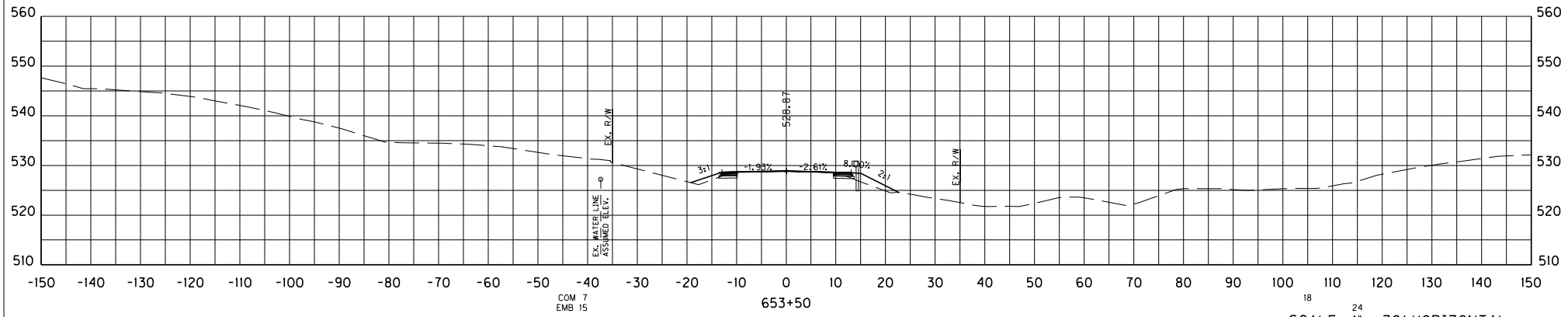
SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X353

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.652+50 TO STA.653+00



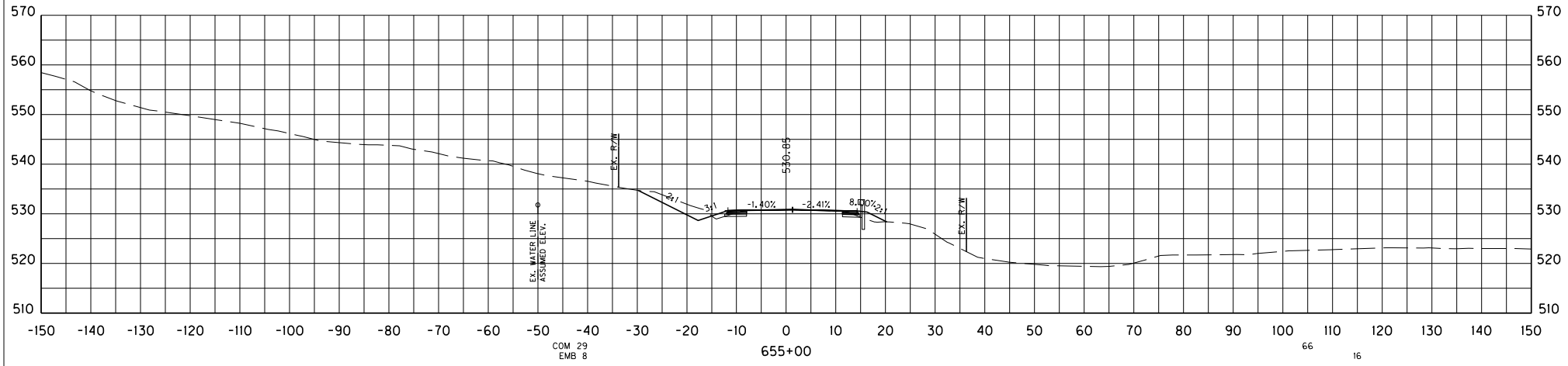


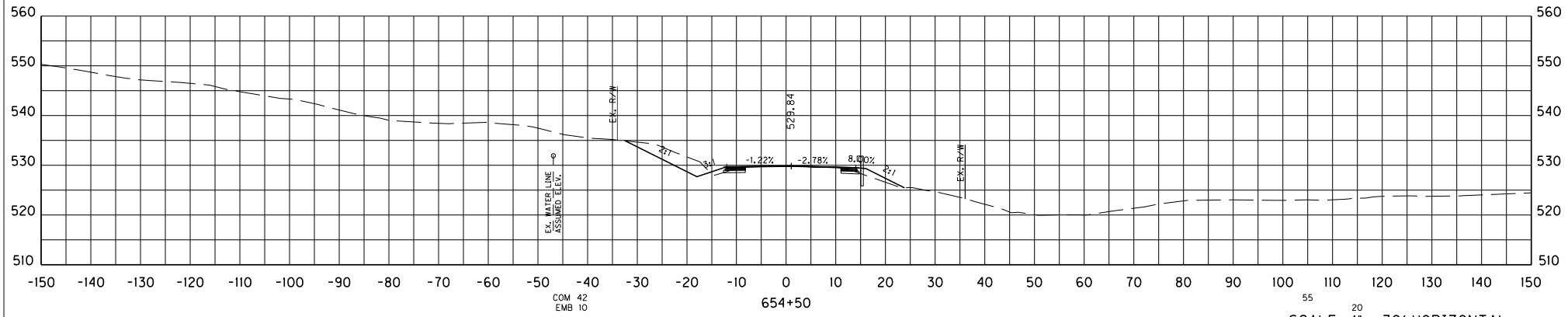
SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X354

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.653+50 TO STA.654+00



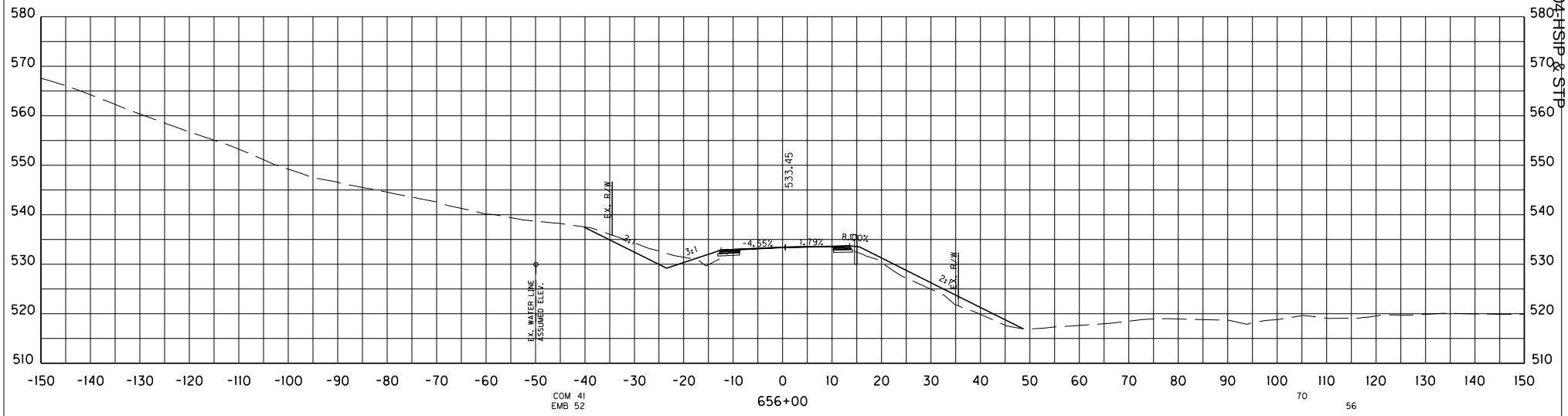


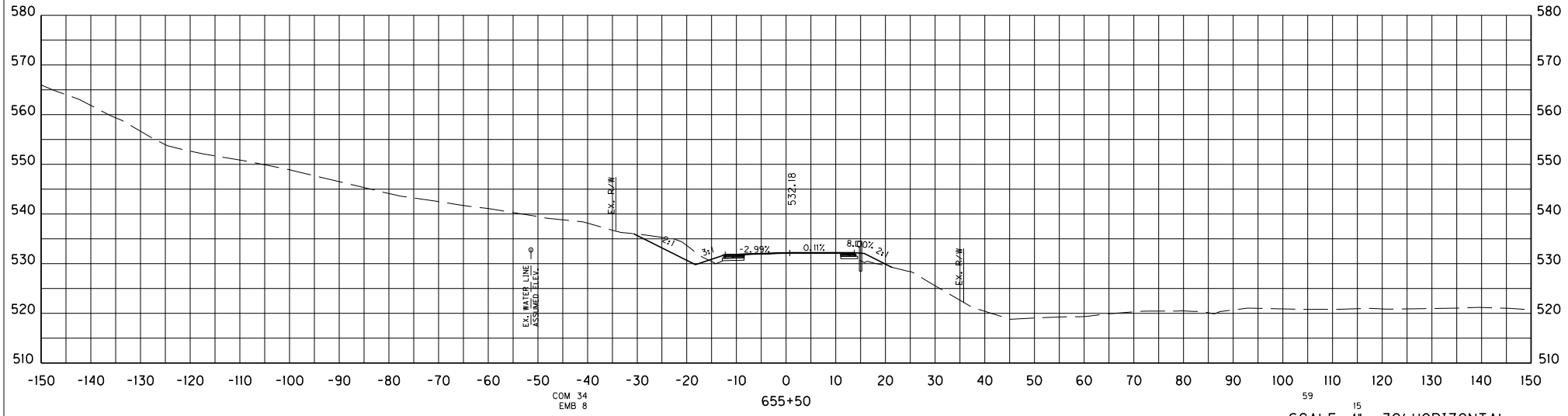
SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X355

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.654+50 TO STA.655+00



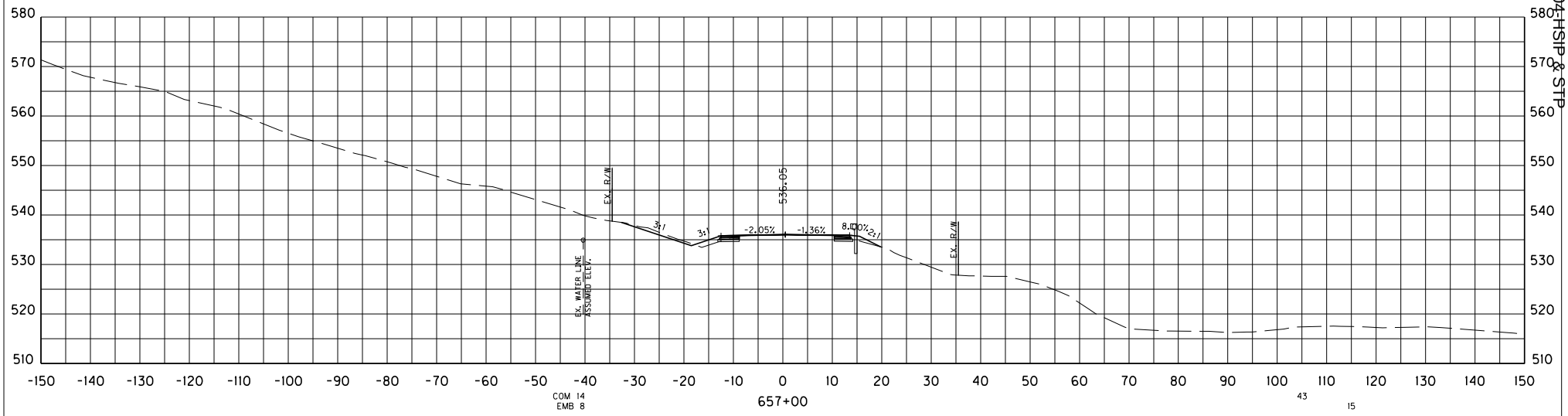


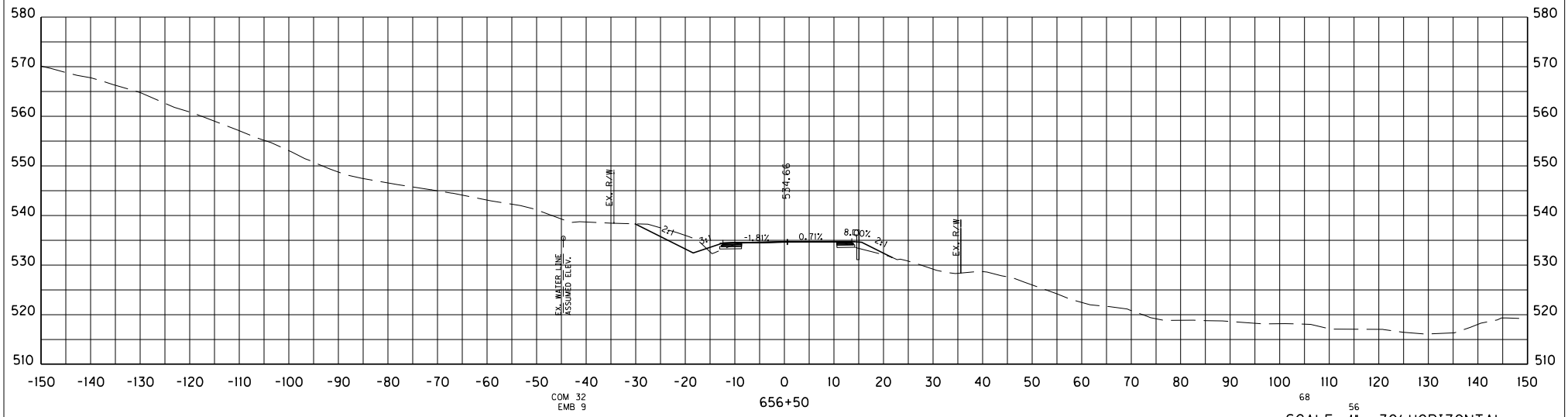
SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X356

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.655+50 TO STA.656+00



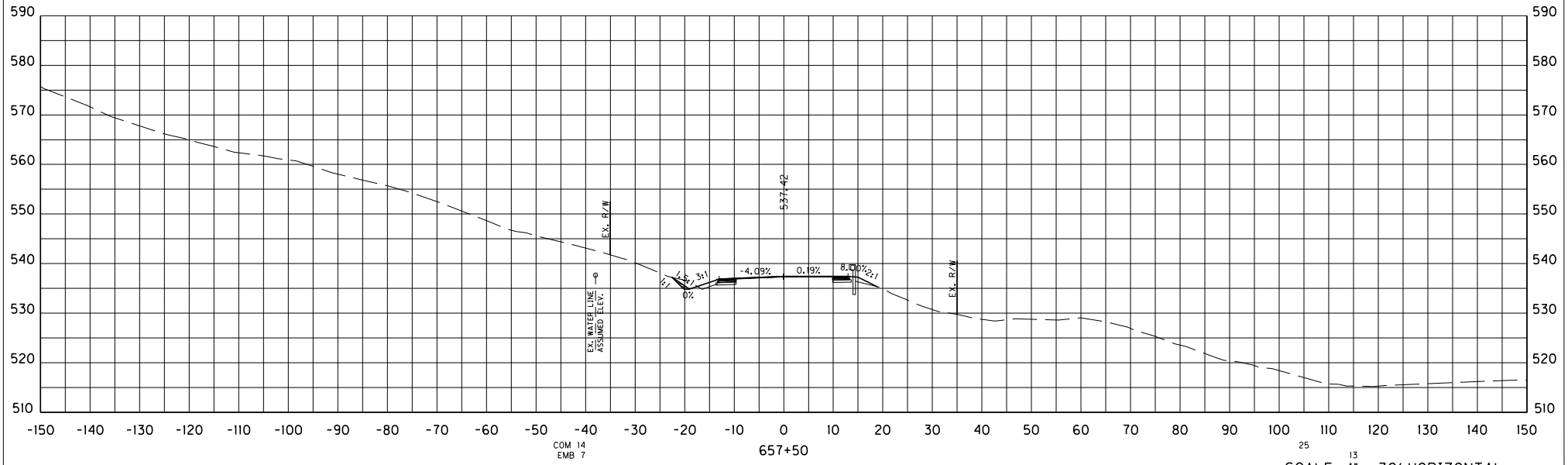


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X357

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.656+50 TO STA.657+00



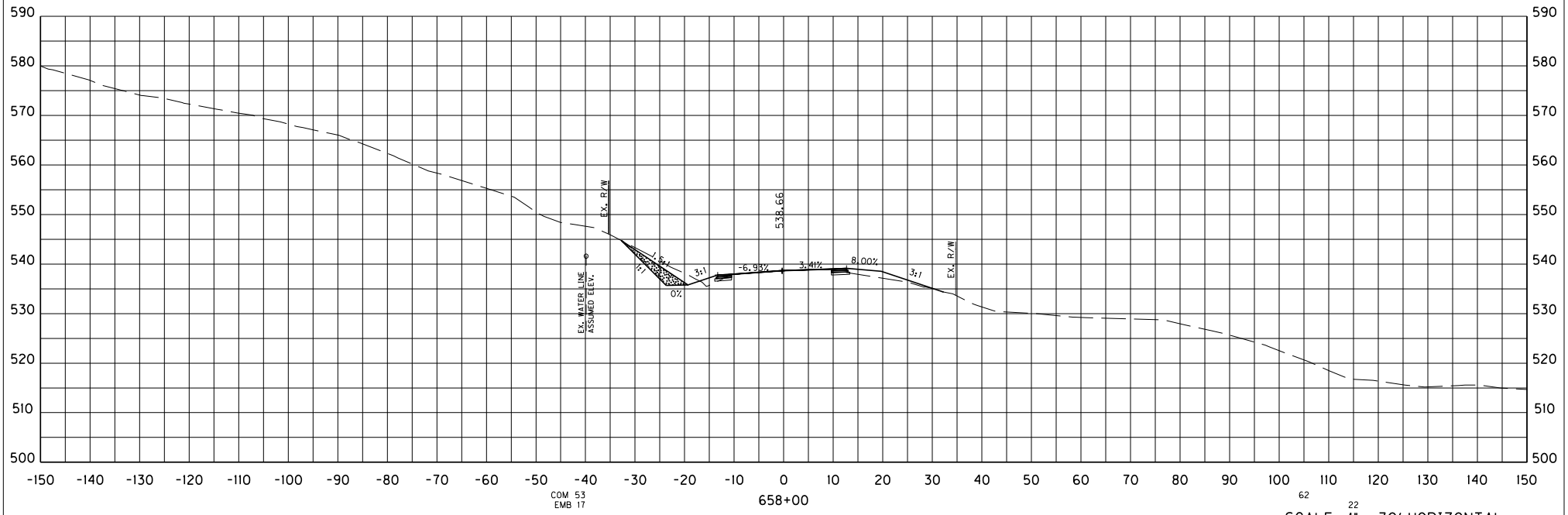
SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

STA 657+50 - 659+00 LT CUT 1.5:1 BACKSLOPE
STABILIZE WITH 213 SQYD GEOTEXTILE FABRIC TY 4 AND
142 CUYD GRANULAR EMBANKMENT
DO NOT CUT TREES OUTSIDE EXISTING RIGHT OF WAY

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X358

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.657+50 TO STA.657+50

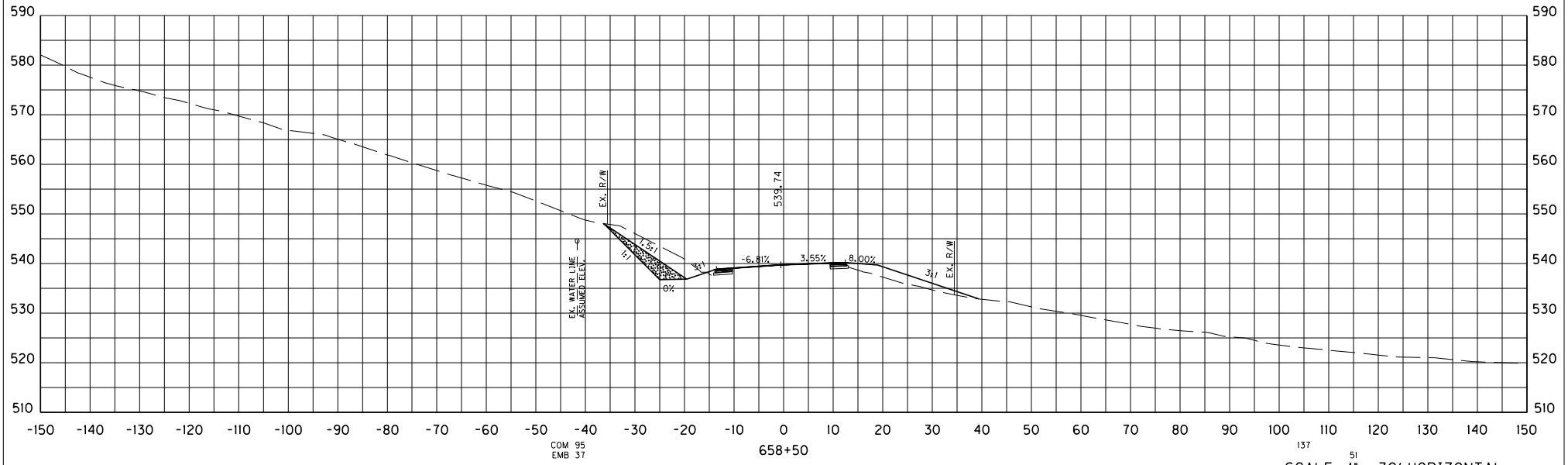


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X359

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.658+00 TO STA.658+00

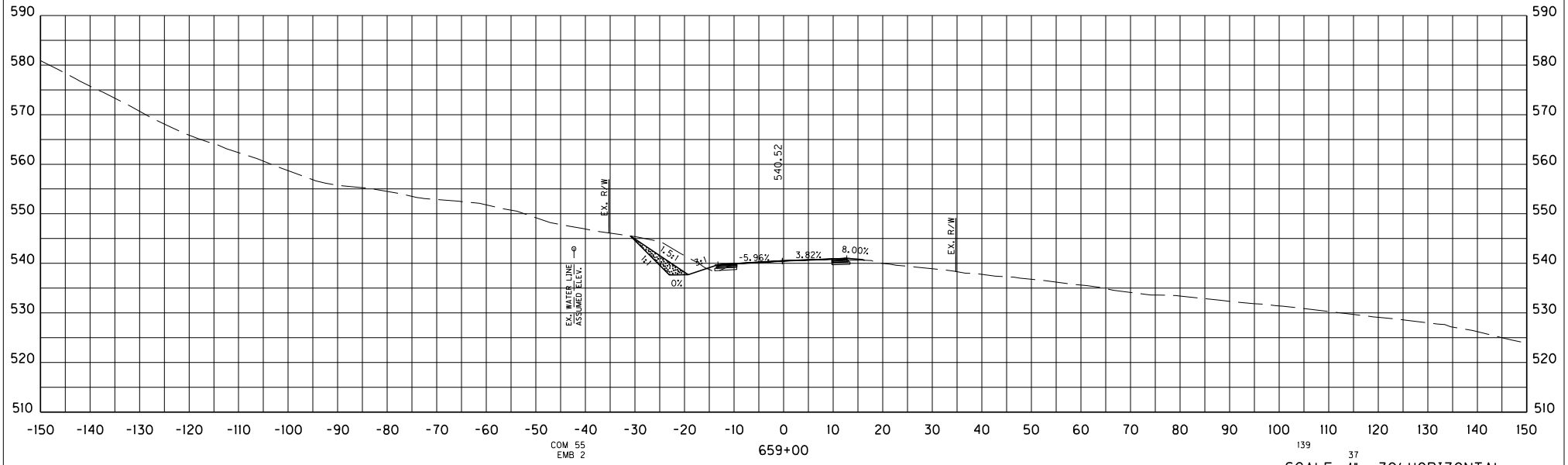


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X360

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.658+50 TO STA.658+50

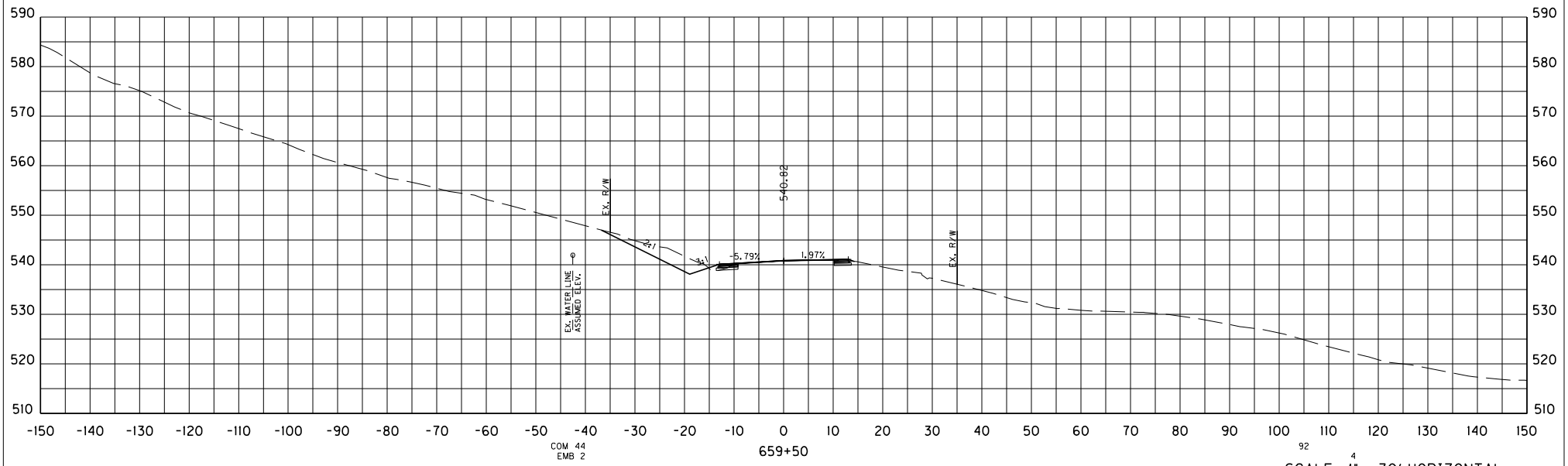


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X361

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.659+00 TO STA.659+00

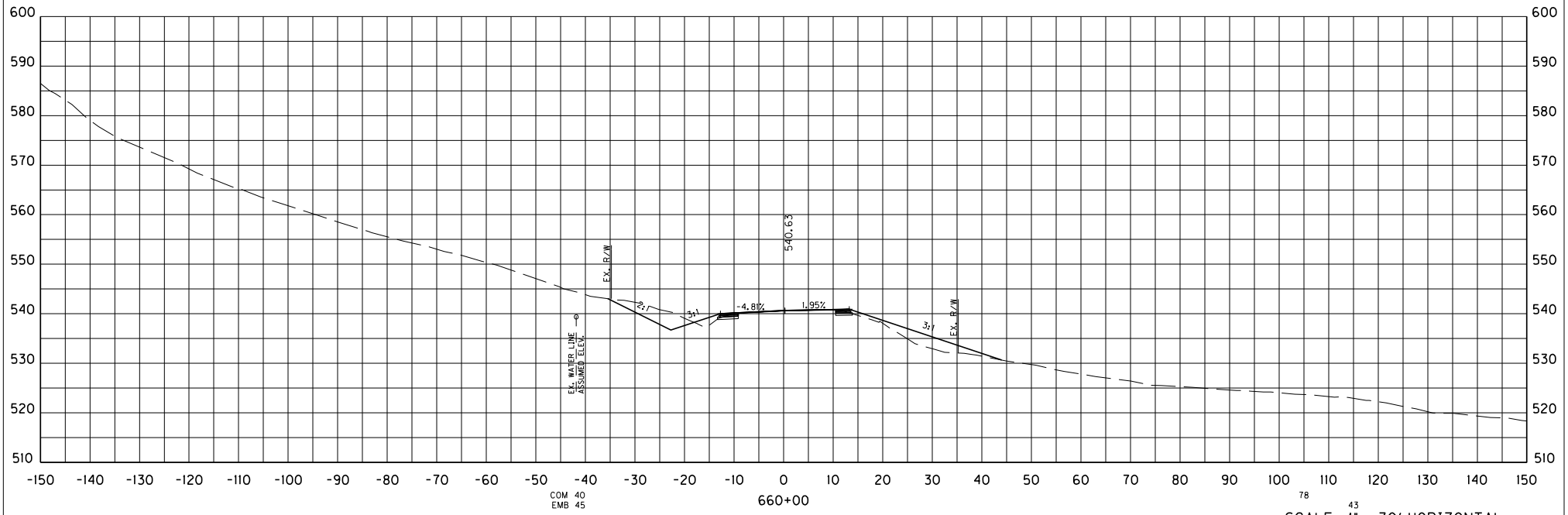


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X362

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.659+50 TO STA.659+50

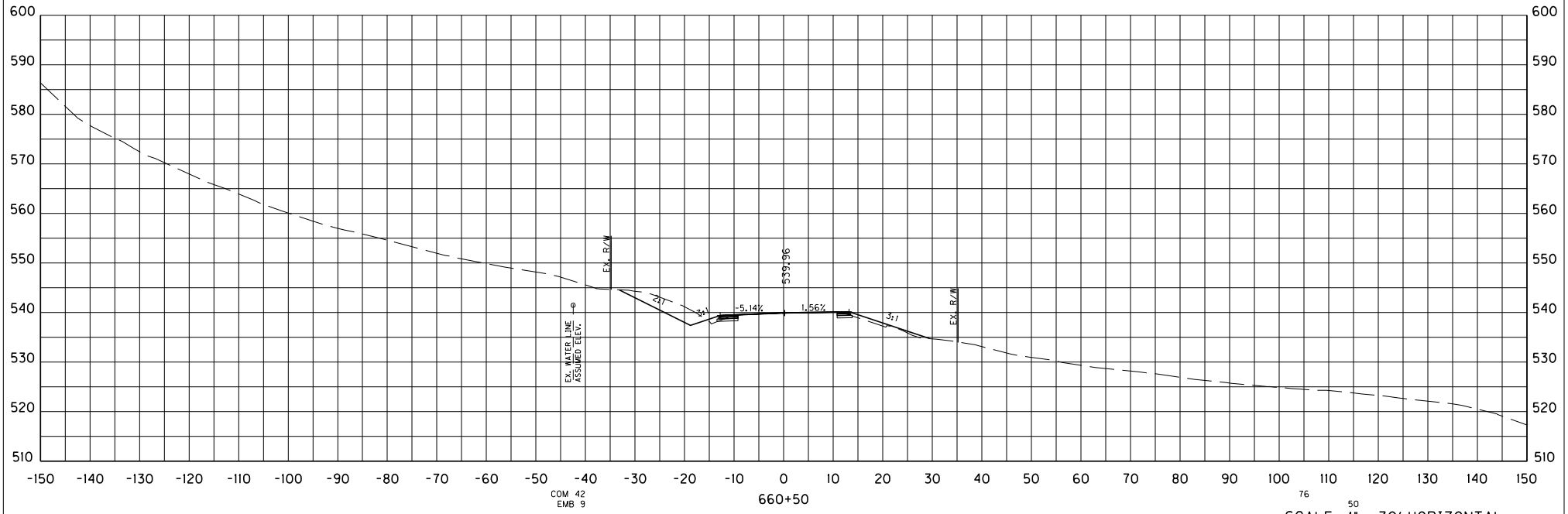


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X363

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.660+00 TO STA.660+00

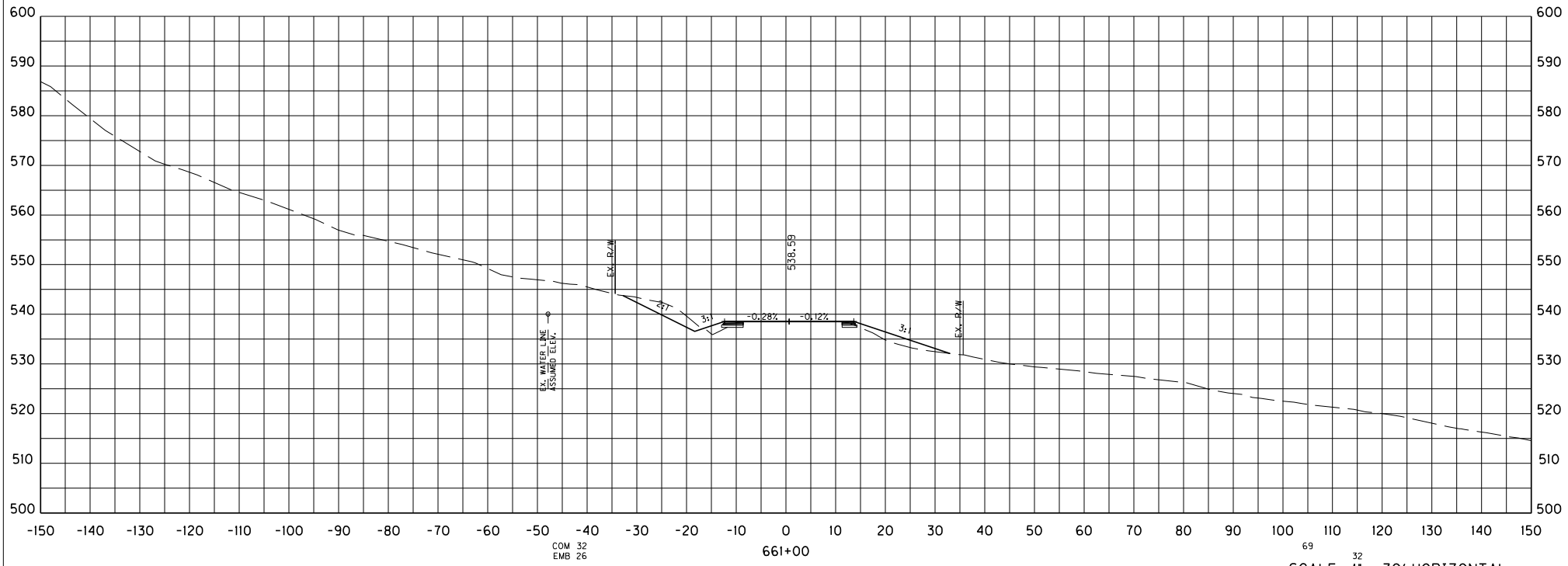


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X364

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.660+50 TO STA.660+50

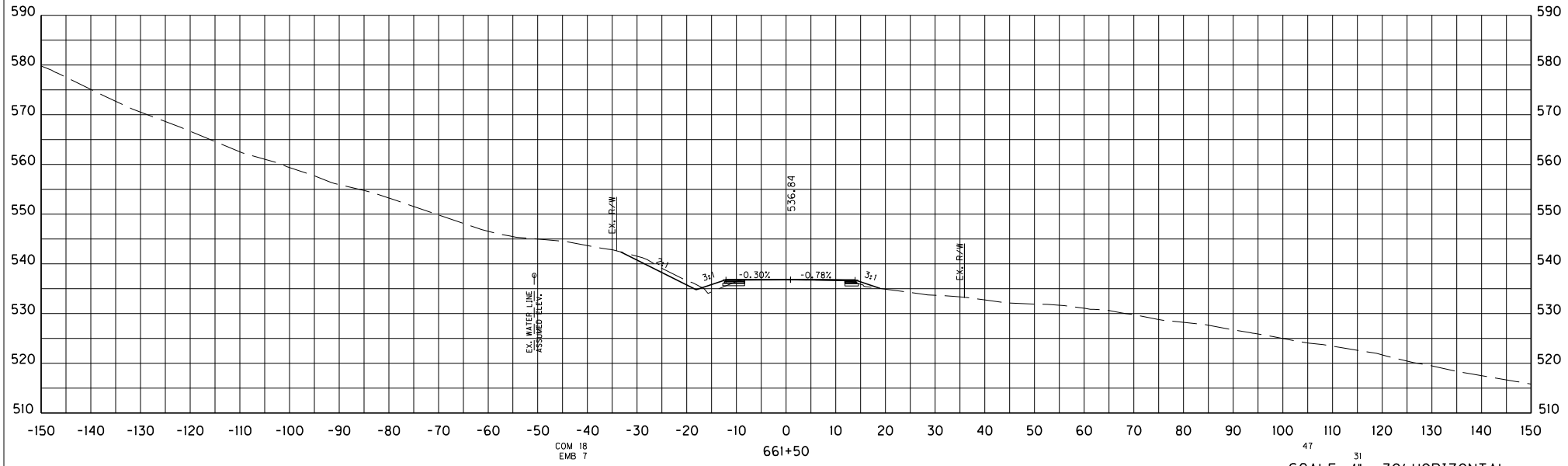


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X365

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.661+00 TO STA.661+00

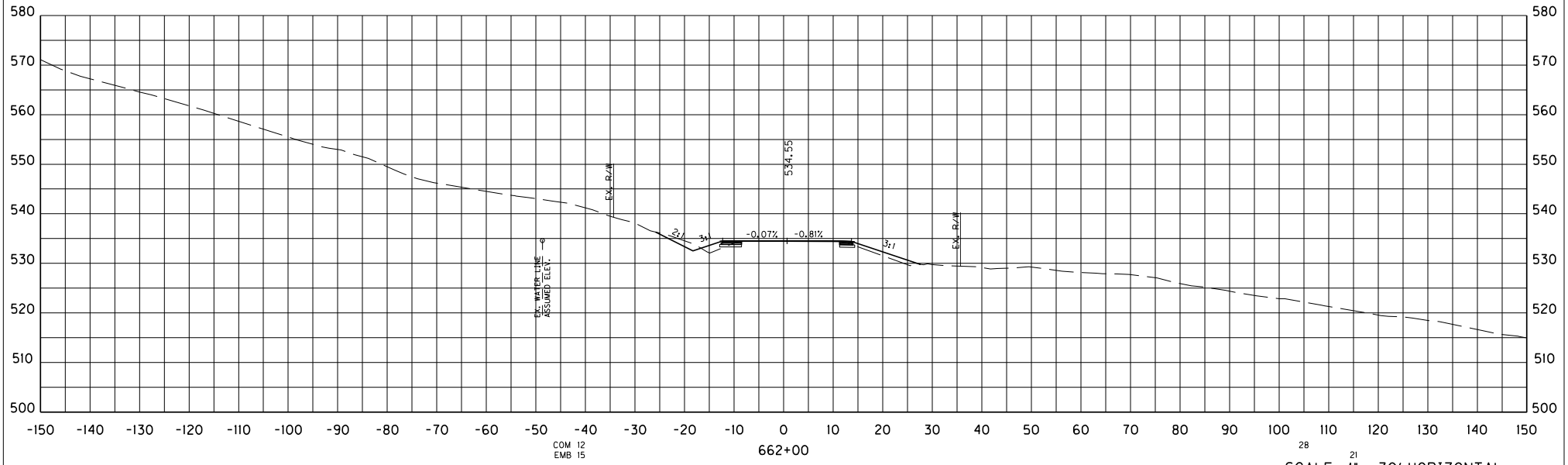


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X366

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.661+50 TO STA.661+50

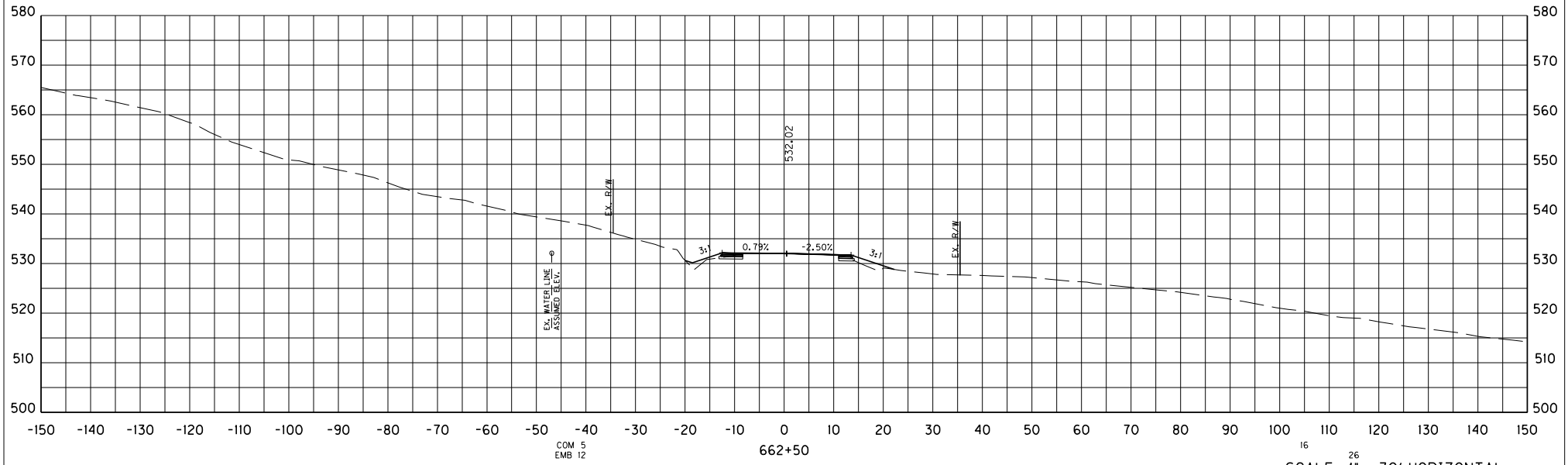


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X367

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.662+00 TO STA.662+00

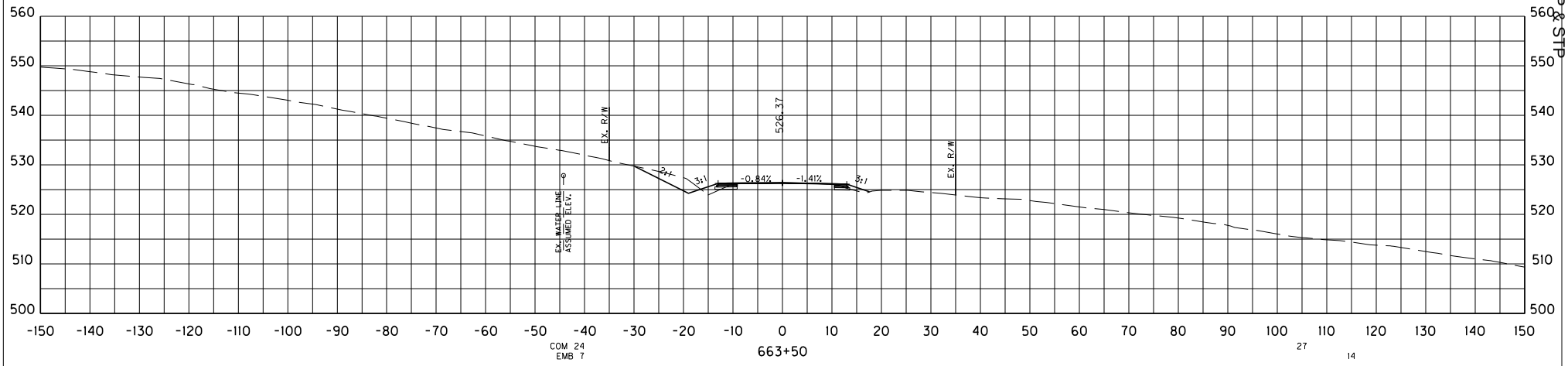


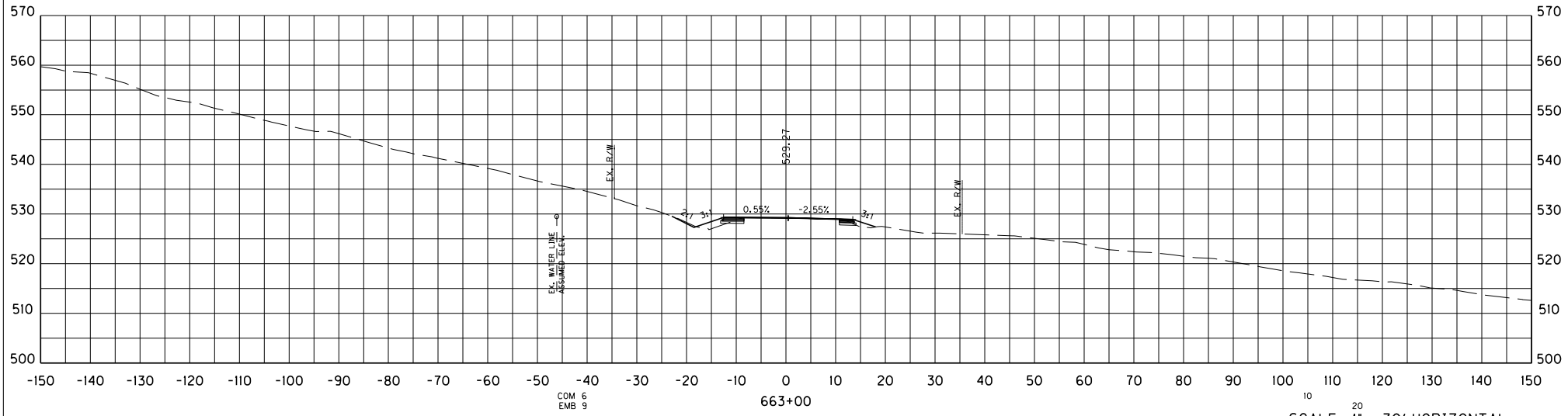
SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X368

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.662+50 TO STA.662+50



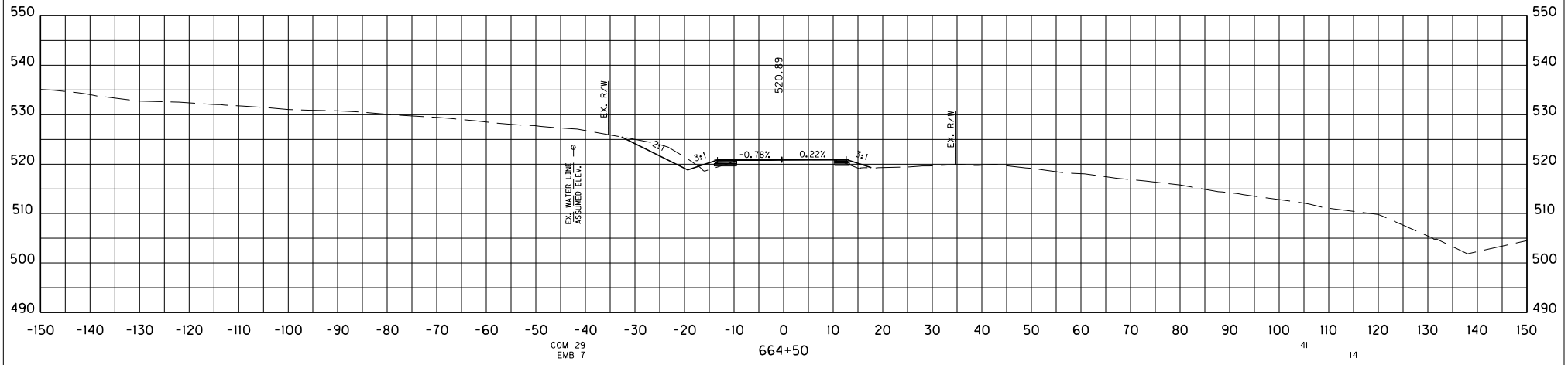


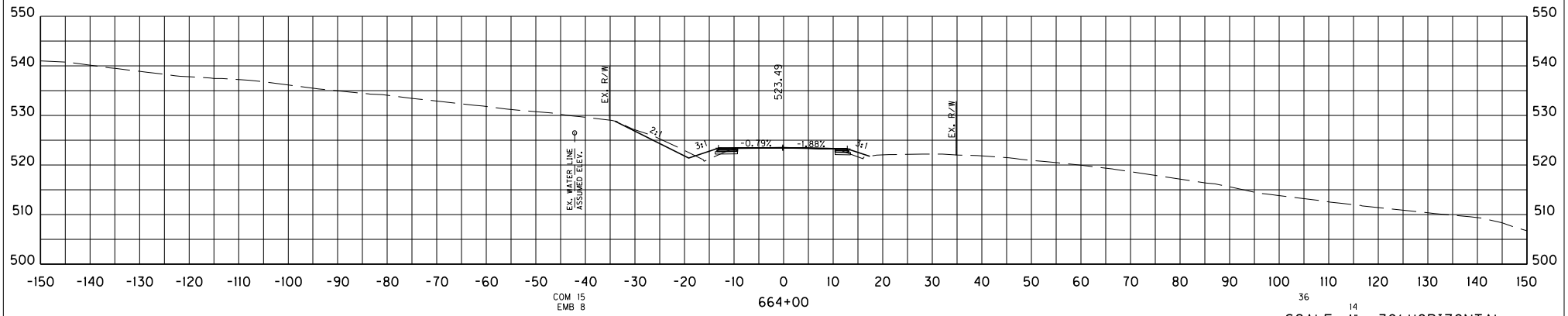
SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X369

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.663+00 TO STA.663+50



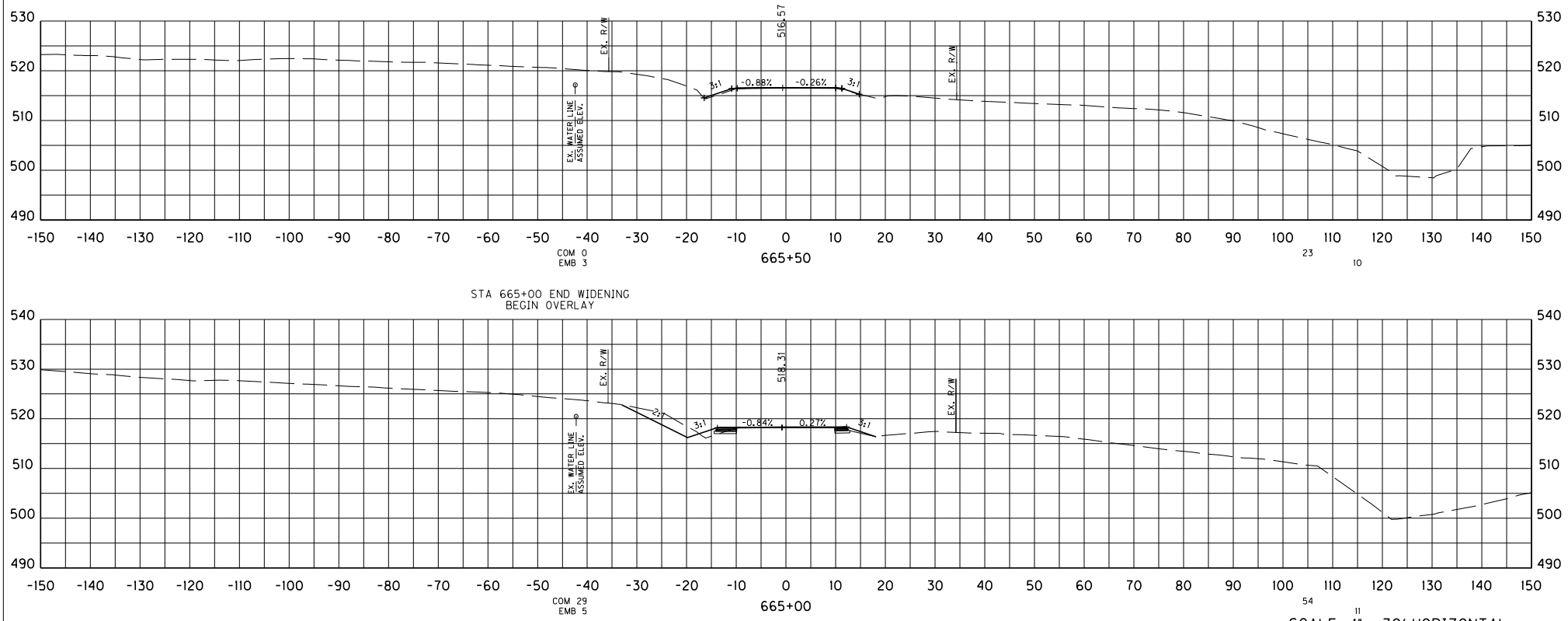


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X370

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.664+00 TO STA.664+50



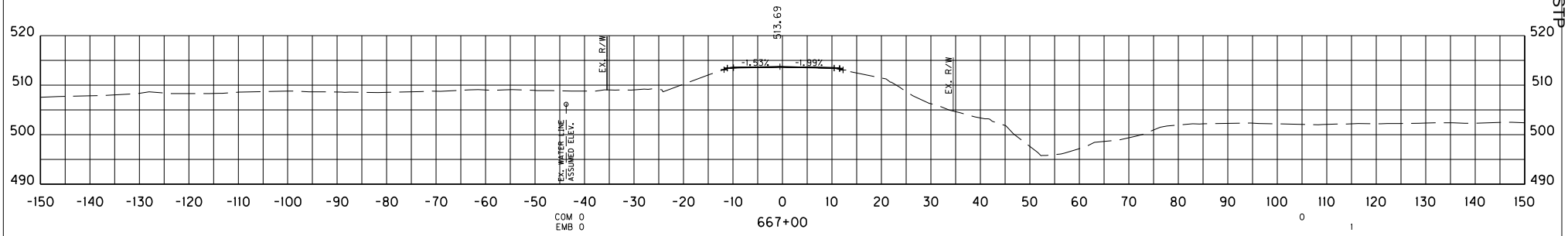
STA 665+00 END WIDENING
BEGIN OVERLAY

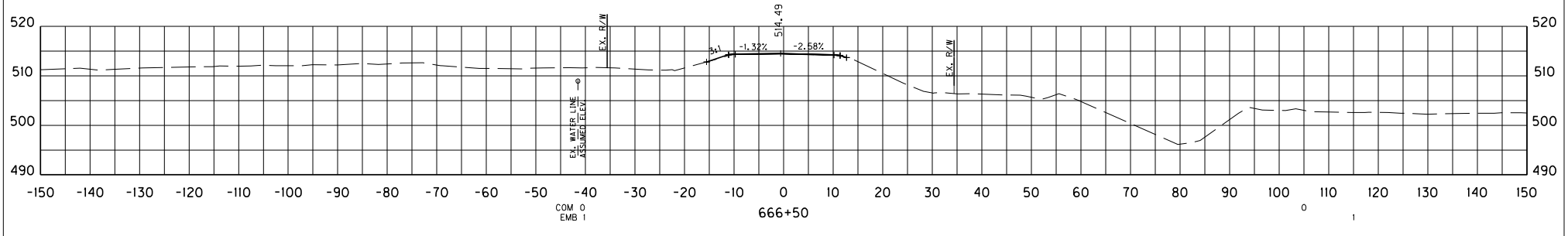
SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

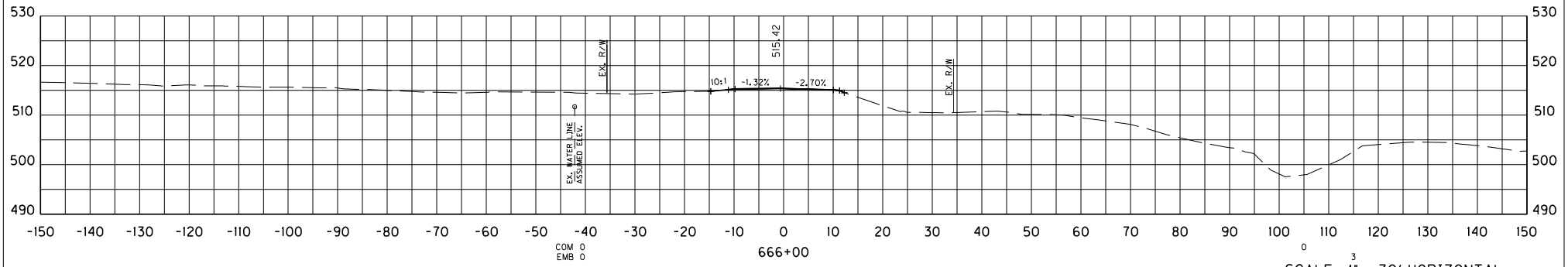
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X371

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.665+00 TO STA.665+50





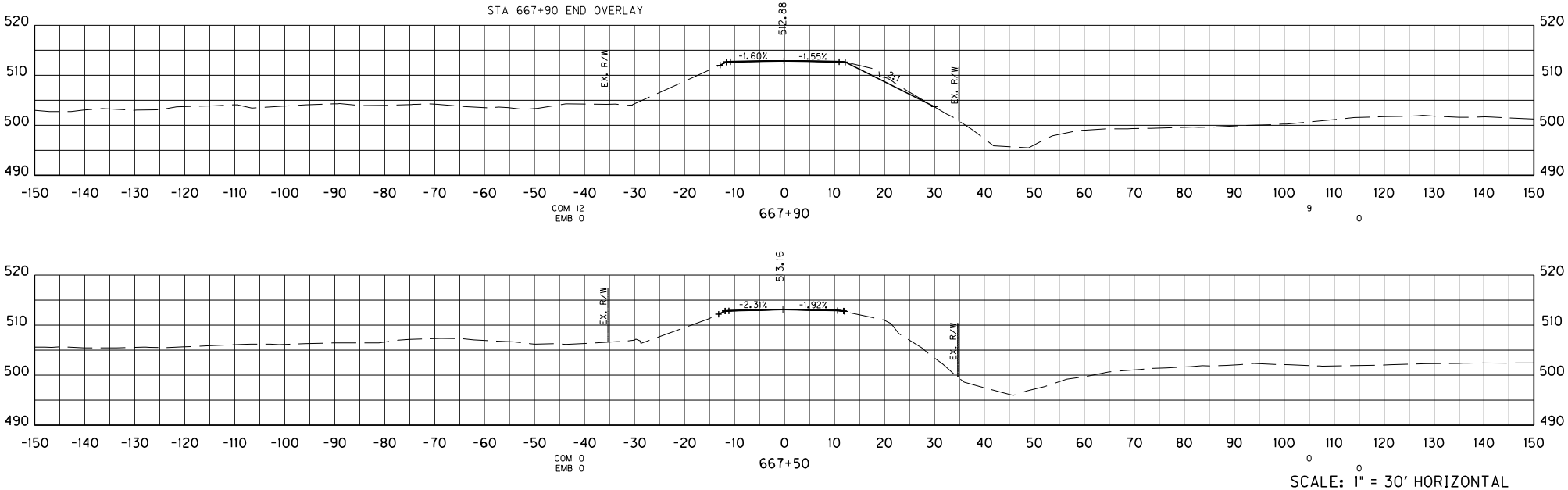


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X372

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

STA.666+00 TO STA.667+00

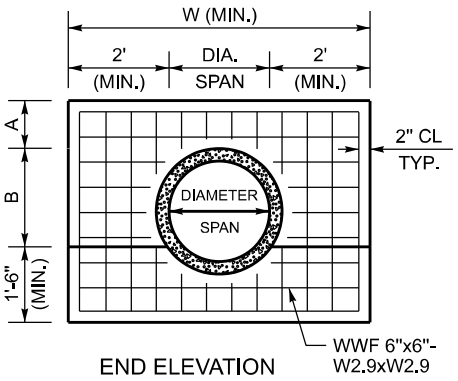


SCALE: 1" = 30' HORIZONTAL
SCALE: 1"= 30' VERTICAL

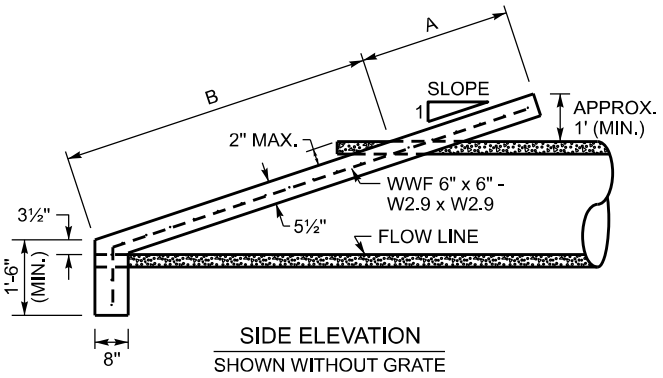
COUNTY OF	ITEM NO.	SHEET NO.
GRAYSON	4-9009	X373

KY HWY 259 ANNETA RD
CROSS SECTIONS SHEET

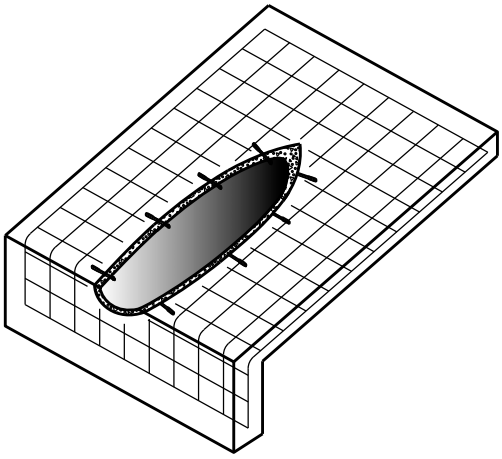
STA.667+00 TO STA.667+00



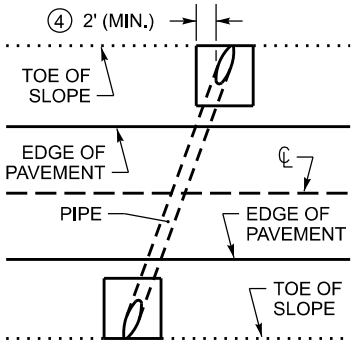
END ELEVATION
SHOWN WITH WOVEN WIRE REINFORCEMENT



SIDE ELEVATION
SHOWN WITHOUT GRATE



ISOMETRIC VIEW
SHOWN WITH WOVEN WIRE REINFORCEMENT AND WEDGE ANCHORS



PLAN VIEW
SHOWN WHEN THE PIPE IS ON A SKEW ④

~ NOTES ~

1. FOR PIPES THAT RECEIVE THE SLOPED & MITERED CONCRETE HEADWALL, THE PIPE LENGTH SHALL BE MEASURED TO THE FURTHEST POINT ALONG THE MITERED END OF THE PIPE.
2. THE EMBANKMENT FILL MATERIAL IS TO BE PLACED, COMPACTED, AND GRADED AROUND THE PIPE BEFORE THE CONCRETE SLOPE PAVING IS PLACED. THE INTENT IS FOR THE SLOPED & MITERED HEADWALL TO MATCH THE FINAL EMBANKMENT SLOPE.
3. THE PIPE SHALL BE MITERED AFTER THE CONCRETE SLOPE PAVING HAS BEEN PLACED AND SUFFICIENTLY CURED. THE PIPE SHOULD BE MITERED AS CLOSE TO FLUSH WITH THE SLOPE PAVING AS POSSIBLE, AND NO HIGHER THAN 2" ABOVE THE SLOPE PAVING. HAND FINISHING AND/OR CUTTING MAY BE NECESSARY.

④ WHEN THE PIPE IS ON A SKEW, INSTALL THE HEADWALL AND MITER THE PIPE SO THAT THE CONCRETE SLOPE PAVING IS PERPENDICULAR TO THE ROADWAY. FOR HEADWALLS ON SKEWED PIPES, THE HEADWALL WIDTH, W, SHALL BE WIDENED, AS NEEDED, SO THAT THE OUTSIDE EDGE OF THE CONCRETE SLOPE PAVING IS A MINIMUM OF 2' FROM THE OUTER MOST EDGE OF THE PIPE.

5. THE DIMENSION 'A' IS BASED ON THE FINAL GRADED SLOPE. THE DIMENSION 'B' IS BASED ON CIRCULAR REINFORCED CONCRETE PIPE AT 0° SKEW FOR THE LISTED SLOPE. THE DIMENSION 'W' IS BASED ON THE DIAMETER, OR SPAN, OF THE PIPE. THE FINAL HEADWALL DIMENSIONS AND CONCRETE QUANTITIES MAY VARY BASED ON THE FINAL GRADED SLOPE, PIPE SKEW, AND/OR TYPE OF PIPE.
6. WOVEN WIRE REINFORCEMENT (WWF 6"x6" - W2.9xW2.9) IS REQUIRED FOR THE SLOPE PAVING AND TOE WALL. UTILIZE 2" CLEARANCE FROM ALL EDGES.
7. DIMENSIONS AND CONCRETE QUANTITIES SHOWN ARE FOR ONE (1) HEADWALL, INSTALLED ON A PIPE WITH SKEW = 0°.
8. AFTER THE PIPE HAS BEEN MITERED, ANCHOR THE PIPE TO THE CONCRETE SLOPE PAVING BY CORE DRILLING AND INSTALLING 1/2" DIAMETER x 7" LENGTH STEEL WEDGE ANCHORS (3" MINIMUM EMBEDMENT) ON 18" CENTERS ALONG THE SIDES OF THE PIPE. HOLE SIZE & DEPTH, TORQUE, & INSTALLATION PROCEDURES PER RECOMMENDATION OF ANCHOR MANUFACTURE. NOTE: STEEL WEDGE ANCHORS ARE NOT REQUIRED FOR REINFORCED CONCRETE PIPE.

⑨ THE FOLLOWING SITUATIONS REQUIRE A HEADWALL WITH A GRATE:
-24" DIAMETER PIPE ON GREATER THAN 30° SKEW
-30" DIAMETER PIPE ON GREATER THAN 15° SKEW
-PIPE WITH GREATER THAN 30" DIAMETER.
-ELLIPTICAL PIPE GREATER THAN 24" EQUIVALENT DIAMETER
SEE SHEET 2 FOR GRATE DETAILS

10. ALL BOLTS AND HARDWARE SHALL BE RUST RESISTANT: ZINC PLATED, STAINLESS STEEL, OR STEEL THAT HAS BEEN GALVANIZED IN ACCORDANCE WITH AASHTO M 232.

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

DIMENSIONS AND CONCRETE QUANTITIES (FOR PIPE WITH SKEW = 0°) ④													
PIPE SIZE	3:1 SLOPE				4:1 SLOPE				6:1 SLOPE				GRATE REQUIRED
	A	B	W	CU. YDS. CONCRETE	A	B	W	CU. YDS. CONCRETE	A	B	W	CU. YDS. CONCRETE	
15"	3'	3'-7½"	5'-3"	0.79	4'	4'-8¾"	5'-3"	0.97	6'	6'-11¾"	5'-3"	1.35	NO
18"	3'	4'-5¾"	5'-6"	0.89	4'	5'-10"	5'-6"	1.10	6'	8'-7¼"	5'-6"	1.54	NO
24"	3'	6'-2½"	6'-0"	1.11	4'	8'-1"	6'-0"	1.38	6'	11'-11"	6'-0"	1.93	SEE ⑨
30"	3'	7'-10¾"	6'-6"	1.33	4'	10'-3¾"	6'-6"	1.67	6'	15'-2½"	6'-6"	2.35	SEE ⑨

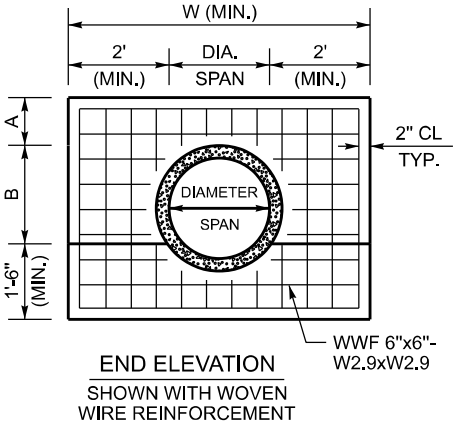
++ SEE SHEET 2 FOR DIMENSIONS OF HEADWALLS FOR PIPE OVER 30" DIAMETER ++

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

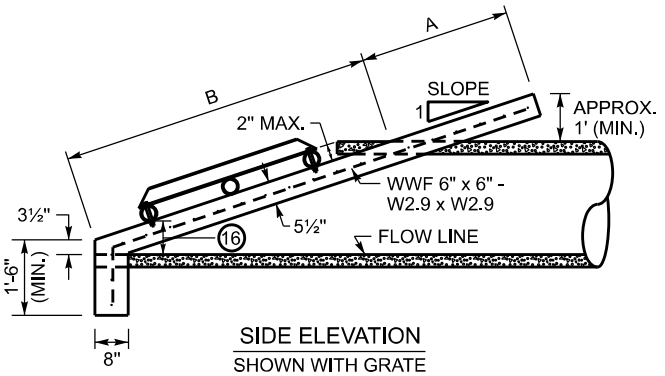
BID ITEM AND UNIT TO BID FOR PIPES LARGER THAN 42 INCHES:
HEADWALL (SLOPED & MITERED FOR _ INCH PIPE) EACH

NOT TO SCALE

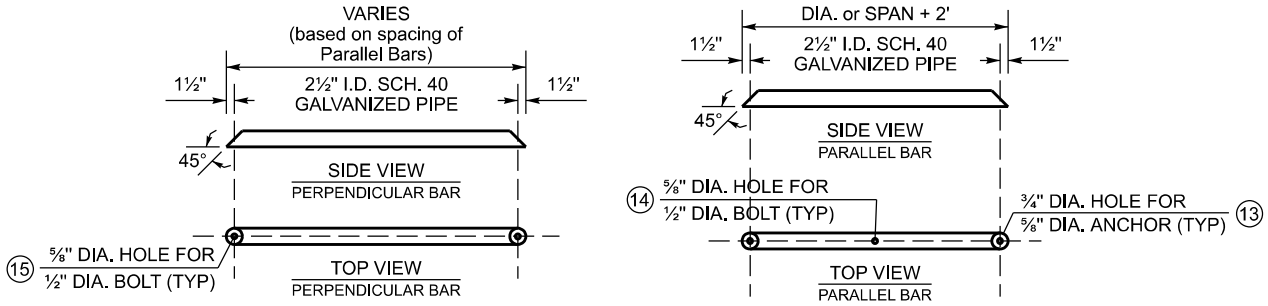
SLOPED & MITERED CONCRETE HEADWALL (SHEET 1 OF 2)



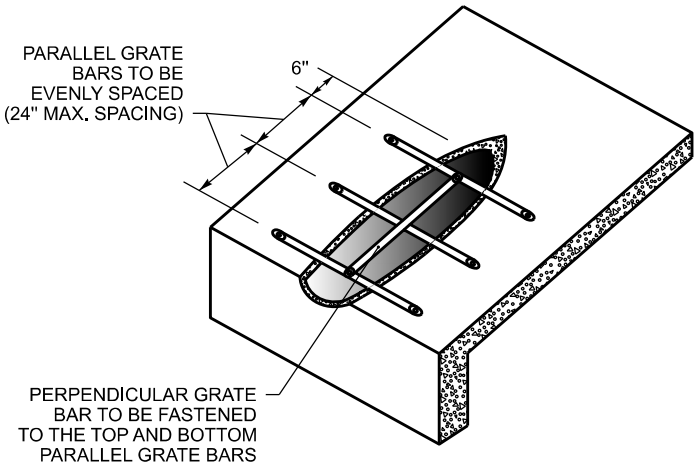
END ELEVATION
SHOWN WITH WOVEN WIRE REINFORCEMENT



SIDE ELEVATION
SHOWN WITH GRATE



PIPE FOR GRATE DETAILS
SEE NOTE 9 TO DETERMINE IF GRATE IS REQUIRED



ISOMETRIC VIEW
SHOWING HEADWALL WITH GRATE

~ NOTES ~

SEE SHEET 1 FOR NOTES 1 THRU 8

9. THE FOLLOWING SITUATIONS REQUIRE A HEADWALL WITH GRATE:
-24" DIAMETER PIPE ON GREATER THAN 30° SKEW
-30" DIAMETER PIPE ON GREATER THAN 15° SKEW
-PIPE WITH GREATER THAN 30" DIAMETER.
-ELLIPTICAL PIPE GREATER THAN 24" EQUIVALENT DIAMETER
10. ALL BOLTS AND HARDWARE SHALL BE RUST RESISTANT: ZINC PLATED, STAINLESS STEEL, OR STEEL THAT HAS BEEN GALVANIZED IN ACCORDANCE WITH AASHTO M 232.
11. THE PIPE USED TO CONSTRUCT THE GRATE SHALL BE STEEL, SCHEDULE 40, CONFORMING TO ASTM A53, AND GALVANIZED IN ACCORDANCE WITH AASHTO M 111 AFTER FABRICATION.
12. ANY RAW METAL EXPOSED BY FIELD CUTTING AND/OR DRILLING SHALL BE TREATED WITH A COLD GALVANIZING COMPOUND.
13. FASTEN PARALLEL BARS TO HEADWALL WITH ⅝" DIA. x 4½" LENGTH STEEL WEDGE ANCHORS, MINIMUM EMBEDMENT = 2¾" HOLE SIZE AND DEPTH, TORQUE, & INSTALLATION PROCEDURES PER RECOMMENDATION OF ANCHOR MANUFACTURE.
14. CENTER BOLT HOLE SHALL ONLY BE DRILLED IN THE TOP AND BOTTOM PARALLEL BARS.
15. FASTEN THE PERPENDICULAR BAR TO THE TOP AND BOTTOM PARALLEL BARS WITH ½" DIA. x 4" LENGTH HEX HEAD BOLTS, HEX HEAD NUTS, & FLAT WASHERS.
16. THE BOTTOM PARALLEL BAR IS TO BE PLACED SO THAT IT IS APPROX. 6" ABOVE THE FLOWLINE OF THE PIPE.

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

DIMENSIONS AND CONCRETE QUANTITIES (FOR PIPE WITH SKEW = 0°) (4)													
PIPE SIZE	3:1 SLOPE				4:1 SLOPE				6:1 SLOPE				GRATE REQUIRED
	A	B	W	CU. YDS. CONCRETE	A	B	W	CU. YDS. CONCRETE	A	B	W	CU. YDS. CONCRETE	
36"	3'	9'-7½"	7'-0"	1.57	4'	12'-6½"	7'-0"	1.98	6'	18'-6"	7'-0"	2.80	YES
42"	3'	11'-4"	7'-6"	1.83	4'	14'-9¼"	7'-6"	2.31	6'	21'-9½"	7'-6"	3.27	YES
48"	3'	12'-11"	8'-0"	2.07	4'	16'-10"	8'-0"	2.40	6'	24'-10"	8'-0"	3.33	YES

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

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

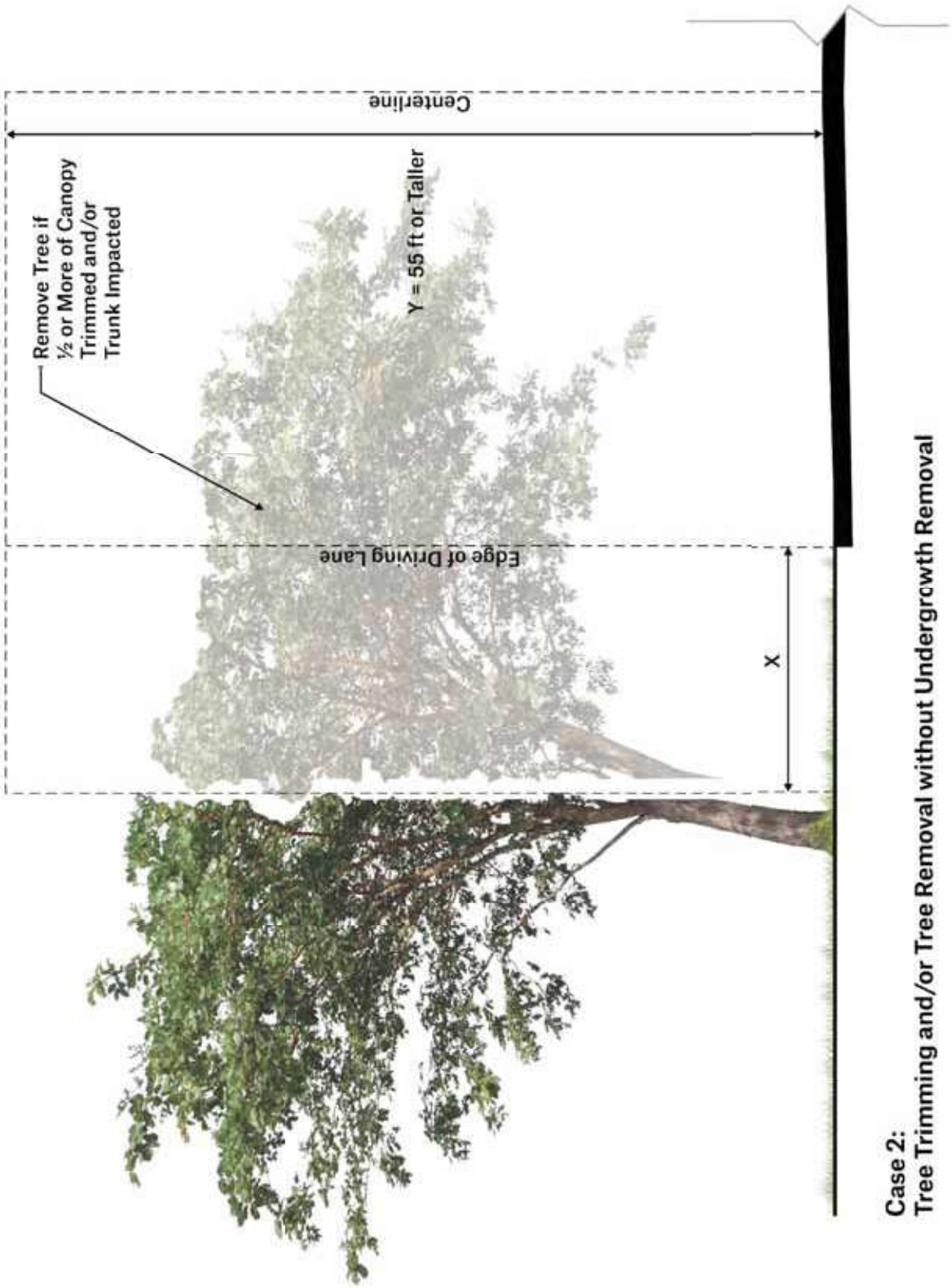
BID ITEM AND UNIT TO BID FOR PIPES LARGER THAN 42 INCHES:
HEADWALL (SLOPED & MITERED FOR _ INCH PIPE) EACH

NOT TO SCALE

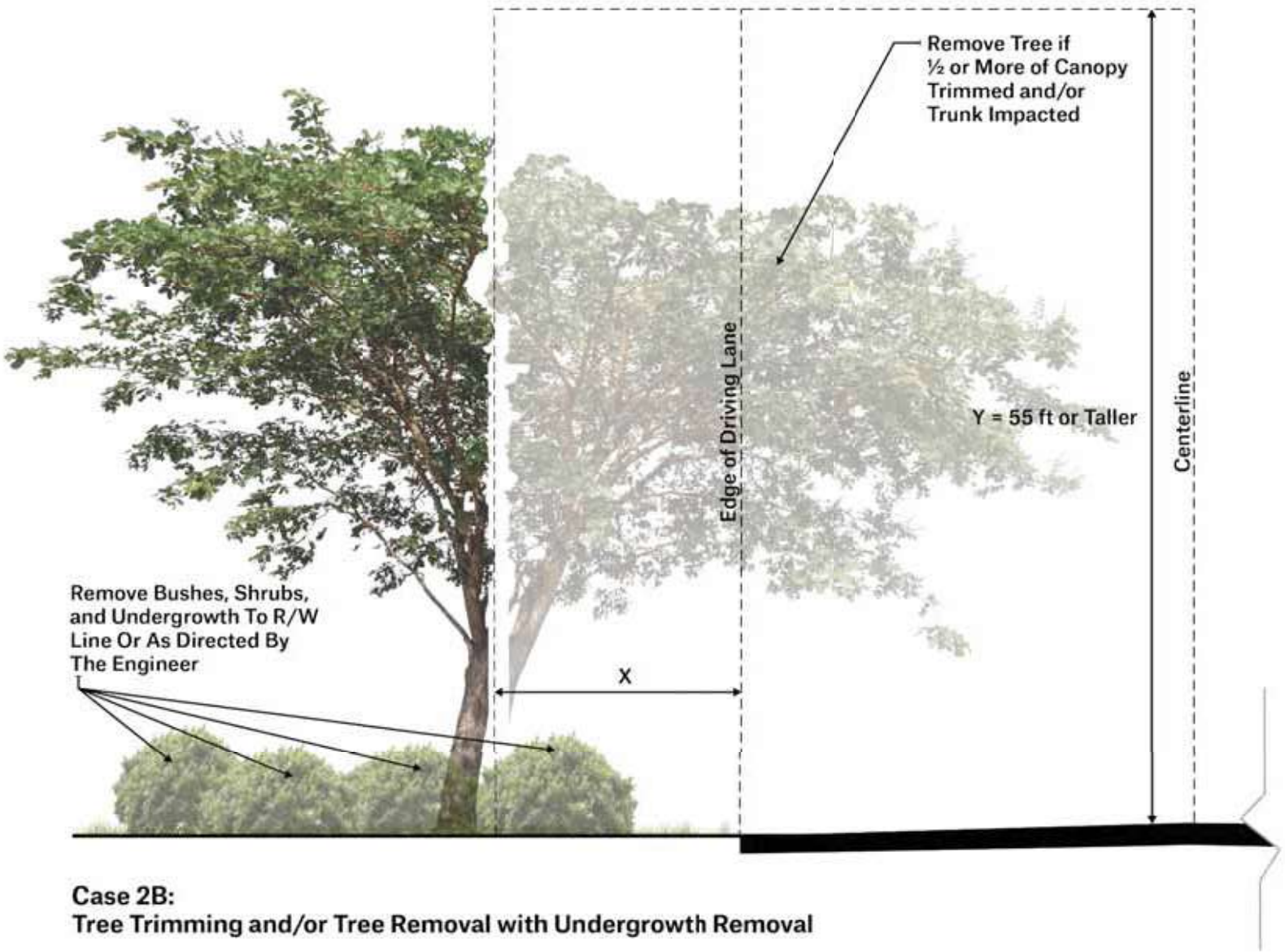
SLOPED & MITERED CONCRETE HEADWALL (SHEET 2 OF 2)

Case 1:
Tree Trimming without Undergrowth Removal

Case 1B:
Tree Trimming with Undergrowth Removal



Case 2:
Tree Trimming and/or Tree Removal without Undergrowth Removal



Case 2B:
Tree Trimming and/or Tree Removal with Undergrowth Removal

Centerline
Edge of Driving Lane
Remove Bushes, Shrubs, and Undergrowth To R/W Line Or As Directed By The Engineer
Case 3B:
Undergrowth Removal Only

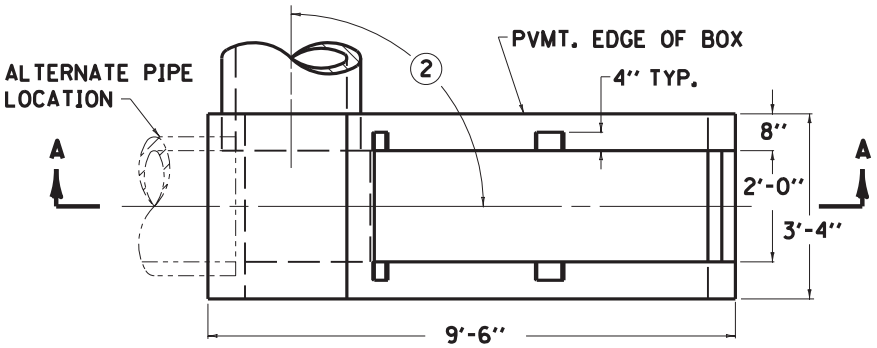
4-9009 PROJECT CONTROL
KY SINGLE ZONE - GEOID12

PNT #	NORTHING	EASTING	ELEVATION	CODE
P1	3644349.05	4774541.85	699.63	CP
P2	3645098.8	4776030.6	706.45	CP
P3	3649136.06	4778665.57	738.21	CP
P4	3651090.92	4778663.21	732.26	CP
P5	3656568.96	4778182.76	791.41	CP
P7	3661033.64	4775353.3	768.73	CP
P8	3662451.8	4774867.57	746.79	CP
P9	3665451.3	4776867.19	774.7	CP
P10	3666645.53	4778398.35	786.23	CP
P11	3668951.34	4779848.89	812.68	CP
P12	3670920.04	4779582.31	832.28	CP
P13	3672539.79	4773794.99	791.45	CP
P15	3673009.89	4771747.98	772.89	CP
P16	3674886.86	4768196.12	673.06	CP
P17	3677254.75	4767722.7	539.81	CP
P18	3678965.06	4767695.3	519.86	CP
P19	3680807.97	4767474.33	508.87	CP
P20	3684080.07	4766072.94	531.32	CP
T101	3644177.05	4774131.9	699.81	PNPT
T102	3644605.82	4775040.12	707.68	PNPT
T103	3645049.01	4775936.93	706.92	PNPT
T104	3645851.79	4776526.8	710.6	PNPT
T105	3646679.04	4777093.15	711.62	PNPT
T106	3647507.67	4777656.52	730.75	PNPT
T107	3648335.41	4778217.52	731.03	PNPT
T108	3649220.82	4778713.21	734.74	PNPT
T109	3650201.5	4778750.54	741.75	PNPT
T110	3651194.32	4778646.44	730.17	PNPT
T111	3652114.82	4778256.42	725.96	PNPT
T112	3653082.48	4778513.37	734.25	PNPT
T113	3654080.32	4778548.81	776.13	PNPT
T114	3655071.95	4778435.74	799.07	PNPT
T115	3656059.67	4778280.85	795.1	PNPT
T116	3657024.69	4778017.66	787.16	PNPT
T117	3657978	4777715.99	772.35	PNPT
T118	3658930.67	4777406.72	764.94	PNPT
T119	3659529.01	4776607.24	762.45	PNPT
T120	3660320.69	4775998.25	766.37	PNPT
T121	3661045.14	4775311.5	768.2	PNPT
T122	3661913.4	4774816.13	756.69	PNPT
T123	3662905.98	4774931.99	743.95	PNPT
T124	3663872.98	4775190.49	725.23	PNPT
T125	3664626.97	4775847.18	721.72	PNPT

T126	3665238.87	4776630.25	762.4	PNPT
T127	3665853.64	4777416.64	758.91	PNPT
T128	3666467.06	4778204.52	776.4	PNPT
T129	3667080.16	4778996.19	781.95	PNPT
T130	3667733.55	4779749.76	803.26	PNPT
T131	3668724.87	4779859.14	809.5	PNPT
T132	3669716.26	4779716.66	817.07	PNPT
T133	3670700.61	4779677.41	827.39	PNPT
T134	3670939.23	4779689.61	840.59	PNPT
T135	3670929.79	4779379.71	821.34	PNPT
T136	3670881.45	4778382.16	800.84	PNPT
T137	3671183.85	4777435.39	777.61	PNPT
T138	3671574.2	4776522.12	749.99	PNPT
T139	3671963.63	4775603.19	759.06	PNPT
T140	3672358.15	4774685.25	759.23	PNPT
T141	3672705.31	4773750.26	771.03	PNPT
T142	3672827.26	4772756.82	750.39	PNPT
T143	3672971.88	4771768.51	771.67	PNPT
T144	3673410.32	4770875.24	726.49	PNPT
T145	3673858.43	4769980.57	710.31	PNPT
T146	3674307.18	4769088.3	686.32	PNPT
T147	3674851.37	4768249.82	674.94	PNPT
T148	3675815.27	4767997.04	631.25	PNPT
T149	3676797.78	4767810.34	571.13	PNPT
T150	3677795.09	4767777.36	528.78	PNPT
T151	3678797.37	4767745.49	526.68	PNPT
T152	3679785.59	4767591.57	512.96	PNPT
T153	3680773.37	4767440.63	510.09	PNPT
T154	3681752.08	4767227.35	533.03	PNPT
T155	3682601.89	4766705.64	522.87	PNPT
T156	3683537.24	4766349.72	521.13	PNPT
T157	3684432.97	4765908.11	526.16	PNPT
T158	3684938.86	4765716.81	535.04	PNPT

COUNTY OF	ITEM NO.	SHEET NO.

GRAYSON COUNTY
043GR23T004-HSIP & STP



PLAN VIEW

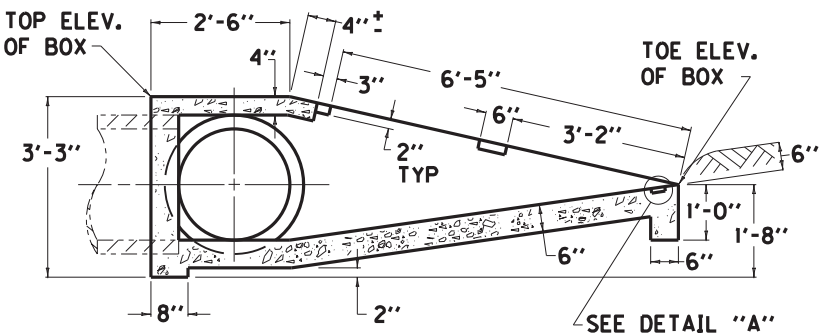
NOTES

ITEM CODE	BID ITEM	UNIT
1726	SAFETY BOX INLET-18 INCH SDB-1	EACH
1727	SAFETY BOX INLET-24 INCH SDB-1	EACH

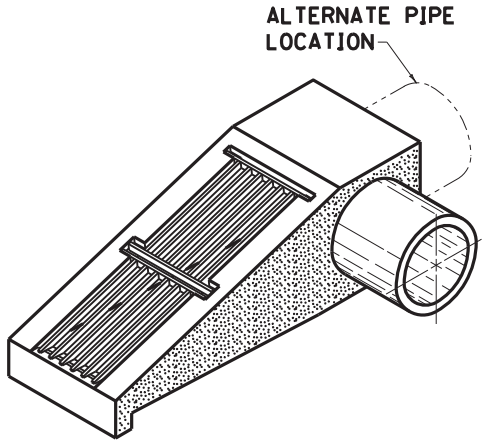
THE UNIT BID FOR EACH STRUCTURE SHALL INCLUDE ALL CONCRETE, STRUCTURAL STEEL GRATING, EXCAVATION, LABOR AND INCIDENTALS NECESSARY FOR ITS CONSTRUCTION AS DETAILED ON THIS SHEET.

(1) TOE OF BOX SHALL BE RAISED OR LOWERED TO FIT EXISTING FIELD CONDITIONS.

(2) SKEW OF BOX SHALL VARY TO FIT EXISTING FIELD CONDITIONS.

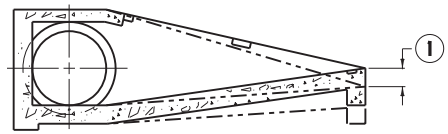


SECTION A-A

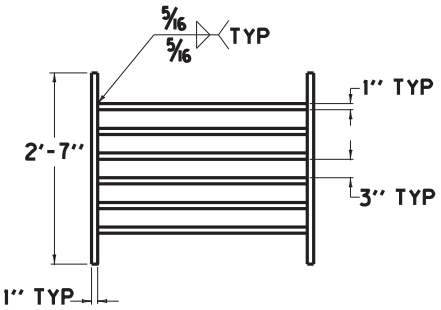


ISOMETRIC VIEW

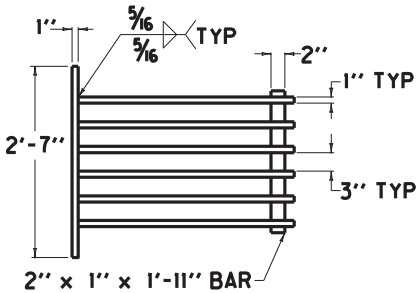
APPROXIMATE QUANTITIES			
CLASS "A" CONC.	GRATE	LBS. STRUCTURAL STEEL	
CUBIC YARDS	NUMBER	EACH GRATE	TOTAL POUNDS
1.44	1	145	298
	2	153	



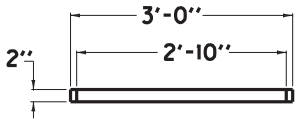
SECTIONAL VIEW



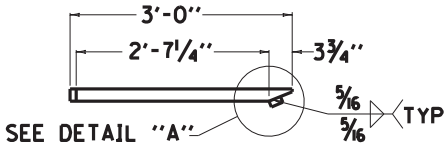
GRATE NO. 1
PLAN VIEW



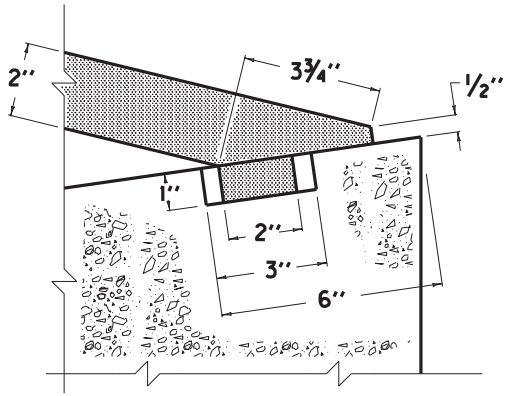
GRATE NO. 2
PLAN VIEW



GRATE NO. 1
SIDE ELEVATION



GRATE NO. 2
SIDE ELEVATION



DETAIL "A"

KENTUCKY
DEPARTMENT OF HIGHWAYS

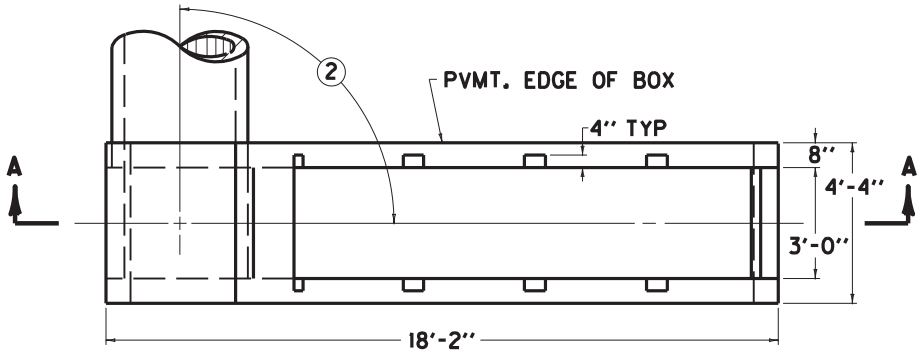
SAFETY TYPE BOX INLET (18" OR 24")

APPROVED _____ PROJECT ENGINEER

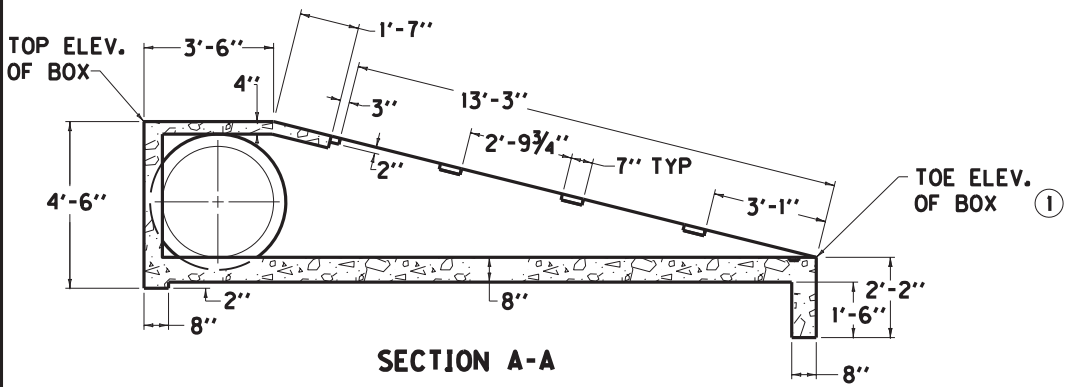
DATE 06-04-2008

Contract ID: 234206
Page 2 of 928

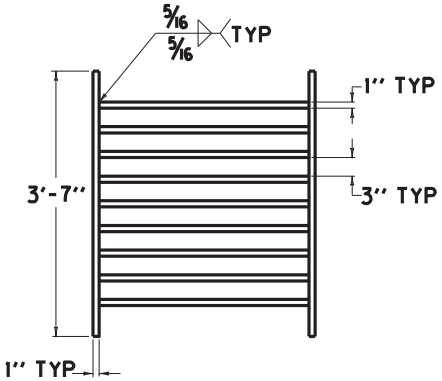
COUNTY OF	ITEM NO.	SHEET NO.



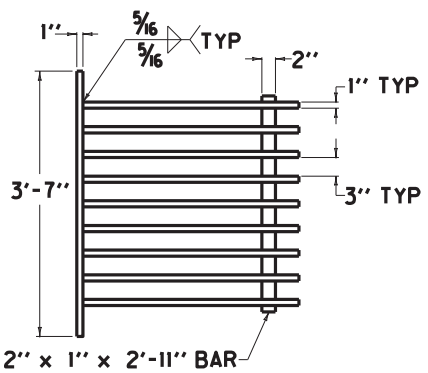
PLAN VIEW



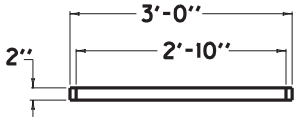
SECTION A-A



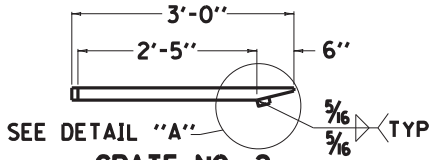
GRATE NO. 1
PLAN VIEW



GRATE NO. 2
PLAN VIEW



GRATE NO. 1
SIDE ELEVATION



GRATE NO. 2
SIDE ELEVATION

NOTES

ITEM CODE	BID ITEM	UNIT
23044NS710	SAFETY BOX INLET-36 INCH SDB-1	EACH

THE UNIT BID FOR EACH STRUCTURE SHALL INCLUDE ALL CONCRETE, STRUCTURAL STEEL GRATING, EXCAVATION, LABOR AND INCIDENTALS NECESSARY FOR ITS CONSTRUCTION AS DETAILED ON THIS SHEET.

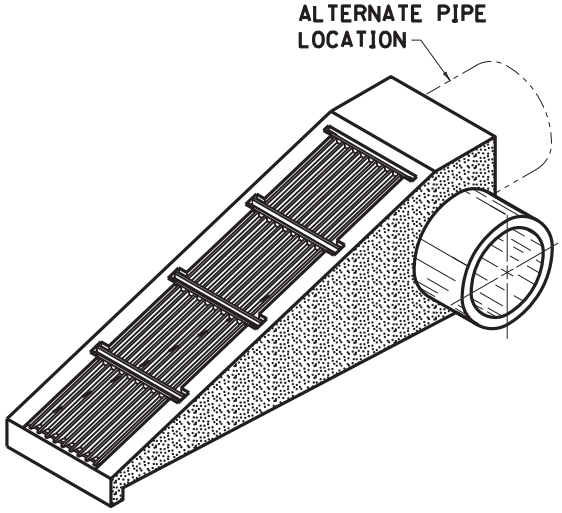
(1) TOE OF BOX SHALL BE RAISED OR LOWERED TO FIT EXISTING FIELD CONDITIONS.

(2) SKEW OF BOX SHALL VARY TO FIT EXISTING FIELD CONDITIONS.

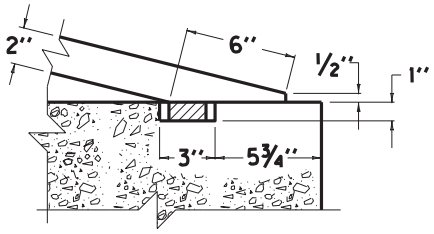
3. ALL QUANTITIES ARE FOR ONE HEADWALL.

APPROXIMATE QUANTITIES

CLASS "A" CONC.	GRATE	NO. OF GRATES REQ'D.	LBS.		
			STRUCTURAL STEEL		REINF. STEEL
CUBIC YARDS	NUMBER		EACH GRATE		
4.51	1	3	222	896	261
	2	1	230		



ISOMETRIC VIEW



DETAIL "A"

SHEET 1 OF 2

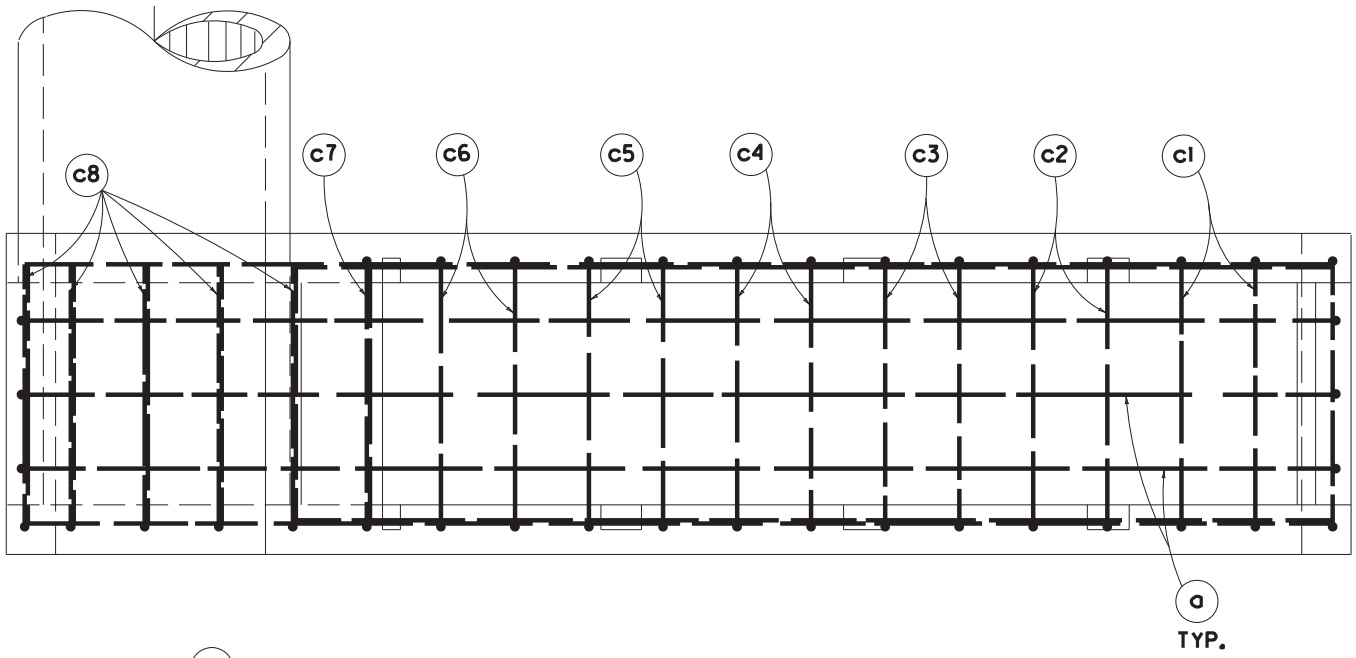
KENTUCKY
DEPARTMENT OF HIGHWAYS

SAFETY TYPE BOX INLET (36")

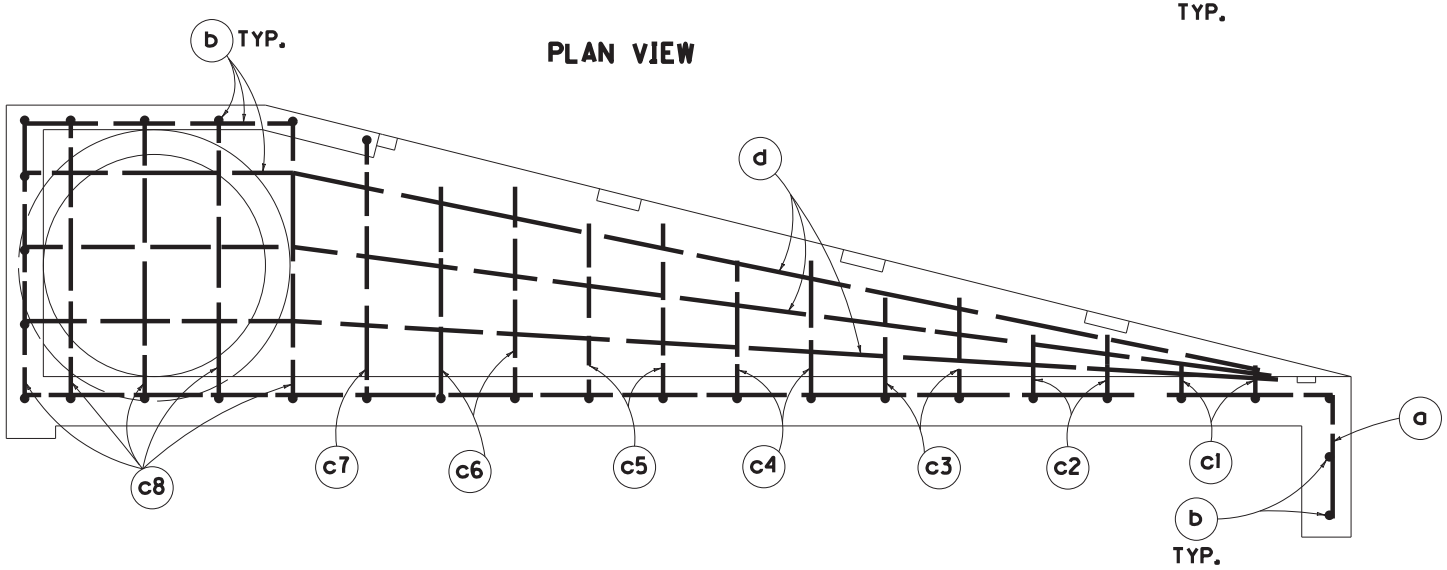
APPROVED _____ PROJECT ENGINEER _____ DATE 06-04-2008

COUNTY OF	ITEM NO.	SHEET NO.

GRAYSON COUNTY
043GR23T004-HSIP &STP



PLAN VIEW

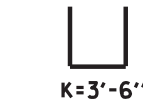


ELEVATION VIEW

NOTES

1. NUMBER OF BARS IN ONE HEADWALL.
2. DIMENSIONS ARE O. TO O. OF BARS.
3. ALL BARS ARE STRAIGHT EXCEPT THOSE SHOWN BELOW.

BENT BAR SHAPES



BARS (c)

BARS (a)

MARK	SIZE	NO (1)	LGTH FT	LGTH IN	K FT	K IN
36"						
a	4	5	19	6	1	8
b	4	16	3	6		
c1	4	2	5	0	3	6
c2	4	2	5	10	3	6
c3	4	2	6	10	3	6
c4	4	2	7	10	3	6
c5	4	2	8	10	3	6
c6	4	2	9	10	3	6
c7	4	1	11	0	3	6
c8	4	5	11	6	3	6
d	4	6	13	4		

SHEET 2 OF 2

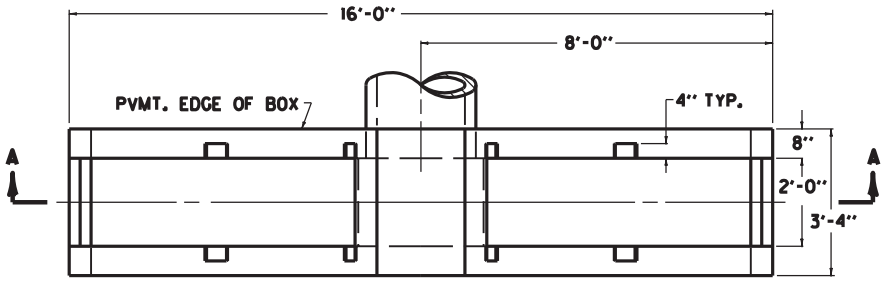
KENTUCKY
DEPARTMENT OF HIGHWAYS

BILL OF REINFORCEMENT SAFETY TYPE BOX INLET (36")

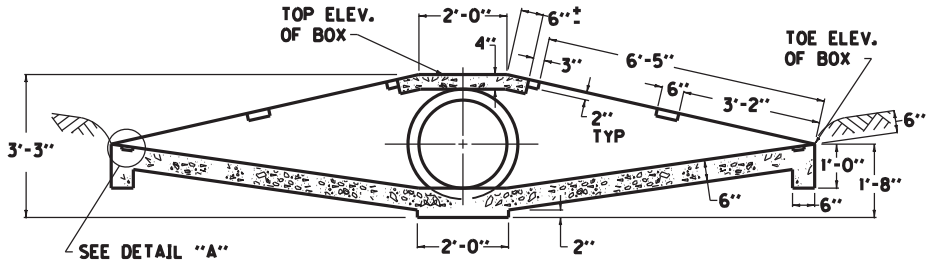
APPROVED _____ PROJECT ENGINEER 06-04-2008 DATE

Contract ID: 234206
Page 174 of 928

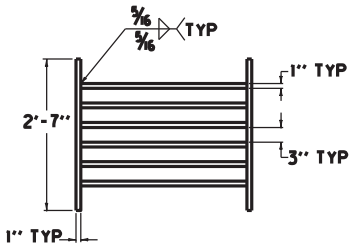
COUNTY OF	ITEM NO.	SHEET



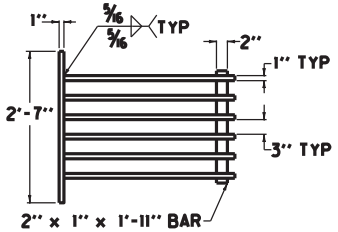
PLAN VIEW



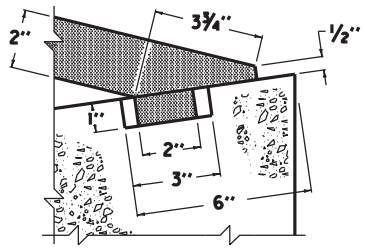
SECTION A-A



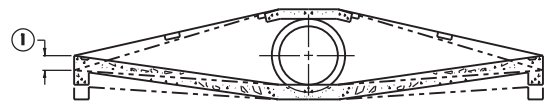
GRATE NO. 1
PLAN VIEW



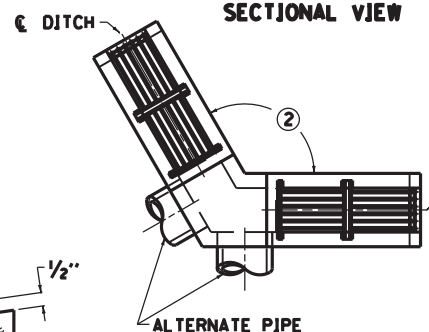
GRATE NO. 2
PLAN VIEW

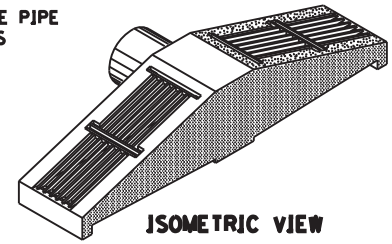


DETAIL "A"

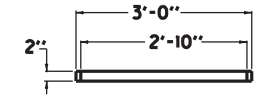


SECTIONAL VIEW

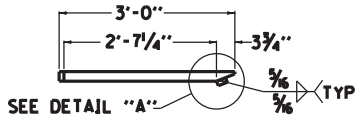




ISOMETRIC VIEW



GRATE NO. 1
SIDE ELEVATION



GRATE NO. 2
SIDE ELEVATION

NOTES

ITEM CODE	BID ITEM	UNIT
1728	SAFETY BOX INLET-18 IN DBL SDB-5	EACH
1729	SAFETY BOX INLET-24 IN DBL SDB-5	EACH

THE UNIT BID FOR EACH STRUCTURE SHALL INCLUDE ALL CONCRETE, STRUCTURAL STEEL GRATING, EXCAVATION, LABOR AND INCIDENTALS NECESSARY FOR ITS CONSTRUCTION AS DETAILED ON THIS SHEET.

(1) TOE OF BOX SHALL BE RAISED OR LOWERED TO FIT EXISTING FIELD CONDITIONS.

(2) ANGLE BETWEEN BOX WALLS MAY VARY TO FIT EXISTING FIELD CONDITIONS.

APPROXIMATE QUANTITIES			
CLASS "A" CONC.	GRATE	LBS. STRUCTURAL STEEL	
CUBIC YARDS	NUMBER	EACH GRATE	TOTAL POUNDS
2.07	1	145	596
	2	153	

N/A

DBL SAFETY BOX INLET DETAIL SHEET

MicroStation v8.11.7.443
E-SHEET NAME: ——
USER: Patrick.Stone
DATE PLOTTED: September 24, 2013
FILE NAME: C:\USERS\PATRICK.STONE\APPDATA\LOCAL\MICROSOFT\WINDOWS\TEMPORARY INTERNET FILES\CONTENT.OUTLOOK\Y0843LNA\SAFETY BOX.DGN

PART II

SPECIFICATIONS AND STANDARD DRAWINGS

SPECIFICATIONS REFERENCE

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

SUPPLEMENTAL SPECIFICATIONS

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

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

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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.

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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

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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

2020 STANDARD DRAWINGS THAT APPLY

ROADWAY
~ BARRIERS ~

TYPICAL BARRIER INSTALLATIONS

TYPICAL GUARDRAIL INSTALLATIONS.....RBI-001-12
TYPICAL GUARDRAIL INSTALLATIONS.....RBI-002-07

GUARDRAIL HARDWARE

STEEL BEAM GUARDRAIL (W-BEAM).....RBR-001-13
GUARDRAIL COMPONENTS.....RBR-005-11
GUARDRAIL TERMINAL SECTIONS.....RBR-010-06
STEEL GUARDRAIL POSTS.....RBR-015-06
GUARDRAIL END TREATMENT TYPE 4A.....RBR-035-12
DELINEATORS FOR GUARDRAIL.....RBR-005-01

~ DRAINAGE ~

BOX INLETS AND OUTLETS

DROP BOXES

DROP BOX INLET TYPE 1.....RDB-001-12
DROP BOX INLET TYPE 11.....RDB-011-08

SLOPED BOXES

SLOPED AND FLARED BOX INLET-OUTLET 18”-24”-30”-36” ALL SKEWS.....RDB-105-06
GRATES FOR SLOPED AND FLARED BOX INLET-OUTLET.....RDB-106-05

PAVED DITCHES, FLUME INLETS AND CHANNEL LININGS

CHANNEL LINING CLASS II AND III.....RDD-040-05

PIPE AND BOX CULVERT HEADWALLS

TYPICAL DRAINAGE INSTALLATIONS

CULVERT, ENTRANCE & STORM SEWER PIPE TYPES & COVER HEIGHTS (12” – 24” PIPE).....RDI-001-10
CULVERT, ENTRANCE & STORM SEWER PIPE TYPES & COVER HEIGHTS (27” – 42” PIPE).....RDI-002-05
PIPE BEDDING FOR CULVERTS, ENTRANCE, AND STORM SEWER PIPE.....RDI-020-10
PIPE BEDDING FOR CULVERTS, ENTRANCE, AND STORM SEWER, REINFORCED CONC. PIPE.....RDI-021-01
PIPE BEDDING, TRENCH CONDITION.....RDI-025-06
PIPE BEDDING, TRENCH CONDITION, REINFORCED CONC. PIPE.....RDI-026-01

Standard Drawings That Apply
Page 2 of 3

EROSION CONTROL BLANKET SLOPE INSTALLATION.....RDI-040-01
EROSION CONTROL BLANKET CHANNEL INSTALLATION.....RDI-041-01

MISCELLANEOUS DRAINAGE

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

~ FENCES AND GATES ~

CHAIN LINK FENCE

CHAIN LINK FENCE 4' TO 6' HIGH..... RFC-001-08

WOVEN WIRE FENCE

FENCING DETAILS.....RFW-001-06
WOVEN WIRE FENCE TYPE 2.....RFW-006-07

~ GENERAL ~

CURVE WIDENING AND SUPERELEVATION

CURVE WIDENING AND SUPERELEVATION TRANSITIONS.....RGS-001-07

MISCELLANEOUS STANDARDS

MISCELLANEOUS STANDARDS..... RGX-001-06

~ PAVEMENT ~

MEDIANS, CURBS, APPROACHES, ENTRANCES, ETC.

APPROACHES, ENTRANCES, AND MAIL BOX TURNOUT.....RPM-110-07

TRAFFIC

~ PERMANENT ~

MARKERS

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

RUMBLE STRIPS

CENTERLINE RUMBLE STRIPS..... TPR-100

Standard Drawings That Apply
Page 3 of 3

CENTERLINE RUMBLE STRIPS 6 INCH STRIPING TPR-110
SHOULDER & EDGELINE RUMBLE STRIPS PLACEMENT DETAILS TPR-115
EDGELINE RUMBLE STRIP DETAILS TWO LANE ROADWAYS..... TPR-120

~ TEMPORARY ~

TRAFFIC CONTROL

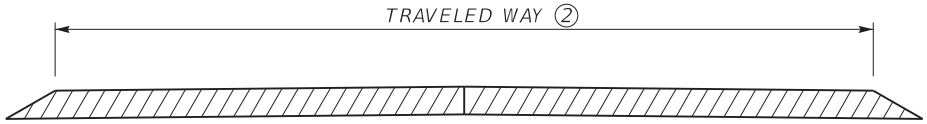
LANE CLOSURE TWO-LANE HIGHWAY..... TTC-100-05
LANE CLOSURE USING TRAFFIC SIGNALS TTC-110-04

DEVICES

DOUBLE FINES ZONE SIGNS.....TTD-120-03
PAVEMENT CONDITION WARNING SIGNS TTD-125-03
SPEED ZONE SIGNING FOR WORK ZONES TTD-130

STRIPING OPERATIONS

MOBILE OPERATION FOR PAINT STRIPING CASE I..... TTS-100-02
MOBILE OPERATION FOR PAINT STRIPING CASE II..... TTS-105-02



TWO LANE ROADWAY
PAVEMENT CROSS-SECTION

TRAVELED WAY (2)	TYPE OF PAVEMENT STRIPING	NON-STATE PRIMARY ROUTES				STATE PRIMARY ROUTES	
		< 1000 ADT		>= 1000 ADT		ANY ADT	
		WIDTH	MATERIAL	WIDTH	MATERIAL	WIDTH	MATERIAL*
< 16' (4)	EDGELINE STRIPES ONLY	4"	PAINT	4"	PAINT	6"	THERMO (ASHPALT) TYPE I TAPE (CONCRETE)
16' TO < 20'	EDGELINE STRIPES ONLY OR CENTERLINE STRIPE ONLY	4"	PAINT	4"	PAINT	6"	THERMO (ASHPALT) TYPE I TAPE (CONCRETE)
>=20' (3)	CENTERLINE AND EDGELINE STRIPES	4" (5)	PAINT	6"	PAINT	6"	THERMO (ASHPALT) TYPE I TAPE (CONCRETE)

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

~ NOTES ~

1. INSTALL PAVEMENT STRIPING ON TWO LANE, TWO WAY ROADWAYS AS DETAILED IN THE ABOVE TABLE AND IN ACCORDANCE WITH THE PAVEMENT MARKINGS AND DELINEATION CHAPTER OF THE TRAFFIC OPERATIONS GUIDANCE MANUAL. CONTACT THE DIVISION OF TRAFFIC OPERATIONS FOR ADDITIONAL GUIDANCE IF NECESSARY.

(2) THE TRAVELED WAY IS THE PORTION OF ROADWAY FOR THE MOVEMENT OF VEHICLES, EXCLUSIVE OF THE SHOULDERS.

(3) ON TWO LANE, TWO WAY ROADWAYS THAT HAVE A TOTAL PAVEMENT WIDTH (W) THAT IS 20 FT OR GREATER, BUT LESS THAN 22 FT, EDGELINE RUMBLE STRIPS ARE NOT A STANDARD APPLICATION, BUT THEY MAY BE INSTALLED. THE DIVISION OF TRAFFIC OPERATIONS IS AVAILABLE TO ASSIST WITH THE DETERMINATION OF WHETHER OR NOT TO INSTALL EDGELINE RUMBLE STRIPS ON PAVEMENT WIDTHS LESS THAN 22 FT, AS WELL AS THE DIMENSION AND PLACEMENT DETAILS OF THE RUMBLE STRIPS AND PAVEMENT STRIPING.

ON TWO LANE, TWO WAY ROADWAYS THAT HAVE A TOTAL PAVEMENT WIDTH (W) THAT IS 22 FT OR GREATER, BUT LESS THAN 34 FT, INSTALL PAVEMENT STRIPING AS DETAILED IN THE ABOVE TABLE AND IN CONJUNCTION WITH CENTERLINE AND EDGELINE RUMBLE STRIPS AS DETAILED ON TPR-120 .

ON TWO LANE, TWO WAY ROADWAYS THAT HAVE A TOTAL PAVEMENT WIDTH (W) THAT IS 34 FT OR GREATER, INSTALL PAVEMENT STRIPING AS DETAILED IN THE ABOVE TABLE AND IN CONJUCTION WITH CENTERLINE AND SHOULDER RUMBLE STRIPS AS DETAILED ON TPR-125.

(4) EDGELINES MAY BE OMITTED FROM ROADWAYS WITH A TRAVELED WAY WIDTH LESS THAN 16 FEET WITH THE APPROVAL OF THE DIVISION OF TRAFFIC OPERATIONS.

(5) EDGELINES MAY BE OMITTED ON NON-STATE PRIMARY ROUTES WITH A TRAVELED WAY WIDTH GREATER THAN OR EQUAL TO 20 FEET AND AN ADT LESS THAN 1,000.

6. EDGELINES MAY BE OMITTED, BASED ON ENGINEERING JUDGMENT, IN AREAS WHERE THE PAVEMENT EDGE IS DELINEATED BY PHYSICAL OBJECTS SUCH AS CURBS, PARKING SPACES, OR OTHER MARKINGS. EDGELINES SHOULD BE INSTALLED ON ROADWAYS WITH CURB AND GUTTER IF THE POSTED SPEED LIMIT IS 45 MPH OR GREATER.

DRAWING NOT TO SCALE

USE WITH CUR. STD. DWGS.
TPR-120 & TPR-125

KENTUCKY
DEPARTMENT OF HIGHWAYS

PAVEMENT STRIPING
DETAILS FOR TWO LANE
TWO WAY ROADWAYS

SUBMITTED _____ 06-09-21
DIVISION DIRECTOR DATE

017

PART III

EMPLOYMENT, WAGE AND RECORD REQUIREMENTS

FHWA-1273 -- Revised July 5, 2022

REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS

I. General
II. Nondiscrimination
III. Non-segregated Facilities
IV. Davis-Bacon and Related Act Provisions
V. Contract Work Hours and Safety Standards Act Provisions
VI. Subletting or Assigning the Contract
VII. Safety: Accident Prevention
VIII. False Statements Concerning Highway Projects
IX. Implementation of Clean Air Act and Federal Water Pollution Control Act
X. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion
XI. Certification Regarding Use of Contract Funds for Lobbying
XII. Use of United States-Flag Vessels:

ATTACHMENTS

A. Employment and Materials Preference for Appalachian Development Highway System or Appalachian Local Access Road Contracts (included in Appalachian contracts only)

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. All laborers and mechanics employed or working upon the site of the work, 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 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.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.d. 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 shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). 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 classification and wage rates conformed under paragraph 1.b. of this section) and the Davis-Bacon poster (WH–1321) shall 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.(1) The contracting officer shall 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 shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore 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 utilized 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) 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 shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, U.S. Department of Labor, Washington, DC 20210. 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.

(3) 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 shall 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.

(4) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs 1.b.(2) or 1.b.(3) of this section, shall 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.

c. 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 shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

d. 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, 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.

2. Withholding (29 CFR 5.5)

The contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract, or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the contracting agency may, 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.

3. Payrolls and basic records (29 CFR 5.5)

a. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, 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 section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) 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 section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall 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. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

b.(1) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the contracting agency. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH–347 is available for this purpose from the Wage and Hour Division Web site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the contracting agency for transmission to the State DOT, the FHWA or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the contracting agency.

(2) Each payroll submitted shall be accompanied by a “Statement of Compliance,” signed by the contractor or

subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(i) That the payroll for the payroll period contains the information required to be provided under 29 CFR 5.5(a)(3)(ii), the appropriate information is being maintained under 29 CFR 5.5(a)(3)(i), and that such information is correct and complete;

(ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed 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;

(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 of work performed, as specified in the applicable wage determination incorporated into the contract.

(3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH–347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(2) of this section.

(4) 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. 231.

c. The contractor or subcontractor shall make the records required under paragraph 3.a. of this section available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the FHWA may, after written notice to the contractor, the contracting agency or the State DOT, 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 may be grounds for debarment action pursuant to 29 CFR 5.12.

4. Apprentices and trainees (29 CFR 5.5)

a. Apprentices (programs of the USDOL).

Apprentices will be permitted to work at less than the predetermined rate for the work they performed 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 Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice.

The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall 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 the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall 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, fringes shall be paid in accordance with that determination.

In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

b. Trainees (programs of the USDOL).

Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration.

The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration.

Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the

corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

d. 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 journeymen 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 shall insert Form FHWA-1273 in any subcontracts and also require the subcontractors to include Form FHWA-1273 in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 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 (29 CFR 5.5)

a. By entering into this contract, the contractor certifies that neither it (nor he or she) 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 section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

c. The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

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 watchmen 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. 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 watchmen 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. 29 CFR 5.5.

* $27 as of January 23, 2019 (See 84 FR 213-01, 218) 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. The FHWA or the contacting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or 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, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph 2 of this section. 29 CFR 5.5.

4. Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraphs 1 through 4 of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs 1 through 4 of this section. 29 CFR 5.5.

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 200.326.

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 200.326.

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.

* * * * *

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals:

(a) 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;

(b) 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

(c) 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)

2. 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

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

KRS 11A.040 (7) provides:

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

KRS 11A.040 (9) states:

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

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

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

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

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

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

Revised: May 23, 2022

General Decision Number: KY20230038 01/06/2023

Superseded General Decision Number: KY20220038

State: Kentucky

Construction Type: Highway

Counties: Anderson, Bath, Bourbon, Boyd, Boyle, Bracken, Breckinridge, Bullitt, Carroll, Carter, Clark, Elliott, Fayette, Fleming, Franklin, Gallatin, Grant, Grayson, Greenup, Hardin, Harrison, Henry, Jefferson, Jessamine, Larue, Lewis, Madison, Marion, Mason, Meade, Mercer, Montgomery, Nelson, Nicholas, Oldham, Owen, Robertson, Rowan, Scott, Shelby, Spencer, Trimble, Washington and Woodford 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)(2)-(60).

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 $16.20 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 2023.
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 $12.15 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 2023.

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	01/06/2023

BRIN0004-003 06/01/2022

BRECKENRIDGE COUNTY

	Rates	Fringes
BRICKLAYER	$ 33.00	19.46

BRKY0001-005 06/01/2022

BULLITT, CARROLL, GRAYSON, HARDIN, HENRY, JEFFERSON, LARUE, MARION, MEADE, NELSON, OLDHAM, SHELBY, SPENCER, & TRIMBLE COUNTIES:

	Rates	Fringes
BRICKLAYER	$ 31.87	16.39

BRKY0002-006 06/01/2022

BRACKEN, GALLATIN, GRANT, MASON & ROBERTSON COUNTIES:

	Rates	Fringes
BRICKLAYER	$ 31.87	16.39

BRKY0007-004 06/01/2022

BOYD, CARTER, ELLIOT, FLEMING, GREENUP, LEWIS & ROWAN COUNTIES:

	Rates	Fringes
BRICKLAYER	$ 32.94	20.28

BRKY0017-004 06/01/2022

ANDERSON, BATH, BOURBON, BOYLE, CLARK, FAYETTE, FRANKLIN, HARRISON, JESSAMINE, MADISON, MERCER, MONTGOMERY, NICHOLAS, OWEN, SCOTT, WASHINGTON & WOODFORD COUNTIES:

	Rates	Fringes
BRICKLAYER	$ 31.87	16.39

CARP0064-001 04/01/2022

	Rates	Fringes
CARPENTER	$ 30.84	22.19
Diver	$ 46.64	22.19
PILEDRIVERMAN	$ 31.09	22.19

ELEC0212-008 06/07/2022

BRACKEN, GALLATIN and GRANT COUNTIES

	Rates	Fringes
ELECTRICIAN	$ 33.29	20.05

ELEC0212-014 11/25/2019

BRACKEN, GALLATIN & GRANT COUNTIES:

	Rates	Fringes
Sound & Communication Technician	$ 24.35	12.09

ELEC0317-012 05/30/2022

BOYD, CARTER, ELLIOT & ROWAN COUNTIES:

	Rates	Fringes
ELECTRICIAN (Wiremen)	$ 35.85	28.25

ELEC0369-007 06/01/2022

ANDERSON, BATH, BOURBON, BOYLE, BRECKINRIDGE, BULLITT, CARROLL, CLARK, FAYETTE, FRAONKLIN, GRAYSON, HARDIN, HARRISON, HENRY, JEFFERSON, JESSAMINE, LARUE, MADISON, MARION, MEADE, MERCER, MONTGOMERY, NELSON, NICHOLAS, OLDHAM, OWEN, ROBERTSON, SCOTT, SHELBY, SPENCER, TRIMBLE, WASHINGTON, & WOODFORD COUNTIES:

	Rates	Fringes
ELECTRICIAN	$ 34.60	19.57

ELEC0575-002 05/30/2022

FLEMING, GREENUP, LEWIS & MASON COUNTIES:

	Rates	Fringes
ELECTRICIAN	$ 35.50	20.63

ENGI0181-018 07/01/2021

	Rates	Fringes
POWER EQUIPMENT OPERATOR		
GROUP 1	$ 34.80	17.85
GROUP 2	$ 31.94	17.85
GROUP 3	$ 32.39	17.85
GROUP 4	$ 31.62	17.85

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 leads equals or exceeds 150 ft. - $1.00 over 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.

IRON0044-009 06/01/2022

BRACKEN, GALLATIN, GRANT, HARRISON, ROBERTSON,
BOURBON (Northern third, including Townships of Jackson, Millersburg, Ruddel Mills & Shawhan);
CARROLL (Eastern third, including the Township of Ghent);
FLEMING (Western part, excluding Townships of Beechburg, Colfax, Elizaville, Flemingsburg, Flemingsburg Junction, Foxport, Grange City, Hillsboro, Hilltop, Mount Carmel, Muses Mills, Nepton, Pecksridge, Plummers Landing, Plummers Mill, Poplar Plains, Ringos Mills, Tilton & Wallingford);
MASON (Western two-thirds, including Townships of Dover, Lewisburg, Mays Lick, Maysville, Minerva, Moranburg, Murphysville, Ripley, Sardis, Shannon, South Ripley & Washington);
NICHOLAS (Townships of Barefoot, Barterville, Carlisle, Ellisville, Headquarters, Henryville, Morningglory, Myers & Oakland Mills);
OWEN (Townships of Beechwood, Bromley, Fairbanks, Holbrook, Jonesville, Long Ridge, Lusby's Mill, New, New Columbus, New Liberty, Owenton, Poplar Grove, Rockdale, Sanders, Teresita & Wheatley);
SCOTT (Northern two-thirds, including Townships of Biddle, Davis, Delaplain, Elmville, Longlick, Muddy Ford, Oxford, Rogers Gap, Sadieville, Skinnersburg & Stonewall)

	Rates	Fringes
IRONWORKER		
Fence Erector	$ 30.28	22.30
Structural	$ 31.87	22.30

IRON0070-006 06/01/2022

ANDERSON, BOYLE, BRECKINRIDGE, BULLITT, FAYETTE, FRANKLIN, GRAYSON, HARDIN, HENRY, JEFFERSON, JESSAMINE, LARUE, MADISON, MARION, MEADE, MERCER, NELSON, OLDHAM, SHELBY, SPENCER, TRIMBLE, WASHINGTON & WOODFORD
BOURBON (Southern two-thirds, including Townships of Austerlity, Centerville, Clintonville, Elizabeth, Hutchison, Littlerock, North Middletown & Paris);
CARROLL (Western two-thirds, including Townships of Carrollton, Easterday, English, Locust, Louis, Prestonville & Worthville);
CLARK (Western two-thirds, including Townships of Becknerville, Flanagan, Ford, Pine Grove, Winchester & Wyandotte);
OWEN (Eastern eighth, including Townships of Glenmary, Gratz, Monterey, Perry Park & Tacketts Mill);
SCOTT (Southern third, including Townships of Georgetown, Great Crossing, Newtown, Stampling Ground & Woodlake);

	Rates	Fringes
IRONWORKER	$ 31.79	24.30

IRON0769-007 06/01/2022

BATH, BOYD, CARTER, ELLIOTT, GREENUP, LEWIS, MONTGOMERY & ROWAN
CLARK (Eastern third, including townships of Bloomingdale, Hunt, Indian Fields, Kiddville, Loglick, Rightangele & Thomson);
FLEMING (Townships of Beechburg, Colfax, Elizaville, Flemingsburg, Flemingsburg Junction, Foxport, Grange City, Hillsboro, Hilltop, Mount Carmel, Muses Mills, Nepton, Pecksridge, Plummers Landing, Plummers Mill, Poplar Plains, Ringos Mills, Tilton & Wallingford);
MASON (Eastern third, including Townships of Helena, Marshall, Orangeburg, Plumville & Springdale);
NICHOLAS (Eastern eighth, including the Township of Moorefield Sprout)

	Rates	Fringes
IRONWORKER		
ZONE 1	$ 33.71	27.69
ZONE 2	$ 34.11	27.69
ZONE 3	$ 35.71	27.69

ZONE 1 - (no base rate increase) Up to 10 mile radius of Union Hall, 1643 Greenup Ave, Ashland, KY.

ZONE 2 - (add $0.40 per hour to base rate) 10 to 50 mile radius of Union Hall, 1643 Greenup Ave, Ashland, KY.

ZONE 3 - (add $2.00 per hour to base rate) 50 mile radius & over of Union Hall, 1643 Greenup Ave, Ashland, KY.

LABO0189-003 07/01/2022

BATH, BOURBON, BOYD, BOYLE, BRACKEN, CARTER, CLARK, ELLIOTT, FAYETTE, FLEMING, FRANKLIN, GALLATIN, GRANT, GREENUP, HARRISON, JESSAMINE, LEWIS, MADISON, MASON, MERCER, MONTGOMERY, NICHOLAS, OWEN, ROBERTSON, ROWAN, SCOTT, & WOOLFORD COUNTIES

	Rates	Fringes
Laborers:		
GROUP 1	$ 23.76	17.12
GROUP 2	$ 24.01	17.12
GROUP 3	$ 24.06	17.12
GROUP 4	$ 24.66	17.12

LABORERS 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; 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

LABO0189-008 07/01/2022

ANDERSON, BULLITT, CARROLL, HARDIN, HENRY, JEFFERSON, LARUE, MARION, MEADE, NELSON, OLDHAM, SHELBY, SPENCER, TRIMBLE & WASHINGTON COUNTIES

	Rates	Fringes
Laborers:		
GROUP 1	$ 23.76	17.12
GROUP 2	$ 24.01	17.12
GROUP 3	$ 24.06	17.12
GROUP 4	$ 24.66	17.12

LABORERS 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; 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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LABO0189-009 07/01/2022

BRECKINRIDGE & GRAYSON COUNTIES

	Rates	Fringes
Laborers:		
GROUP 1	$ 23.76	17.12
GROUP 2	$ 24.01	17.12
GROUP 3	$ 24.06	17.12
GROUP 4	$ 24.66	17.12

LABORERS 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; 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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PAIN0012-005 06/11/2005

BATH, BOURBON, BOYLE, CLARK, FAYETTE, FLEMING, FRANKLIN, HARRISON, JESSAMINE, MADISON, MERCER, MONTGOMERY, NICHOLAS, ROBERTSON, SCOTT & WOODFORD COUNTIES:

	Rates	Fringes
PAINTER		
Bridge/Equipment Tender and/or Containment Builder	$ 18.90	5.90
Brush & Roller	$ 21.30	5.90
Elevated Tanks; Steeplejack Work; Bridge & Lead Abatement	$ 22.30	5.90
Sandblasting & Waterblasting	$ 22.05	5.90
Spray	$ 21.80	5.90

PAIN0012-017 05/01/2015

BRACKEN, GALLATIN, GRANT, MASON & OWEN COUNTIES:

	Rates	Fringes
PAINTER (Heavy & Highway Bridges - Guardrails - Lightpoles - Striping)		
Bridge Equipment Tender and Containment Builder	$ 20.73	9.06
Brush & Roller	$ 23.39	9.06
Elevated Tanks; Steeplejack Work; Bridge & Lead Abatement	$ 24.39	9.06
Sandblasting & Water Blasting	$ 24.14	9.06
Spray	$ 23.89	9.06

PAIN0118-004 06/01/2018

ANDERSON, BRECKINRIDGE, BULLITT, CARROLL, GRAYSON, HARDIN, HENRY, JEFFERSON, LARUE, MARION, MEADE, NELSON, OLDHAM, SHELBY, SPENCER, TRIMBLE & WASHINGTON COUNTIES:

	Rates	Fringes
PAINTER		
Brush & Roller	$ 22.00	12.52
Spray, Sandblast, Power Tools, Waterblast & Steam Cleaning	$ 23.00	12.52

PAIN1072-003 12/01/2021

BOYD, CARTER, ELLIOTT, GREENUP, LEWIS and ROWAN COUNTIES

	Rates	Fringes
Painters:		
Bridges; Locks; Dams; Tension Towers & Energized Substations	$ 35.06	21.15
Power Generating Facilities	$ 31.82	21.15

PLUM0248-003 06/01/2022

BOYD, CARTER, ELLIOTT, GREENUP, LEWIS & ROWAN COUNTIES:

	Rates	Fringes
Plumber and Steamfitter	$ 38.50	22.40

PLUM0392-007 06/01/2022

BRACKEN, CARROLL (Eastern Half), GALLATIN, GRANT, MASON, OWEN & ROBERTSON COUNTIES:

	Rates	Fringes
Plumbers and Pipefitters	$ 36.81	27.35

PLUM0502-003 08/01/2021

BRECKINRIDGE, BULLITT, CARROLL (Western Half), FRANKLIN (Western three-fourths), GRAYSON, HARDIN, HENRY, JEFFERSON, LARUE, MARION, MEADE, NELSON, OLDHAM, SHELBY, SPENCER, TRIMBLE & WASHINGTON COUNTIES

	Rates	Fringes
PLUMBER	$ 38.07	20.78

SUKY2010-160 10/08/2001

	Rates	Fringes
Truck drivers:		
GROUP 1	$ 16.57	7.34
GROUP 2	$ 16.68	7.34
GROUP 3	$ 16.86	7.34
GROUP 4	$ 16.96	7.34

TRUCK DRIVER CLASSIFICATIONS

GROUP 1 - Mobile Batch Truck Tender

GROUP 2 - Greaser; Tire Changer; & Mechanic Tender

GROUP 3 - Single Axle Dump; Flatbed; Semi-trailer or Pole Trailer when used to pull building materials and equipment; Tandem Axle Dump; Distributor; Mixer; & Truck Mechanic

GROUP 4 - Euclid & Other Heavy Earthmoving Equipment & Lowboy; Articulator Cat; 5-Axle Vehicle; Winch & A-Frame when used in transporting materials; Ross Carrier; Forklift when used to transport building materials; & Pavement Breaker

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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) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which 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. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of 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. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour National Office because National Office has responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write 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 the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write 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 by 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

4.) All decisions by the Administrative Review Board are final.

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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

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY (Executive Order 11246)

1. The Offeror's or Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Specifications" set forth herein.

2. The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate work force in each trade on all construction work in the covered area, are as follows:

GOALS FOR MINORITY PARTICIPATION IN EACH TRADE	GOALS FOR FEMALE PARTICIPATION IN EACH TRADE
9.6%	6.9%

These goals are applicable to all the Contractor's construction work (whether or not it is Federal or federally-assisted) performed in the covered area. If the contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the contractor also is subject to the goals for both its federally involved and non-federally involved construction.

The Contractor's compliance with the Executive Order and the regulations in CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4, 3(a), and its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

3. The Notification of Construction Contract Award Portal (NCAP) is OFCCP's preferred method for receiving construction contract award notifications. The NCAP can be found on OFCCP's website at https://www.dol.gov/agencies/ofccp/ncap. Users who prefer not to use the portal maintain the option to send their notifications via mail, email and facsimile to the OFCCP Regional office in which the work will be performed. The Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within ten (10) working days of award of any construction subcontract in excess of $10,000.00 at any tier for construction work under the contract resulting from this solicitation. The notification must include: Prime Contract Number (issued by the federal agency or applicant); Name of Awarding Federal Agency, Applicant or Contractor; Contracting Officer, Applicant Representative or Contractor Representative Submitting Notification with name, phone number, email address; Contractor Awarded Contract or Subcontract with name, address, phone number, email address, EIN, dollar amount of the contract, estimated start date of the contract, estimated completion date of the contract, geographical area in which the contract is to be performed (state, county's city (if applicable)).
The notification shall be mailed to:

Regional Director
Office of Federal Contract Compliance Programs
61 Forsyth Street, SW, Suite 7B75
Atlanta, Georgia 30303-8931
Main Number: 404-893-4545 Fax: 404-893-4546
Regional Director Contact: OFCCP-SE@dol.gov
Construction Award Email: OFCCP-SE-ConstructionAward@dol.gov

4. As used in this Notice, and in the contract resulting from this solicitation, the **"covered area"** is Grayson County.

(Revised: 1/1/2023)

PART IV

INSURANCE

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

PART V

BID ITEMS

234206

PROPOSAL BID ITEMS

Report Date 12/28/22

Section: 0001 - PAVING

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0010	00001		DGA BASE	1,311.00	TON		$	
0020	00003		CRUSHED STONE BASE	16,697.00	TON		$	
0030	00190		LEVELING & WEDGING PG64-22	1,388.00	TON		$	
0040	00212		CL2 ASPH BASE 1.00D PG64-22	18,933.00	TON		$	
0050	00301		CL2 ASPH SURF 0.38D PG64-22	5,530.00	TON		$	
0060	02101		CEM CONC ENT PAVEMENT-8 IN	700.00	SQYD		$	
0070	02562		TEMPORARY SIGNS	430.00	SQFT		$	
0080	02650		MAINTAIN & CONTROL TRAFFIC	1.00	LS		$	
0090	02676		MOBILIZATION FOR MILL & TEXT	1.00	LS		$	
0100	02676		MOBILIZATION FOR MILL & TEXT	1.00	LS		$	
0110	02677		ASPHALT PAVE MILLING & TEXTURING	385.00	TON		$	
0120	06510		PAVE STRIPING-TEMP PAINT-4 IN	90,000.00	LF		$	
0130	06568		PAVE MARKING-THERMO STOP BAR-24IN	40.00	LF		$	
0140	10020NS		FUEL ADJUSTMENT	58,122.00	DOLL	$1.00	$	$58,122.00
0150	10030NS		ASPHALT ADJUSTMENT	107,100.00	DOLL	$1.00	$	$107,100.00
0160	21653ES403		CL2 ASPH SURF NO.4D PG64-22	1,833.00	TON		$	
0170	23625EC		PAVE MARK THERMO-6 IN W CAT TRAXX	225.00	LF		$	
0180	24970EC		ASPHALT MATERIAL FOR TACK NON-TRACKING	81.00	TON		$	

Section: 0002 - ROADWAY

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0190	00078		CRUSHED AGGREGATE SIZE NO 2	750.00	TON		$	
0200	01987		DELINEATOR FOR GUARDRAIL BI DIRECTIONAL WHITE	51.00	EACH		$	
0210	02159		TEMP DITCH	24,485.00	LF		$	
0220	02160		CLEAN TEMP DITCH	12,243.00	LF		$	
0230	02200		ROADWAY EXCAVATION	33,690.00	CUYD		$	
0240	02223		GRANULAR EMBANKMENT	502.00	CUYD		$	
0250	02237		DITCHING	9,794.00	LF		$	
0260	02259		FENCE-TEMP	2,575.00	LF		$	
0270	02268		REMOVE & REPLACE FENCE BARBED WIRE	1,350.00	LF		$	
0280	02268		REMOVE & REPLACE FENCE CHAIN LINK	150.00	LF		$	
0290	02268		REMOVE & REPLACE FENCE WOOD PLANK	200.00	LF		$	
0300	02268		REMOVE & REPLACE FENCE WOVEN WIRE	3,075.00	LF		$	
0310	02360		GUARDRAIL TERMINAL SECTION NO 1	1.00	EACH		$	
0320	02383		REMOVE & RESET GUARDRAIL	500.00	LF		$	
0330	02391		GUARDRAIL END TREATMENT TYPE 4A	15.00	EACH		$	
0340	02483		CHANNEL LINING CLASS II	1,483.00	TON		$	
0350	02545		CLEARING AND GRUBBING 57.54 ACRES	1.00	LS		$	
0360	02562		TEMPORARY SIGNS	800.00	SQFT		$	
0370	02585		EDGE KEY	134.00	LF		$	

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LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0380	02650		MAINTAIN & CONTROL TRAFFIC (GRAYSON KY 259 HSIP)	1.00	LS		$	
0390	02671		PORTABLE CHANGEABLE MESSAGE SIGN	2.00	EACH		$	
0400	02697		EDGELINE RUMBLE STRIPS	97,940.00	LF		$	
0410	02701		TEMP SILT FENCE	24,485.00	LF		$	
0420	02704		SILT TRAP TYPE B	57.00	EACH		$	
0430	02705		SILT TRAP TYPE C	57.00	EACH		$	
0440	02707		CLEAN SILT TRAP TYPE B	57.00	EACH		$	
0450	02708		CLEAN SILT TRAP TYPE C	57.00	EACH		$	
0460	03269		TRIM & REMOVE TREES & BRUSH	875.00	LF		$	
0470	04933		TEMP SIGNAL 2 PHASE	1.00	EACH		$	
0480	05950		EROSION CONTROL BLANKET	38,849.00	SQYD		$	
0490	05952		TEMP MULCH	185,674.00	SQYD		$	
0500	05953		TEMP SEEDING AND PROTECTION	139,255.00	SQYD		$	
0510	05963		INITIAL FERTILIZER	15.00	TON		$	
0520	05964		MAINTENANCE FERTILIZER	9.00	TON		$	
0530	05985		SEEDING AND PROTECTION	191,731.00	SQYD		$	
0540	05989		SPECIAL SEEDING CROWN VETCH	47,933.00	SQYD		$	
0550	05992		AGRICULTURAL LIMESTONE	172.00	TON		$	
0560	06510		PAVE STRIPING-TEMP PAINT-4 IN	195,880.00	LF		$	
0570	06542		PAVE STRIPING-THERMO-6 IN W	97,940.00	LF		$	
0580	06543		PAVE STRIPING-THERMO-6 IN Y	73,455.00	LF		$	
0590	20191ED		OBJECT MARKER TY 3	13.00	EACH		$	
0600	20458ES403		CENTERLINE RUMBLE STRIPS	48,970.00	LF		$	
0610	21289ED		LONGITUDINAL EDGE KEY	32,930.00	LF		$	
0620	21802EN		G/R STEEL W BEAM-S FACE (7 FT POST)	1,993.75	LF		$	

Section: 0003 - DRAINAGE

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0630	00440		ENTRANCE PIPE-15 IN	3,283.00	LF		$	
0640	00441		ENTRANCE PIPE-18 IN	436.00	LF		$	
0650	00462		CULVERT PIPE-18 IN	1,595.00	LF		$	
0660	00464		CULVERT PIPE-24 IN	383.00	LF		$	
0670	00466		CULVERT PIPE-30 IN	58.00	LF		$	
0680	00468		CULVERT PIPE-36 IN	32.00	LF		$	
0690	01204		PIPE CULVERT HEADWALL-18 IN	21.00	EACH		$	
0700	01208		PIPE CULVERT HEADWALL-24 IN	4.00	EACH		$	
0710	01310		REMOVE PIPE	1,025.00	LF		$	
0720	01490		DROP BOX INLET TYPE 1	1.00	EACH		$	
0730	01544		DROP BOX INLET TYPE 11	1.00	EACH		$	
0740	01726		SAFETY BOX INLET-18 IN SDB-1	6.00	EACH		$	
0750	01728		SAFETY BOX INLET-18 IN DBL SDB-5	5.00	EACH		$	
0760	01729		SAFETY BOX INLET-24 IN DBL SDB-5	3.00	EACH		$	
0770	02403		REMOVE CONCRETE MASONRY FOR STA 374+47.11	1.00	CUYD		$	
0780	02403		REMOVE CONCRETE MASONRY FOR STA 593+50.27	1.00	CUYD		$	

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LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0790	02403		REMOVE CONCRETE MASONRY FOR STA 607+59.30	1.00	CUYD		$	
0800	02625		REMOVE HEADWALL	99.00	EACH		$	
0810	02690		SAFELOADING	11.50	CUYD		$	
0820	08002		STRUCTURE EXCAV-SOLID ROCK FOR STA 374+47.11	13.00	CUYD		$	
0830	08002		STRUCTURE EXCAV-SOLID ROCK FOR STA 593+50.27	13.00	CUYD		$	
0840	08002		STRUCTURE EXCAV-SOLID ROCK FOR STA 607+59.30	13.00	CUYD		$	
0850	08003		FOUNDATION PREPARATION FOR STA 374+47.11	1.00	LS		$	
0860	08003		FOUNDATION PREPARATION FOR STA 593+50.27	1.00	LS		$	
0870	08003		FOUNDATION PREPARATION FOR STA 607+59.30	1.00	LS		$	
0880	08100		CONCRETE-CLASS A FOR STA 374+47.11	25.60	CUYD		$	
0890	08100		CONCRETE-CLASS A FOR STA 593+50.27	27.90	CUYD		$	
0900	08100		CONCRETE-CLASS A FOR STA 607+59.30	21.70	CUYD		$	
0910	08150		STEEL REINFORCEMENT FOR STA 374+47.11	2,796.00	LB		$	
0920	08150		STEEL REINFORCEMENT FOR STA 593+50.27	2,933.00	LB		$	
0930	08150		STEEL REINFORCEMENT FOR STA 607+59.30	2,009.00	LB		$	
0940	24575ES610		HEADWALL SLOPED AND MITERED CONC HEADWALL 18"	60.00	EACH		$	
0950	24575ES610		HEADWALL SLOPED AND MITERED CONC HEADWALL 24"	12.00	EACH		$	
0960	24575ES610		HEADWALL SLOPED AND MITERED CONC HEADWALL 30"	2.00	EACH		$	
0970	24583EC		HDPE PIPE LINER HDPE Pipe Liner	300.00	LF		$	
0980	24814EC		PIPELINE INSPECTION	3,014.00	LF		$	
0990	40023		KYTC S&F HEADWALL-18 IN	2.00	EACH		$	

Section: 0004 - UTILITY

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1000	02690		SAFELOADING	40.25	CUYD		$	
1010	14003		W CAP EXISTING MAIN	11.00	EACH		$	
1020	14007		W ENCASEMENT STEEL BORED RANGE 2	207.00	LF		$	
1030	14022		W FLUSH HYDRANT ASSEMBLY	3.00	EACH		$	
1040	14028		W METER 3/4 INCH	18.00	EACH		$	
1050	14047		W PIPE DCTL IRON RSTRND JOINT 06 IN	540.00	LF		$	
1060	14058		W PIPE PVC 04 INCH	375.00	LF		$	
1070	14059		W PIPE PVC 06 INCH	4,905.00	LF		$	

PROPOSAL BID ITEMS

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LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1080	14080		W SERV PE/PLST LONG SIDE 3/4 IN	79.00	EACH		$	
1090	14085		W SERV PE/PLST SHORT SIDE 3/4 IN	4.00	EACH		$	
1100	14089		W TAPPING SLEEVE AND VALVE SIZE 1	14.00	EACH		$	
1110	14124		W VALVE SPECIAL	6.00	EACH		$	
1120	14144		W LINE MARKER	18.00	EACH		$	

Section: 0005 - MISCELLANEOUS

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1130	02726		STAKING (GRAYSON KY 259 HSIP)	1.00	LS		$	

Section: 0006 - DEMOBILIZATION

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1140	02568		MOBILIZATION	1.00	LS		$	
1150	02569		DEMOBILIZATION	1.00	LS		$	