



SHAWNEE COUNTY INVITATION TO BID

Quotation Number: 019-23
Date Issued: 04-06-2023
Closing Date: 04-26-2023, 2:00pm

Vendor Name: _____
Address: _____
Phone Number: _____

1. SHAWNEE COUNTY PROJECT: S-841012.00 SW Nottingham Rd. – SW 33rd St. to SW 37th St. – Full Depth Pavement Reclamation Project
2. BIDS RECEIVED UNTIL: 2:00 P.M., Local Time, Wednesday, April 26, 2023, through the Shawnee County bid portal, www.snco.us/purchasing/.
3. BID OPENING: Bids from the portal will be publically read and recorded at 2:30 PM, Local Time, Wednesday, April 26, 2023, in the County Commission Chambers, 707 SE Quincy, 1st Floor.
4. DESCRIPTION OF MAJOR UNITS OF WORK:

The project will remove and reconstruct SW Nottingham Road from approximately SW 33rd Street to approximately SW 37th Street. The project will include 8" Asphaltic Pavement, Subgrade Treatment (Cement)(8"), Pavement Marking, Traffic Control, Erosion Control, and Seeding.

5. DESIGN ENGINEER: SBB Engineering LLC, 101 S. Kansas Ave., Topeka, KS 66609
6. BID DOCUMENTS: Digital (.pdf) Project Drawings and Project Manual may be obtained free of charge from the bid portal, or by emailing a request to Courtney.Liberato@sbbeng.com.
7. BID SECURITY REQUIREMENTS: All bids must be accompanied by a certified check, cashier's check or a bid bond for not less than five percent (5%) of the amount bid (including alternates), made payable to the County Clerk of Shawnee County, Kansas.
8. PRE-BID CONFERENCE: A pre-bid conference will be held at N/A. Representatives of the Design Engineer and Owner will be present to answer questions. Attendance is N/A (Specify mandatory or optional).
9. SUBMITTAL: Bid Submittal requirements are explained in the Instructions to Bidders.

SHAWNEE COUNTY, KANSAS
SPECIFICATIONS AND CONTRACT
DOCUMENTS

STREET REPAIR PROJECT
Shawnee County Project No. S-841012.00

SW Nottingham Rd. - SW 33rd to SW 37th Street
Full-Depth Pavement Reclamation Project

**DIRECTOR OF PUBLIC WORKS/
SHAWNEE COUNTY ENGINEER**

Curt F. Niehaus, PE

**BOARD OF COUNTY
COMMISSIONERS**

**Bill Riphahn
Chair**

**Kevin Cook
Vice-Chair**

**Aaron Mays
Member**

**Shawnee County
Department of Public Works 1515
NW Saline Street
Topeka, Kansas**

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DOCUMENT 020
INVITATION TO BID

- ## Full Depth Pavement Reclamation Project

The project will remove and reconstruct SW Nottingham Road from approximately SW 33rd Street to approximately SW 37th Street. The project will include 8" Asphaltic Pavement, Subgrade Treatment (Cement)(8"), Pavement Marking, Traffic Control, Erosion Control, and Seeding.

DOCUMENT 100
INSTRUCTIONS TO BIDDERS

1. Defined Terms.

Terms used in these Instructions to Bidders shall have the meanings assigned to them in the General Conditions. The term "Successful Bidder" means the lowest, qualified, responsible Bidder to whom Owner (on the basis of Owner's evaluation as hereinafter provided) makes an award.

2. Copies of Bidding Documents.

2.1. Complete sets of the Bidding Documents in the number and for the deposit sum, if any, stated in the Invitation may be obtained from the office designated in the Invitation to Bid.

2.2. Complete sets of Bidding Documents shall be used in preparing Bids; neither Owner nor Design Engineer assume any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.

2.3. Owner and Design Engineer in making copies of Bidding Documents available on the above terms do so only for the purpose of obtaining Bids on the Work and do not confer a license or grant for any other use.

3. Qualifications of Bidders.

To demonstrate qualifications to perform the Work, the apparent low Bidder must be prepared to submit within five days of Owner's request written evidence of the types set forth in the General or Supplementary Conditions, such as financial data, previous experience and evidence of authority to conduct business in the jurisdiction where the Project is located. Any information furnished pursuant to this section shall be deemed confidential and will not be disclosed by the Owner. Each Bid must contain evidence of Bidder's qualification to do business in the State of Kansas or covenant to obtain such qualification prior to award of the contract.

4. Examination of Contract Documents and Site.

4.1. Before submitting a Bid, each Bidder must (a) examine the Contract Documents thoroughly, (b) visit the site to familiarize himself with local conditions that may in any manner affect cost, progress or performance of the Work, (c) familiarize himself with federal, state and local laws, ordinances, rules and regulations that may in any manner affect cost, progress or performance of the Work; and (d) study and carefully correlate Bidder's observations with the Contract Documents.

4.2. Reference is made to the Supplementary Conditions for the identification of those reports of investigations and tests of subsurface and latent physical conditions at the site or otherwise affecting cost, progress or performance of the Work which have been relied upon by Engineer in preparing the Drawings and Specifications. Owner will make copies of such reports available to any Bidder requesting them. These reports are not guaranteed as to accuracy or completeness, nor are they part of the Contract Documents. Before submitting his Bid each Bidder will, at his own expense, make such additional investigations and tests as the Bidder may deem necessary to determine his Bid for performance of the Work in accordance

with the specified calendar completion dates, price and other terms and conditions of the Contract Documents.

4.3. On request Owner will provide each Bidder access to the site to conduct such investigations and tests as each Bidder deems necessary for submission of his Bid.

4.4. The lands upon which the Work is to be performed, rights-of-way for access thereto and other lands designated for use by Contractor in performing the Work are identified in the Supplementary Conditions, Specifications or Drawings.

4.5. The submission of a Bid will constitute an incontrovertible representation by the Bidder that he has complied with every requirement of this Article 4 and that the Contract Documents are sufficient in scope and detail to indicate and convey understanding of all terms, and conditions for performance of the Work.

5. Interpretations.

All questions about the meaning or intent of the Contract Documents shall be submitted to the Design Engineer as defined in Article 2 of the Agreement in writing at least 10 calendar days prior to the opening of Bids. Replies will be issued by Addenda mailed or delivered to all parties recorded by Engineer as having received the Bidding Documents. Only questions answered by formal written Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.

6. Bid Security.

6.1. Bid Security shall be made payable to Owner, in an amount of five percent of the Bidder's maximum Bid price (including alternates) and in the form of a certified or cashier's check or a Bid Bond issued by a Surety meeting the requirement of paragraph 5.1 of the General Conditions. All forms of Bid Security must be delivered in original form. Facsimile transmission of Bid Security documents will not be accepted.

6.2. The Bid Security of the Successful Bidder will be retained until such Bidder has executed the Agreement and furnished the required Contract Security, whereupon it will be returned; if the successful Bidder fails to execute and deliver the Agreement and furnish the required Contract Security within 10 days of the award of contract, Owner may annul the award and the Bid Security of that bidder will be forfeited to the Owner.

The Bid Security of any Bidder whom Owner believes to have a reasonable chance of receiving the award may be retained by Owner until the seventh day after the "Effective date of the Agreement" (which term is defined in the General Conditions). Bid Security of other Bidders will be returned within seven days of the Bid opening.

7. Calendar Completion Date Contract.

The specified calendar completion dates by which the Work is to be completed is set forth in the Agreement.

8. Liquidated Damages.

Provisions for liquidated damages are set forth in the Agreement.

9. Substitute Material and Equipment.

The Contract, if awarded, will be on the basis of material and equipment described in the Drawings or specified in the Specifications without consideration of possible substitute or "or equal" items. Whenever it is indicated in the Drawings or allowed by Specifications that a substitute or an "or equal" item of material or equipment may be furnished or used by Contractor if acceptable to Engineer, application for such acceptance will not be considered by Engineer until after the "Effective date of the Agreement". The procedure for submittal of any such application by Contractor and consideration by Engineer is set forth in paragraphs 6.7.1, 6.7.2 and 6.7.3 of the General Conditions which may be supplemented in the Specifications.

10. Subcontractors, etc.

10.1. Bidder must submit to Owner, as part of their Bid Form, a complete list of all Subcontractors and other persons and organizations (including those who will be furnishing the principal items of material and equipment) proposed to be used by the bidder to complete this project. Failure by the Bidder to provide this list with his bid shall render the bid nonresponsive. If requested by the Owner, the Successful Bidder shall submit to the owner, in writing, an experience statement with pertinent information as to similar projects and other evidence of qualifications for each such Subcontractor, person and organization listed on the Bid Form. If Owner or Engineer, after due investigation, has reasonable objection to any proposed Subcontractor, other person or organization, either Owner or Engineer may before giving the award of contract, request the apparent Successful Bidder to submit an acceptable substitute without an increase in Bid Price. If the apparent Successful Bidder declines to make any such substitution, the contract shall not be awarded to such Bidder, but his declining to make any such substitution will not constitute grounds for sacrificing his Bid Security. Any Subcontractor, other person or organization so listed and to whom Owner or Engineer does not make written objection prior to giving the award of contract, will be deemed acceptable to Owner and Engineer. Substitutions to this list of acceptable Subcontractors and other persons and organizations after the apparent Successful Bidder has been awarded a contract by the Owner will not be allowed without the written approval of the Owner or Engineer.

10.2. No Contractor shall be required to employ any Subcontractor, other person or organization against whom he has reasonable objection.

10.3. No Subcontractor who is on the Owner's "List of Suspended Contractors" as of the date of the opening of Bids may be employed by the Contractor on the project. A current list of suspended contractors may be obtained from the County Clerk's Office.

10.4. The amount of the Work performed by Subcontractors in aggregate shall not exceed seventy (70) percent of the Total Bid in accordance with paragraph 6.8.3 of the General Conditions. A contract will not be awarded to a bidder not in compliance with this requirement.

11. Bid Form.

11.1. The Bid Form is included in this Project Manual; additional copies may be obtained from the office designated in the Invitation to Bid.

11.2. Bid Forms must be typed and submitted through the Shawnee County bid portal, www.snco.us/purchasing/.

11.3. Bids by corporations must be executed in the corporate name by the president or a vice-president (or other corporate officer accompanied by evidence of authority to sign) and the corporate seal must be affixed and attested by the secretary or an assistant secretary. The corporate address shall be shown below the signature.

11.4. Bids by partnerships must be executed in the partnership name and signed by a partner whose title must appear under the signature and the official address of the partnership must be shown below the signature.

11.5. All names must be typed or printed below the signature.

11.6. The Bid shall contain an acknowledgment of receipt of all Addenda (the numbers of which shall be filled in on the Bid Form).

11.7. The address to which communications regarding the Bid are to be directed must be shown, if different than that required above.

12. Submission of Bids.

12.1. Bids must be submitted on a duly executed copy of the Bid Form obtainable as designated in the Invitation to Bid.

12.2. Bids shall be submitted at the time and place indicated in the Invitation to Bid and shall be included in an opaque sealed envelope marked with the Project title and name and address of the Bidder and accompanied by the Bid Security and other required documents. Bids received after the closing time indicated in the Invitation to Bid will be rejected.

12.3. Bids will not be accepted from any Contractor who is on the Owner's "List of Suspended Contractors" as of the date of the Opening of Bids. Bids received from suspended Contractors will automatically be rejected.

13. Modification and Withdrawal of Bids.

13.1. Bids may be modified or withdrawn by an appropriate document duly executed (in the manner that a Bid must be executed) and delivered to the place where Bids are to be submitted at any time prior to the opening of Bids.

13.2. If, within twenty-four hours after Bids are opened, any Bidder files a duly signed written notice with Owner and promptly thereafter demonstrates to the reasonable satisfaction of Owner that there was a material and substantial mistake in the preparation of his Bid, Owner may, at its sole discretion, allow that bidder to withdraw his Bid and the Bid Security will be returned.

14. Opening of Bids.

Bids will be read publicly as noted on the Invitation to Bid.

15. Bids to Remain Open.

All Bids shall remain open for thirty (30) days after the day of the bid opening, but Owner may, in his sole discretion, release any Bid and return the Bid Security prior to that date.

16. Award of Contract.

16.1. Owner reserves the right to reject any and all Bids, to waive any and all informalities and to negotiate contract terms with the Successful Bidder. Owner reserves the right to reject all nonconforming, nonresponsive or conditional Bids. Discrepancies in the indicated multiplication of unit prices and quantities shall be resolved in favor of the correct multiplication based on the unit prices indicated. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.

16.2. In evaluating Bids, Owner shall consider the qualifications of the Bidders, whether or not the Bids comply with the prescribed requirements and alternates and unit prices if requested in the Bid forms. It is Owner's intent to accept alternates (if any are accepted) in the order in which they are listed in the Bid form but Owner may accept them in any order or combination.

16.3. Owner may consider the qualifications, experience and financial ability of Subcontractors and other persons and organizations (including those who are to furnish the principal items of material or equipment) proposed for those portions of the Work as to which the identity of Subcontractors and other persons and organizations must be submitted as provided in the General Conditions. Operating costs, maintenance considerations, performance data and guarantees of materials and equipment may also be considered by Owner.

16.4. Owner reserves the right to reject the Bid of any Bidder who does not pass any such evaluation to Owner's satisfaction.

16.5. If the contract is to be awarded it will be awarded to the lowest Bidder whose evaluation by Owner indicates to Owner that the award will be in the best interests of the Owner.

16.6. If the contract is to be awarded, Owner will notify the Successful Bidder within thirty (30) days after the day of the Bid opening.

17. Performance and Other Bonds.

Paragraph 5.1 of the General Conditions sets forth Owner's requirements as to performance and other Bonds. When the Successful Bidder delivers the executed Agreement to Owner, it shall be accompanied by the required Contract Security.

18. Signing of Agreement.

Owner will notify the apparent low Bidder in writing that their bid will be recommended for award of contract, it will be accompanied by at least three unsigned counterparts of the Agreement and all other Contract Documents. Contractor shall sign and deliver all counterparts of the Agreement to Owner with all other Contract Documents attached by the date and time specified in Document 820,

Supplementary Conditions. The Contractor shall also submit certificates of insurance in accordance with paragraph 2.1 of the General Conditions and an estimated construction schedule in accordance with paragraph 2.6 of the General Conditions with the executed Agreement. Within ten days after contract award, Owner will deliver all fully signed counterparts to Contractor.

19. Sales Taxes.

19.1. For all projects, payment of Kansas State Sales Tax or Compensating (Use) tax is not necessary and should not be included in unit prices bid for materials to be incorporated in the work. The County Engineer will furnish an exemption certificate (including exemption certificate number) obtained from the Sales and Compensating Tax Division of the Department of Revenue of the State of Kansas to the Contractor, Subcontractor or repairmen making purchases of any tangible personal property to be incorporated in this project. The Contractor, Subcontractor or repairmen must furnish all suppliers with a copy of the properly executed exemption certificate secured for this project. He may reproduce as many copies of the certificate as he may need.

20. State Registration of Out-of-State Contractors.

Bidders are advised that K.S.A. 79-1008, 79-1009 requires the registration of out-of-state contractors with the Director of Revenue for collection of tax.

21. Non-Resident Bidders.

Attention is directed to Section 16-113 and 16-114 of the Kansas Statutes Annotated which requires that any Non-Resident Contractor who undertakes the construction of any public improvement to be paid for out of public funds, must appoint in writing and file with the Kansas Secretary of State, some person (resident in Shawnee County, Kansas) on whom service may be had in any civil action which may arise out of such contractual relation.

22. Equal Employment Opportunity.

It is the policy of Shawnee County, Kansas to require that all bidders and contractors are expected to comply with the provisions of K.S.A. 44-1030 and 44-1031 and other applicable Federal and Kansas laws governing equal employment opportunity.

22.1. Comply with K.S. A. 44-1030 requiring that:

- a. The Contractor shall observe the provisions of the Kansas act against discrimination and shall not discriminate against any person in the performance of work under the present contract because of race, religion, color, sex, physical handicap unrelated to such person's ability to engage in the particular work, national origin or ancestry;
- b. In all solicitations or advertisements for employees, the Contractor shall include the phrase, "equal opportunity employer," or a similar phrase to be approved by the commission;
- c. If the Contractor fails to comply with the manner in which the Contractor reports to the commission in accordance with the provisions of K.S.A. 44-1031, the Contractor shall be deemed to have breached the present contract and it may be cancelled, terminated or suspended, in whole or in part, by the Owner;

- d. If the Contractor is found guilty of a violation of the Kansas act against discrimination under a decision or order of the commission which has become final, the Contractor shall be deemed to have breached the present contract and it may be cancelled, terminated or suspended, in whole or in part, by the Owner; and
- e. The Contractor shall include the provisions of paragraphs (a) through (d) inclusively of this subsection 22.1. in every sub-contract or purchase order so that such provisions will be binding upon such Subcontractor or vendor.

22.2. Guarantee that during the performance of any County contract or agreement the Contractor, Subcontractor, vendor, or supplier of the County shall comply with all provisions of the Civil Rights Act of 1964, The Equal Employment Opportunity Act of 1972, Executive Order 11246, Age Discrimination in Employment Act of 1967, Part 20 Title 41 of the Code of Federal Regulations, Rehabilitation Act of 1973.

23. Standard Technical Specifications.

This project shall be subject to the latest revisions of the City of Topeka and Shawnee County Standard Technical Specifications, with any addenda thereto, except as modified or supplemented by specifications contained in this Project Manual and Kansas Department of Transportation Specifications for Road and Bridges, latest edition and addendum.

DOCUMENT 101
MODIFICATIONS TO INSTRUCTIONS TO BIDDERS

These modifications to the Instruction to Bidders amend or supplement the Instruction to Bidders, Document 100, of this Project Manual, as listed below. All provisions which are not so amended or supplemented shall remain in full force and effect.

- 1) Bids must be submitted through the Shawnee County bid portal, www.snco.us/purchasing/.

DOCUMENT 330
BID FORM

TO: Board of County Commissioners
200 S.E. 7th St., Room B-11
Topeka, Kansas 66603

Project No. and Description: S-841012.00 SW Nottingham Rd. – SW 33rd St. to SW 37th St. –

Full Depth Pavement Reclamation Project

1. The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an agreement with Owner in the form included in the contract Documents to perform and furnish all Work as specified or indicated in the Contract Documents for the Contract Price and be complete by the Calendar Completion Dates indicated in this Bid and in accordance with the other terms and conditions of the Contract Documents.

2. Bidder accepts all of the terms and conditions of the Invitation to Bid and Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for thirty (30) days after the day of Bid opening. Bidder will sign and submit the Agreement with the Bonds and other documents required by the Bidding Requirements within ten days after receipt of the award of contract and Contract Documents from the Owner.

3. In submitting this Bid, Bidder represents, as more fully set forth in the Agreement, that:

a. Bidder has examined copies of all the bidding Documents and of the following Addenda (receipt of all which is hereby acknowledged):

| Date | Number |
|-------|--------|
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |

b. Bidder has familiarized itself with the nature and extent of the Contract Documents, Work, site, locality, and all local conditions and Laws and Regulations that in any manner may affect cost, progress, performance or furnishing of the Work.

c. Bidder has studied carefully all reports and drawings of subsurface conditions and drawings of physical conditions which are identified in the Supplementary Conditions as provided in paragraph 4.2 of the General Conditions, and accepts the determination set forth in the Supplementary Conditions (if applicable) of the extent of the technical data contained in such reports and drawings upon which Bidder is entitled to rely.

d. Bidder has obtained and carefully studied (or assumes responsibility for obtaining and carefully studying) all such examinations, investigations, explorations, tests and studies (in addition to or to supplement these referred to in (c) above) which pertain to the subsurface or physical conditions at the site or otherwise may affect the cost, progress, performance or furnishing of the Work as Bidder considers necessary for the performance or furnishing of the Work at the Contract Price, by the Calendar Completion Date and in accordance with the other terms and conditions of the Contract Documents, including specifically the provisions of paragraph 4.2 of the General Conditions; and no additional examinations, investigations, explorations, tests, reports or similar information or data are or will be required by Bidder for such purposes.

e. Bidder has reviewed and checked all information and data shown or indicated on the Contract Documents with respect to existing Underground Facilities at or contiguous to the site and assumes responsibility for the accurate location of said Underground Facilities. No additional examinations, investigations, explorations, tests, reports or similar information or data in respect of said Underground Facilities are or will be required by Bidder in order to perform and furnish the Work at the Contract Price, by the Calendar Completion Date and in accordance with the other terms and conditions of the Contract Documents, including specifically the provisions of paragraph 4.3 of the General Conditions.

f. Bidder has correlated the results of all such observations, examinations, investigations, explorations, tests, reports and studies with the terms and conditions of the Contract Documents.

g. Bidder has given the Design Engineer written notice of all conflicts, errors or discrepancies that it has discovered in the Contract Documents and the written resolution thereof by Engineer is acceptable to Bidder.

h. This Bid is genuine and not made in the interest of or on behalf of any undisclosed person, firm or corporation and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation; Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid; Bidder has not solicited or induced any person, firm or corporation to refrain from bidding; and Bidder has not sought by collusion to obtain for itself any advantage over any other bidder or over Owner.

Project No. and Description: S-841012.00 SW Nottingham Rd. – SW 33rd St. to SW 37th St. –
Full Depth Pavement Reclamation Project

4. Bidder will complete the Work for the following price(s):

| <u>ITEM</u> | <u>DESCRIPTION</u> | <u>QTY</u> | <u>UNITS</u> | <u>UNIT PRICE</u> | <u>TOTAL</u> |
|-------------|--|------------|--------------|-------------------|--------------|
| 1 | CONSTRUCTON STAKING | 1 | LS | _____ | _____ |
| 2 | PAVEMENT REMOVAL | 10,452 | SY | _____ | _____ |
| 3 | SUBGRADE TREATMENT (CEMENT)(8") | 11,268 | SY | _____ | _____ |
| 4 | 8" ASPHALTIC CONCRETE | 10,411 | SY | _____ | _____ |
| 5 | PAVEMENT MARKING (THERMOPLASTIC)(WHITE)(4") | 7,597 | LF | _____ | _____ |
| 6 | PAVEMENT MARKING (THERMOPLASTIC)(YELLOW)(4") | 7,473 | LF | _____ | _____ |
| 7 | SILT FENCE (ALLOWANCE) | 4,000 | LF | _____ | _____ |
| 8 | SEEDING, FERTILIZING, & MULCHING | 1 | LS | _____ | _____ |
| 9 | PORTABLE CHANGEABLE MESSAGE SIGN | 6 | DAYS | _____ | _____ |
| 10 | TEMPORARY TRAFFIC CONTROL | 1 | LS | _____ | _____ |

TOTAL BID \$ _____

NOTE: Quantities bid are estimates only. Shawnee County reserves the right to increase or decrease quantities, as necessary, with no change in the Unit Bid Price.

5. Quantities are estimated. Final payment will be based on actual quantities unless otherwise stated in the Contract Documents.
6. Bidder agrees that the Work will be substantially complete by the calendar completion date for substantial completion given in the Agreement and General Conditions.
7. Bidder accepts the provisions of the Agreement for Liquidated Damages in the event of failure to complete the work by the calendar completion date.
8. The following documents are attached to and made a condition of this Bid:
 - a. Required Bid Security in the form of a certified or bank check or a bid bond in accordance with the provisions of the Instructions to Bidders.
 - b. List of Subcontractors/Suppliers.
9. The terms used in this Bid which are defined in the General Conditions included as part of the Contract Documents have the meanings assigned to them in the General Conditions.

SUBMITTED on _____, 2023

Name of Bidder a(n) _____
(individual, partnership, corporation)

Address of Bidder

Telephone Number

By: _____, (Corporate Seal)
Authorized Person

Title

Project Number: S-841012.00

Contractor's Name: _____

List of Subcontractors/Suppliers

The Bidder is required to furnish the following information in accordance with the provisions of Section 100, Instructions to Bidders for ALL Subcontractors. Each Supplier performing more than 10 % of the Total Bid shall also be furnished. Do not list alternate subcontractors/suppliers for the same work. The Contractor shall list only one subcontractor/supplier for each such portion of Work as is defined by the Contractor in his bid. Contractor shall not substitute any person as subcontractor/supplier in the place of a subcontractor/supplier listed below, except as provided in Section 100.

The Bidder understands that if he fails to specify a subcontractor/supplier for any portion of the Work to be performed under the contract or specifies more than one subcontractor/supplier for the same portion of the Work, he shall be deemed to have agreed that he is fully qualified to perform that portion himself and that he shall not be permitted to sublet or subcontract that portion of the Work, except as provided in Section 100.

Subcontractor: _____
Amount: _____ (\$ _____)
(words)

Subcontractor: _____
Amount: _____ (\$ _____)
(words)

Subcontractor: _____
Amount: _____ (\$ _____)
(words)

Subcontractor: _____
Amount: _____ (\$ _____)
(words)

DOCUMENT 530
AGREEMENT

THIS AGREEMENT is dated as of the _____ day of _____ in the year 2022
by and between Shawnee County, Kansas (hereinafter called Owner) and
_____ (hereinafter called Contractor).
Owner and Contractor in consideration of the mutual covenants hereinafter set forth, agree as follows:

Article 1. Work.

Contractor shall complete all Work as specified or indicated in the Contract Documents. The Project for which the Work under the Contract Documents is to be performed is: S-841012.00 SW Nottingham Rd. – SW 33rd St. to SW 37th St. – Full-Depth Pavement Reclamation Project

Article 2. Engineer.

The project has been designed by SBB Engineering LLC
The Design Engineer is hereinafter designated as the Engineer and is to act as Owner's project representative, assume all duties and responsibilities and have the rights and authority assigned to Engineer in the Contract Documents in connection with completion of the Work in accordance with the Contract Documents.

Article 3. Calendar Completion Date Contract.

3.1. This is a Calendar Completion Date contract. The Work will commence with an issuance of a Work Order by the Owner on Monday, May 29, 2023 provided the Contractor complies with the required submittal times for the executed Agreement and its counterparts, and be substantially completed on or before Close of Business Friday, August 11, 2023 and completed and ready for final payment and acceptance in accordance with paragraph 14.13 of the General Conditions on or before Close of Business Friday, August 18, 2023.

3.2. Liquidated Damages. Owner and Contractor recognize that time is of the essence of this Agreement and that Owner will suffer financial loss if the Work is not completed by the calendar completion dates specified in paragraph 3.1 above. They also recognize the delays, expense and difficulties involved in proving in a legal proceeding the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty) Contractor shall pay Owner according to the following schedule:

| Contract Amount | Substantial Completion Liquidated Damages | Final Payment and Acceptance Liquidated Damages |
|----------------------------------|--|---|
| \$0 to \$500,000 | \$750.00 | \$750.00 |
| \$500,000.01 to \$1,000,000 | \$1,250.00 | \$750.00 |
| \$1,000,000.01 to \$1,500,000 | \$2,000.00 | \$1,250.00 |
| \$1,500,000.01 to \$2,000,000 | \$2,500.00 | \$1,500.00 |
| \$2,000,000.01 to \$5,000,000 | \$3,000.00 | \$2,000.00 |
| \$5,000,000.01 and up | \$5,000.00 | \$3,000.00 |

For each day that expires after the date specified in paragraph 3.1 for Substantial Completion until the work is certified by the engineer as Substantially Complete and after certification of Substantial Completion if Contractor neglects, refuses or fails to complete the remaining Work by the calendar completion date for Final Payment and Acceptance. The Owner shall deduct the accrued liquidated damages from the final payment due to the Contractor.

Article 4. Contract Price.

4.1. Owner shall pay Contractor for completion of the Work in accordance with the Contract Documents in current funds as per the Contractor's Bid, which is attached as an exhibit to this Agreement.

Article 5. Payment Procedures.

Applications for Payment shall be in accordance with Article 14 of the General Conditions.

5.1. Progress Payments. Owner shall make progress payments on account of the Contract Price on the basis of Contractor's signed Applications for Payment as recommended by Engineer within thirty-five (35) days following the end of the period for which payment is being requested, provided the application for payment is submitted within seven (7) days following the end of the period. Period shall end on the last calendar day of each month. All progress payments will be based on the number of units or estimated percentage of the Work completed in accordance with paragraph 14.1 of the General Conditions.

5.1.1. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below, but, in each case, less the aggregate of payments previously made and less such amounts as Engineer shall determine, or Owner may withhold, in accordance with paragraph 14.7 of the General Conditions.

- (1) 90% of Work completed. If the project has been 50% completed as determined by Engineer, and if the character and progress of the Work have been satisfactory to Owner and Engineer upon written request by the Contractor, Owner, may determine that as long as the character and progress of the Work remain

satisfactory to them, that the retainage on account of Work completed be reduced or eliminated. Reduction or elimination of the retainage will be at the sole discretion of the Owner.

- (2) 0 % of materials and equipment not incorporated in the Work (but delivered, suitably stored and accompanied by documentation satisfactory to Owner as provided in paragraph 14.2 of the General Conditions).

5.1.2. Upon Substantial Completion, in an amount sufficient to increase total payments to Contractor to 95% of the Contract Price, less such amounts as Engineer shall determine, or Owner may withhold, in accordance with paragraph 14.7 of the General Conditions.

5.2. Final Payment. Upon final completion and acceptance of the Work in accordance with paragraph 14.13 of the General Conditions, Owner shall pay the remainder of the Contract Price as recommended by Engineer as provided in said paragraph 14.13.

5.3. Interest. All monies not paid when due hereunder shall not bear interest.

Article 6. Contractor's Representations.

In order to induce Owner to enter into this Agreement, Contractor represents that he fully complies with the requirements stated in paragraphs 3b. through 3g. of the Bid Form, which is attached as an exhibit to this Agreement.

Article 7. Contract Documents.

The Contract Documents which comprise the entire agreement between Owner and Contractor concerning the Work consist of the following:

- 7.1. This Agreement.
- 7.2. Performance and other Bonds contained in this Project Manual.
- 7.3. Work Order.
- 7.4. General Conditions, Doc 700 (available at Shawnee County Department of Public Works Office, 1515 NW Saline Street, Topeka, Kansas or on-line at www.snco.us/publicworks)
- 7.5. Supplementary Conditions contained in this Project Manual, if any.
- 7.6. City of Topeka and Shawnee County Standard Technical Specifications, 2016 Edition with any addenda thereto and KDOT Standard Specification for Road & Bridges, latest edition with any addenda thereto.
- 7.7. Specifications contained in this Project Manual, if any.
- 7.8. Project Drawings, bearing the following title: S-841012.00 SW Nottingham Rd. – SW 33rd St. to SW 37th St. – Full-Depth Pavement Reclamation Project
- 7.9. Addenda _____ to _____, inclusive.
- 7.10. Contractor's Bid, including all attachments to Bid, which is attached as an exhibit to this Agreement.
- 7.11. The following which may be delivered or issued after the Effective Date of the Agreement and are not attached hereto: All Change Orders and other documents amending,

modifying, or supplementing the Contract Documents pursuant to paragraphs 3.4 and 3.5 of the General Conditions.

There are no Contract Documents other than those listed above in this Article 7. The Contract Documents may only be amended, modified or supplemented as provided in paragraphs 3.4 and 3.5 of the General Conditions.

Article 8. Suspension of Contractor.

8.1. Contractor may be placed on Owner's "List of Suspended Contractors" for a period of time from the date of written notification by Owner if Contractor fails to perform in accordance with specific provisions stated in paragraph 8.2 of this Article 8. The period of Suspension shall be established as follows:

First Suspension - 1 year

Second Suspension - 2 years

Third Suspension - Permanent

During the period of suspension, the Contractor will not be permitted to submit a bid to Owner to perform Work either directly or indirectly or as a subcontractor.

8.2. The Contractor shall be suspended upon written notification by Owner:

8.2.1. If Contractor exceeds the date established for substantial completion or final payment and acceptance as indicated in paragraph 3.1, or

8.2.2. Upon occurrence of any of the events stated in paragraph 15.2 of the General Conditions.

8.2.3. If Contractor fails to complete any outstanding "One-Year Correction Period" work, as defined in paragraph 13.12 of the General Conditions, on previously completed projects within 90 calendar days of written notification by the Owner, the Contractor will be placed on Owners "List of Suspended Contractors", as defined in paragraph 8.1, Article 8. Suspension of Contractor, and shall remain suspended until such time as the corrective work has been certified as complete in writing by the Owner.

Article 9. Miscellaneous.

9.1. Terms used in this Agreement which are defined in Article 1 of the General Conditions will have the meanings indicated in the General Conditions.

9.2. No assignment by a party hereto of any rights under or interests in the Contract Documents will be binding on another party hereto without the written consent of the party sought to be bound; and specifically but without limitation moneys that may become due and moneys that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

9.3. Owner and Contractor each binds itself, its partners, successors, assigns and legal representatives to the other party hereto, its partners, successors, assigns and legal representatives in respect of all covenants, agreements and obligations contained in the Contract Documents.

IN WITNESS WHEREOF, Owner and Contractor have signed this Agreement in triplicate. One counterpart each has been delivered to Owner, Contractor and Design Engineer. All portions of the Contract Documents have been signed or identified by Owner and Contractor or by Design Engineer on their behalf.

OWNER: Shawnee County, Kansas

CONTRACTOR _____

By: _____
Chair,
Board of County Commissioners

By: _____

[CORPORATE SEAL]

Attest: _____
Shawnee County Clerk

Attest: _____

Date: _____

Attachment To
Shawnee County Contract C _____

CONTRACTUAL PROVISIONS ATTACHMENT

The undersigned parties agree that the following provisions are hereby incorporated into the contract to which it is attached and made a part thereof, said contract being dated the _____ day of _____, 2022.

1. **TERMS HEREIN CONTROLLING PROVISIONS.** It is expressly agreed that the terms of each and every provision in this attachment shall prevail and control over the terms of any other conflicting provision in any other document relating to and a part of the contract in which this attachment is incorporated.
2. **AGREEMENT WITH KANSAS LAW.** It is agreed by and between the undersigned that all disputes and matters whatsoever arising under, in connection with or incident to this contract shall be litigated, if at all, in and before a Court located in the State of Kansas, U.S.A., to the exclusion of the Courts of any other states or country. All contractual agreements shall be subject to, governed by, and construed according to the laws of the State of Kansas.
3. **TERMINATION DUE TO LACK OF FUNDING APPROPRIATION.** Shawnee County is subject to the Kansas Cash Basis Law, K.S.A. 10-1101 *et seq.* If, in the judgment of the Financial Administrator, Audit-Finance Office, sufficient funds are not appropriated to continue the function performed in this agreement and for the payment of the charges hereunder, County may terminate this agreement at the end of its current fiscal year. County agrees to give written notice of termination to contractor at least thirty (30) days prior to the end of its current fiscal year. In the event this agreement is terminated pursuant to this paragraph, County will pay to the contractor all regular contractual payments incurred through the end of such fiscal year. The termination of the contract pursuant to this paragraph shall not cause any penalty to be charged to the County or the contractor.
4. **DISCLAIMER OF LIABILITY.** Neither the County of Shawnee nor any department thereof shall hold harmless or indemnify any contractor for any liability whatsoever.
5. **ANTI-DISCRIMINATION CLAUSE.** The contractor agrees: (a) to comply with the Kansas Act Against Discrimination (K.S.A. 44-1001 *et seq.*) and the Kansas Age Discrimination in Employment Act, (K.S.A. 44-1111 *et seq.*) and the applicable provisions of the Americans With Disabilities Act (42 U.S.C. 12101 *et seq.*) [ADA] and to not discriminate against any person because of race, religion, color, sex, disability, national origin or ancestry, or age in the admission of access to or treatment or employment in, its programs or activities; (b) to include in all solicitations or advertisements for employees, the phrase "equal opportunity employer"; (c) to comply with the reporting requirements set out in K.S.A. 44-1031 and K.S.A. 44-1116; (d) to include those provisions in every subcontract or purchase order so that they are binding upon such subcontractor or vendor; (e) that a failure to comply with the reporting requirements of (c) above or if the contractor is found guilty of any violation of such acts by the Kansas Human Rights Commission, such violation shall constitute a breach of contract; (f) if the contracting agency determines that the contractor has violated applicable provisions of ADA, that violation shall constitute a breach of contract; (g) if (e) or (f) occurs, the contract may be cancelled, terminated or suspended in whole or in part by the County. Parties to this contract understand that subsections (b) through (e) of this paragraph number 5 are not applicable to a contractor who employs fewer than four employees or whose contract with the County totals \$5,000 or less during this fiscal year.

6. **ACCEPTANCE OF CONTRACT.** This contract shall not be considered accepted, approved or otherwise effective until the required approvals and certifications have been given and this is signed by the Board of County Commissioners of the County of Shawnee, Kansas.
7. **ARBITRATION, DAMAGES, WARRANTIES.** Notwithstanding any language to the contrary, no interpretation shall be allowed to find the County has agreed to binding arbitration, or the payment of damages or penalties upon the occurrence of a contingency. Further, the County shall not agree to pay attorney fees and late payment charges; and no provisions will be given effect which attempts to exclude, modify, disclaim or otherwise attempt to limit implied warranties of merchantability and fitness for a particular purpose.
8. **REPRESENTATIVE'S AUTHORITY TO CONTRACT.** By signing this document, the representative of the contractor thereby represents that such person is duly authorized by the contractor to execute this document on behalf of the contractor and that the contractor agrees to be bound by the provisions thereof.
9. **RESPONSIBILITY FOR TAXES.** The County shall not be responsible for, nor indemnify a contractor for, any federal, state or local taxes which may be imposed or levied upon the subject matter of this contract.
10. **INSURANCE.** The County shall not be required to purchase, any insurance against loss or damage to any personal property to which this contract relates, nor shall this contract require the County to establish a "self-insurance" fund to protect against any such loss or damage. Subject to the provisions of the Kansas Tort Claims Act (K.S.A. 75-6101 *et seq.*), the vendor or lessor shall bear the risk of any loss or damage to any personal property to which vendor or lessor holds title.
11. **AUTOMATED CLEARING HOUSE (ACH).** Shawnee County prefers to pay its vendor invoices via electronic funds transfers through the automated clearing house (ACH) network. Shawnee County may require vendors to accept payments via ACH. To initiate payment of invoices, vendors shall execute the County's standard ACH Vendor Payment Authorization Agreement. Upon verification of the data provided, the Payment Authorization Agreement will authorize the County to deposit payment for services rendered or goods provided directly into vendor accounts with financial institutions. All payments shall be made in United States currency.

VENDOR/CONTRACTOR:

By: _____

Title: _____

Date: _____

**BOARD OF COUNTY COMMISSIONERS
SHAWNEE COUNTY, KANSAS**

Bill Riphahn, Chair

Date: _____

ATTEST:

Cynthia A. Beck, Shawnee County Clerk

Performance Bond

Any singular reference to Contractor, Surety, Owner of other party shall be considered plural where applicable.

CONTRACTOR (Name and Address):

SURETY (Name and Address of Principal Place of Business):

OWNER (Name and Address):

CONTRACT

Date:

Amount:

Description (Name and Location): S-841012.00 - SW Nottingham Rd. - SW 33rd St. to SW 37th St.
Full-Depth Pavement Reclamation Project
Shawnee County, KS

BOND

Date (Not earlier than Contract Date):

Amount:

Modifications to this Bond Form:

Surety and Contractor, intending to be legally bound hereby, subject to the terms printed on the reverse side hereof, do each cause this Performance Bond to be duly executed on its behalf by its authorized officer, agent or representative.

CONTRACTOR AS PRINCIPAL

Company: (Corp. Seal)

Signature: _____
Name and Title:

SURETY

Company: (Corp. Seal)

Signature: _____
Name and Title:
(Attach Power of Attorney)

(Space is provided below for signatures of additional parties, if required.)

CONTRACTOR AS PRINCIPAL

Company: (Corp. Seal)

Signature: _____
Name and Title:

SURETY

Company: (Corp. Seal)

Signature: _____
Name and Title:

EJCDC No. 1910-28-A (1996 Edition)

Originally prepared through the joint efforts of the Surety Association of America, Engineers Joint Contract Documents Committee, the Associated General Contractors of America, and the American Institute of Architects.

1. The CONTRACTOR and the Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner for the performance of the Contract, which is incorporated herein by reference.

2. If the CONTRACTOR performs the Contract, the Surety and the CONTRACTOR have no obligation under this Bond, except to participate in conferences as provided in paragraph 3.1.

3. If there is no OWNER Default, the Surety's obligation under this Bond shall arise after:

3.1. The OWNER has notified the CONTRACTOR and the Surety at the addresses described in paragraph 10 below, that the OWNER is considering declaring a CONTRACTOR Default and has requested and attempted to arrange a conference with the CONTRACTOR and the Surety to be held not later than fifteen days after receipt of such notice to discuss methods of performing the Contract. If the OWNER, the CONTRACTOR and the Surety agree, the CONTRACTOR shall be allowed a reasonable time to perform the Contract, but such an agreement shall not waive the OWNER's right, if any, subsequently to declare a CONTRACTOR Default; and

3.2. The OWNER has declared a CONTRACTOR Default and formally terminated the CONTRACTOR's right to complete the Contract. Such CONTRACTOR Default shall not be declared earlier than twenty days after the CONTRACTOR and Surety have received notice as provided in paragraph 3.1; and

3.3. The OWNER has agreed to pay the Balance of the Contract Price to:

3.3.1. The Surety in accordance with the terms of the Contract;

3.3.2. Another contractor selected pursuant to paragraph 4.3 to perform the Contract.

4. When the OWNER has satisfied the conditions of paragraph 3, the Surety shall promptly and at the Surety's expense take one of the following actions:

4.1. Arrange for the CONTRACTOR, with consent of the OWNER, to perform and complete the Contract; or

4.2. Undertake to perform and complete the Contract itself, through its agents or through independent contractors; or

4.3. Obtain bids or negotiated proposals from qualified contractors acceptable to the OWNER for a contract for performance and completion of the Contract, arrange for a contract to be prepared for execution by the OWNER and the contractor selected with the OWNER's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the Bonds issued on the Contract, and pay to the OWNER the amount of damages as described in paragraph 6 in excess of the Balance of the Contract Price incurred by the OWNER resulting from the CONTRACTOR Default; or

4.4. Waive its right to perform and complete, arrange for completion, or obtain a new contractor and with reasonable promptness under the circumstances;

4.4.1. After investigation, determine the amount for which it may be liable to the OWNER and, as soon as practicable after the amount is determined, tender payment therefor to the OWNER; or

4.4.2. Deny liability in whole or in part and notify the OWNER citing reasons therefor.

5. If the Surety does not proceed as provided in paragraph 4 with reasonable promptness, the Surety shall be deemed to be in default on this Bond fifteen days after receipt of an additional written notice from the OWNER to the Surety demanding that the Surety perform its obligations under this Bond, and the OWNER shall be entitled to enforce any remedy available to the OWNER. If the Surety proceeds as provided in paragraph 4.4, and the OWNER refuses the payment tendered or the Surety has denied liability, in

whole or in part, without further notice the OWNER shall be entitled to enforce any remedy available to the OWNER.

6. After the OWNER has terminated the CONTRACTOR's right to complete the Contract, and if the Surety elects to act under paragraph 4.1, 4.2, or 4.3 above, then the responsibilities of the Surety to the OWNER shall not be greater than those of the CONTRACTOR under the Contract, and the responsibilities of the OWNER to the Surety shall not be greater than those of the OWNER under the Contract. To a limit of the amount of this Bond, but subject to commitment by the OWNER of the Balance of the Contract Price to mitigation of costs and damages on the Contract, the Surety is obligated without duplication for:

6.1. The responsibilities of the CONTRACTOR for correction of defective Work and completion of the Contract;

6.2. Additional legal, design professional and delay costs resulting from the CONTRACTOR's Default, and resulting from the actions or failure to act of the Surety under paragraph 4; and

6.3. Liquidated damages, or if no liquidated damages are specified in the Contract, actual damages caused by delayed performance or non-performance of the CONTRACTOR.

7. The Surety shall not be liable to the OWNER or others for obligations of the CONTRACTOR that are unrelated to the Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the OWNER or its heirs, executors, administrators, or successors.

8. The Surety hereby waives notice of any change, including changes of time, to the Contract or to related subcontracts, purchase orders and other obligations.

9. Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the Work or part of the Work is located and shall be instituted within two years after CONTRACTOR Default or within two years after the CONTRACTOR ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

10. Notice to the Surety, the OWNER or the CONTRACTOR shall be mailed or delivered to the address shown on the signature page.

11. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the Contract was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted here from and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. The intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

12. Definitions.

12.1. Balance of the Contract Price: The total amount payable by the OWNER to the CONTRACTOR under the Contract after all proper adjustments have been made, including allowance to the CONTRACTOR of any amounts received or to be received by the OWNER in settlement of insurance or other Claims for damages to which the CONTRACTOR is entitled, reduced by all valid and proper payments made to or on behalf of the CONTRACTOR under the Contract.

12.2. Contract: The agreement between the OWNER and the CONTRACTOR identified on the signature page, including all Contract Documents and changes thereto.

12.3. CONTRACTOR Default: Failure of the CONTRACTOR, which has neither been remedied nor waived, to perform or otherwise to comply with the terms of the Contract.

12.4. OWNER Default: Failure of the OWNER, which has neither been remedied nor waived, to pay the CONTRACTOR as required by the Contract or to perform and complete or comply with the other terms thereof.

(FOR INFORMATION ONLY---Name, Address and Telephone)
AGENT or BROKER: OWNER'S REPRESENTATIVE (Engineer or other party):

STATUTORY BOND

KNOW ALL MEN BY THESE PRESENTS:

THAT we, the undersigned _____ of _____, hereinafter referred to as "CONTRACTOR", and _____ a corporation organized under the laws of the State of _____, and authorized to transact business in the State of Kansas, as "Surety", are held and firmly bound unto the State of Kansas, in the penal sum of _____ Dollars (\$ _____), lawful money of the United States of America, for the payment of which sum well and truly to be made, we bind ourselves, or heirs, executors, administrators, successors and assigns, jointly and severally by these presents.

THE CONDITION OF THE FOREGOING OBLIGATION IS SUCH THAT:

WHEREAS, the above bonded CONTRACTOR has, on the _____ day of _____, 20_____, entered into the Public Improvement Agreement with the Shawnee County, Kansas, for the construction of the public improvements described in the attached contract documents and below.

Shawnee County Project S-841012.00: SW Nottingham Rd. - SW 33rd St. to SW 37th St.
Full-Depth Pavement Reclamation Project
Date of Project: May 11, 2023

NOW, THEREFORE, if the CONTRACTOR and his SUBCONTRACTORS shall pay all indebtedness incurred for supplies, materials, or labor furnished, used or consumed in connection with, or in, or about the construction or making of, public improvements, including gasoline, lubricating oils, fuel oils, greases, coal, and similar items used or consumed directly in furtherance of such improvements, this obligation shall be void; otherwise it shall remain in full force and effect.

PROVIDED FURTHER, that the surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration, or addition to the terms of the contract or to the work to be performed thereunder, or the specifications accompanying the same, shall in any way affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alteration, or addition to the terms of the contract or to the specifications.

PROVIDED FURTHER, that the surety agrees that any person to whom there is due any sum for supplies, materials, or labor, as herein before stated, or his assigns, may bring an action on this bond for the recovery of the indebtedness; PROVIDED, that no action shall be brought on the bond after six (6) months from the completion of the public improvements.

IN TESTIMONY WHEREOF, the CONTRACTOR has hereunto set his hand, and said surety has caused these presents to be executed in its name and its corporate seal to be hereunto affixed by its attorney-in-fact duly authorized to do so at _____ on this _____ day of _____, 20__.

NAME

(NAME PRINTED)

(ADDRESS)

(TELEPHONE)

BY

TITLE

Surety

By _____
Attorney-in-Fact

Address

Phone No.

By _____
State Representative

(Accompany this bond with the attorney-in-fact's authority from the surety company certified to include the date of bond).

WHEREBY certify that the above bond is approved and that said bond has been filed in the records of _____ County, this _____ day of _____, 20__.

Clerk of the District Court

DOCUMENT 820
SUPPLEMENTARY CONDITIONS

These Supplementary Conditions amend, modify or supplement the General Conditions for Shawnee County Department of Public Works Construction Projects, Document 700, and other provisions of the Contract Documents, the Standard Technical Specifications or the Drawings, as indicated below. All provisions which are not so amended, modified or supplemented shall remain in full force and effect.

SC-1: The Contractor shall use the following dates in preparation of the Progress Schedule:

| Item | Description | Due Date |
|----------|--|---|
| 1 | Bid Opening @ 2:00 PM in Commission Chambers, Shawnee County Courthouse | Wednesday, April 26, 2023 |
| 2 | Contractor returns three (3) executed Contracts, Bonds and Insurance to Shawnee County Public Works | Wednesday May 3, 2023 |
| 3 | Contract Awarded by Board of County Commissioners | Thursday, May 11, 2023 |
| 4 | Pre-Construction Conference | Wednesday, May 17, 2023 |
| 5 | Construction Start Work Order | Monday, May 29, 2023 |
| 6 | Substantial Completion | Close of Business Friday August 11, 2023 |
| 7 | Final Payment & Acceptance | Close of Business Friday August 18, 2023 |

ALL materials, equipment and work provided for on this project shall be in accordance with City of Topeka and Shawnee County Standard Technical Specifications, 2016 Edition and as supplemented by the following Supplemental Conditions and KDOT Standard Specifications for Road & Bridges.

DOCUMENT 830
SUBMITTAL CONTROL SHEET

| Project: SW Nottingham Rd. (SW 33rd St. to SW 37th St.) - Pavement Reclamation Project | | | | | | | | | | | | Project Manager: | | | | |
|--|-------------------------------|---------|-----------|---------------------|------------------|------------------|-------------|----------------|------------------|-------|-------------------|------------------|------------------------|-----------------------------|--------------------------|-------|
| Project No.: S-841012.00 | | | | | | | | | | | | Contractor: | | | | |
| Section No. | Specifications Section Title | Samples | Shop Dwg. | Matl. Or Parts List | Descriptive Data | Mfrgs Literature | Mix Designs | Certifications | Operation Instr. | Tests | Date of Submittal | Date Rejected | Date Revise & Resubmit | Date Make Corrections Noted | Date No Exceptions Taken | Notes |
| 3.11 | Cement for Subgrade Treatment | | | | X | | X | X | | | | | | | | |
| 7.00 | Asphaltic Pavement | | | | X | | X | X | | X | | | | | | |
| 4.22 | Pavement Markings | | | | X | | | X | | | | | | | | |
| 4.19 | Seeding Materials | | | | X | | | X | | | | | | | | |
| 4.07 | Crushed Rock Surfacing | | | | X | | | X | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |

Note: Contractor shall furnish all specified submittal's indicated on the Submittal Control Sheet as directed by the Engineer.

11/1/2021

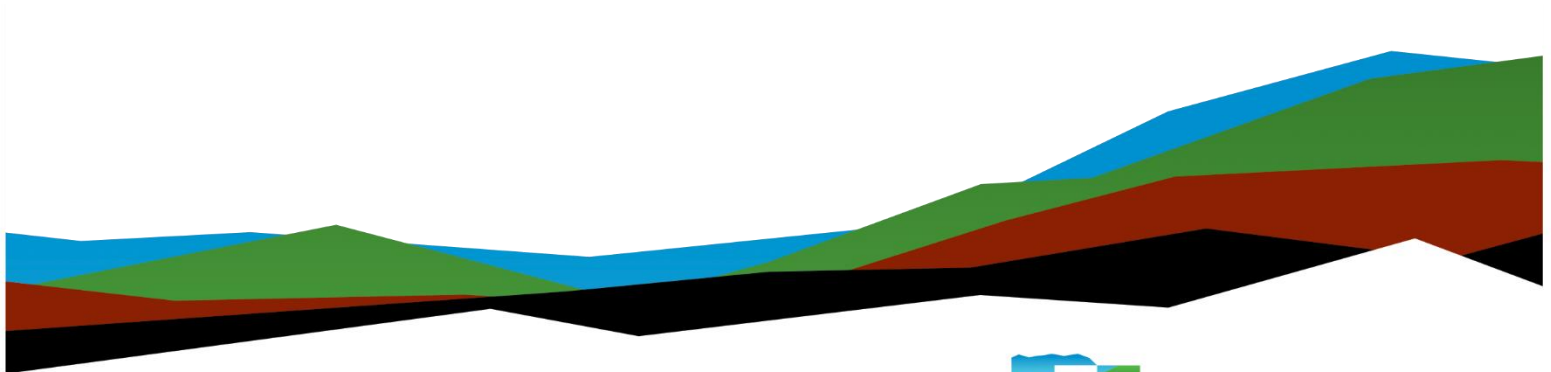
SW Nottingham Road Improvements

Geotechnical Engineering Report

March 15, 2023 | Terracon Project No. 14235004

Prepared for:

Shawnee County Public Works
Department
Topeka, Kansas



Nationwide
[Terracon.com](https://www.terracon.com)

- Facilities
- Environmental
- Geotechnical
- Materials



2016 SW 37th Street
Topeka, KS 66611
(785) 267-3310
Terracon.com

March 15, 2023

Shawnee County Public Works Department
1515 NW Saline Street, Suite 200
Topeka, Kansas

Attn: Mr. Curt Niehaus
P: (785) 251-6077
E: Curt.Niehaus@snco.us

Re: Geotechnical Engineering Report
SW Nottingham Road Improvements
Along SW Nottingham Rd. between SW 33rd St. and SW 37th St.
Topeka, Kansas
Terracon Project No. 14235004

Dear Mr. Niehaus:

We have completed a subsurface exploration and geotechnical engineering evaluation for the referenced project in general accordance with Terracon Proposal No. P14235004 dated January 17, 2023. This report presents the findings of the subsurface exploration and provides geotechnical recommendations concerning earthwork and the design and construction of the pavements for the proposed project.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning this report or if we may be of further service, please contact us.

Sincerely,

Terracon

Michael A. Snapp, P.E.
Geotechnical Engineer
Kansas PE: 27005

Stephen B. Pretsch, P.E.
Office Manager
Kansas PE: 16602

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Attachments


Exploration and Testing Procedures

Site Location and Exploration Plans

Exploration and Laboratory Results

- Boring Logs with Laboratory Data
- GeoModel

Supporting Information

Note: This report was originally delivered in a web-based format. **Blue Bold** text in the report indicates a referenced section heading. The PDF version also includes hyperlinks which direct the reader to that section and clicking on the  logo will bring you back to this page. For more interactive features, please view your project online at client.terracon.com.

Refer to each individual Attachment for a listing of contents.

Introduction

This report presents the results of our subsurface exploration and Geotechnical Engineering services performed for the proposed road improvements to be located along SW Nottingham Road between SW 33rd Street and SW 37th Street in Topeka, Kansas. The purpose of these services was to provide information and geotechnical engineering recommendations relative to:

- Subsurface soil conditions
- Groundwater conditions
- Site preparation and earthwork
- Pavements

Drawings showing the site and boring locations are shown on the attached [Site Location](#) and [Exploration Plan](#). The results of the laboratory testing performed on soil samples obtained from the site during our field exploration are included on the boring logs in [Exploration Results](#).

Project Description

Our initial understanding of the project was provided in our proposal and was discussed during project planning. A period of collaboration has transpired since the project was initiated, and our final understanding of the project conditions is as follows:

| Item | Description |
|-----------------------------|---|
| Information Provided | Our understanding of the project is from conversations with the Client. |
| Project Description | The project will include the removal and reconstruction of SW Nottingham Road. We understand an adjacent project that includes improvements to the Lake Sherwood Dam will impact the planned road improvements at two possible locations. A new pipe section will cross Nottingham Road near the entrance to the South Topeka Wastewater Treatment Facility. In addition, pipe drainage may be designed below Nottingham Road along Lake Sherwood's primary spillway located north of SW 37 th Street. We were informed the pipe crossings will be designed and installed by others outside of the current road improvement project. |
| Grading/Slopes | We understand grade modifications will be limited to outside of the commercial and residential driveway connections. |

| Item | Description |
|------------------|---|
| Pavements | <p>We understand SW Nottingham Road will be reconstructed with asphaltic concrete. However, the pipe crossings may occur over the winter months, which will necessitate using Portland cement concrete sections over the limited distances. We understand the pavement sections will not have curb and gutter constructed.</p> <p>The following traffic information was provided:</p> <p><u>North Bound</u></p> <ul style="list-style-type: none"> • Average Daily Traffic (ADT): 1,759 north • Of the ADT as buses: 14 • Approximately 1% trucks <p><u>South Bound</u></p> <ul style="list-style-type: none"> • Average Daily Traffic (ADT): 1,852 South • Of the ADT as buses: 21 • Approximately 1% trucks |

Terracon should be notified if any of the above information is inconsistent with the planned construction, as modifications to our recommendations may be necessary.

Site Conditions

The following description of site conditions is derived from our site visit in association with the field exploration and our review of publicly available geologic and topographic maps.

| Item | Description |
|------------------------------|--|
| Project Location | <p>The project is located along SW Nottingham Road between SW 33rd Street and SW 37th Street in Topeka, Kansas.</p> <p>See Exhibit D – Site Location</p> |
| Existing Improvements | <p>The general area of the project is improved with an existing asphaltic concrete road that services both residential and commercial development. Much of the roadway is located downslope of the earth dam and primary spillway for Lake Sherwood.</p> |
| Current Ground Cover | <p>Asphaltic concrete road</p> |

Geotechnical Characterization

We have developed a general characterization of the subsurface conditions based on the subsurface exploration, laboratory data, geologic setting, and our understanding of the project. This characterization, termed GeoModel, forms the basis of our geotechnical evaluation. Conditions observed at each boring location are indicated on the individual logs. The individual logs and GeoModel are in the [Exploration Results](#) section of this report.

The borings were observed during drilling and shortly after completion of drilling for the presence and level of water. Groundwater was not observed at these times during our exploration. A longer period of time may be required for groundwater to develop and stabilize in a borehole. Longer term observations in piezometers or observation wells, sealed from the influence of surface water, are often required to define groundwater levels.

Groundwater levels may fluctuate due to seasonal variations in the amount of rainfall, runoff, and other factors not evident at the time the borings were performed. "Perched" water could occur above lower permeability soil layers and "trapped" water could be present within existing fill materials. Therefore, groundwater conditions at other times may be different than the conditions encountered in our exploratory borings. The potential for water level fluctuations and perched water should be considered when developing design and construction plans and specifications for the project.

Geotechnical Overview

Based on the results of the subsurface exploration, laboratory testing, and our analyses, it is our opinion the pavement subgrade soils will require some degree of remediation prior to paving operations.

Existing fill and possible fill materials were encountered in Borings B-2, B-3, B-4, B-6, and B-7 to depths ranging from approximately 2½ to 10 feet below existing grade. It should be noted the borings did not fully penetrate the fill and possible fill materials at B-2, B-4 and B-6. We expect the existing fill encountered in the borings to be associated with grading performed during the original construction of SW Nottingham Road. As such, existing fill should be expected in unexplored areas of the site, possibly to greater extents.

Pavements supported over fill not placed with strict moisture and density control may not perform predictably. As such, we recommend the existing fill be further evaluated and tested during construction. This evaluation would likely include, but not be limited to, the excavation of test pits, performing field moisture and density tests, and/or proofrolling. Any existing fill that is unstable or does not meet the moisture, density and

material requirements detailed in the **Earthwork** section should be removed to a horizontal distance of two feet outside the proposed paving limits.

Based on the materials recovered from our borings, it appears the existing fill would generally be suitable for reuse as engineered fill below the pavement section. However, unsuitable materials could be encountered during general site grading. Soil containing debris or organics, if encountered, should not be used as engineered fill. We encourage the owner to secure unit rates that include costs for exporting unsuitable materials and importing approved replacement materials, if required. The owner or contractor could consider a contingency budget to provide for additional earthwork items such as moisture conditioning dry subgrade soils, repairing soft subgrade soils, and remediating uncontrolled existing fill.

Clay soils are not an ideal subgrade for pavements. The clay soils that predominately exist in this locale generally have moderate to high potential, low permeability (and thus poor internal drainage), low strength when saturated and are moderately susceptible to frost action. If relatively well compacted to a high degree and left undisturbed, these subgrade soils can satisfactorily support pavements. It should be noted that a uniformly moisture conditioned and compacted subgrade should result in more uniform performance of the pavement.

The recommendations contained in this report are based upon the results of field and laboratory testing (presented in the **Exploration Results**), engineering analyses, and our current understanding of the proposed project. The **General Comments** section provides an understanding of the report limitations.

Earthwork

Site preparation, excavation, subgrade preparation and placement of engineered fill should follow the recommendations presented in this section. The recommendations presented for design and construction of earth-supported elements such as pavements are contingent upon the recommendations outlined in this section being followed. We recommend earthwork on this project be observed and evaluated by Terracon. The evaluation of earthwork should include observation and testing of subgrade preparation, engineered fill and other geotechnical conditions exposed during the construction of the project.

Site Preparation

Prior to placing any new fill, all pavements and unsuitable material including but not limited to vegetation and organic soils should be removed from the construction areas. Existing fill present in areas to be paved should be further evaluated. Any existing fill not placed with moisture and density control as detailed in section **Fill Compaction and**

Compaction Requirements should be removed. After stripping and removal of unsuitable materials, the exposed subgrade soils should be proofrolled with a loaded tandem-axle dump truck. Unstable materials identified by proofrolling should be removed and replaced with suitable compacted structural fill or stabilized using methods as described below in the **Soil Stabilization** section.

Subgrade Stabilization

Soft subgrade conditions as a result of weather impacts could occur at the site. In general (weather permitting), scarifying, drying and compacting the exposed subgrades is expected to be the most economical means of improving these soils prior to placing new fill. However, this option is typically less effective where soft/wet soils are more than about one foot thick. Alternatives for subgrade stabilization could include undercutting unsuitable soils (wet, low strength, and/or disturbed), incorporating crushed limestone aggregate (typically on the order of 12 to 30 inches thick) to improve subgrade stability, and/or the incorporation of a chemical additive such as portland cement or Class C fly ash. The need for stabilization, and the most appropriate type of stabilization, will be dependent upon soil, groundwater, and weather conditions at the time of construction. The proposed grading plan, the construction schedule, and construction methods will also affect the selection of stabilization method. Terracon should be retained during construction to help provide recommendations as needed.

Fill Material Types

Fill required to achieve design grades should be classified as engineered fill. Engineered fill could be further classified as structural fill and general fill. Structural fill is material used below pavements. General fill is material used to achieve grade outside of these areas.

Reuse of On-Site Soil: Excavated on-site native and existing fill soils may be selectively reused as engineered fill. Material property requirements for on-site soil for use as general fill and engineered fill are noted in the table below:

| Fill Type ¹ | USCS Classification | Acceptable Location for Placement |
|--|------------------------|------------------------------------|
| Native fat clays and/or lean to fat clays (LL \geq 45 and/or PI \geq 23) | CH, CL/CH ² | > 8 inches below pavement subgrade |
| Existing fill | CH, CL/CH, or CL | > 8 inches below pavement subgrade |
| Native lean clays (LL<45 and 5<PI<23) | CL | > 8 inches below pavement subgrade |

Imported Fill Materials: Imported fill materials should meet the following material property requirements. Regardless of its source, engineered fill should consist of approved materials that are free of organic matter and debris. Frozen material should not be used, and fill should not be placed on a frozen subgrade.

| Fill Type ¹ | USCS Classification | Acceptable Location for Placement |
|--|------------------------|------------------------------------|
| Native fat clays and/or lean to fat clays (LL \geq 45 and/or PI \geq 23) | CH, CL/CH ² | > 8 inches below pavement subgrade |
| Native lean clays (LL<45 and 5<PI<23) | CL | > 8 inches below pavement subgrade |
| Cement modified soils | N/A ³ | All locations and elevations |
| Well graded granular | GM ⁴ | All locations and elevations |

1. Engineered fill should consist of approved materials that are free of organic matter and debris. Frozen material should not be used, and fill should not be placed on a frozen subgrade.
2. By our definition, cohesive soils with a liquid limit of 46 to 49 and/or plastic index of 22 or greater are classified as lean to fat clay (with the borderline symbol CL/CH) to alert of the expansive potential of moderate plasticity clay soils (see ASTM D2487, Section 1.1, Note 1).
3. If designed and constructed as recommended herein.
4. KDOT AB-1 or AB-3 crushed limestone base or other dense graded crushed rock approved by Terracon.

Fill Placement and Compaction Requirements

Structural and general fill should meet the following compaction requirements.

| Item | Structural Fill | General Fill |
|---|---|-------------------------|
| Maximum Lift Thickness | 9 inches or less in loose thickness when heavy, self-propelled compaction equipment is used 4 to 6 inches in loose thickness when hand-guided equipment (i.e. jumping jack or plate compactor) is used | Same as structural fill |
| Minimum Compaction Requirements ^{1,2,3} | 95% of max. for cohesive soils | 92% of max. |

| Item | Structural Fill | General Fill |
|---|--|--|
| Water Content Range ¹ | Low plasticity cohesive (LL<45): -2% to +2% of optimum High plasticity cohesive (LL≥45): 0 to +4% of optimum Granular: -3% to +3% of optimum | As required to achieve min. compaction requirements ⁴ |

1. Maximum density and optimum water content as determined by the standard Proctor test (ASTM D 698).
2. High plasticity cohesive fill should not be compacted to more than 100% of standard Proctor maximum dry density.
3. If the granular material is a coarse sand or gravel, or of a uniform size, or has a low fines content, compaction comparison to relative density may be more appropriate. In this case, granular materials should be compacted to at least 70% relative density (ASTM D 4253 and D 4254). Materials not amenable to density testing should be placed and compacted to a stable condition observed by the Geotechnical Engineer or representative.
4. Typically -3% to +3% of optimum

Earthwork Construction Considerations

Care should be taken to avoid disturbance of prepared subgrades. Unstable subgrade conditions can develop during general construction operations, particularly if the soils are wetted and/or subjected to repetitive construction traffic. If unstable subgrade conditions develop, stabilization measures will need to be employed. Construction traffic over the completed subgrade should be avoided to the extent practical. If the subgrade becomes frozen, desiccated, saturated, or disturbed, the affected materials should be removed or these materials should be scarified, moisture conditioned, and compacted prior to floor slab construction.

As a minimum, excavations should be performed in accordance with OSHA 29 CFR, Part 1926, Subpart P, "Excavations" and its appendices, and in accordance with any applicable local, state, and federal safety regulations. The contractor should be aware that slope height, slope inclination, and excavation depth should in no instance exceed those specified by these safety regulations. Flatter slopes than those dictated by these regulations may be required depending upon the soil conditions encountered and other external factors. These regulations are strictly enforced and if they are not followed, the owner, contractor, and/or earthwork and utility subcontractor could be liable and subject to substantial penalties. Under no circumstances should the information provided in this report be interpreted to mean that Terracon is responsible for construction site safety or the contractor's activities. Construction site safety is the sole responsibility of the contractor who shall also be solely responsible for the means, methods, and sequencing of the construction operations.

Construction Observation and Testing

The earthwork efforts should be observed by the Geotechnical Engineer (or others under their direction). Observation should include documentation of adequate removal of surficial materials (vegetation, topsoil, and pavements), evaluation of existing fill materials, as well as proofrolling and mitigation of unsuitable areas delineated by the proofroll.

Each lift of compacted fill should be tested, evaluated, and reworked, as necessary, as recommended by the Geotechnical Engineer prior to placement of additional lifts. Each lift of fill should be tested for density and water content at a frequency of at least one test for every 2,500 square feet of compacted fill in the building areas and 5,000 square feet in pavement areas. Where not specified by local ordinance, one density and water content test should be performed for every 100 linear feet of compacted utility trench backfill and a minimum of one test performed for every 12 vertical inches of compacted backfill.

In addition to the documentation of the essential parameters necessary for construction, the continuation of the Geotechnical Engineer into the construction phase of the project provides the continuity to maintain the Geotechnical Engineer's evaluation of subsurface conditions, including assessing variations and associated design changes.

Pavements

Pavement Subgrade Preparation

The liquid limit and/or plasticity index values determined from the Atterberg limits tests performed on a sample from Boring B-1 and B-6 exceeds the City of Topeka/Shawnee County Department of Public Work's Liquid Limit and Plasticity Index requirements. In addition, we understand the prepared pavement subgrade must perform satisfactory under construction loads during the placement of the paving materials. Based on our understanding of the requirements and the variability of the soils encountered, we recommend modifying the subgrade soils with cement, which will require microcracking as described below. The modified zone should extend at least 3 feet beyond the edge of the roadway.

We recommend applying the cementitious agent at an application rate of 6 percent by dry weight of the soil within the upper 8 inches of soil subgrade. Materials mixed with cementitious agent should be compacted to at least 95 percent of the maximum dry density per ASTM D698 and at moisture contents within 2 percentage points of their optimum moisture. In our opinion, either dry portland cement or a cement slurry could be utilized to construct the modified subgrade. Slurry mixtures can provide added benefit by reducing problems associated with fugitive dust (i.e. blowing, hazards to nearby traffic or other

improvements, etc.). The cement stabilizing agent shall be mixed within 1 hour of placement, and grading and final compaction shall be completed within 3 hours after thoroughly mixing into the soil/aggregate. Mixing should only be performed when the soil has a minimum temperature of 45°F (at a depth 4 inches below the surface) and the air temperature is rising.

Dry portland cement should be distributed uniformly by a cyclone, screw-type, or pressure manifold distributor with the application rate approved by the geotechnical engineer. Dry portland cement shall not be applied when wind conditions create problems in adjacent areas or create a hazard to traffic on any adjacent roadway where fugitive dust can be observed as determined by the geotechnical engineer. The spreading of dry portland cement shall be limited to an amount which can be incorporated into the soil within one hour. If weather causes stoppage of work or exposes dry portland cement to washing or blowing, additional cement may be spread when the work resumes. The dry portland cement, soil, and water shall be thoroughly mixed by rotary speed mixers or a disc harrow. The mixing shall continue until a homogenous layer of the required thickness has been obtained.

Following cement subgrade modification, either a concrete or asphalt surface can be constructed. If asphalt surface is planned, we recommend microcracking the cement-treated subgrade with a steel-wheel smooth drum vibratory roller after 1 to 2 days of curing, combined with a minimum 3-day moist cure period after microcracking, to assist in reducing the severity of cracking for asphalt pavement (i.e. crack width and total crack length). In our opinion, the roller used for microcracking should be similar or equivalent to the vibratory steel roller used in for compaction. We recommend performing light weight deflectometer (LWD) testing in conjunction with the microcracking operations to evaluate the dynamic deflection modulus before and after microcracking the modified subgrade. A stiffness reduction ranging from 40 to 60 percent should be expected after the completed microcracking operation. In addition, we recommend performing LWD testing on the modified subgrade 7 days after completing microcracking operations to evaluate the recovered stiffness prior to placement of asphalt. The LWD test data should be reviewed by Terracon to evaluate the resulting subgrade stiffness and to determine when placement of asphalt would be recommended.

Cement modification may not be economically feasible to repair patches of pavement where the pipe crossings are currently planned given the limited construction areas and the possible wintertime construction. As an alternative, crushed rock could be used for pavement support. If an aggregate base is desired, we recommend placing an 8-inch thick layer of dense graded crushed limestone (KDOT AB-3 or AB-1) placed and compacted as described in section **Fill Compaction and Compaction Requirements**. It should be noted this option would likely require the removal of existing subgrade soils, which should be accounted for in budget estimates.

Pavement Section Thicknesses

We understand from the Client that SW Nottingham Avenue is classified as a Collector and, per the Topeka Street Design Criteria, the design parameters for this type of street include a 25-year design life, reliability of 90%, initial serviceability is 4.5 and a terminal serviceability of 2.0. Based upon provided traffic information, we utilized the higher average daily traffic (ADT) of the south bound lane consisting of 1,852 with up to 1% of the ADT as truck traffic. We estimated the equivalent single axle loads (ESALs) for this project at 1,200,000 (flexible). If heavier or lighter traffic loading is expected, Terracon should be provided with the information and should be allowed to review the recommended pavement sections.

Minimum Pavement Section Thicknesses (inches)

| Asphalt Concrete Surface Course ¹ | Asphalt Concrete Base Course ² | Pavement Subgrade Improvements | Total Thickness |
|--|---|--------------------------------|-----------------|
| 2.0 | 6.0 | 8.0 ³ | 16.0 |

1. Surface course material should conform to the current City of Topeka and Shawnee County Standard Technical Specifications. We recommend the surface course asphalt not contain recycled asphalt product (RAP). The mix design should utilize the appropriate Performance Graded (PG) asphalt cement for the project location and traffic.
2. Base course material should conform to the current City of Topeka and Shawnee County Standard Technical Specifications. The maximum allowable RAP in the base course mixes should be limited to 10%. The mix design should utilize the appropriate PG asphalt cement for the project location and traffic. We recommend applying a prime coat to the cement-modified soil surface at the end of the curing period if applicable
3. The pavement subgrade should be cement improved as detailed in section **Pavement Subgrade Preparation**. As an alternative in pipe crossing areas, a crushed aggregate base could be used.

As previously noted, we understand the installation of a new pipe section near the entrance to the South Topeka Wastewater Treatment Facility and a new pipe drainage structure below Nottingham Road along Lake Sherwood's primary spillway is currently under design by others and may be constructed after the reconstruction of Nottingham Road is completed. We also understand these pipe crossings may occur over the winter months, necessitating the use of concrete pavements as a patch. If concrete pavement sections are used, we recommend the pavement section be at least 8-inches thick placed over an 8-inch section crushed rock as detailed in the **Pavement Subgrade Preparation** section.

Construction traffic on the pavements was not considered in developing our opinions of minimum pavement thickness. If the pavements will be subject to construction equipment/vehicles, the pavement sections should be revised to consider the additional loading.

Pavements and subgrades will be subject to freeze-thaw cycles and seasonal fluctuations in moisture content. Pavement thickness design methods are intended to provide adequate thickness of structural materials over a particular subgrade such that wheel loads are reduced to a level that the subgrade can support. The subgrade support parameters for pavement thickness design do not account for shrink/swell movements of a subgrade constructed of expansive clay soils. Therefore, the pavement may be adequate from a structural standpoint, yet still experience cracking and deformation due to shrink/swell related movement of the subgrade.

The pavement sections provided above consider that the subgrade soils will not experience significant changes in moisture content. Paved areas should be sloped to provide rapid drainage of surface water and to drain water away from the pavement edges. Pavements should be designed so water does not accumulate on or adjacent to the pavement, since this could saturate and soften the subgrade soils and subsequently accelerate pavement deterioration.

Pavement Maintenance

The pavement sections represent minimum recommended thicknesses, and periodic maintenance and repairs should be anticipated. Preventive maintenance should be planned and provided for through an on-going pavement management program. Maintenance activities are intended to slow the rate of pavement deterioration and to preserve the pavement investment. Pavement care consists of both localized (e.g., crack sealing, joint sealing, and patching) and global maintenance (e.g., surface sealing). Additional engineering consultation is recommended to determine the type and extent of a cost-effective program. Even with periodic maintenance, some movements and related cracking may still occur, and repairs may be required.

Pavement performance is affected by the pavement's surroundings. In addition to providing preventive maintenance, the civil engineer should consider the following recommendations in the design and layout of pavements:

- Final grade adjacent to paved areas should slope down from the edges at a minimum 2%.
- Subgrade and pavement surfaces should have a minimum 2% slope to promote proper surface drainage.
- Install pavement drainage systems surrounding areas anticipated for frequent wetting.
- Install joint sealant and seal cracks immediately.
- Seal all landscaped areas in or adjacent to pavements to reduce moisture migration to subgrade soils.
- Place compacted, low permeability backfill against the exterior side of curb and gutter.

- Place curb, gutter and/or sidewalk directly on clay subgrade soils rather than on unbound granular base course materials.

General Comments

Our analysis and opinions are based upon our understanding of the project, the geotechnical conditions in the area, and the data obtained from our site exploration. Variations will occur between exploration point locations or due to the modifying effects of construction or weather. The nature and extent of such variations may not become evident until during or after construction. Terracon should be retained as the Geotechnical Engineer, where noted in this report, to provide observation and testing services during pertinent construction phases. If variations appear, we can provide further evaluation and supplemental recommendations. If variations are noted in the absence of our observation and testing services on-site, we should be immediately notified so that we can provide evaluation and supplemental recommendations.

Support of pavements above existing fill is discussed in this report. Even with the construction observation/testing recommended in this report, the owner must accept the risk that unsuitable materials within or buried by the fill will not be discovered. This may result in larger than normal settlement and damage to slabs and pavements supported above existing fill, requiring additional maintenance. This risk cannot be eliminated without removing the existing fill from below the building and pavement areas, but it can be reduced by thorough observation and testing as discussed herein.

Our Scope of Services does not include either specifically or by implication any environmental or biological (e.g., mold, fungi, bacteria) assessment of the site or identification or prevention of pollutants, hazardous materials or conditions. If the owner is concerned about the potential for such contamination or pollution, other studies should be undertaken.

Our services and any correspondence are intended for the sole benefit and exclusive use of our client for specific application to the project discussed and are accomplished in accordance with generally accepted geotechnical engineering practices with no third-party beneficiaries intended. Any third-party access to services or correspondence is solely for information purposes to support the services provided by Terracon to our client. Reliance upon the services and any work product is limited to our client and is not intended for third parties. Any use or reliance of the provided information by third parties is done solely at their own risk. No warranties, either express or implied, are intended or made.

Site characteristics as provided are for design purposes and not to estimate excavation cost. Any use of our report in that regard is done at the sole risk of the excavating cost estimator as there may be variations on the site that are not apparent in the data that could significantly impact excavation cost. Any parties charged with estimating

excavation costs should seek their own site characterization for specific purposes to obtain the specific level of detail necessary for costing. Site safety, cost estimating, excavation support, and dewatering requirements/design are the responsibility of others. Construction and site development have the potential to affect adjacent properties. Such impacts can include damages due to vibration, modification of groundwater/surface water flow during construction, foundation movement due to undermining or subsidence from excavation, as well as noise or air quality concerns. Evaluation of these items on nearby properties are commonly associated with contractor means and methods and are not addressed in this report. The owner and contractor should consider a preconstruction/precondition survey of surrounding development. If changes in the nature, design, or location of the project are planned, our conclusions and recommendations shall not be considered valid unless we review the changes and either verify or modify our conclusions in writing.

Geotechnical Engineering Report

SW Nottingham Road Improvements | Topeka, Kansas

March 15, 2023 | Terracon Project No. 14235004



Attachments

Exploration and Testing Procedures

Field Exploration

| Number of Borings | Approximate Boring Depth (feet) | Location |
|-------------------|---------------------------------|---------------------------------|
| 7 | 10 | Along the existing road section |

Boring Layout and Elevations: Terracon personnel provided the boring layout using handheld GPS equipment (estimated horizontal accuracy of about ±10 feet) and referencing existing site features. Approximate ground surface elevations estimated using Google Earth. If elevations and a more precise boring layout are desired, we recommend the borings be surveyed.

Subsurface Exploration Procedures: We advanced the borings with a track-mounted rotary drill rig using continuous flight augers (solid stem and/or hollow stem, as necessary, depending on soil conditions). Three samples were obtained in the upper 10 feet of each boring and at intervals of 5 feet thereafter. In the thin-walled tube sampling procedure, a thin-walled, seamless steel tube with a sharp cutting edge was pushed hydraulically into the soil to obtain a relatively undisturbed sample. In the split-barrel sampling procedure, a standard 2-inch outer diameter split-barrel sampling spoon was driven into the ground by a 140-pound automatic hammer falling a distance of 30 inches. The number of blows required to advance the sampling spoon the last 12 inches of a normal 18-inch penetration is recorded as the Standard Penetration Test (SPT) resistance value. The SPT resistance values, also referred to as N-values, are indicated on the boring logs at the test depths.

We also observed the boreholes while drilling and at the completion of drilling for the presence of groundwater. Groundwater was not observed at these times in the boreholes.

The sampling depths, penetration distances, and other sampling information was recorded on the field boring logs. The samples were placed in appropriate containers and taken to our soil laboratory for testing and classification by a geotechnical engineer. Our exploration team prepared field boring logs as part of the drilling operations. These field logs included visual classifications of the materials observed during drilling and our interpretation of the subsurface conditions between samples. Final boring logs were prepared from the field logs. The final boring logs represent the Geotechnical Engineer's interpretation of the field logs and include modifications based on observations and tests of the samples in our laboratory.

For safety purposes, all borings were backfilled with auger cuttings after their completion. Pavements were patched with cold-mix asphalt. Because backfill material

often settles below the surface after a period, we recommend boreholes be checked periodically and backfilled, if necessary.

Laboratory Testing

The project engineer reviewed the field data and assigned laboratory tests. The laboratory testing program included the following tests on selected samples:

- Moisture Content
- Dry Unit Weight
- Unconfined Compression
- Atterberg Limits

The laboratory testing program included examination of soil samples by an engineer or geologist. Based on the results of our field and laboratory programs, we described and classified the soil samples in accordance with the Unified Soil Classification System.

Site Location and Exploration Plans

Contents:

Site Location Plan

Exploration Plan

Note: All attachments are one page unless noted above.

Geotechnical Engineering Report

SW Nottingham Road Improvements | Topeka, Kansas

March 15, 2023 | Terracon Project No. 14235004



Site Location



DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

MAP PROVIDED BY MICROSOFT BING MAPS

Geotechnical Engineering Report

SW Nottingham Road Improvements | Topeka, Kansas

March 15, 2023 | Terracon Project No. 14235004



Exploration Plan



DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

MAP PROVIDED BY MICROSOFT BING MAPS




Exploration and Laboratory Results

Contents:

Boring Logs (B-1 through B-7)
GeoModel

Note: All attachments are one page unless noted above.

Boring Log No. B-1

| Model Layer | Graphic Log | Location: See Exploration Plan Latitude: 39.0068° Longitude: -95.7809° Depth (Ft.) Elevation: 1007 (Ft.) +/- | Depth (Ft.) | Water Level Observations | Sample Type | Recovery (In.) | Field Test Results | SAMPLE NUMBER | HP (psf) | Unconfined Compressive Strength (psf) | Water Content (%) | Dry Unit Weight (pcf) | Atterberg Limits LL-PL-PI |
|-------------|--|--|-------------|--------------------------|-------------|----------------|--------------------|---------------|-----------|---------------------------------------|-------------------|-----------------------|------------------------------|
| 1 |  | 7 INCHES ASPHALT 0.6 1006.42 0.8 1006.17 | | | | | | | | | | | |
| |  | 3 INCHES AGGREGATE | | | | | | | | | | | |
| |  | LEAN TO FAT CLAY (CL/CH) , dark gray, medium stiff to stiff gray with brown | | | | 11 | | 1 | 3500 (HP) | 1630 | 28.1 | 93 | 48-24-24 |
| 3 | | | 5 | | | 10 | 2-3-5 N=8 | 2 | 3500 (HP) | | 26.6 | | |
| | | | | | | 12 | 3-4-5 N=9 | 3 | 6000 (HP) | | 26.3 | | |
| | | Boring Terminated at 10 Feet | 10 | | | | | | | | | | |

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).
 See [Supporting Information](#) for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevations were estimated from Google Earth.

Water Level Observations
 No free water observed

Advancement Method
 Solid Stem Auger

Abandonment Method
 Boring backfilled with Auger Cuttings and/or Bentonite
 Surface Capped with Asphalt

Drill Rig
 D-50
Hammer Type
 Automatic
Driller
 WB
Logged by

Boring Started
 02-13-2023
Boring Completed
 02-13-2023

Boring Log No. B-2

[illegible]

See **Exploration and Testing Procedures** for a description of field and laboratory procedures used and additional data (If any).

See **Supporting Information** for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevations were estimated from Google Earth.

Water Level Observations

No free water observed

Drill Rig

D-50

Hammer Type

Automatic

Driller

WB

Logged by

Advancement Method

Advancement 14

Solid Stem Auger

Abandonment Method

Abandonment Method
Boring backfilled with Auger Cuttings and/or Bentonite
Surface Capped with Asphalt




Boring Started

02-13-2023

Boring Completed

02-13-2023

Boring Log No. B-3

| Model Layer | Graphic Log | Location: See Exploration Plan Latitude: 39.0051° Longitude: -95.7778° Depth (Ft.) Elevation: 988 (Ft.) +/- | Depth (Ft.) | Water Level Observations | Sample Type | Recovery (In.) | Field Test Results | SAMPLE NUMBER | HP (psf) | Unconfined Compressive Strength (psf) | Water Content (%) | Dry Unit Weight (pcf) | Atterberg Limits LL-PL-PI |
|-------------|--|---|-------------|--------------------------|-------------|----------------|--------------------|---------------|-----------|---------------------------------------|-------------------|-----------------------|------------------------------|
| 1 |  | 0.5 6 INCHES ASPHALT 987.5 0.8 3 INCHES AGGREGATE 987.25 | | | | | | | | | | | |
| 2 |  | FAT CLAY , with sand, gray 2.5 985.5 | | | | 6 | | 1 | 7000 (HP) | 2950 | 16.9 | 105 | |
| 3 |  | FAT CLAY (CH) , olive gray, stiff dark brownish gray 10.0 978 | 5 | | | 10 | 3-5-4 N=9 | 2 | 5000 (HP) | | 25.5 | | |
| | | | | | | 12 | 3-4-6 N=10 | 3 | 4000 (HP) | | 24.1 | | |
| | | Boring Terminated at 10 Feet | 10 | | | | | | | | | | |

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).
See [Supporting Information](#) for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevations were estimated from Google Earth.

Water Level Observations
No free water observed



Advancement Method
Solid Stem Auger

Abandonment Method
Boring backfilled with Auger Cuttings and/or Bentonite
Surface Capped with Asphalt

Drill Rig
D-50
Hammer Type
Automatic
Driller
WB
Logged by

Boring Started
02-13-2023
Boring Completed
02-13-2023

Boring Log No. B-4

| Model Layer | Graphic Log | Location: See Exploration Plan Latitude: 39.0045° Longitude: -95.7759° Depth (Ft.) Elevation: 981 (Ft.) +/- | Depth (Ft.) | Water Level Observations | Sample Type | Recovery (In.) | Field Test Results | SAMPLE NUMBER | HP (psf) | Unconfined Compressive Strength (psf) | Water Content (%) | Dry Unit Weight (pcf) | Atterberg Limits |
|-------------|--|--|-------------|--------------------------|-------------|----------------|--------------------|---------------|----------|---------------------------------------|-------------------|-----------------------|------------------|
| | | | | | | | | | | | | | LL-PL-PI |
| 1 |  | 0.4 5 INCHES ASPHALT 980.58 0.7 3 INCHES AGGREGATE 980.33 FAT CLAY (CH) , trace silt, dark gray, stiff to very stiff, (Possible Fill) | | | | | | | | | | | |
| 2 |  | trace gravel | 5 | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | dark gray with olive gray | | | | | | | | | | | |
| | | 10.0 971 | 10 | | | | | | | | | | |
| | | Boring Terminated at 10 Feet | | | | | | | | | | | |

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).

See [Supporting Information](#) for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevations were estimated from Google Earth.

Water Level Observations

No free water observed

Drill Rig
D-50

Hammer Type
Automatic

Driller
WB

Logged by

Advancement Method

Solid Stem Auger



Abandonment Method

Boring backfilled with Auger Cuttings and/or Bentonite
 Surface Capped with Asphalt

Boring Started
02-13-2023

Boring Completed
02-13-2023

Boring Log No. B-5

| Model Layer | Graphic Log | Location: See Exploration Plan Latitude: 39.0033° Longitude: -95.7748° Depth (Ft.) Elevation: 977 (Ft.) +/- | Depth (Ft.) | Water Level Observations | Sample Type | Recovery (In.) | Field Test Results | SAMPLE NUMBER | HP (psf) | Unconfined Compressive Strength (psf) | Water Content (%) | Dry Unit Weight (pcf) | Atterberg Limits LL-PL-PI |
|-------------|--|--|-------------|--------------------------|-------------|----------------|--------------------|---------------|-----------|---------------------------------------|-------------------|-----------------------|------------------------------|
| 1 |  | 0.5 6 INCHES ASPHALT 976.5 0.8 4 INCHES AGGREGATE 976.17 | | | | | | | | | | | |
| 3 |  | LEAN TO FAT CLAY (CL/CH) , trace gravel, dark gray with tan, medium stiff to stiff less gravel trace sand, gray | 5 | | | 10 | | 1 | 7000 (HP) | 3320 | 21.8 | 105 | |
| | | | | | | 7 | 4-4-4 N=8 | 2 | 9000 (HP) | | 21.6 | | |
| | | | | | | 12 | 2-2-5 N=7 | 3 | 2500 (HP) | | 25.1 | | |
| | | Boring Terminated at 10 Feet | 10 | | | | | | | | | | |

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).

See [Supporting Information](#) for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevations were estimated from Google Earth.

Water Level Observations

No free water observed

Drill Rig
D-50

Hammer Type
Automatic

Driller
WB

Logged by

Advancement Method

Solid Stem Auger



Abandonment Method

Boring backfilled with Auger Cuttings and/or Bentonite
 Surface Capped with Asphalt

Boring Started
02-13-2023

Boring Completed
02-13-2023

Boring Log No. B-6

| Model Layer | Graphic Log | Location: See Exploration Plan Latitude: 39.0025° Longitude: -95.7729° Depth (Ft.) Elevation: 991 (Ft.) +/- | Depth (Ft.) | Water Level Observations | Sample Type | Recovery (In.) | Field Test Results | SAMPLE NUMBER | HP (psf) | Unconfined Compressive Strength (psf) | Water Content (%) | Dry Unit Weight (pcf) | Atterberg Limits LL-PL-PI |
|-------------|--|---|-------------|--------------------------|-------------|----------------|--------------------|---------------|-----------|---------------------------------------|-------------------|-----------------------|------------------------------|
| 1 |  | 0.5 6 INCHES ASPHALT 990.5 0.8 4 INCHES AGGREGATE 990.17 | | | | | | | | | | | |
| 2 |  | LEAN CLAY , trace gravel, dark gray trace organics trace sand and bedrock fragments, dark gray with olive gray | 5 | | | 4 | 2-2-3 N=5 | 1 | 6500 (HP) | | 23.0 | | |
| | | | | | | 16 | | 2 | 7500 (HP) | 1420 | 24.8 | 97 | 41-26-15 |
| | | | | | | 8 | 3-3-3 N=6 | 3 | 2500 (HP) | | 28.3 | | |
| | | Boring Terminated at 10 Feet | 10 | | | | | | | | | | |

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).

See [Supporting Information](#) for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevations were estimated from Google Earth.

Water Level Observations

No free water observed

Drill Rig
D-50

Hammer Type
Automatic

Driller
WB

Logged by

Advancement Method

Solid Stem Auger



Abandonment Method

Boring backfilled with Auger Cuttings and/or Bentonite
Surface Capped with Asphalt

Boring Started
02-13-2023

Boring Completed
02-13-2023

Boring Log No. B-7

| Model Layer | Graphic Log | Location: See Exploration Plan Latitude: 39.0006° Longitude: -95.7721° | Depth (Ft.) | Water Level Observations | Sample Type | Recovery (In.) | Field Test Results | SAMPLE NUMBER | HP (psf) | Unconfined Compressive Strength (psf) | Water Content (%) | Dry Unit Weight (pcf) | Atterberg Limits LL-PL-PI |
|-------------|--|--|-------------|--------------------------|-------------|----------------|--------------------|---------------|------------|---------------------------------------|-------------------|-----------------------|------------------------------|
| 1 |  | Depth (Ft.) Elevation: 1006 (Ft.) +/- 0.2 2 INCHES ASPHALT 1005.83 0.4 3 INCHES AGGREGATE 1005.58 FAT CLAY , trace sand, gravel, and cement, brownish gray trace bedrock fragments, yellowish brown | | | | | | | | | | | |
| 2 |  | 4.0 FAT CLAY (CH) , with sand and gravel, trace bedrock fragments, medium stiff to very stiff, (Possible Fill) 1002 10.0 Boring Terminated at 10 Feet 996 | 5 | | 6 | | | 1 | 9000+ (HP) | | 19.3 | 101 | |
| | | | | | 8 | | 4-4-7 N=11 | 2 | 5000 (HP) | | 31.7 | | |
| | | | | | 5 | | 6-12-17 N=29 | 3 | | | 8.0 | | |

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).
 See [Supporting Information](#) for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevations were estimated from Google Earth.

Water Level Observations
 No free water observed

Advancement Method
 Solid Stem Auger

Abandonment Method
 Boring backfilled with Auger Cuttings and/or Bentonite
 Surface Capped with Asphalt

Drill Rig
 D-50
Hammer Type
 Automatic

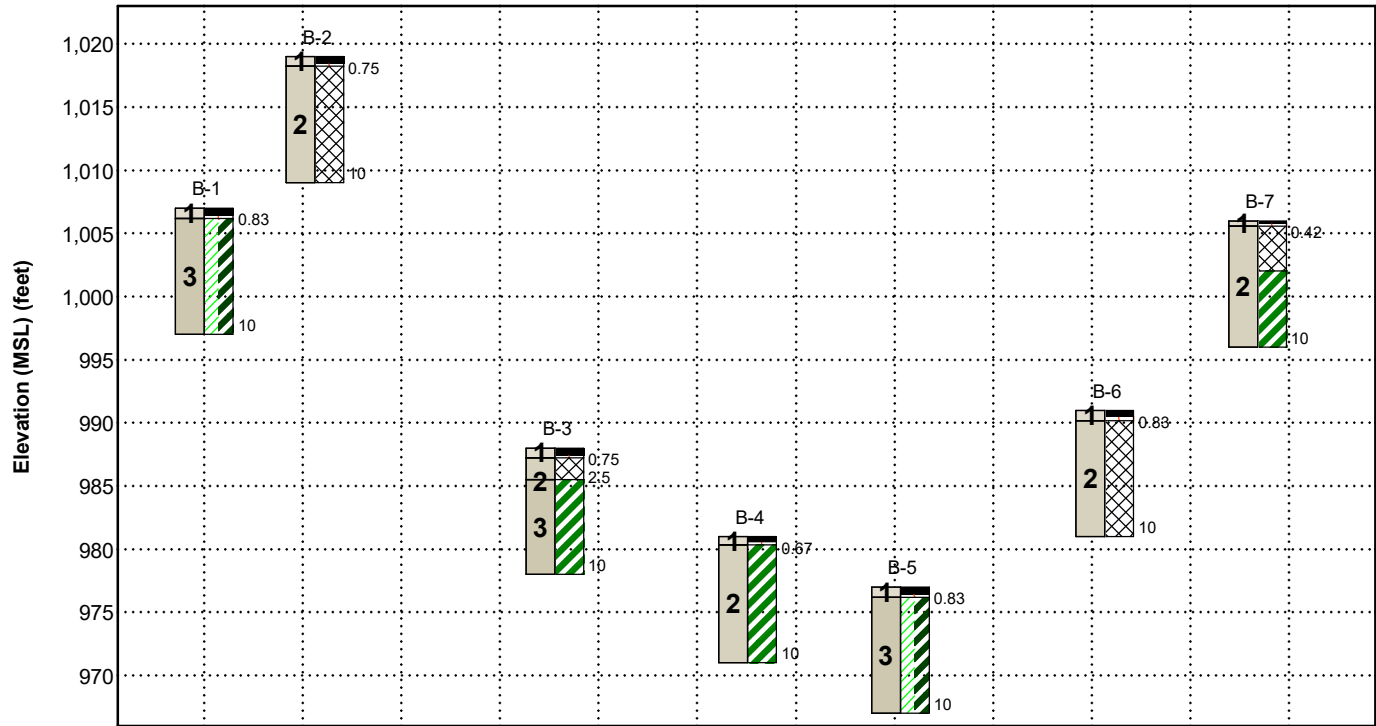
Driller
 WB

Logged by

Boring Started
 02-13-2023

Boring Completed
 02-13-2023






GeoModel



This is not a cross section. This is intended to display the Geotechnical Model only. See individual logs for more detailed conditions.

| Model Layer | Layer Name | General Description |
|-------------|------------------------|---|
| 1 | Surface | Asphalt and Aggregate. |
| 2 | Fill and Possible Fill | Lean, Lean to Fat, and Fat Clays, varying amounts of silt, sand, gravel, cement, organics, and bedrock fragments. |
| 3 | Cohesive Soil | Lean to Fat and Fat Clays, varying amounts of sand and gravel, medium stiff to stiff. |

LEGEND

-  Asphalt
-  Fill
-  Aggregate Base Course
-  Fat Clay
-  Lean Clay/Fat Clay

NOTES:
Layering shown on this figure has been developed by the geotechnical engineer for purposes of modeling the subsurface conditions as required for the subsequent geotechnical engineering for this project.
Numbers adjacent to soil column indicate depth below ground surface.

Supporting Information

Contents:

General Notes

Unified Soil Classification System

Note: All attachments are one page unless noted above.









Geotechnical Engineering Report

SW Nottingham Road Improvements | Topeka, Kansas

March 15, 2023 | Terracon Project No. 14235004



General Notes

| Sampling | Water Level | Field Tests |
|---|--|--|
|  Rock Core |  Water Initially Encountered | N Standard Penetration Test Resistance (Blows/Ft.) |
|  Grab Sample |  Water Level After a Specified Period of Time | (HP) Hand Penetrometer |
|  Shelby Tube |  Water Level After a Specified Period of Time | (T) Torvane |
|  Split Spoon |  Cave In Encountered | (DCP) Dynamic Cone Penetrometer |
| | | UC Unconfined Compressive Strength |

Descriptive Soil Classification

Soil classification as noted on the soil boring logs is based Unified Soil Classification System. Where sufficient laboratory data exist to classify the soils consistent with ASTM D2487 "Classification of Soils for Engineering Purposes" this procedure is used. ASTM D2488 "Description and Identification of Soils (Visual-Manual Procedure)" is also used to classify the soils, particularly where insufficient laboratory data exist to classify the soils in accordance with ASTM D2487. In addition to USCS classification, coarse grained soils are classified on the basis of their in-place relative density, and fine-grained soils are classified on the basis of their consistency. See "Strength Terms" table below for details. The ASTM standards noted above are for reference to methodology in general. In some cases, variations to methods are applied as a result of local practice or professional judgment.

Location and Elevation Notes

Exploration point locations as shown on the Exploration Plan and as noted on the soil boring logs in the form of Latitude and Longitude are approximate. See Exploration and Testing Procedures in the report for the methods used to locate the exploration points for this project. Surface elevation data annotated with +/- indicates that no actual topographical survey was conducted to confirm the surface elevation. Instead, the surface elevation was approximately determined from topographic maps of the area.

Strength Terms

| Relative Density of Coarse-Grained Soils (More than 50% retained on No. 200 sieve.) Density determined by Standard Penetration Resistance | | Consistency of Fine-Grained Soils (50% or more passing the No. 200 sieve.) Consistency determined by laboratory shear strength testing, field visual-manual procedures or standard penetration resistance | | |
|---|---|---|--|---|
| Relative Density | Standard Penetration or N-Value (Blows/Ft.) | Consistency | Unconfined Compressive Strength Qu (psf) | Standard Penetration or N-Value (Blows/Ft.) |
| Very Loose | 0 – 3 | Very Soft | less than 500 | 0 – 1 |
| Loose | 4 – 9 | Soft | 500 – 1000 | 2 – 4 |
| Medium Dense | 10 – 29 | Medium Stiff | 1000 – 2000 | 4 – 8 |
| Dense | 30 – 50 | Stiff | 2000 – 4000 | 8 – 15 |
| Very Dense | > 50 | Very Stiff | 4000 – 8000 | 15 – 30 |
| | | Hard | > 8,000 | > 30 |

Relevance of Exploration and Laboratory Test Results

Exploration/field results and/or laboratory test data contained within this document are intended for application to the project as described in this document. Use of such exploration/field results and/or laboratory test data should not be used independently of this document.

Unified Soil Classification System

| Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests ^A | | | | Soil Classification | | |
|--|--|---|---|---|--|----|
| | | | | Group Symbol | Group Name ^B | |
| Coarse-Grained Soils: More than 50% retained on No. 200 sieve | Gravels: More than 50% of coarse fraction retained on No. 4 sieve | Clean Gravels: Less than 5% fines ^C | Cu≥4 and 1≤Cc≤3 ^E | GW | Well-graded gravel ^F | |
| | | Gravels with Fines: More than 12% fines ^C | Cu<4 and/or [Cc<1 or Cc>3.0] ^E | GP | Poorly graded gravel ^F | |
| | | | Fines classify as ML or MH | GM | Silty gravel ^{F, G, H} | |
| | | | Fines classify as CL or CH | GC | Clayey gravel ^{F, G, H} | |
| | Sands: 50% or more of coarse fraction passes No. 4 sieve | Clean Sands: Less than 5% fines ^D | Cu≥6 and 1≤Cc≤3 ^E | SW | Well-graded sand ^I | |
| | | Sands with Fines: More than 12% fines ^D | Cu<6 and/or [Cc<1 or Cc>3.0] ^E | SP | Poorly graded sand ^I | |
| | | | Fines classify as ML or MH | SM | Silty sand ^{G, H, I} | |
| | | | Fines classify as CL or CH | SC | Clayey sand ^{G, H, I} | |
| Fine-Grained Soils: 50% or more passes the No. 200 sieve | Silts and Clays: Liquid limit less than 50 | Inorganic: | PI > 7 and plots above “A” line ^J | CL | Lean clay ^{K, L, M} | |
| | | | PI < 4 or plots below “A” line ^J | ML | Silt ^{K, L, M} | |
| | | Organic: | $\frac{LL \text{ oven dried}}{LL \text{ not dried}} < 0.75$ | OL | Organic clay ^{K, L, M, N} Organic silt ^{K, L, M, O} | |
| | | | Silts and Clays: Liquid limit 50 or more | Inorganic: | PI plots on or above “A” line | CH |
| | PI plots below “A” line | MH | | | Elastic silt ^{K, L, M} | |
| | Organic: | $\frac{LL \text{ oven dried}}{LL \text{ not dried}} < 0.75$ | | OH | Organic clay ^{K, L, M, P} Organic silt ^{K, L, M, Q} | |
| | | Highly organic soils: | | Primarily organic matter, dark in color, and organic odor | | |

^A Based on the material passing the 3-inch (75-mm) sieve.

^B If field sample contained cobbles or boulders, or both, add "with cobbles or boulders, or both" to group name.

^C Gravels with 5 to 12% fines require dual symbols: GW-GM well-graded gravel with silt, GW-GC well-graded gravel with clay, GP-GM poorly graded gravel with silt, GP-GC poorly graded gravel with clay.

^D Sands with 5 to 12% fines require dual symbols: SW-SM well-graded sand with silt, SW-SC well-graded sand with clay, SP-SM poorly graded sand with silt, SP-SC poorly graded sand with clay.

$$E \quad Cu = D_{60}/D_{10} \quad Cc = \frac{(D_{30})^2}{D_{10} \times D_{60}}$$

^F If soil contains $\geq 15\%$ sand, add "with sand" to group name.

^G If fines classify as CL-ML, use dual symbol GC-GM, or SC-SM.

^H If fines are organic, add "with organic fines" to group name.

^I If soil contains $\geq 15\%$ gravel, add "with gravel" to group name.

^J If Atterberg limits plot in shaded area, soil is a CL-ML, silty clay.

^K If soil contains 15 to 29% plus No. 200, add "with sand" or "with gravel," whichever is predominant.

^L If soil contains $\geq 30\%$ plus No. 200 predominantly sand, add "sandy" to group name.

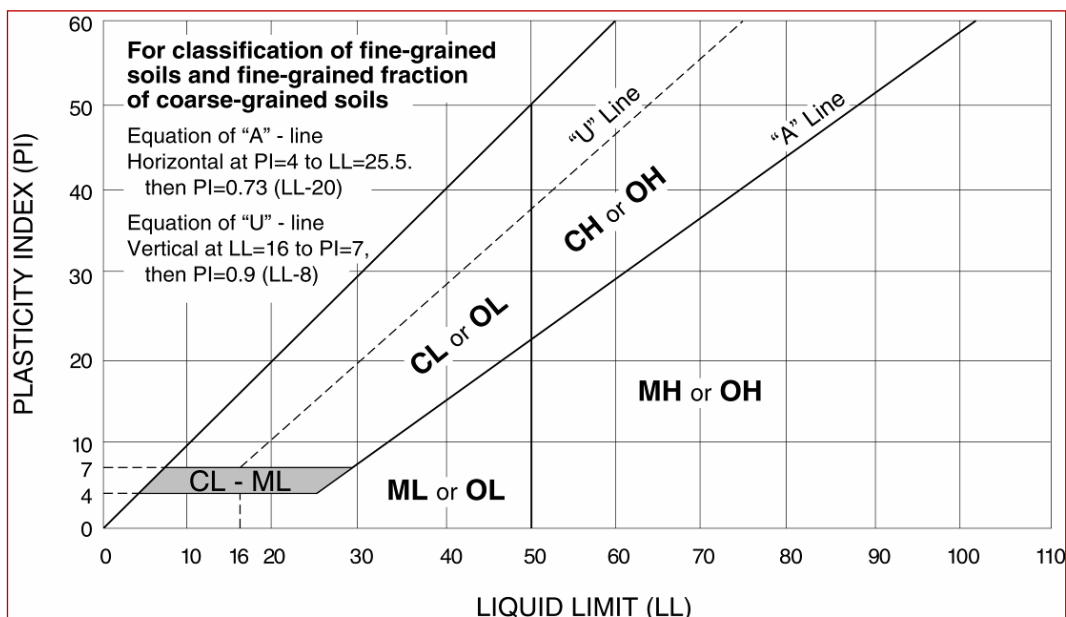
^M If soil contains $\geq 30\%$ plus No. 200, predominantly gravel, add "gravelly" to group name.

^N PI ≥ 4 and plots on or above "A" line.

^O PI < 4 or plots below "A" line.

^P PI plots on or above "A" line.

^Q PI plots below "A" line.





"Kansas One-Call" is the Underground Utility Notification center for the State of Kansas. Through this facility, you can notify operators of underground facilities of proposed excavations to request that the underground facilities be marked before you dig.

Kansas Statute annotated #66-1801 through #66-1815 requires anyone who engages in any type of excavation to provide advance notice of at least two full working days, but not more than 15 calendar days, excluding weekends and holidays.

The person who is doing the work is responsible for calling Kansas One-Call. If the owner contracts with a professional excavator to do the excavation, then the professional excavator is responsible for calling Kansas One-Call.

The service provided by Kansas One-Call to excavators is free of charge.

Call 785-368-3111 for emergencies with City of Topeka utilities.

Cable TV
Cox Communications
931 SW Henderson Rd.
Topeka, KS 66615
Glenn Calhoon
(785)215-6705
(785)207-1693
glenn.calhoon@cox.com

Electric
Every
PO Box 889
4001 NW 14th St.
Topeka, KS 66603
Jennifer Rohr
(785)575-1248
jennifer.rohr@evergy.com

Fiber Optic - City of Topeka
City of Topeka, Info. Tech.
620 SE Madison St., 3rd Flr
Topeka, KS 66603
Wesley L. White
(785)338-2633
wlwhite@topeka.org

Fiber Optic - LUMEN
LUMEN
711 E. 19th St.
Kansas City, MO 64108
Richard Redel
(816)518-2804
richard.redel@lumen.com
Relocations: relocations@lumen.com

*Fiber Optic - USD 501
USD 501, Info. Tech.
1900 SW Hope St.
Topeka, KS 66604
Joergen Laigaard
(785)438-4750
jlaigaard@tps501.org*

*Fiber Optic - KsFiberNet
Kansas Fiber Network LLC
10875 Benson, Ste. 250
Overland Park, KS 66210
Brad Burger
(913)213-2937
bburger@ksfiber.net*

Gas
Kansas Gas Service
P.O. Box 3538
200 E 1st St.
Topeka, KS 66601
Dawn Hecker
(785)431-4251
dawn.hecker@onegas.com
For Gas Leaks 1-888-482-4950
911 must also be called immediately

Telephone
AT&T
220 SE 6th St., Ste 236
Topeka, KS 66603
Ezra Brown
(785)596-9905
eb409q@att.com

Sanitary/Storm Sewer
City of Topeka, WPC Div.
1115 NE Poplar St.
Topeka, KS 66616
Darrin A. Coffland
(785)368-2467
dcoffland@topeka.org

Water
City of Topeka, Water Dist.
3245 NW Waterworks Dr.
Topeka, KS 66606
Duncan Theuri
(785)368-0152
dttheuri@topeka.org

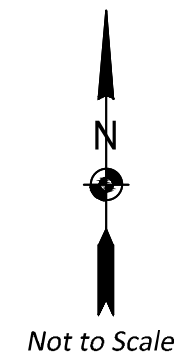
*Traffic Signal
City of Topeka, Traffic Ops.
927 NW Harrison St.
Topeka, KS 66612
Duane Morris
(785)368-3913
dmorris@topeka.org*

Fiber Optic - Giant Communications
Giant Communications
515 S Kansas Ave., Ste. 210
Topeka, KS 66603
Lance Lyman
(785)362-3312
lancelym@giantcomm.net



| <u>Sheet</u> | <u>Title</u> |
|--------------|---|
| 1 | Title Sheet |
| 2 | General Notes, Summary of Quantities, Typical Section |
| 3 | Project Control Sheet |
| 4 - 11 | Plan & Profile Sheets |
| 12 - 13 | Standard Erosion Control Details |
| 14 | Traffic Control Plans |
| 15 - 16 | Traffic Control Standard Details |
| 17 - 40 | Cross-Sections |

| | | | |
|----------------------------|--|---------------------------------|--|
| Construction Limits | | | |
| Traffic Signal Line | | | |
| Overhead Telephone Line | | | |
| Underground Telephone Line | | | |
| Overhead Cable | | | |
| Underground Cable | | | |
| Overhead Electric Line | | | |
| Underground Electric Line | | | |
| Water Line | | | |
| Gas Line | | | |
| Sanitary Sewer | | | |
| Storm Sewer | | | |
| Fiber Optic Line | | | |
| Centerline | | | |
| Right-of-Way Line | | | |
| Property Line | | | |
| Lot Line | | | |
| Fence | | | |
| Guard Rail | | | |
| RailRoad Tracks | | | |
| Section Corner | | | |
| Bench Mark | | Mail Box | |
| Property Pin | | Existing Storm Inlet | |
| Power Pole | | Existing Sanitary Sewer Manhole | |
| Telephone Pole | | Existing Storm Sewer Manhole | |
| Street Light | | Existing Traffic Manhole | |
| Guy Pole | | Sign | |
| Guy Wire | | Tree, Deciduous | |
| Fire Hydrant | | Tree, Coniferous | |
| Water Meter | | Shrub | |
| Water Valve | | | |
| Gas Meter | | | |
| Gas Valve | | | |



| | |
|---|---|
| <h1 style="margin: 0;">SHAWNEE COUNTY, KANSAS</h1> <h2 style="margin: 0;">DEPARTMENT OF PUBLIC WORKS - ENGINEERING DIVISION</h2> | |
| <div style="border: 1px solid black; padding: 5px; margin: 0 auto; width: 80%;">RELEASED FOR CONSTRUCTION</div> | |
| <div style="border-bottom: 1px solid black; height: 40px; display: flex; align-items: center; justify-content: center;"> </div> <div style="border-top: 1px solid black; padding-top: 5px;">COUNTY ENGINEER</div> | <div style="border-bottom: 1px solid black; height: 40px; display: flex; align-items: center; justify-content: center;"> 3/31/2023 </div> <div style="border-top: 1px solid black; padding-top: 5px;">DATE</div> |
| ATTEST: _____ | |
| _____ COUNTY CLERK | _____ DATE |
| REVIEWED BY _____ | |
| _____ UTILITIES | _____ DATE |

SBB PROJ. NO. 23-013

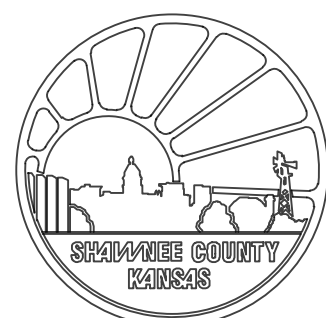
DATE: 3/31/2023

SHEET: 1 OF 40

PROJ.: S-841012.00

GENERAL NOTE:

All construction methods and materials used in the construction of the improvements covered by these plans shall be in accordance with the latest revisions of the City of Topeka and Shawnee County Standard Technical Specifications.



SBB Engineering, LLC

101 S Kansas Ave., Topeka, KS 66603
Ph: (785) 215-8630 www.sbbeng.com

S-841012.00
SW Nottingham
(SW 33rd Street To SW 37th Street)

Title Sheet

[File Location: X:\1 SBB Drawings\0-2023\02-013 S-NCO SW Nottingham\Design\Street Plans\23-013 Title_Gen Notes.dwg] [Plot Date: 3/31/2023 12:15:00 PM] [Last Saved: 3/31/2023 11:37:39 AM] [Locomotion]

GENERAL NOTES:

1.

All construction methods and materials used in the construction of the improvements covered by these plans shall be in accordance with the latest revisions of the City of Topeka and Shawnee County Standard Technical Specifications.
2.

The location of all overhead and underground utilities may vary from what is indicated in these plans. It shall be the Contractor's responsibility to coordinate with the utility owner to locate and flag all underground utilities whether indicated or not. No excavation will be permitted in the area of underground utilities until all such utilities have been located and identified to the satisfaction of all parties and then only with extreme care to avoid any possibility of damage to the utility.
3.

All disposal sites must be approved by the Kansas Department of Health and Environment. Material either stockpiled or disposed of in a Flood Plain would require a Kansas State Board of Agriculture Permit. Any material dumped in waters of the United States or wetlands is subject to U.S. CORPS of Engineers Permitting Regulations. Any material buried or stockpiled beyond approved construction limits would require additional archeological investigations unless buried in previously approved borrow locations.
4.

The Contractor shall maintain construction limits within the existing and/or proposed Right of Way and any easements shown. Work within the street shall require Traffic Control per the latest revisions of the City of Topeka and Shawnee County Standard Technical Specifications.
5.

Access to all properties shall be maintained throughout the duration of construction by the Contractor.
6.

All Permits and fees necessary to construct the project are the responsibility of the Contractor unless otherwise noted.
7.

Unless otherwise specified, all disturbed areas that are not hardscaped shall be seeded and fertilized in accordance with the latest revisions of the City of Topeka and Shawnee County Standard Technical Specifications.
8.

Temporary Erosion Control shall be provided to control siltation and sediment movement, due to barren soils, into the storm sewer system. Temporary seeding, fertilizing and mulching shall be provided in the event that the project is not completed prior to an extended work stoppage due to winter weather.
9.

All property pins disturbed by construction shall be replaced by a Land Surveyor. This work shall be subsidiary to other items of the contract.
10.

Contractor shall provide work zone traffic control in compliance with City of Topeka Standards and the Manual on Uniform Traffic Control Devices (MUTCD) while working on or adjacent to public roadways is proceeding. The Contractor shall require a Traffic Disruption Permit from the City of Topeka Engineering Division (785-368-3842) 48 hours in advance of work in the public R/W.
11.

Traffic Control devices and flagger operations necessary to complete the project shall not be paid for directly, but shall be considered subsidiary to the Bid Item "Temporary Traffic Control" (LS).
12.

Crushed Rock Surfacing shall be compacted to 95% of maximum dry density.
13.

The Contractor shall provide temporary mailbox locations for residents with mailbox access impaired during construction. Contractor shall provide 48-hour notice to residents for mailbox or driveway access closures.
14.

The Contractor shall be responsible for providing access to trash service providers on a weekly basis. The Contractor may provide trash truck access to each residence during construction or transport individual trash containers to and from each resident to an accessible location coordinated with each trash service provider servicing the neighborhood.

ABBREVIATIONS

- TC

Top of Curb
- TP

Top of Pavement
- TS

Top of Sidewalk
- TW

Top of Retaining Wall
- TOP

Top of Pipe
- M.E.

Match Existing
- L.I.P.

Leave in Place
- T.C.E.

Temporary Construction Easement

CONSTRUCTION NOTES:

1.

Contractor shall mill 6" of existing asphaltic pavement and remove from project. Contractor shall be owner of asphalt millings. Asphalt millings may be used as "Crushed Rock Surfacing" if gradation requirements are met.
2.

Contractor shall perform Subgrade Treatment (Cement)(8") by roto-tilling the subgrade mixture while adding 6% cement by dry unit weight in accordance with the Geotechnical Report. Contractor's method for establishing a uniformly spread cement at the required percentage shall be submitted to and approved by City or County's Project Field Representative prior to application in the field. The subgrade shall be compacted to 97% standard proctor maximum dry density at moisture contents presented in the geotechnical report. Contractor shall moist cure the cement treated subgrade for at least 5 days and verify adequate moisture conditions exist.
3.

In the instance the project field representative determines insufficient cement was applied, the subgrade shall be roto-tilled and cement shall be reapplied as directed by the project field representative. Unclassified excavation and Subgrade Treatment (Cement)(8") resulting from inadequate cement shall be at contrator's expense.
4.

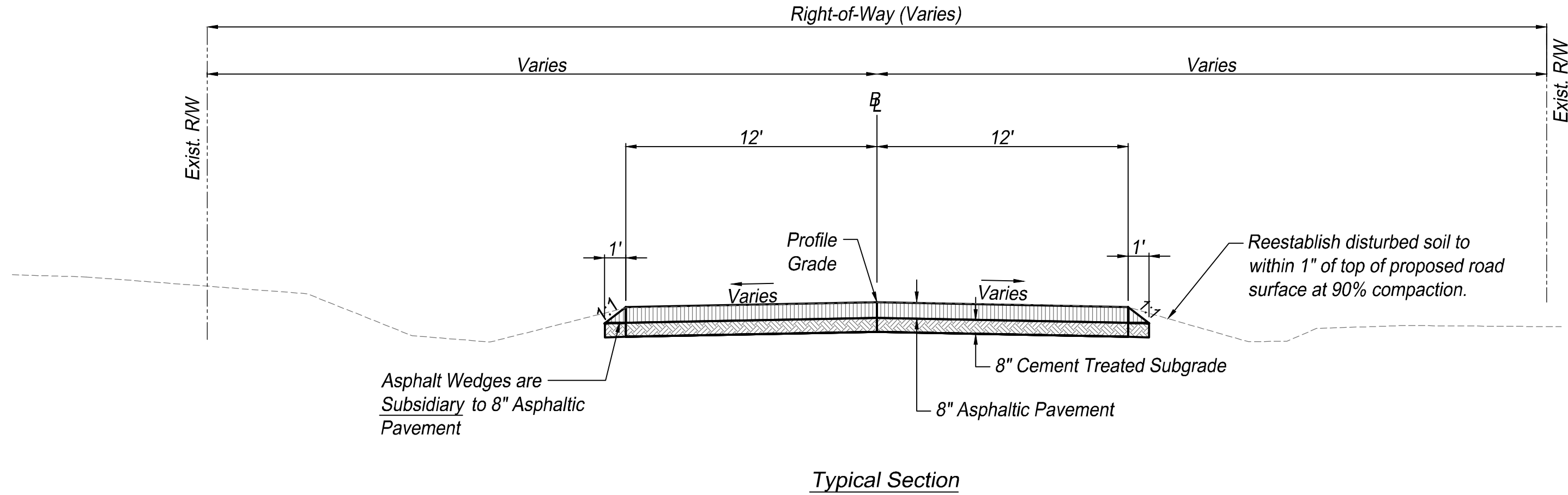
Contractor shall micro-crack the cement-treated subgrade with a steel-wheeled smooth drum vibratory roller 1 to 2 days after curing in accordance with the geotechnical report. Terracon will perform lightweight deflectometer (LWD) testing in conjunction with the contractor's micro-cracking operations and at day 5 to determine suitability of subgrade section for asphalt placement. Construction traffic other than to perform micro-cracking and sprinkling will not be allowed on subgrade during the curing period.
5.

Contractor shall remove unsuitable subgrade and replace with cement treated subgrade as directed by the project field representative. Unclassified excavation and Subgrade Treatment (Cement)(8") resulting from inadequate cement shall be at contractor's expense.
6.

Once project field representative has approved the cement treated subgrade, contractor shall apply a prime coat and construct the asphaltic pavement in accordance with the City of Topeka and Shawnee County Standard Technical Specificaitons.

SUMMARY OF QUANTITIES
SW Nottingham (SW 33rd Street To SW 37th Street)
S-841012.00

| PROJECT QUANTITIES | | | |
|--------------------|--|--------|-------|
| ITEM | DESCRIPTION | QTY | UNITS |
| 1 | CONSTRUCTON STAKING | 1 | LS |
| 2 | PAVEMENT REMOVAL | 10,452 | SY |
| 3 | SUBGRADE TREATMENT (CEMENT)(8") | 11,268 | SY |
| 4 | 8" ASPHALTIC CONCRETE | 10,411 | SY |
| 5 | PAVEMENT MARKING (THERMOPLASTIC)(WHITE)(4") | 7,597 | LF |
| 6 | PAVEMENT MARKING (THERMOPLASTIC)(YELLOW)(4") | 7,473 | LF |
| 7 | SILT FENCE (ALLOWANCE) | 4,000 | LF |
| 8 | SEEDING, FERTILIZING, & MULCHING | 1 | LS |
| 9 | PORTABLE CHANGEABLE MESSAGE SIGN | 6 | DAYS |
| 10 | TEMPORARY TRAFFIC CONTROL | 1 | LS |



SBB PROJ. NO. 23-013

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| NO. | DATE: | REVISION | BY: | APPD | |

DRAWN BY:

L. O'CONNOR

APP'D BY:

B. AUSTIN

FIELD BOOKS:

-

SURVEYED BY:

SBB ENG.



SBB Engineering, LLC
101 S Kansas Ave., Topeka, KS 66603
Ph: (785) 215-8630 www.sbbeng.com

S-841012.00
SW Nottingham
(SW 33rd Street To SW 37th Street)

General Notes,
Summary of Quantities,
Typical Section

DATE:

3/31/2023

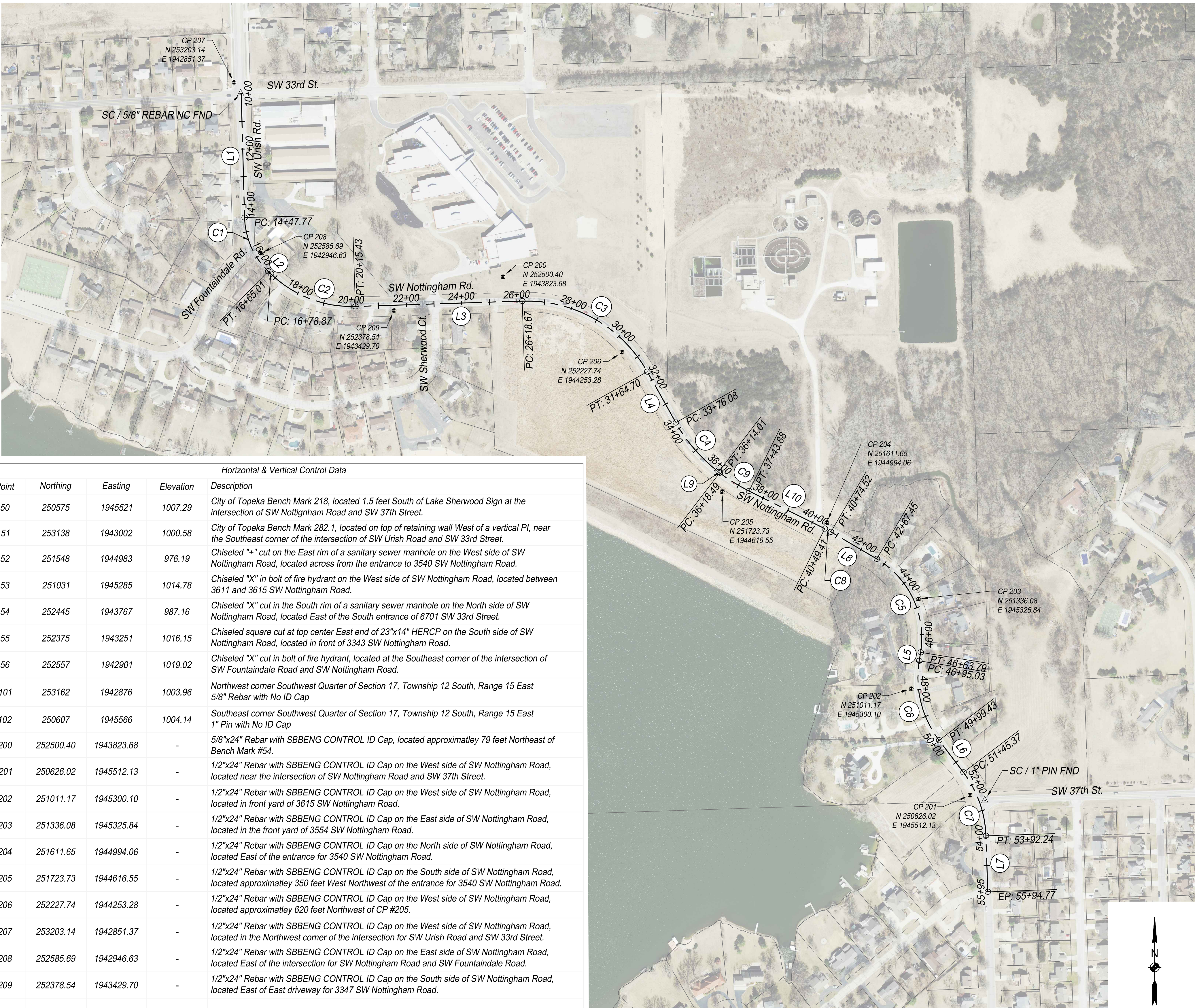
SHEET:

2 OF 40

PROJ.:

S-841012.00

[File Location: X:\11 SBB Drawings\0-2023\02-013 S-NCO SW Nottingham\dwg\Design\Street Plans\02-013 P_C.dwg] [Plot Date: 3/31/2023 12:15:20 PM] [Last Saved: 3/30/2023 8:37:34 AM: Locomor]



| Horizontal & Vertical Control Data | | | | |
|---|-----------|------------|-----------|---|
| Point | Northing | Easting | Elevation | Description |
| 50 | 250575 | 1945521 | 1007.29 | City of Topeka Bench Mark 218, located 1.5 feet South of Lake Sherwood Sign at the intersection of SW Nottighnam Road and SW 37th Street. |
| 51 | 253138 | 1943002 | 1000.58 | City of Topeka Bench Mark 282.1, located on top of retaining wall West of a vertical PI, near the Southeast corner of the intersection of SW Urish Road and SW 33rd Street. |
| 52 | 251548 | 1944983 | 976.19 | Chiseled "+" cut on the East rim of a sanitary sewer manhole on the West side of SW Nottingham Road, located across from the entrance to 3540 SW Nottingham Road. |
| 53 | 251031 | 1945285 | 1014.78 | Chiseled "X" in bolt of fire hydrant on the West side of SW Nottingham Road, located between 3611 and 3615 SW Nottingham Road. |
| 54 | 252445 | 1943767 | 987.16 | Chiseled "X" cut in the South rim of a sanitary sewer manhole on the North side of SW Nottingham Road, located East of the South entrance of 6701 SW 33rd Street. |
| 55 | 252375 | 1943251 | 1016.15 | Chiseled square cut at top center East end of 23"x14" HERCP on the South side of SW Nottingham Road, located in front of 3343 SW Nottingham Road. |
| 56 | 252557 | 1942901 | 1019.02 | Chiseled "X" cut in bolt of fire hydrant, located at the Southeast corner of the intersection of SW Fountaindale Road and SW Nottingham Road. |
| 101 | 253162 | 1942876 | 1003.96 | Northwest corner Southwest Quarter of Section 17, Township 12 South, Range 15 East 5/8" Rebar with No ID Cap |
| 102 | 250607 | 1945566 | 1004.14 | Southeast corner Southwest Quarter of Section 17, Township 12 South, Range 15 East 1" Pin with No ID Cap |
| 200 | 252500.40 | 1943823.68 | - | 5/8"x24" Rebar with SBBENG CONTROL ID Cap, located approximatley 79 feet Northeast of Bench Mark #54. |
| 201 | 250626.02 | 1945512.13 | - | 1/2"x24" Rebar with SBBENG CONTROL ID Cap on the West side of SW Nottingham Road, located near the intersection of SW Nottingham Road and SW 37th Street. |
| 202 | 251011.17 | 1945300.10 | - | 1/2"x24" Rebar with SBBENG CONTROL ID Cap on the West side of SW Nottingham Road, located in front yard of 3615 SW Nottingham Road. |
| 203 | 251336.08 | 1945325.84 | - | 1/2"x24" Rebar with SBBENG CONTROL ID Cap on the East side of SW Nottingham Road, located in the front yard of 3554 SW Nottingham Road. |
| 204 | 251611.65 | 1944994.06 | - | 1/2"x24" Rebar with SBBENG CONTROL ID Cap on the North side of SW Nottingham Road, located East of the entrance for 3540 SW Nottingham Road. |
| 205 | 251723.73 | 1944616.55 | - | 1/2"x24" Rebar with SBBENG CONTROL ID Cap on the South side of SW Nottingham Road, located approximatley 350 feet West Northwest of the entrance for 3540 SW Nottingham Road. |
| 206 | 252227.74 | 1944253.28 | - | 1/2"x24" Rebar with SBBENG CONTROL ID Cap on the West side of SW Nottingham Road, located approximatley 620 feet Northwest of CP #205. |
| 207 | 253203.14 | 1942851.37 | - | 1/2"x24" Rebar with SBBENG CONTROL ID Cap on the West side of SW Nottingham Road, located in the Northwest corner of the intersection for SW Urish Road and SW 33rd Street. |
| 208 | 252585.69 | 1942946.63 | - | 1/2"x24" Rebar with SBBENG CONTROL ID Cap on the East side of SW Nottingham Road, located East of the intersection for SW Nottingham Road and SW Fountaindale Road. |
| 209 | 252378.54 | 1943429.70 | - | 1/2"x24" Rebar with SBBENG CONTROL ID Cap on the South side of SW Nottingham Road, located East of East driveway for 3347 SW Nottingham Road. |
| Horizontal data is based on Kansas State Plane, North Zone NAD 83 datum | | | | |
| Vertical data is based on NAVD 88 datum | | | | |

| Nottingham Road (Alignment Control) | | | | | |
|-------------------------------------|---------------|--------------|-----------------------------------|-----------------------------------|--|
| ID | Begin Station | End Station | Begin Coordinates | End Coordinates | Curve Info |
| L1 | 10+00.00 | 14+47.77 | N: 253162.43 E: 1942877.69 | N: 252714.81 E: 1942889.29 | |
| C1 | PC: 14+47.77 | PT: 16+65.01 | PC: N: 252714.81 E: 1942889.29 | PT: N: 252520.86 E: 1942974.48 | L: 217.25' T: 114.42' R: 280.00' Δ: 44°27'16" C: 211.84' |
| L2 | 16+65.01 | 16+78.87 | N: 252520.86 E: 1942974.48 | N: 252511.23 E: 1942984.43 | |
| C2 | PC: 16+78.87 | PT: 20+15.43 | PC: N: 252511.23 E: 1942984.43 | PT: N: 252393.26 E: 1943290.09 | L: 336.57' T: 177.91' R: 420.00' Δ: 45°54'50" C: 327.63' |
| L3 | 20+15.43 | 26+18.67 | N: 252393.26 E: 1943290.09 | N: 252412.76 E: 1943893.01 | |
| C3 | PC: 26+18.67 | PT: 31+64.70 | PC: N: 252412.76 E: 1943893.01 | PT: N: 252157.58 E: 1944345.29 | L: 546.03' T: 303.83' R: 500.00' Δ: 62°34'14" C: 519.30' |
| L4 | 31+64.70 | 33+76.08 | N: 252157.58 E: 1944345.29 | N: 251973.21 E: 1944448.68 | |
| C4 | PC: 33+76.08 | PT: 36+14.01 | PC: N: 251973.21 E: 1944448.68 | PT: N: 251794.70 E: 1944603.49 | L: 237.93' T: 120.63' R: 585.00' Δ: 23°18'11" C: 236.29' |
| L9 | 36+14.01 | 36+18.49 | N: 251794.70 E: 1944603.49 | N: 251791.98 E: 1944607.05 | |
| C9 | PC: 36+18.49 | PT: 37+43.88 | PC: N: 251791.98 E: 1944607.05 | PT: N: 251725.84 E: 1944713.35 | L: 125.39' T: 62.89' R: 650.00' Δ: 11°03'11" C: 125.20' |
| L10 | 37+43.88 | 40+49.41 | N: 251725.84 E: 1944713.35 | N: 251590.18 E: 1944987.11 | |
| C8 | PC: 40+49.41 | PT: 40+74.52 | PC: N: 251590.18 E: 1944987.11 | PT: N: 251578.23 E: 1945009.19 | L: 25.11' T: 12.56' R: 350.00' Δ: 4°06'40" C: 25.11' |
| L8 | 40+74.52 | 42+67.45 | N: 251578.23 E: 1945009.19 | N: 251480.39 E: 1945175.47 | |
| C5 | PC: 42+67.45 | PT: 46+63.79 | PC: N: 251480.39 E: 1945175.47 | PT: N: 251142.72 E: 1945333.79 | L: 396.34' T: 226.02' R: 330.00' Δ: 68°48'51" C: 372.94' |
| L5 | 46+63.79 | 46+95.03 | N: 251142.72 E: 1945333.79 | N: 251111.89 E: 1945328.75 | |
| C6 | PC: 46+95.03 | PT: 49+99.43 | PC: N: 251111.89 E: 1945328.75 | PT: N: 250824.54 E: 1945400.22 | L: 304.39' T: 161.14' R: 375.00' Δ: 46°30'28" C: 296.11' |
| L6 | 49+99.43 | 51+45.37 | N: 250824.54 E: 1945400.22 | N: 250708.32 E: 1945488.50 | |
| C7 | PC: 51+45.37 | PT: 53+92.24 | PC: N: 250708.32 E: 1945488.50 | PT: N: 250479.34 E: 1945569.77 | L: 246.87' T: 127.51' R: 400.00' Δ: 35°21'42" C: 242.97' |
| L7 | 53+92.24 | 55+94.77 | N: 250479.34 E: 1945569.77 | N: 250276.92 E: 1945576.34 | |

SBB PROJ. NO. 23-013

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| NO. | DATE: | REVISION | BY: | APPD | |

DRAWN BY: L. O'CONNOR
APP'D BY: B. AUSTIN
FIELD BOOKS: -
SURVEYED BY: SBB ENG.

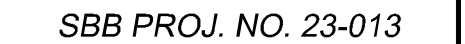
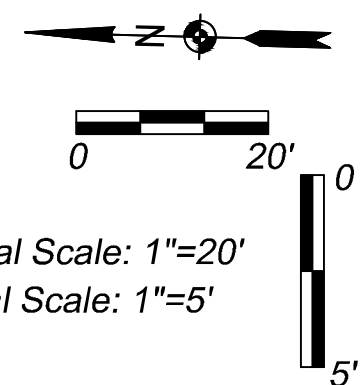


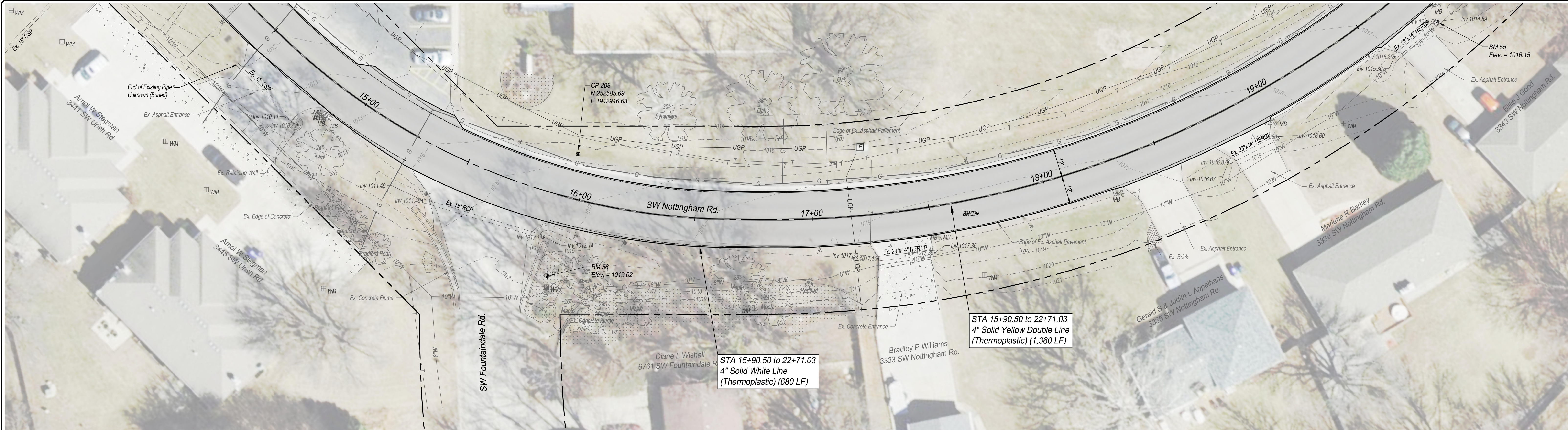
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SW Nottingham
(SW 33rd Street To SW 37th Street)

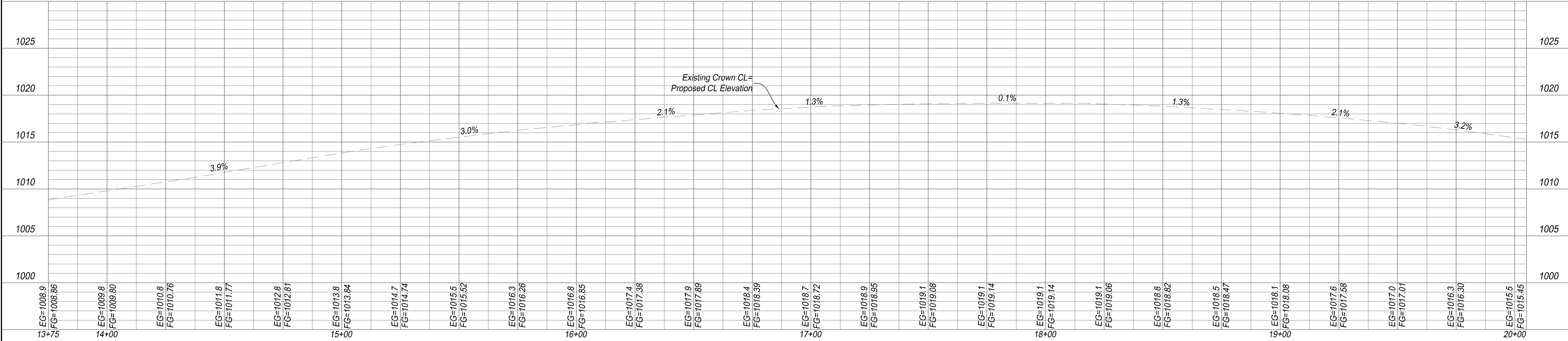
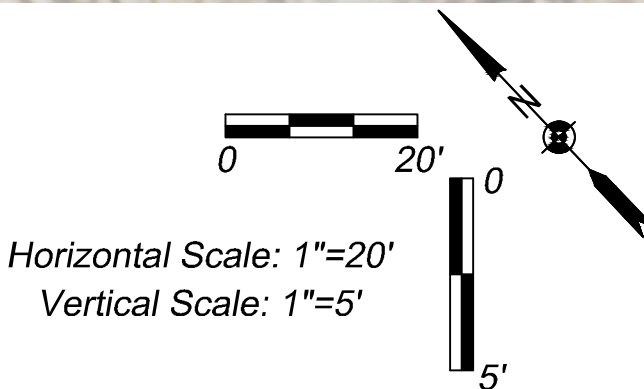
Project Control

DATE: 3/31/2023
SHEET: 3 OF 40
PROJ.: S-841012.00





Legend
8" Asphaltic Pavement on
8" Cement Treated Subgrade



SBB PROJ. NO. 23-013

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| DRAWN BY: L. O'CONNOR | | | |
| APP'D BY: B. AUSTIN | | | |
| FIELD BOOKS: | | | |
| SURVEYED BY: SBB ENG. | | | |
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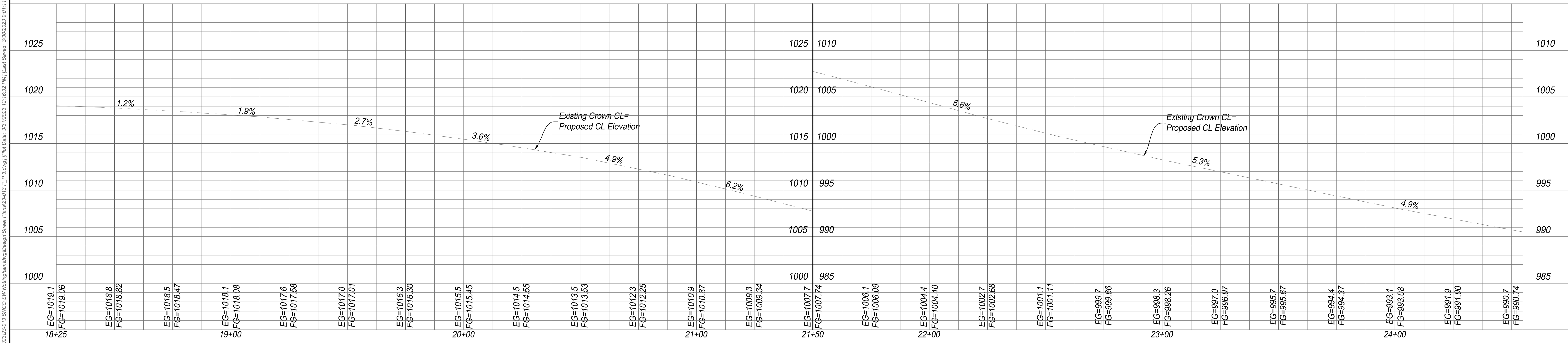
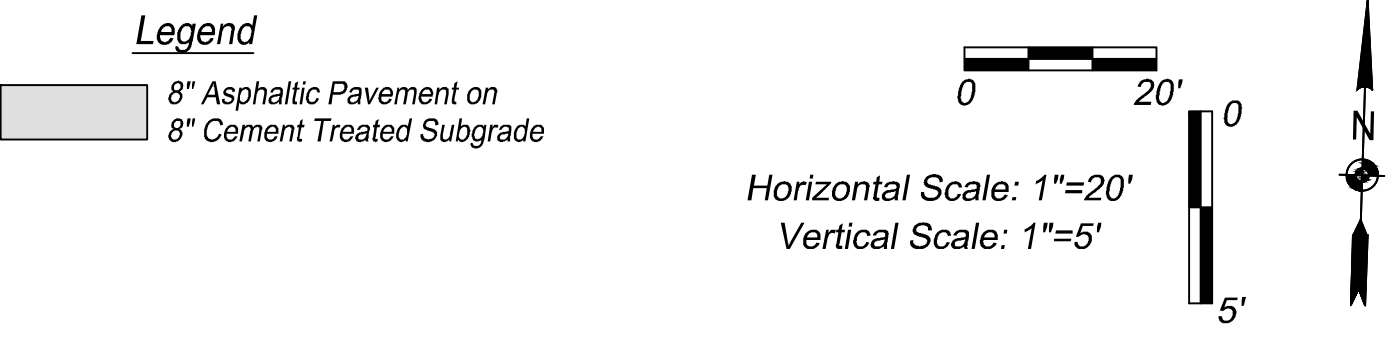
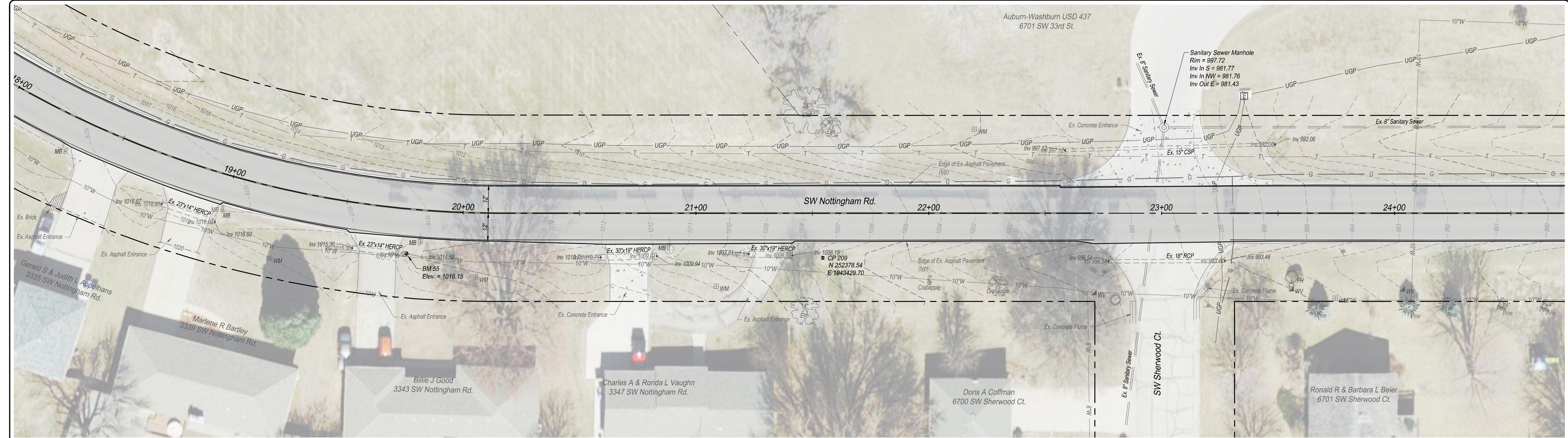


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SW Nottingham
(SW 33rd Street To SW 37th Street)

Plan & Profile

DATE: 3/31/2023
SHEET: 5 OF 40
PROJ.: S-841012.00



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DRAWN BY: L. O'CONNOR

APP'D BY: B. AUSTIN

FIELD BOOKS: -

SURVEYED BY: SBB ENG.

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SW Nottingham

(SW 33rd Street To SW 37th Street)

Plan & Profile

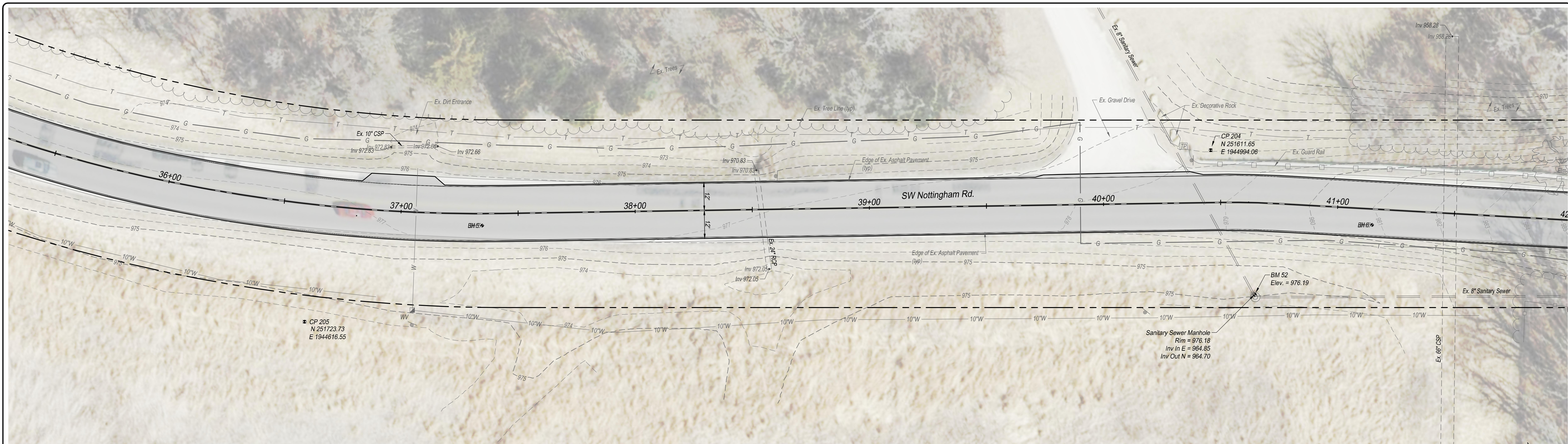
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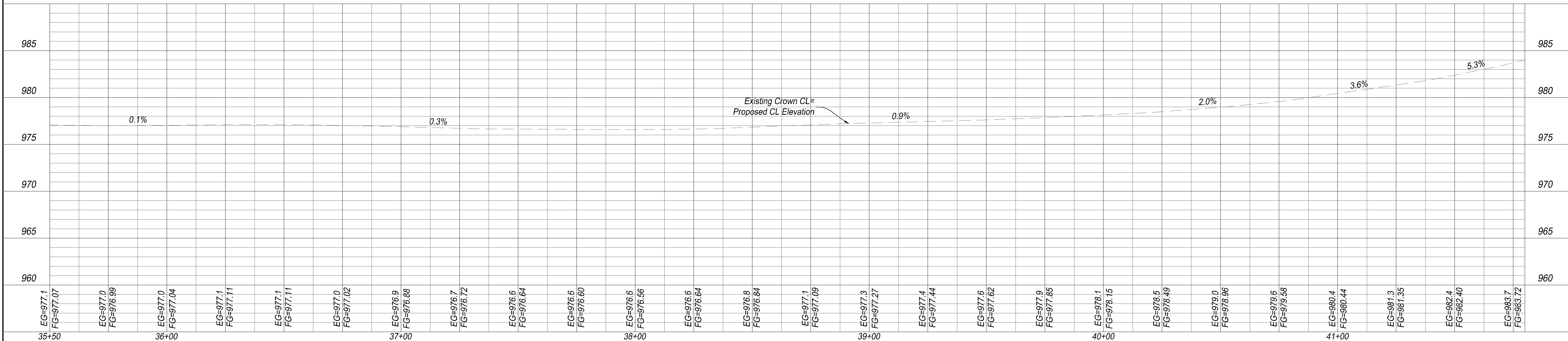
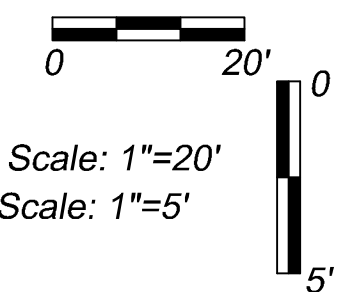
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SBB PROJ. NO. 23-013

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Legend

 8" Asphaltic Pavement on
8" Cement Treated Subgrade

SBB PROJ. NO. 23-013

DRAWN BY: L. O'CONNOR

APP'D BY: B. AUSTIN

FIELD BOOKS:

SURVEYED BY: SBB ENG.



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SW Nottingham
(SW 33rd Street To SW 37th Street)

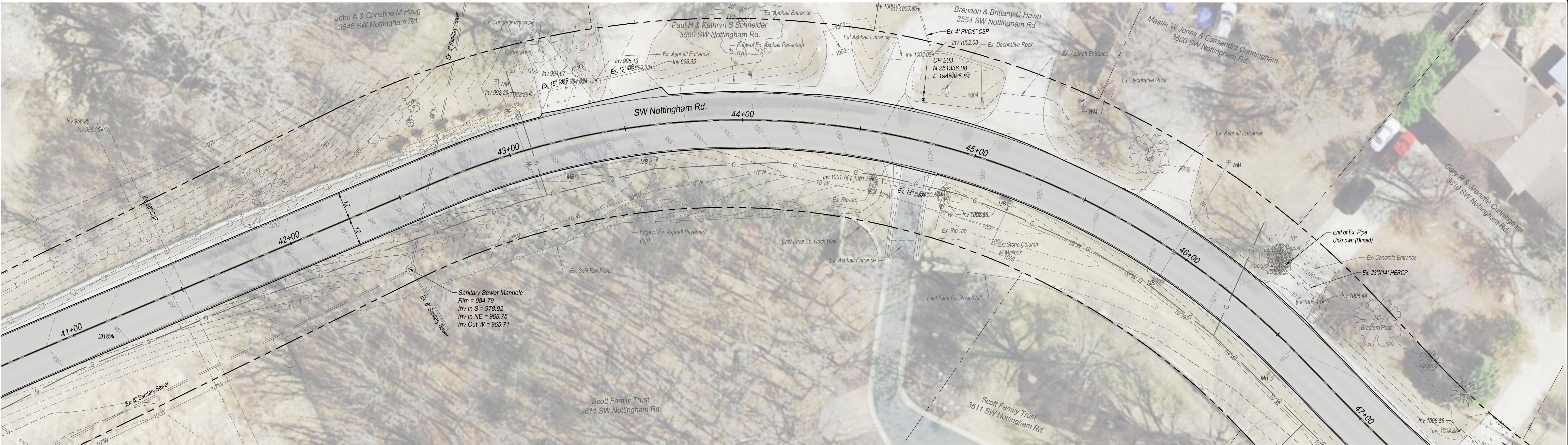
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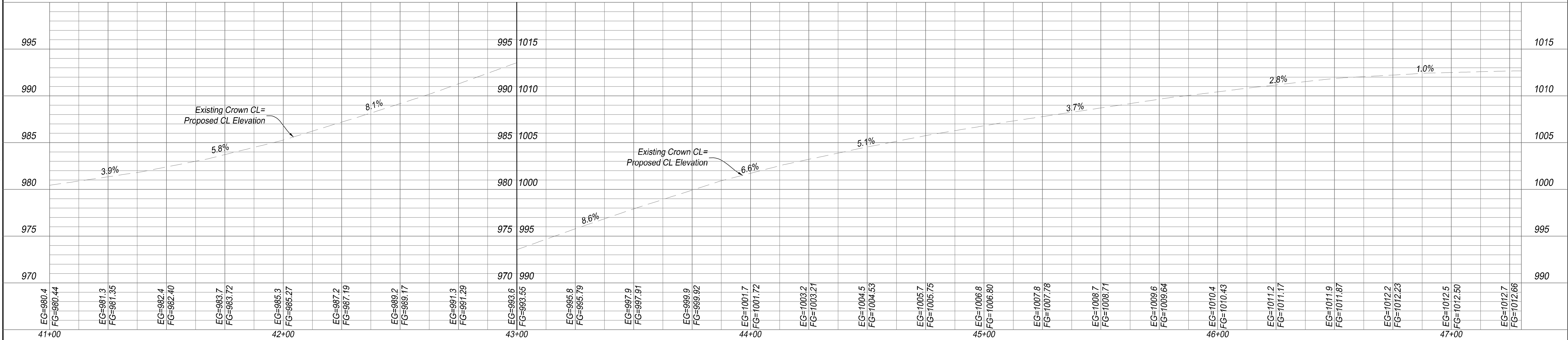
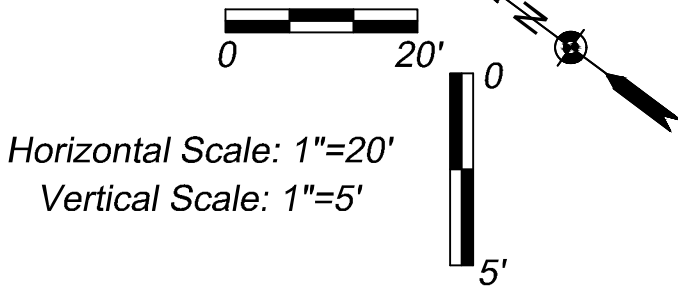
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PROJ.: S-841012.00

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Legend
8" Asphaltic Pavement on
8" Cement Treated Subgrade



SBB PROJ. NO. 23-013

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| DRAWN BY: L. O'CONNOR | | | |
| APP'D BY: B. AUSTIN | | | |
| FIELD BOOKS: - | | | |
| SURVEYED BY: SBB ENG. | | | |
| NO. | DATE: | REVISION | BY: APPD |
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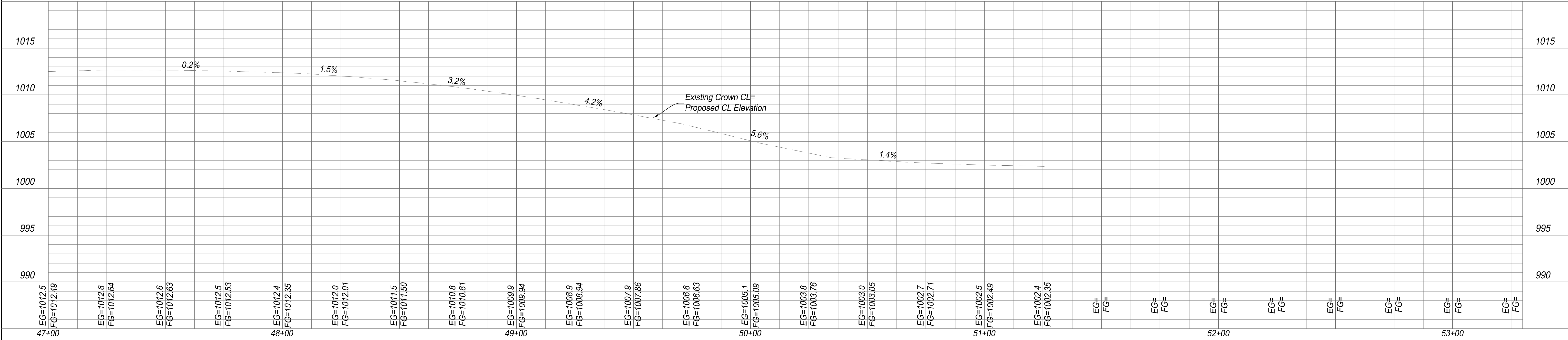
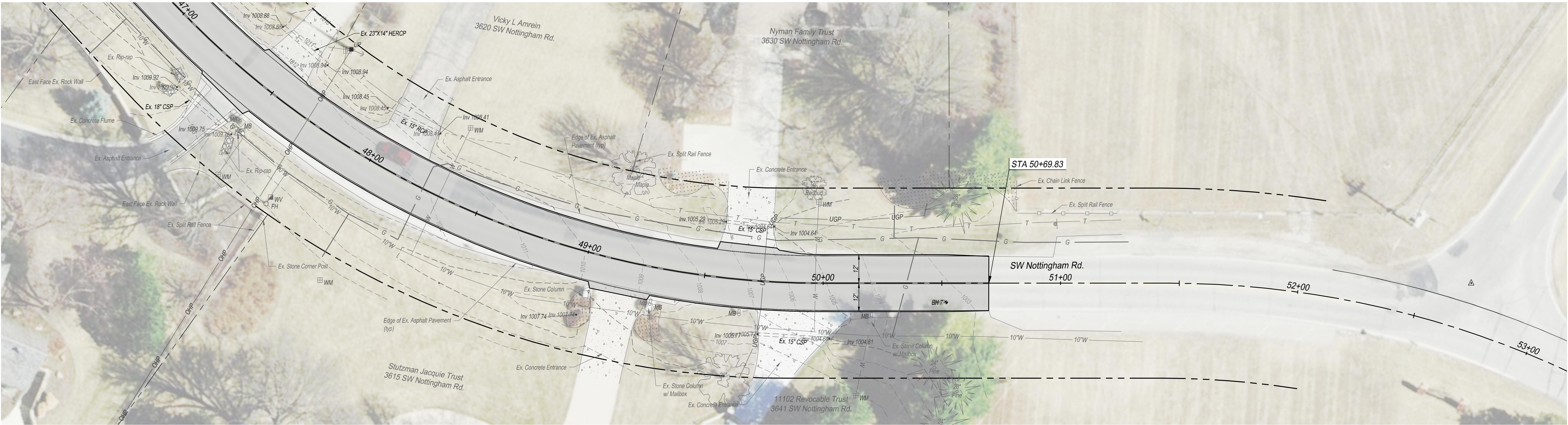


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SW Nottingham
(SW 33rd Street To SW 37th Street)

Plan & Profile

DATE: 3/31/2023
SHEET: 10 OF 40
PROJ.: S-841012.00



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APP'D BY: B. AUSTIN
FIELD BOOKS: -
SURVEYED BY: SBB ENG.

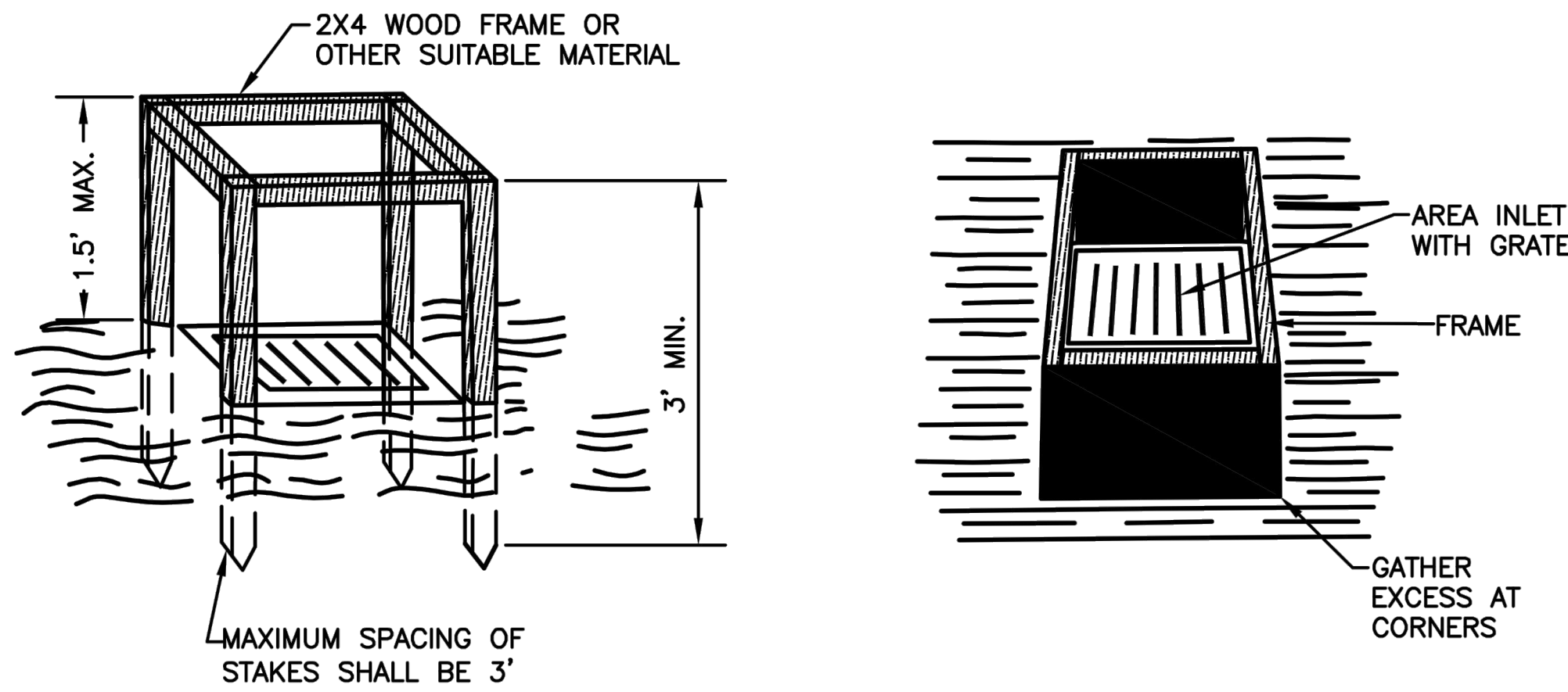


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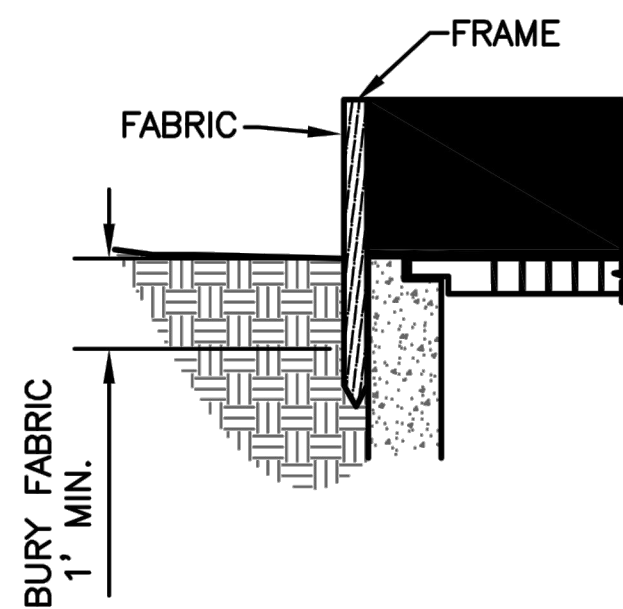
S-841012.00
SW Nottingham
(SW 33rd Street To SW 37th Street)

Plan & Profile

SBB PROJ. NO. 23-013
DATE: 3/31/2023
SHEET: 11 OF 40
PROJ.: S-841012.00



TOP VIEWS



PROFILE VIEW

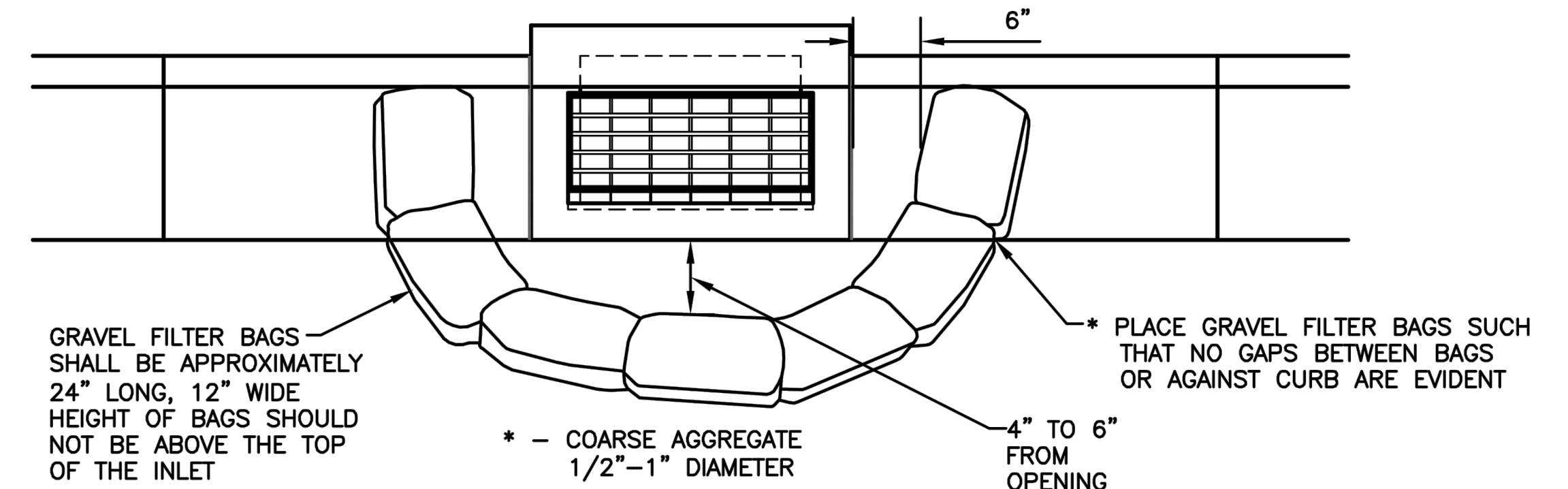
- NOTES:
1. BASE OF FABRIC SHALL BE BURIED AT LEAST 1' BELOW GROUND SURFACE AND BACKFILLED WITH CRUSHED STONE OR COMPACTED MATERIAL.
 2. WIRE MESH FENCE MAY BE USED TO SUPPORT FABRIC. TOP OF FENCE SHOULD BE LEVEL WITH FRAME AND BOTTOM BURIED 6" BELOW GROUND.
 3. MAY BE NECESSARY TO BUILD A TEMPORARY DIKE ON DOWN-SLOPE SIDE OF STRUCTURE TO PREVENT BYPASS FLOW.
 4. STRAW BALES OR GRAVEL FILLED FILTER BAGS MAY BE USED IN LIEU OF FABRIC. IF STRAW BALES ARE USED, TWO 4' (MINIMUM) LONG, 2" X 2" HARDWOOD STAKES SHALL BE DRIVEN THROUGH EACH BALE AND SET BACK 12" TO 24" FROM INLET. IF FILTER BAGS ARE USED, PLACE BAGS SUCH THAT NO GAPS ARE EVIDENT.

AREA INLET PROTECTION

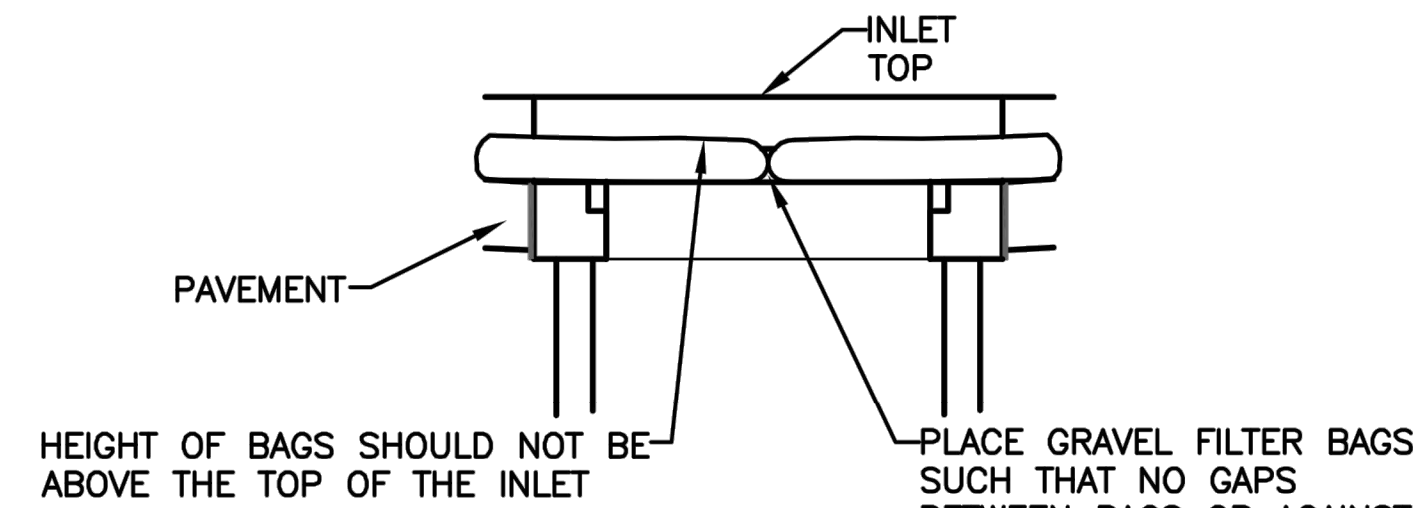
- GENERAL NOTES:
1. ANY EROSION AND SEDIMENT CONTROL MEASURES INTENDED TO CONTROL EROSION OF AN EARTH DISTURBANCE OPERATION SHALL BE INSTALLED BEFORE ANY EARTH DISTURBANCE OPERATIONS TAKE PLACE.
 2. THE CONTRACTOR SHALL INSPECT THE LAND DISTURBANCE SITE AFTER EACH SIGNIFICANT RAINFALL EVENT WITHIN A 24-HOUR PERIOD AND ASSURE THAT ALL EROSION AND SEDIMENT CONTROL MEASURES ARE IN WORKING CONDITION PRIOR TO ANY FORECASTED RAINFALL. SEDIMENT REMOVAL AND ALL NECESSARY REPAIRS SHALL BE MADE TO MAINTAIN THE INTEGRITY OF THE EROSION AND SEDIMENT CONTROL MEASURES. SEDIMENT SHALL BE REMOVED ONCE IT REACHES HALF OF THE INSTALLED HEIGHT OF MEASURE.
 3. THE CONTRACTOR SHALL MAINTAIN ALL EROSION AND SEDIMENT CONTROL MEASURES DURING ALL PHASES OF CONSTRUCTION UNTIL OWNER ACCEPTS WORK AS COMPLETE. THE CONTRACTOR SHALL PROVIDE TEMPORARY SEEDING, BERMS, SILT FENCE, SEDIMENT TRAPS OR OTHER MEANS TO PREVENT SEDIMENT FROM REACHING STREAMS, PUBLIC RIGHT-OF-WAY OR ADJACENT PROPERTY.
 4. SEDIMENT AND EROSION CONTROL MEASURES SHALL BE REMOVED ONCE 70 PERCENT OF THE PERMANENT COVER IS ESTABLISHED.
 5. THE CONTRACTOR SHALL TEMPORARILY SEED AND MULCH ALL DISTURBED AREAS IF THERE HAS BEEN NO CONSTRUCTION ACTIVITY ON THEM FOR A PERIOD OF 14 CALENDAR DAYS. IF THE ENGINEER DETERMINES THAT A SITE HAS A POTENTIAL FOR EROSION, STABILIZATION OF SOIL MAY BE REQUIRED. TEMPORARY SEED MIXTURE SHALL BE APPROVED BY THE ENGINEER OR AS FOLLOWS:

| | | | |
|-------|--|-------------------|------------------|
| TYPE: | | APPLICATION RATE: | |
| | | WINTER WHEAT | 120 LBS PER ACRE |
| | | RYEGRASS | 75 LBS PER ACRE |

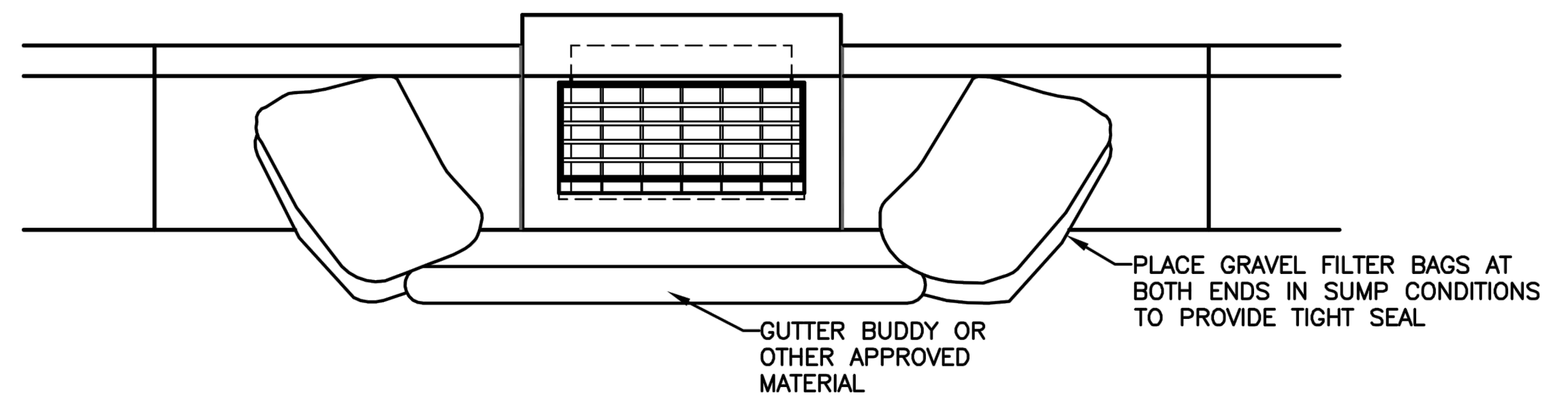
REPAIRS AND RESEEDING SHALL BE PERFORMED BY THE CONTRACTOR AT THE DIRECTION OF THE ENGINEER AT NO ADDITIONAL COST TO THE OWNER. IF VEGETATIVE MEASURES ARE NOT EFFECTIVE, NON-VEGETATIVE OPTION MAY BE REQUIRED.



PLAN

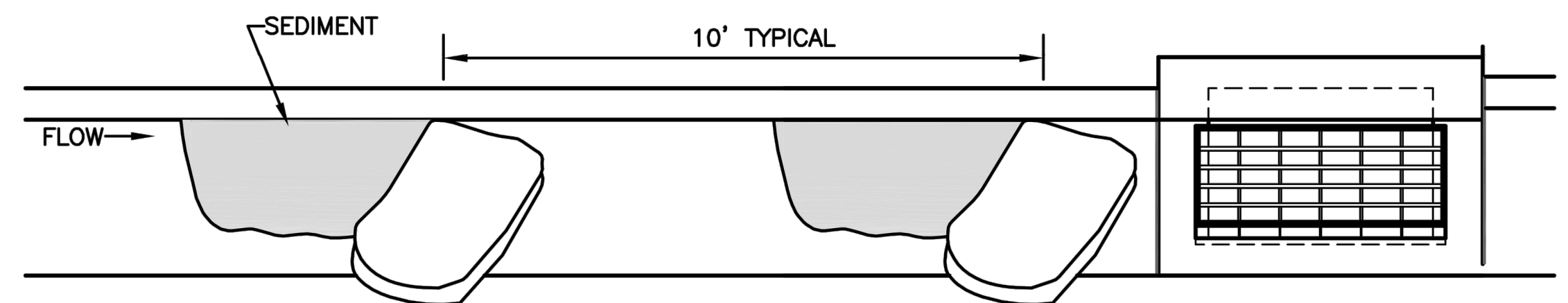


PROFILE



SUMP CONDITIONS

NOTE:
DO NOT BLOCK INLET OPENING - STORMWATER MUST BE ALLOWED TO FLOW TO DRAIN AND NOT BYPASS TO DOWNSTREAM.



PLAN

IN GRADE CONDITIONS

- NOTES:
1. OTHER APPROVED CURB INLET SEDIMENT FILTERS MAY BE USED.
 2. IMMEDIATELY FOLLOWING INLET CONSTRUCTION AND PRIOR TO CONSTRUCTION OF CURB AND INLET THROAT, PROTECT INLET OPENING AROUND PERIMETER. SEE AREA INLET DETAIL THIS PAGE.
 3. CONTRACTOR TO CLEAN OUT SEDIMENT AFTER EACH SIGNIFICANT RAINFALL EVENT.
 4. DURING CONSTRUCTION GRAVEL FILTER BAGS SHALL BE REPLACED PRIOR TO DEGRADATION.
 5. ANY SEDIMENT OR GRAVEL DEPOSITED IN INLET SHALL BE REMOVED PROMPTLY.

CURB INLET SEDIMENT PROTECTION

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| 2 | May 2015 | Added & Updated Notes | DHS | JDH | |
| 1 | March 2013 | Revised Notes | DHS | JDH | |
| NO. | DATE: | REVISION | BY: | APP'D | |

DRAWN BY: DHS
APP'D BY: JDH



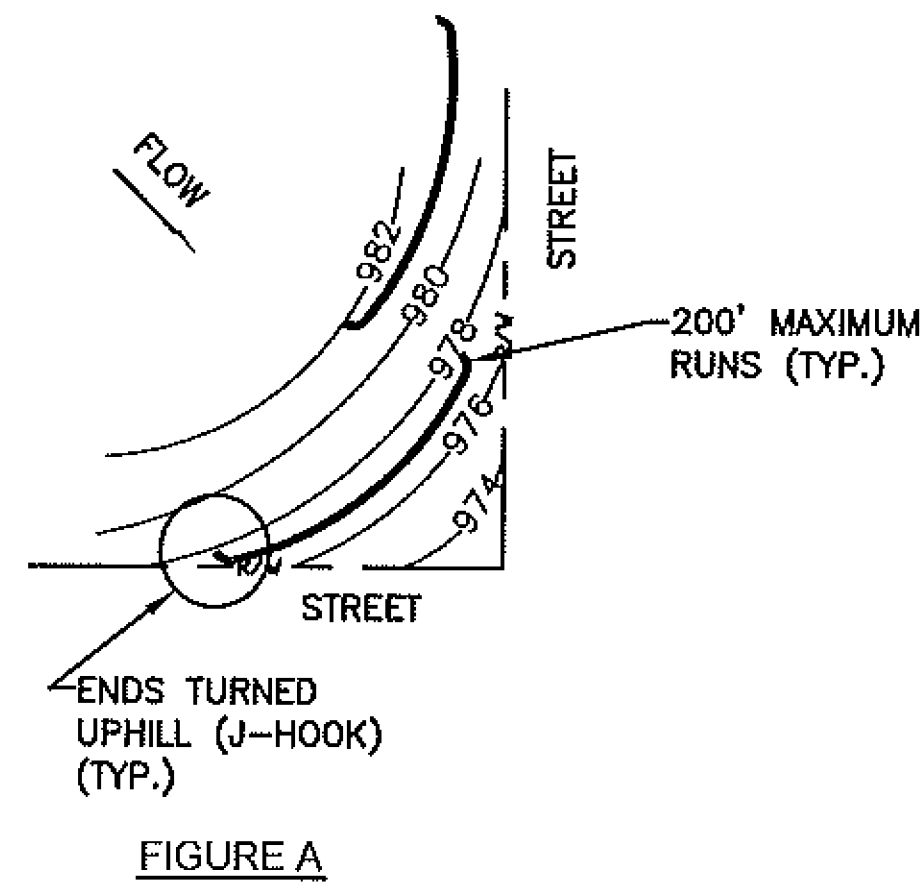
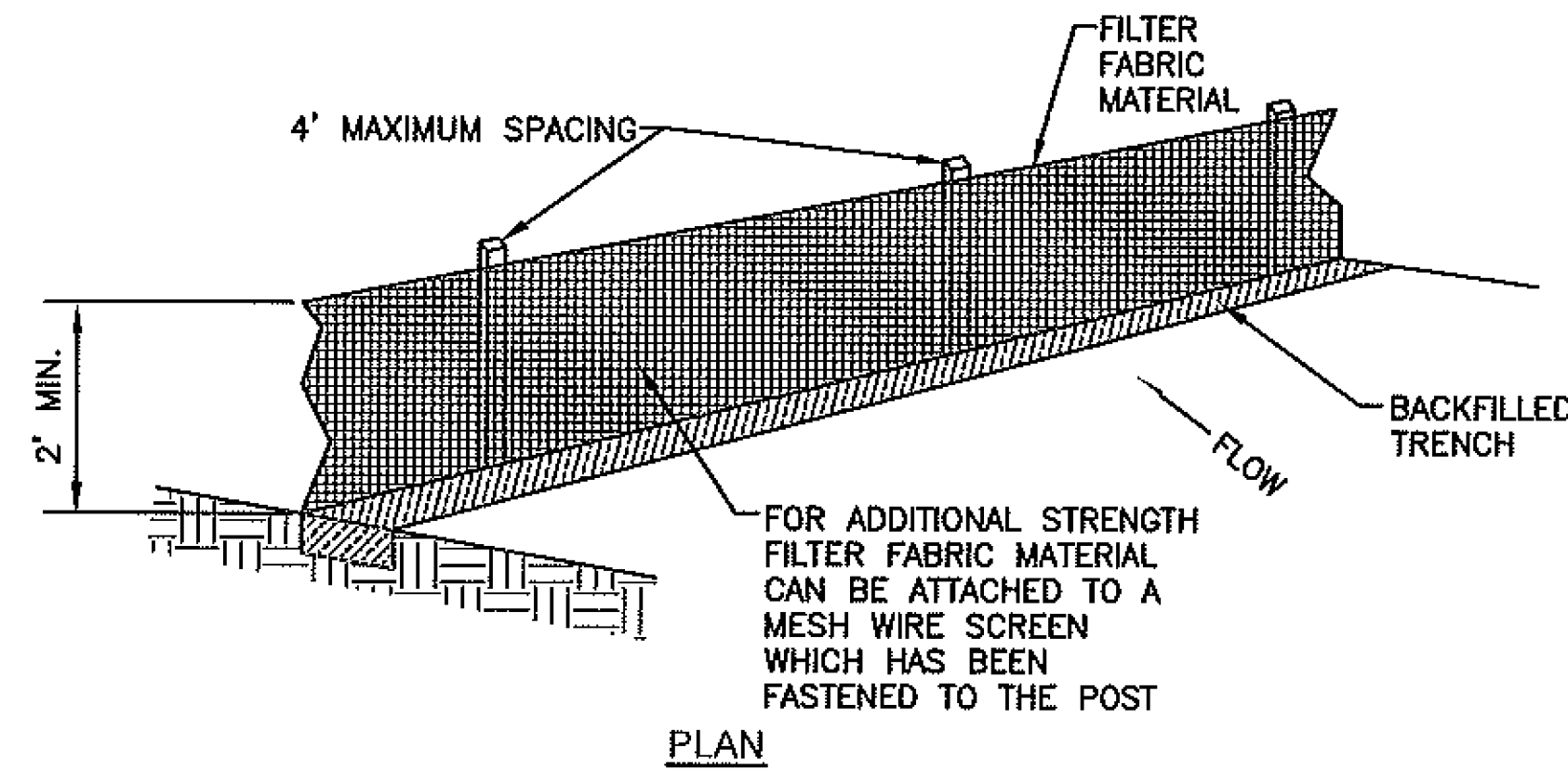
SHAWNEE COUNTY, KANSAS
PUBLIC WORKS DEPARTMENT
COUNTY ENGINEER
1515 NW SALINE
TOPEKA, KS 66618
(785) 233-7702

TOPEKA
Public Works
ENGINEERING
620 SE MADISON St. • 2nd Floor • TOPEKA, KS 66607
Phone: (785) 368-3842 • Fax: (785) 368-3881

STANDARD DETAILS

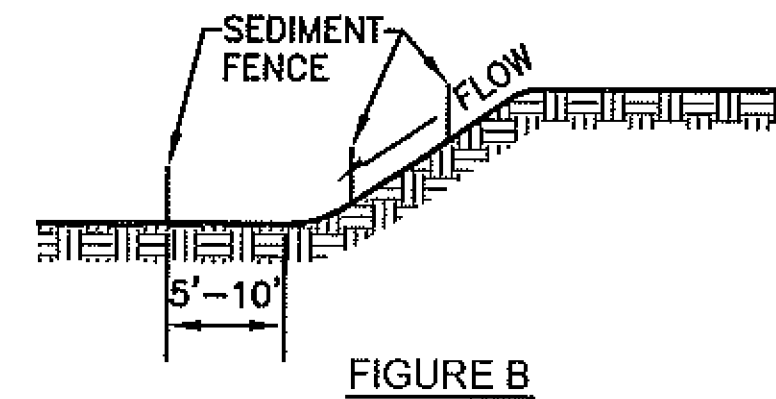
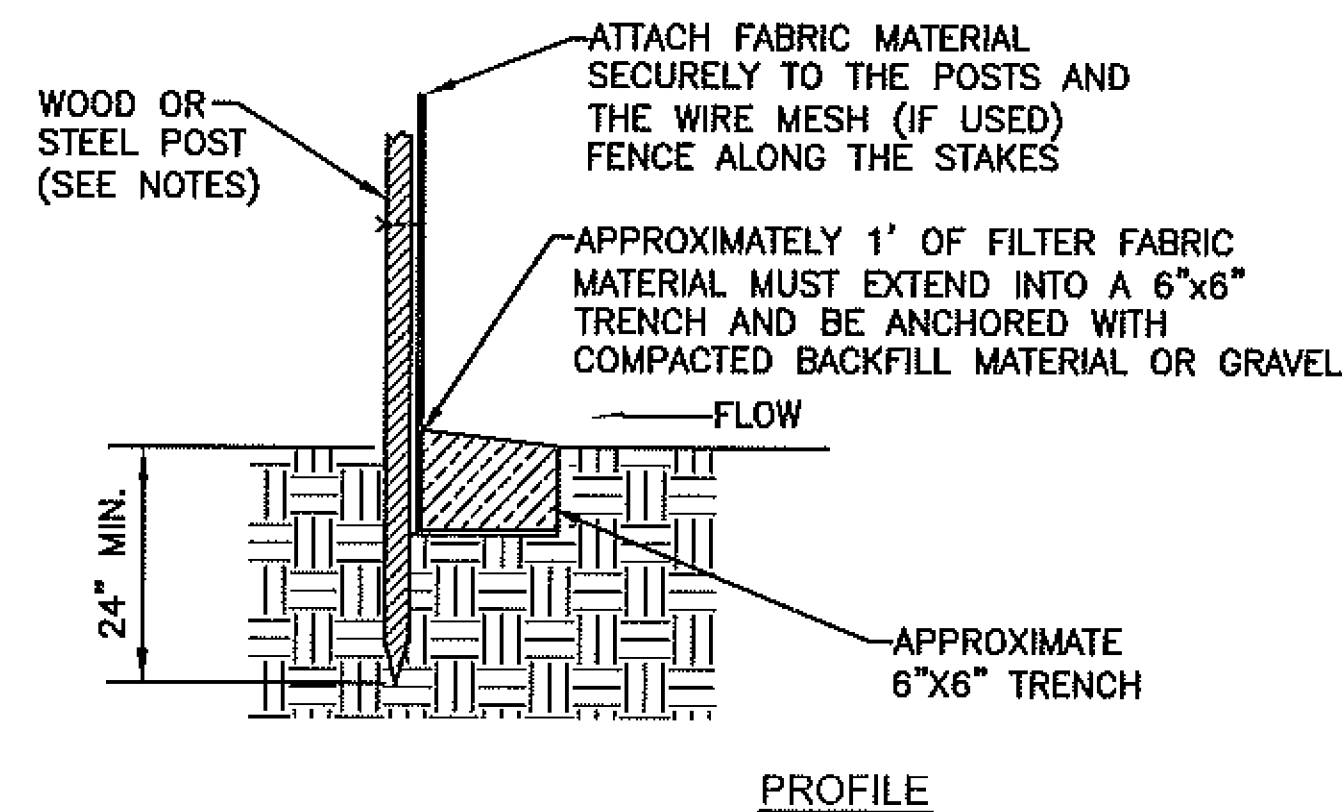
**EROSION &
POLLUTION CONTROL**
INLET PROTECTION AND GENERAL NOTES
(DT-020)

DATE: 3/31/2023
SHEET: 12 OF 40
PROJ.: S-841012.00



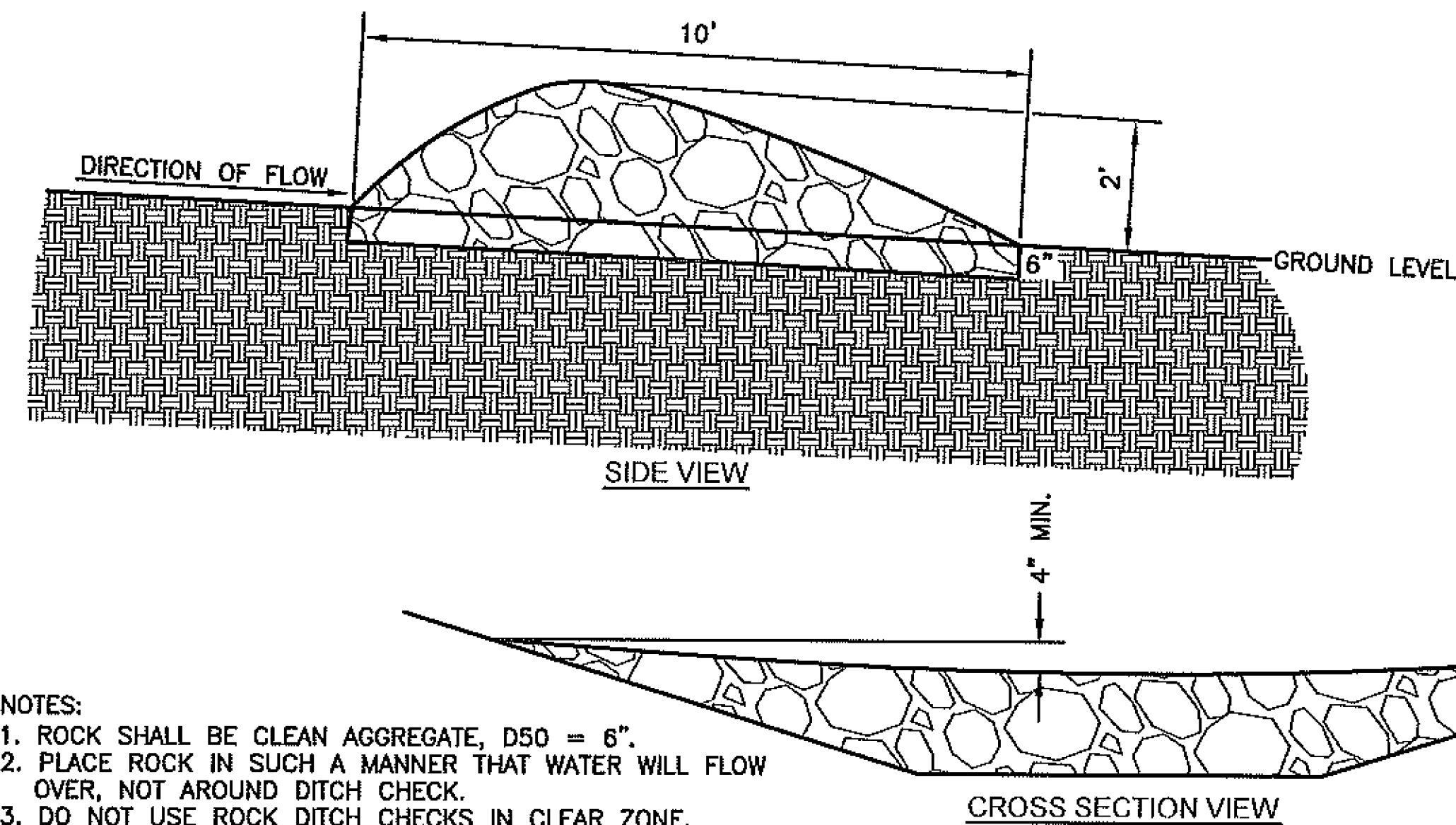
| Land Slope and Distance for Sediment Fence | |
|--|--|
| Land Slope (percent) | Maximum Slope Distance* above Fence (feet) |
| Less than 2 | 100 |
| 2 to 5 | 75 |
| 5 to 10, greater than 10 | 50* |

*Follow manufacturers' recommendations for proper spacing.



- NOTES:
1. THE USE OF HAY/STRAW BALES IS THE CONTRACTOR'S OPTION. IF HAY BALES ARE USED PLACE TIGHTLY TOGETHER WITH 2"x2"x4' (MIN.) LENGTH WOOD STAKES IN OUTER 1/3 SECTIONS OF BALES. BALES SHOULD BE EMBEDDED INTO THE SOIL A MINIMUM OF 6" WITHIN A MAXIMUM DRAINAGE AREA OF 1 ACRE OR LESS.
 2. THE SEDIMENT FENCES SHALL BE PLACED ALONG CONTOUR LINES, WITH A SHORT SECTION TURNED UPGRADE (J-HOOK) AT EACH END OF THE BARRIERS TO HOLD WATER AND SEDIMENT (SEE FIGURE A).
 3. AREAS THAT CONTAIN LARGER CONCENTRATIONS OF WATER SHALL BE LIMITED TO LENGTHS OF SILT FENCES TO NO LONGER THAN 200' (SEE FIGURE A). LIMIT TO 1/4 ACRE PER 100' OF FENCE. FURTHER RESTRICT AREA BY LAND SLOPE TABLE ABOVE.
 4. AREAS SHOULD BE BROKEN UP WITH INTERIOR SEDIMENT FENCE TO MINIMIZE WATER CONCENTRATIONS AND LONG SLOPES (SEE FIGURE B).
 5. SEDIMENT FENCES INSTALLED AT TOE OF SLOPE SHALL BE PLACED 5' TO 10' AWAY (DOWNSTREAM) TO CREATE SEDIMENT STORAGE (SEE FIGURE B).
 6. DEPTH OF WATER CONCENTRATIONS SHOULD NOT EXCEED 1.5' AT ANY POINT ALONG THE FENCE.
 7. PLACE SILT FENCE ONLY WHERE OVERLAND OR SHEET FLOW DISCHARGES OCCUR.
 8. SILT FENCES SHOULD NOT BE USED IN CONCENTRATED FLOW CHANNELS, OR AS INLET PROTECTION DEVICES IF FLOODING CONDITIONS COULD OCCUR.
 9. DO NOT USE HAY OR STRAW BALES WITH WIRE TIES.
 10. WHEN SEDIMENT REACHES 1/2 HEIGHT OF SILT FENCE OR SIMILAR CONTROL MEASURE, THE CONTRACTOR SHALL REMOVE THE SEDIMENT.

SILT FENCE

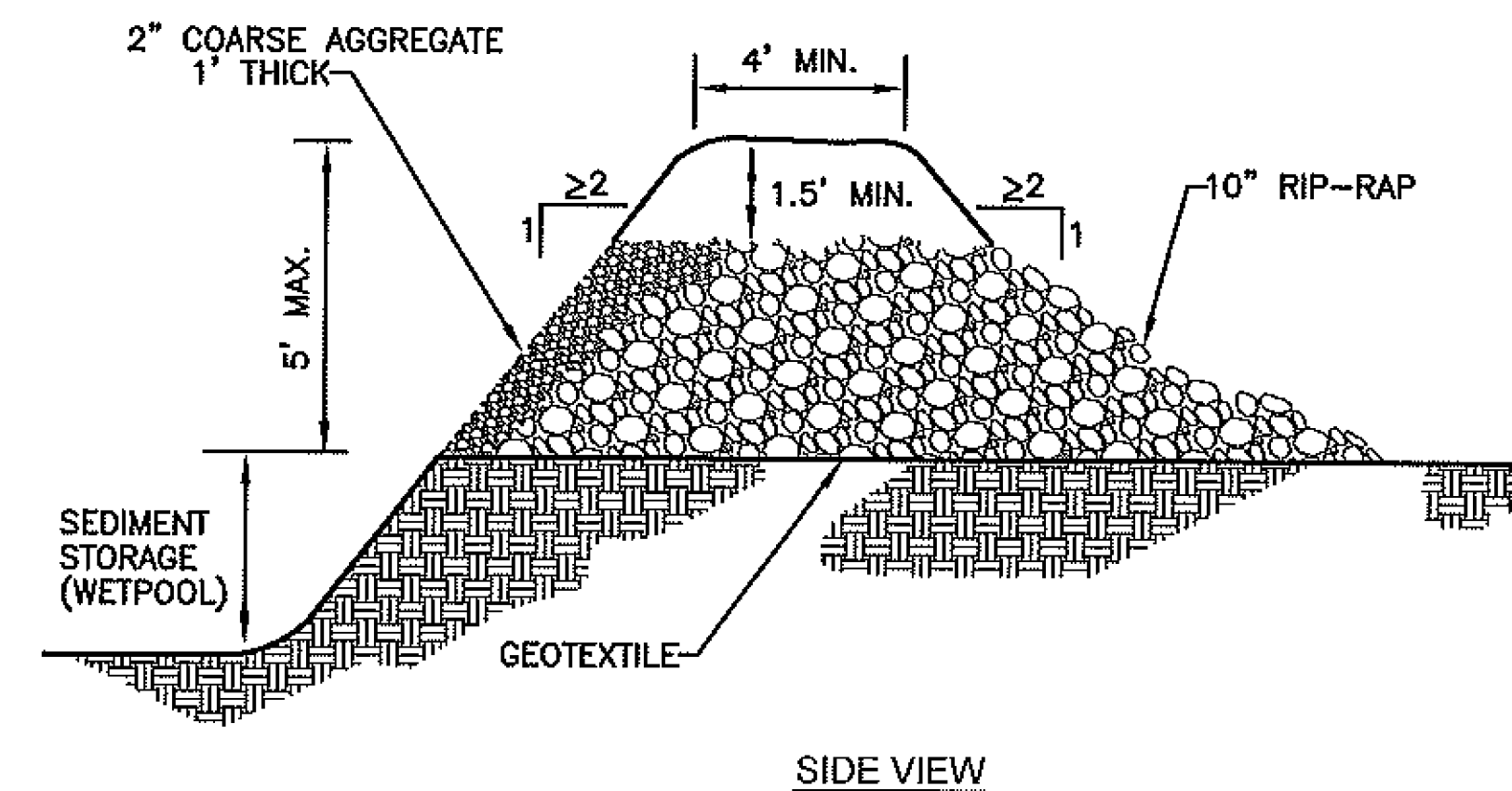
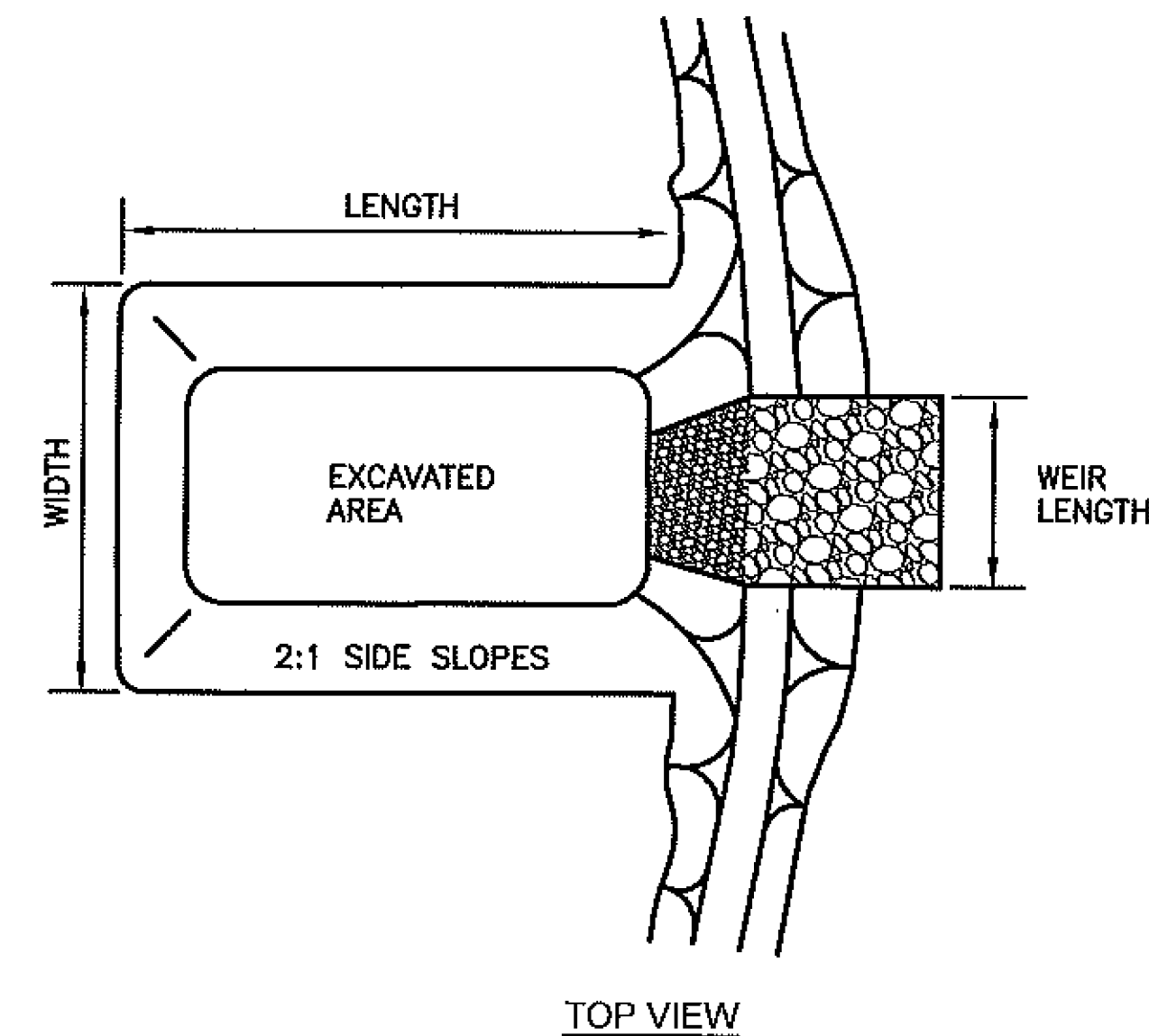


| TEMPORARY ROCK DITCH CHECK SPACING | |
|------------------------------------|-------------------------|
| DITCH & SLOPE (%) | SPACING INTERVAL (FEET) |
| 5.0 | 60 |
| 6.0 | 50 |
| 7.0 | 43 |
| 8.0 | 36 |
| 9.0 | 33 |
| 10.0 | 29 |

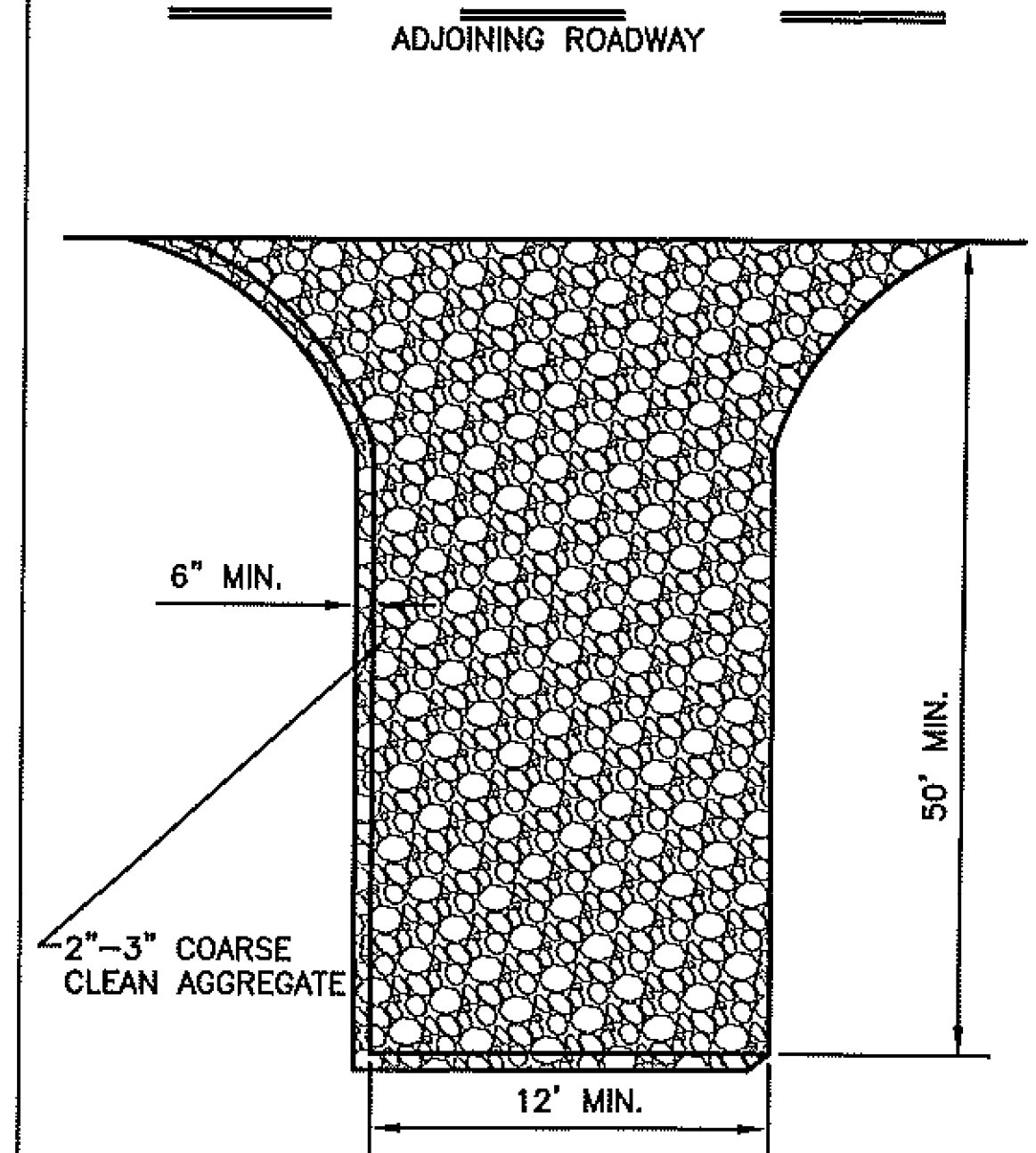
THIS SPACING IS TO BE USED FOR ROCK DITCH CHECKS ONLY.

- NOTES:
1. ROCK SHALL BE CLEAN AGGREGATE, D50 = 6".
 2. PLACE ROCK IN SUCH A MANNER THAT WATER WILL FLOW OVER, NOT AROUND DITCH CHECK.
 3. DO NOT USE ROCK DITCH CHECKS IN CLEAR ZONE.
 4. AGGREGATE EXCAVATED ON SITE MAY BE USED AS AN ALTERNATE TO THE 6" ROCK, IF APPROVED BY THE ENGINEER.

ROCK DITCH CHECK



SEDIMENT BASIN



- NOTES:
1. GEOTEXTILE FABRIC MAY BE USED AS AN UNDERLINER IN WET CONDITIONS TO PROVIDE STABILITY.
 2. PROVIDE SUFFICIENT WIDTH, LENGTH & TURNING RADIUS FOR CONSTRUCTION VEHICLES ENTERING & EXITING SITE.
 3. MUST BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR DIRECT FLOW OF SEDIMENT ON TO STREETS AND KEEP THE ENTRANCE EFFECTIVE.
 4. PROPERLY GRADE TO PREVENT RUNOFF FROM LEAVING CONSTRUCTION SITE THROUGH ENTRANCE/EXIT.
 5. DO NOT ALLOW ROCK SPACES TO BE FILLED IN WITH DIRT - ROCKS MUST BE KEPT LOOSE.

CONSTRUCTION ENTRANCE

| NO. | DATE | REVISION | BY | APP'D |
|-----|------------|--|-----|-------|
| 3 | May 2015 | Updated Notes & Added Rock Ditch Check | DHS | JDH |
| 2 | March 2013 | Repl. Sed. Trap & Added Land Slope Table | DHS | JDH |
| 1 | Dec. 2009 | Modified Slope Depth & Spacing | DHS | JDH |

DRAWN BY: DHS
APP'D BY: JDH



SHAWNEE COUNTY, KANSAS
PUBLIC WORKS DEPARTMENT
COUNTY ENGINEER
1515 NW SALINE
TOPEKA, KS 66618
(785) 233-7702

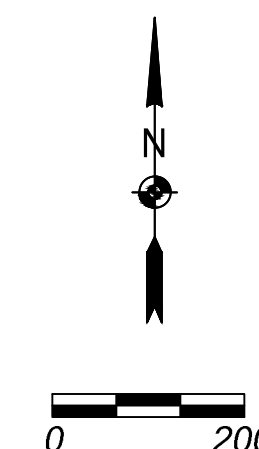
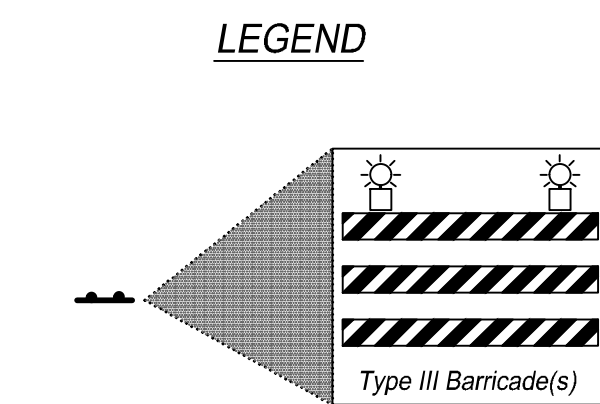
TOPEKA
Public Works
ENGINEERING
620 SE MADISON ST. • 2nd Floor • TOPEKA, KS 66607
Phone: (785) 365-3842 • Fax: (785) 365-3851

STANDARD DETAILS

EROSION & POLLUTION CONTROL
SILT FENCE, SEDIMENT BASIN,
CONSTRUCTION ENTRANCE,
AND ROCK DITCH CHECK
(DT-021)

DATE: 3/31/2023
SHEET: 13 OF 40
PROJ.: S-841012.00

Contractor to provide access to residents along project throughout construction.



| | | | | | | DRAWN BY: | L. O'CONNOR |
|-----|-------|----------|--|-----|-------|--------------|-------------|
| | | | | | | APP'D BY: | B. AUSTIN |
| | | | | | | FIELD BOOKS: | - |
| | | | | | | SURVEYED BY: | SBB ENG. |
| NO. | DATE: | REVISION | | BY: | APP'D | | |



SBB Engineering, LLC
101 S Kansas Ave., Topeka, KS 66603
Ph: (785) 215-8630 www.sbbeng.com

S-841012.00
SW Nottingham
(SW 33rd Street To SW 37th Street)

Traffic Control Plan

SBB PROJ. NO. 23-013

DATE: 3/31/2023

SHEET: 14 OF 40

PROJ.: S-841012.00

GENERAL NOTES:

ALL DEVICES SHALL COMPLY WITH THE 2009 EDITION OF
THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).

72-HOUR NOTICE TO CITY IS REQUIRED BEFORE WORK IS
STARTED. CONTACT 785-368-3842 FOR TRAFFIC DISRUPTION
PERMIT.

72-HOUR NOTICE IS REQUIRED IF TRAFFIC SIGNALS ARE TO BE MODIFIED AS PART OF TRAFFIC CONTROL. CONTACT 785-368-3913.

UNLESS OTHERWISE NOTED, ALL TRAFFIC CONTROL DEVICES SHALL BE PROVIDED AND MAINTAINED BY THE CONTRACTOR.

SIGNS AND TRAFFIC CONTROL DEVICES NEED TO BE PROPERLY MAINTAINED FOR CLEANLINESS, VISIBILITY, AND CORRECT POSITIONING.

CONTRACTOR SHALL OBTAIN UTILITY LOCATES PRIOR TO
INSTALLING SIGNPOSTS.

SIGNS LEFT IN PLACE THREE OR FEWER DAYS CAN BE MOUNTED AT ONE FOOT. SIGNS LEFT IN PLACE GREATER THAN THREE DAYS NEED TO BE MOUNTED AT SEVEN FEET. IF THERE ARE NO SIDEWALKS, NO PEDESTRIANS, AND NO PARKING, MOUNTING MOUNTING HEIGHT CAN BE REDUCED TO FIVE FEET. IF SECONDARY SIGN IS NEEDED MINIMUM MOUNTING HEIGHT MAY BE ONE FOOT LOWER.

ALL SIGNS SHALL TO BE REMOVED, COVERED, OR TURNED AWAY FROM TRAFFIC WHEN NOT IN USE.

CONTRACTOR MAY BE REQUIRED TO ADD SNOW FENCE TO PROHIBIT PEDESTRIANS FROM ENTERING THE WORK AREA. FENCING SHOULD NOT CREATE A SIGHT DISTANCE RESTRICTION FOR ROAD USERS.

ALL WORKERS SHALL WEAR HIGH VISIBILITY APPAREL MEETING ANSI 107-2004 CLASS 2 OR 3.

TRAFFIC CONTROL DEVICES SHALL MEET NCHRP REPORT 350 (AND SUPPLEMENTS) OR MASH 2009. NCHRP TESTED DEVICES ARE GRANDFATHERED. NEW DEVICES WILL BE MASH 2009 TESTED.

WHEN ROAD WORK CREATES A DIFFERENCE IN ELEVATION BETWEEN ADJACENT LANES THAT ARE OPEN TO TRAVEL, UNEVEN LANE SIGNS, (W8-11) 36"x36" SHALL BE ADDED. THEY SHALL BE PLACED AT BEGINNING AND AT INTERVALS EQUAL TO APPROXIMATELY 1000', BOTH DIRECTIONS IF APPLICABLE.

A BUMP SIGN (W8-1) 36"X36" SHALL BE INSTALLED TO GIVE WARNING OF A 2" OR MORE RISE OR DEPRESSION IN THE PROFILE OF THE ROADWAY. USE AT BEGINNING AND END OF MILLING EVEN IF WEDGE IS IN PLACE.

FORMULAS FOR DETERMINING TAPER LENGTH

| <u>SPEED (S)</u> | <u>TAPER LENGTH (L) IN FEET</u> |
|------------------|---------------------------------|
| 40 MPH OR LESS | $L = \frac{WS^2}{60}$ |
| 45 MPH OR MORE | $L = WS$ |

WHERE: L = TAPER LENGTH IN FEET
W = WIDTH OF OFFSET IN FEET
S = POSTED SPEED LIMIT PRIOR TO WORK STARTING

| <u>SPEED LIMIT</u> | <u>TAPER (L)</u> | <u>SIGN SPACING (X)</u> |
|---------------------------|-------------------------|--------------------------------|
| 20 | 80' | 100' |
| 25 | 125' | 100' |
| 30 | 180' | 100' |
| 35 | 245' | 100' |
| 40 | 320' | 100' |
| 45 | 540' | 350' |

BASED ON $W=12'$

EXCEPT AS NOTED (DOWNSTREAM TAPER, FLAGGER OPERATIONS, YIELD OPERATION), SPACE CHANNELIZER @ SPEED LIMIT. IF SPEED LIMIT IS 40mph SET DEVICES AT 40'.

DETOUR SIGNING-STREET **CONSTRUCTION IN A STREET GRID**

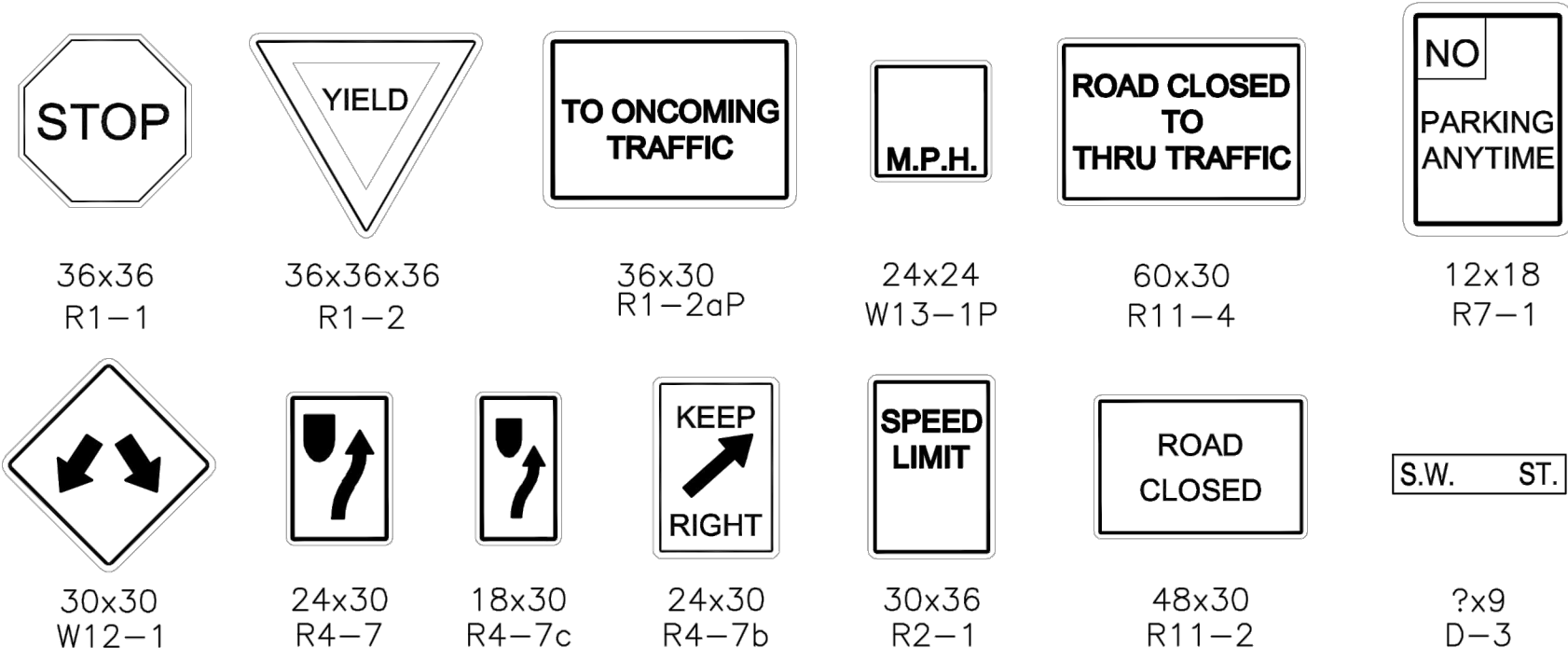
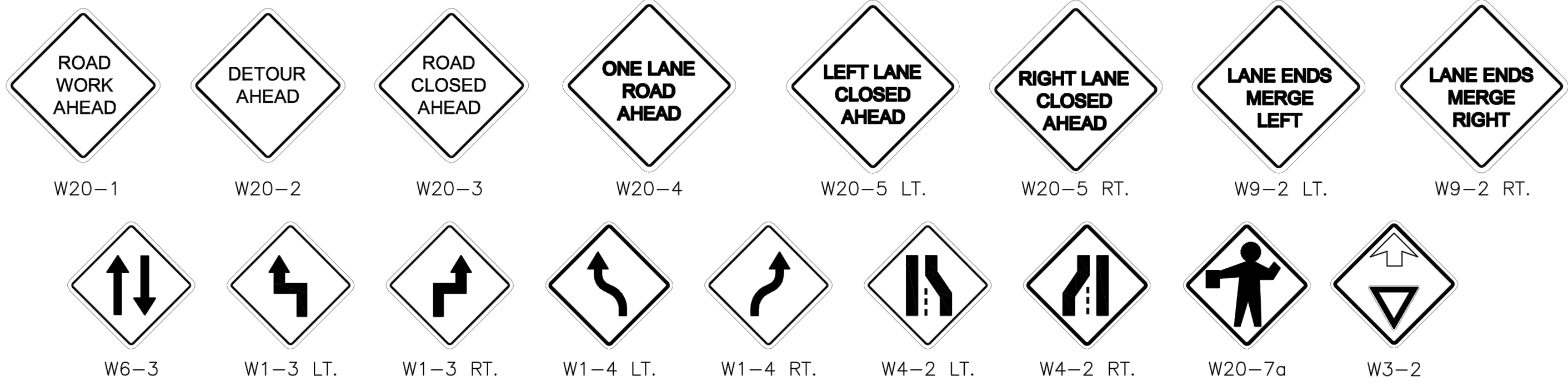
STREET NAME SIGN (D-3) TO BE PLACED ABOVE THE
DETOUR SIGN (M4-9) TO INDICATE THE NAME OF THE
ROADWAY FOR WHICH THE DETOUR WAS ESTABLISHED.

CORNER SIDEWALK CLOSURE WITH PEDESTRIAN DETOUR

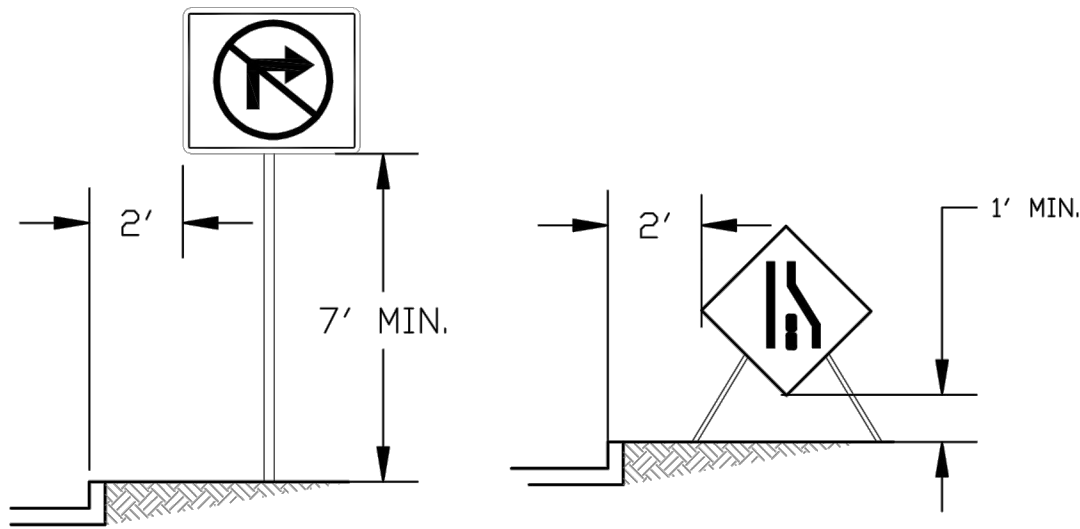
* ADVANCE SIGNS TO BE PLACED ON TYPE I OR TYPE II BARRICADES. PLACE SO THAT AT LEAST 48" OF SIDEWALK IS AVAILABLE FOR PEDESTRIAN USE.

SIGNS TO BE PLACED ON CONTINUOUS DETECTABLE DEVICES. DEVICE CAN BE TYPE I, TYPE II, TYPE III OR OTHER TYPE WALLS OR RAILS AS PER MUTCD. THEY WILL HAVE ORANGE AND WHITE STRIPES. THE BOTTOM EDGING WILL BE AT LEAST 6 INCHES IN WIDTH AND PLACED A MAXIMUM OF 2 1/2 INCHES ABOVE THE SIDEWALK, SO AS TO BE DETECTABLE BY PEDESTRIANS WITH LONG CANE.

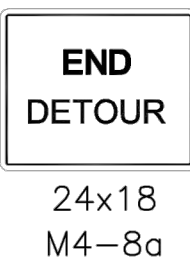
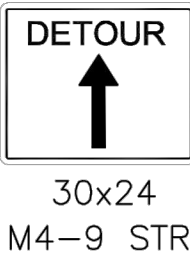
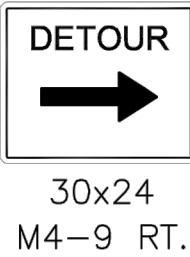
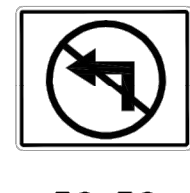
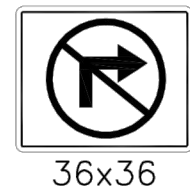
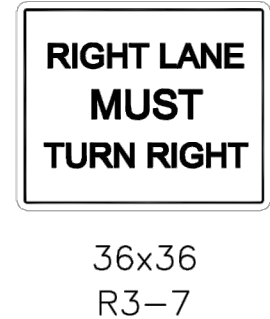
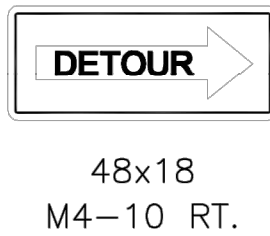
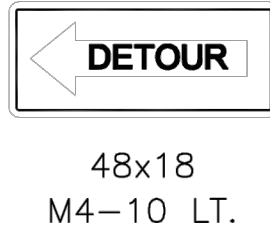
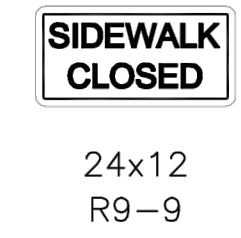
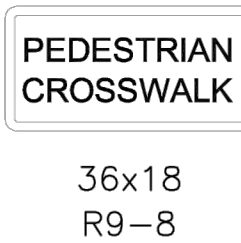
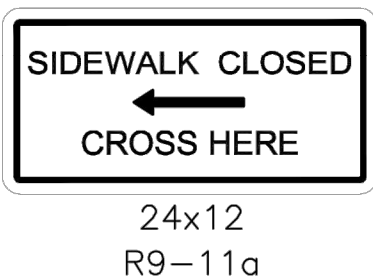
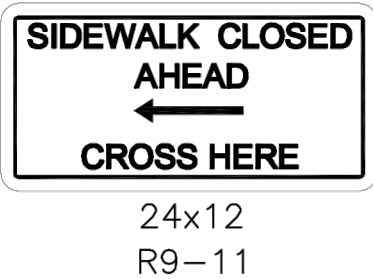
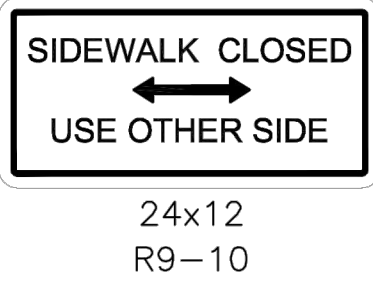
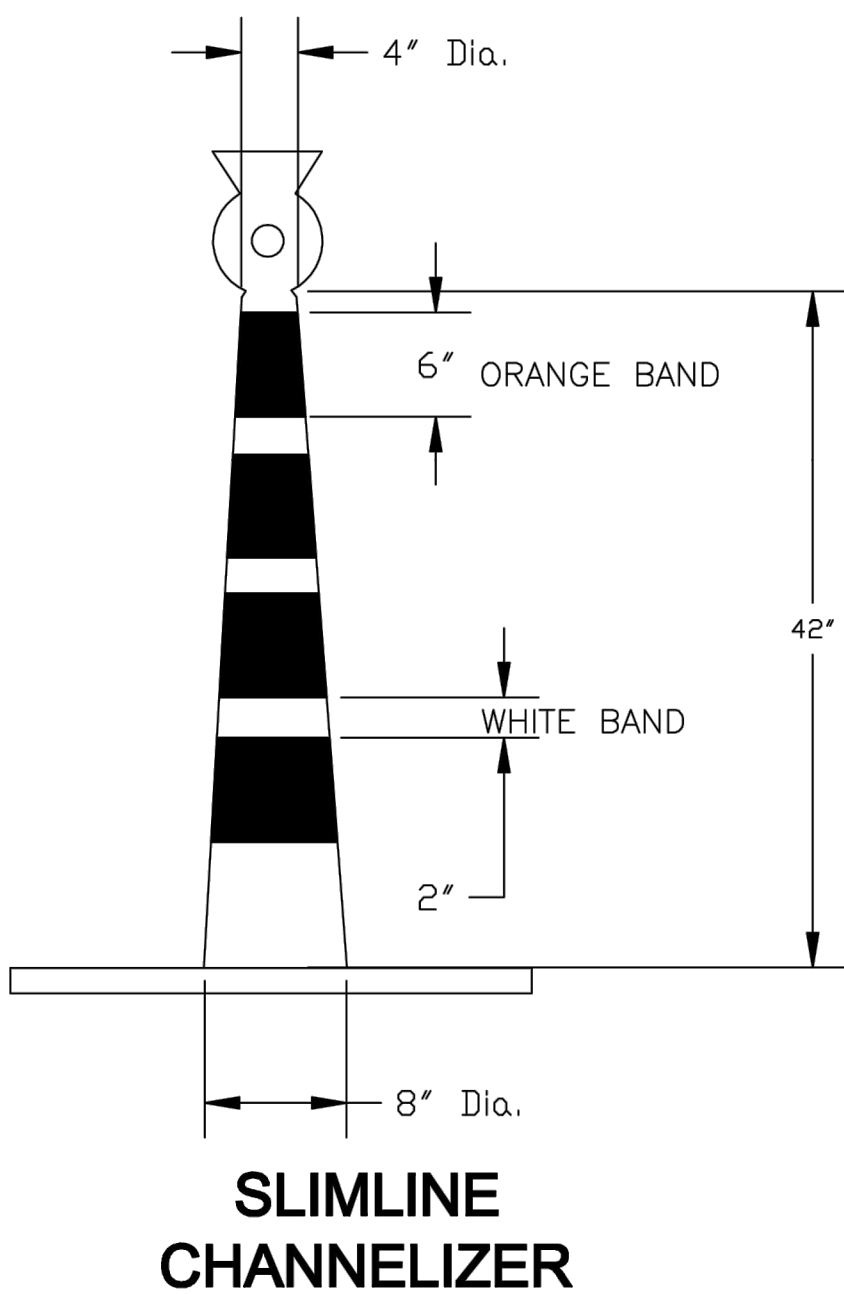
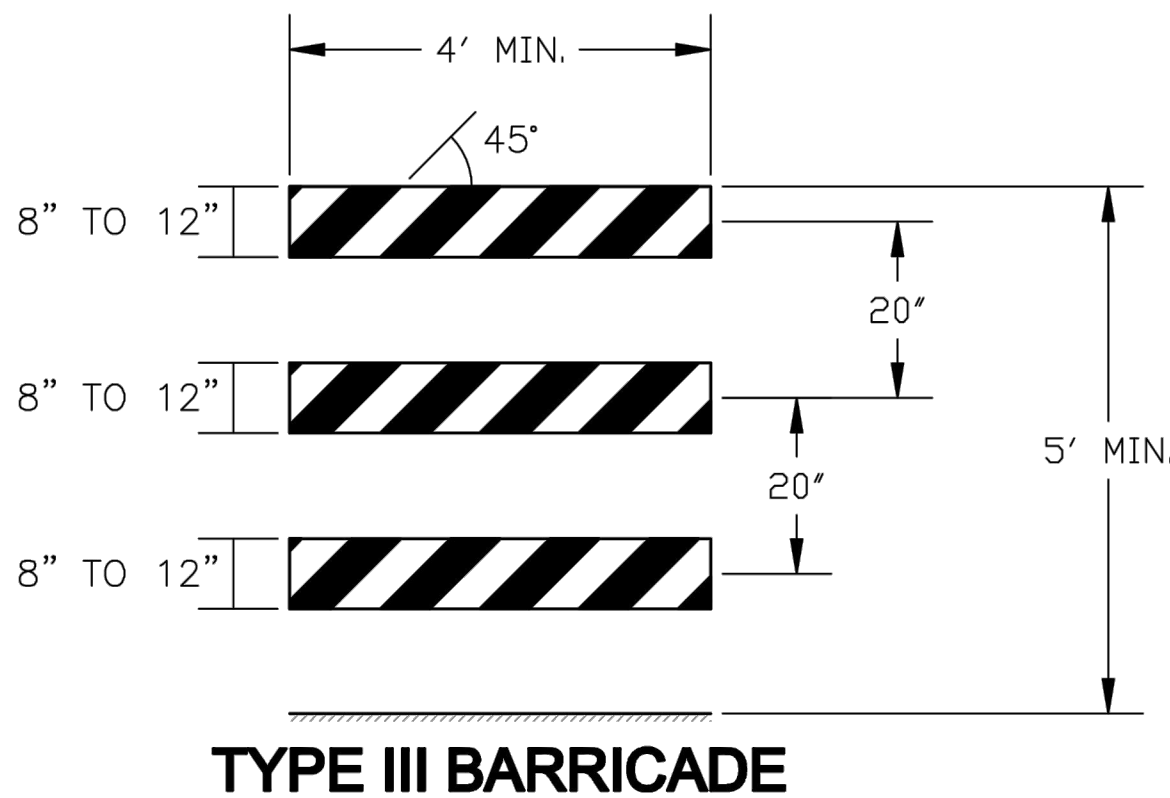
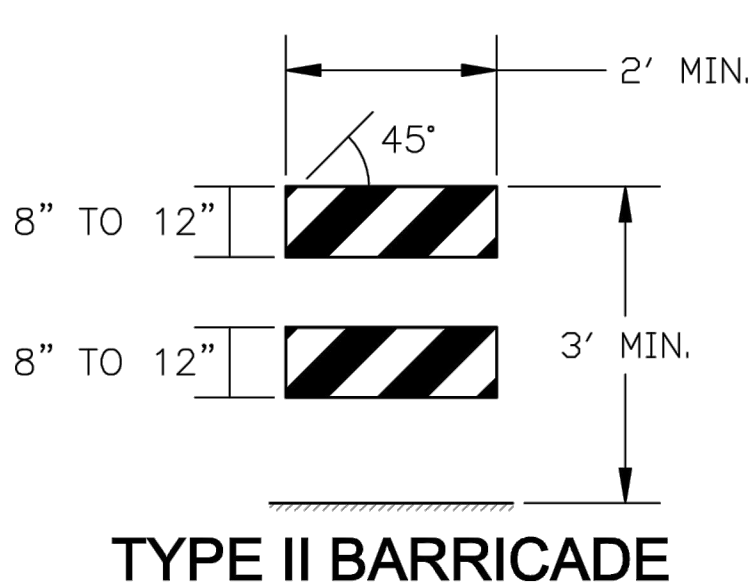
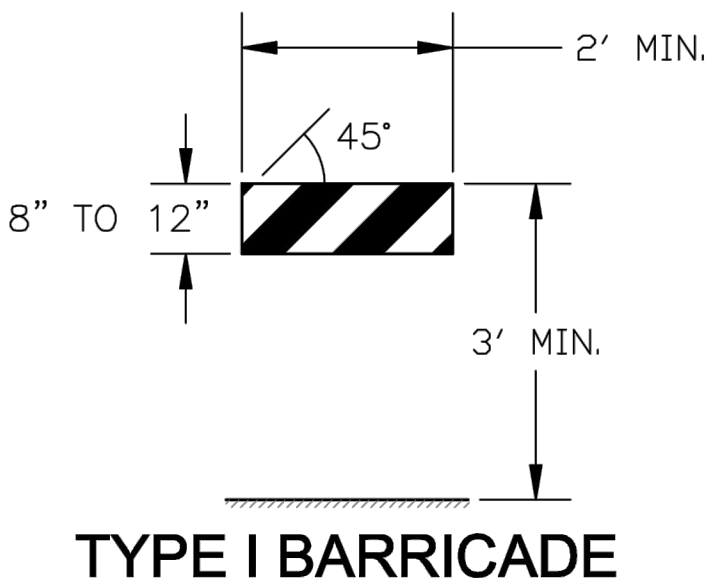
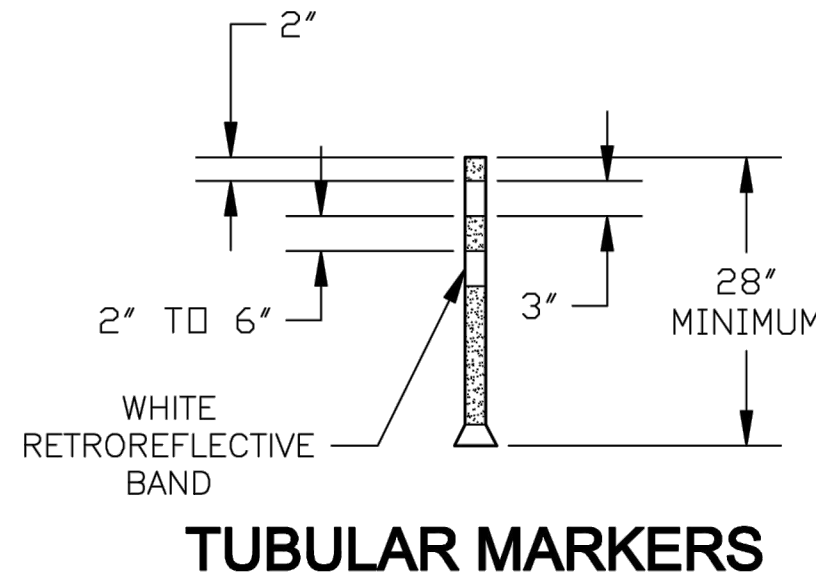
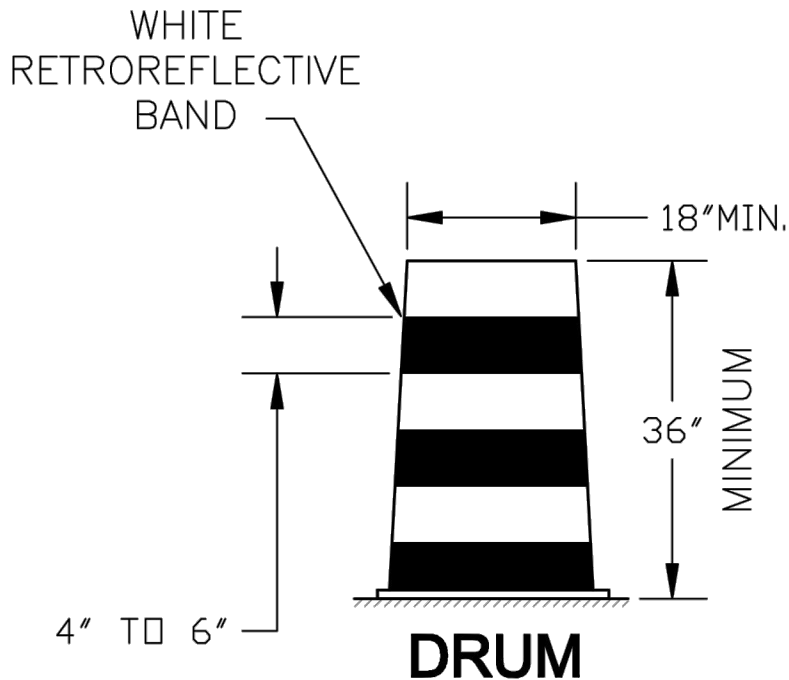
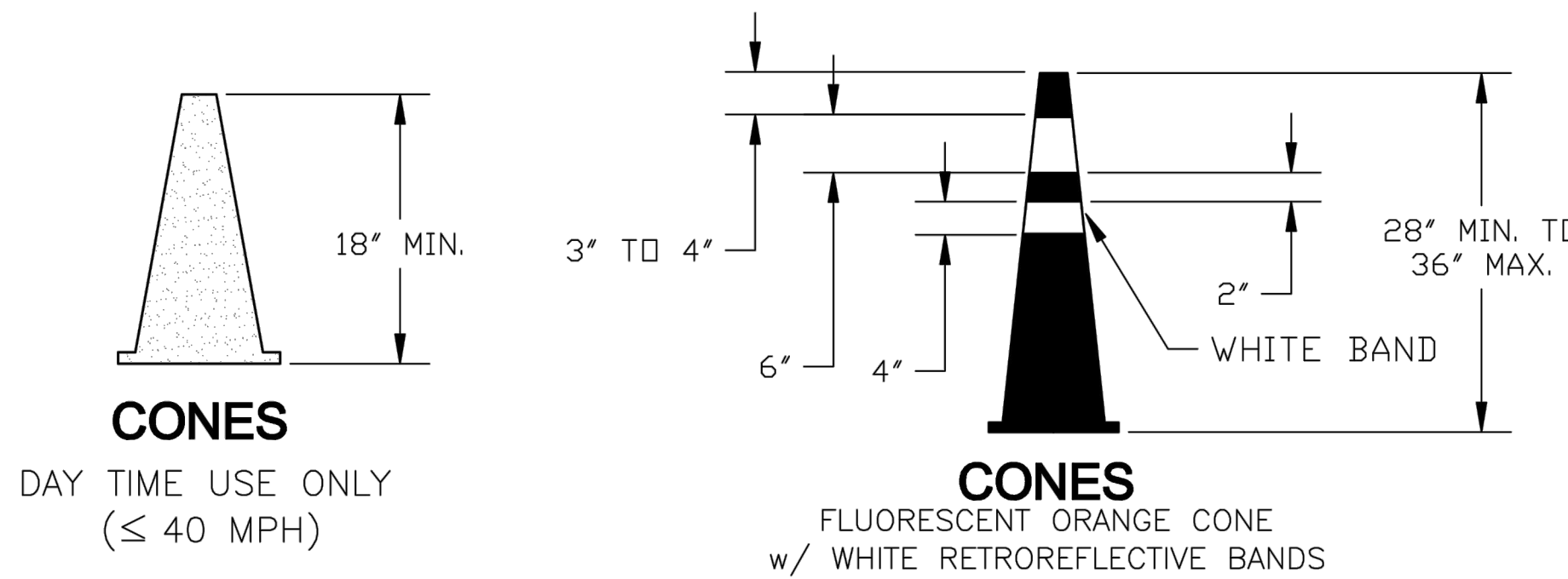
| | | | | | | | | | | |
|-----|----------|----------------------------------|-----|-------|-------------------------------|------------------------------|--|--|------------------------|------------------------|
| | | | | | | DRAWN BY: <u>K.PELTON</u> | <div><p>TOPEKA <i>Public Works</i> ENGINEERING 630 SE MADISON STREET - 2nd FLS • TOPEKA, KS 66607 Phone: (785) 368-3842 • Fax: (785) 368-3281</p></div> | | TRAFFIC CONTROL | DATE: <u>3/31/2023</u> |
| | | | | | | PAGE: <u>15</u> OF <u>40</u> | | | | |
| | | | | | | DRAWING: <u>DT-118</u> | | | | |
| 2 | 02/27/12 | ADD ADA DETECTABLE WARNING NOTES | KAP | LGV | | PROJ. <u>S-841012.00</u> | | | | |
| 1 | 01/30/12 | UPDATE SPECIFICATIONS | KAP | LGV | | | | | | |
| NO. | DATE: | REVISION | BY: | APP'D | | | | | | |
| | | | | | APP'D BY: <u>Linda Pelton</u> | | | | | |



UNLESS OTHERWISE NOTED ALL WARNING SIGNS TO BE 36"x36"



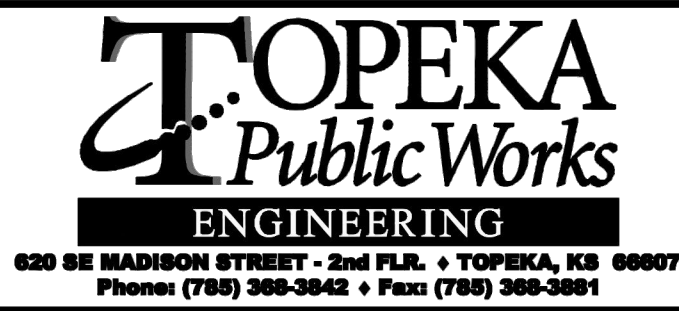
HEIGHT AND LOCATION OF SIGNS



| RECAPITULATION OF SIGNS, MARKINGS, BARRICADES. | | | | |
|--|-----------|---------|------|-------|
| SIGN NO. | SIZE | SQ. FT. | UNIT | TOTAL |
| W20-1 | 36x36 | | EACH | |
| W20-2 | 36x36 | | EACH | |
| W20-3 | 36x36 | | EACH | |
| W20-4 | 36x36 | | EACH | |
| W20-5 | 36x36 | | EACH | |
| W9-2 | 36x36 | | EACH | |
| W3-1a | 36x36 | | EACH | |
| W12-1 | 30x30 | | EACH | |
| W1-3 | 36x36 | | EACH | |
| W1-4 | 36x36 | | EACH | |
| W4-2 | 36x36 | | EACH | |
| W20-7a | 36x36 | | EACH | |
| R1-1 | 30x36 | | EACH | |
| R1-2 | 36x36x36 | | EACH | |
| R1-2aP | 36x30 | | EACH | |
| W13-1P | 24x24 | | EACH | |
| R11-4 | 60x30 | | EACH | |
| R7-1 | 12x18 | | EACH | |
| G20-2 | 36x18 | | EACH | |
| D-3 | ?x9 | | EACH | |
| DIRECTIONAL | 30x9 | | EACH | |
| INFORMATIONAL | AS NEEDED | | EACH | |
| R4-7 | 24x30 | | EACH | |
| R4-7b | 24x30 | | EACH | |
| R4-7c | 18x30 | | EACH | |
| R2-1 | 30x36 | | EACH | |
| R11-2 | 48x30 | | EACH | |
| R3-1 | 36x36 | | EACH | |
| R3-2 | 36x36 | | EACH | |
| R3-7 | 36x36 | | EACH | |
| R8-3 | 30x30 | | EACH | |
| R9-8 | 36x18 | | EACH | |
| R9-9 | 24x12 | | EACH | |
| R9-10 | 24x12 | | EACH | |
| R9-11 | 24x12 | | EACH | |
| R9-11a | 24x12 | | EACH | |
| M4-8a | 30x24 | | EACH | |
| M4-9 ADV. | 30x24 | | EACH | |
| M4-9 | 30x24 | | EACH | |
| M4-10 | 48x18 | | EACH | |
| CONSTRUCTION BARRICADES TYPE I OR II | | | EACH | |
| CONSTRUCTION BARRICADES TYPE III | | | EACH | |
| REFLECTIVE DRUMS | | | EACH | |
| REFLECTIVE VERTICAL PANELS | | | EACH | |
| SEQUENCING ARROW PANEL BOARD | | | EACH | |
| | | | EACH | |
| | | | EACH | |
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| 1 | 01-30-12 | UPDATE SPECIFICATIONS | KAP | LGV | |
| NO. | DATE: | REVISION | BY: | APP'D | |

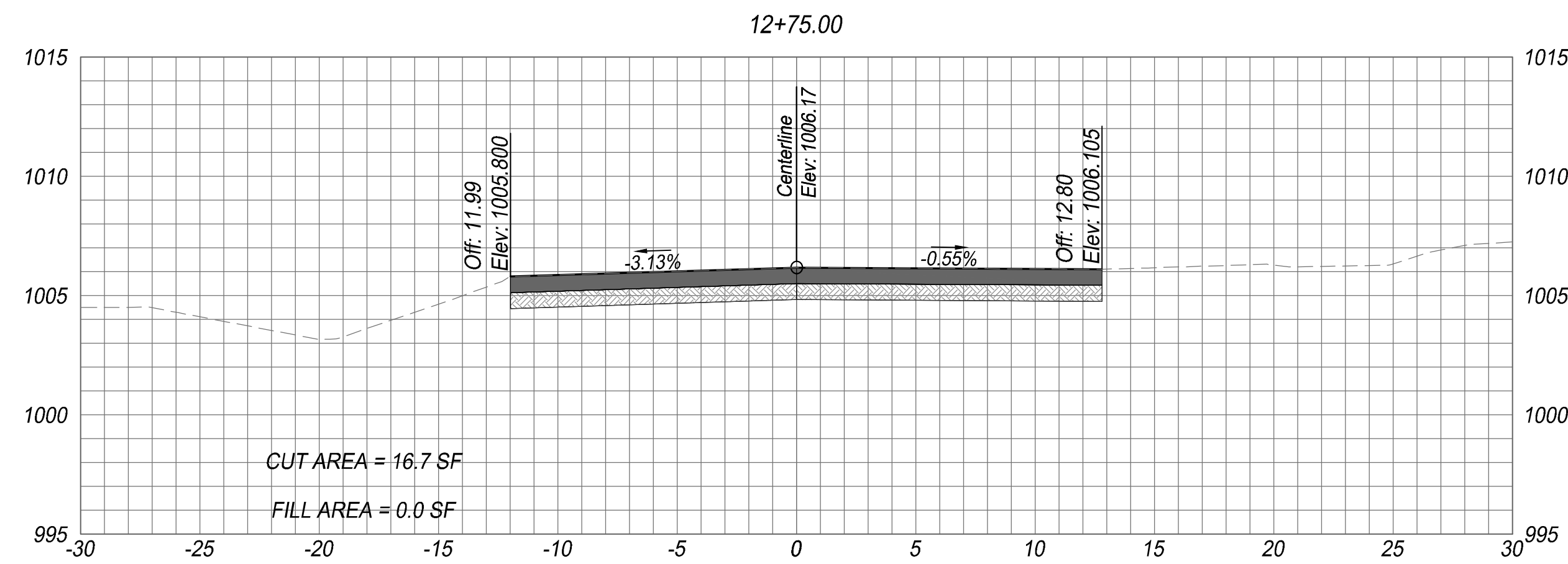
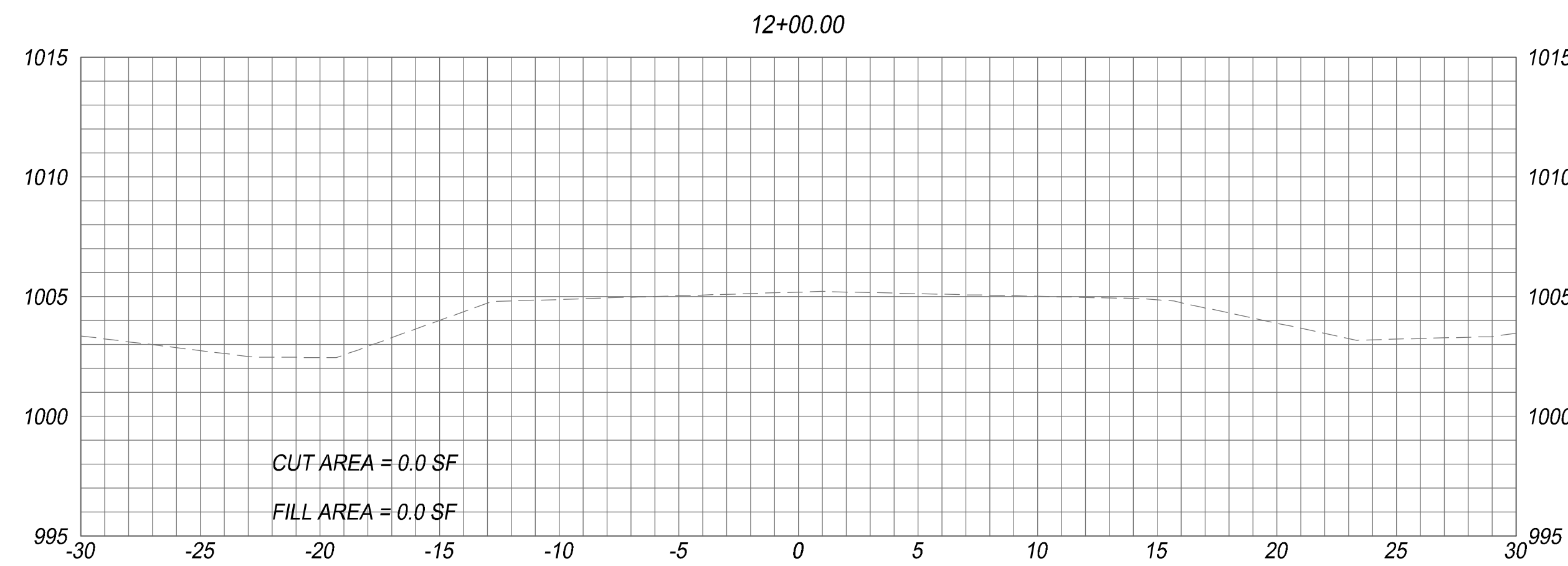
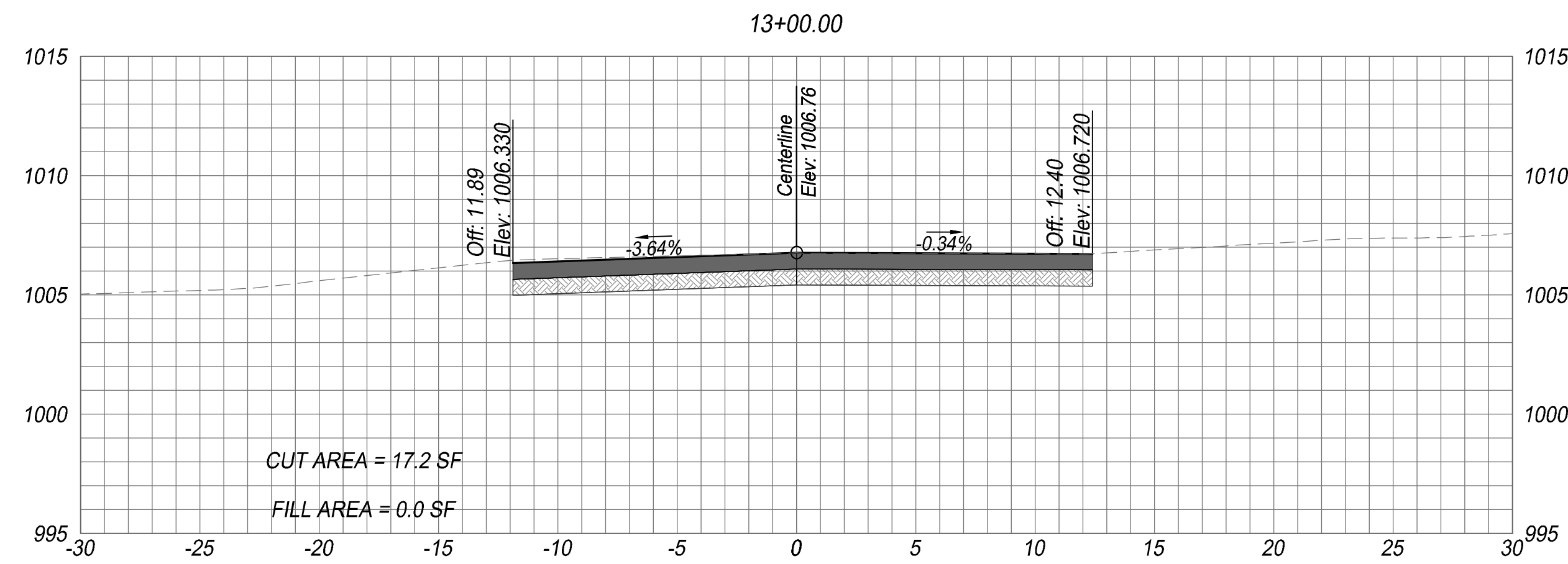
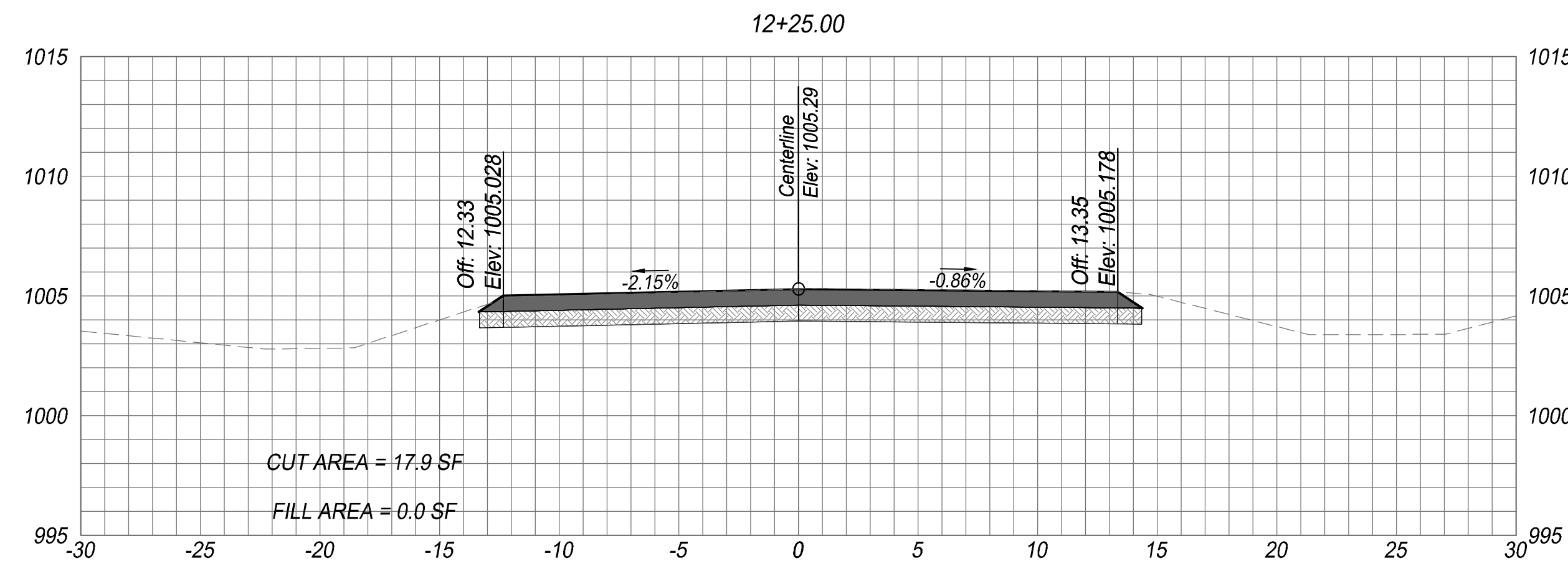
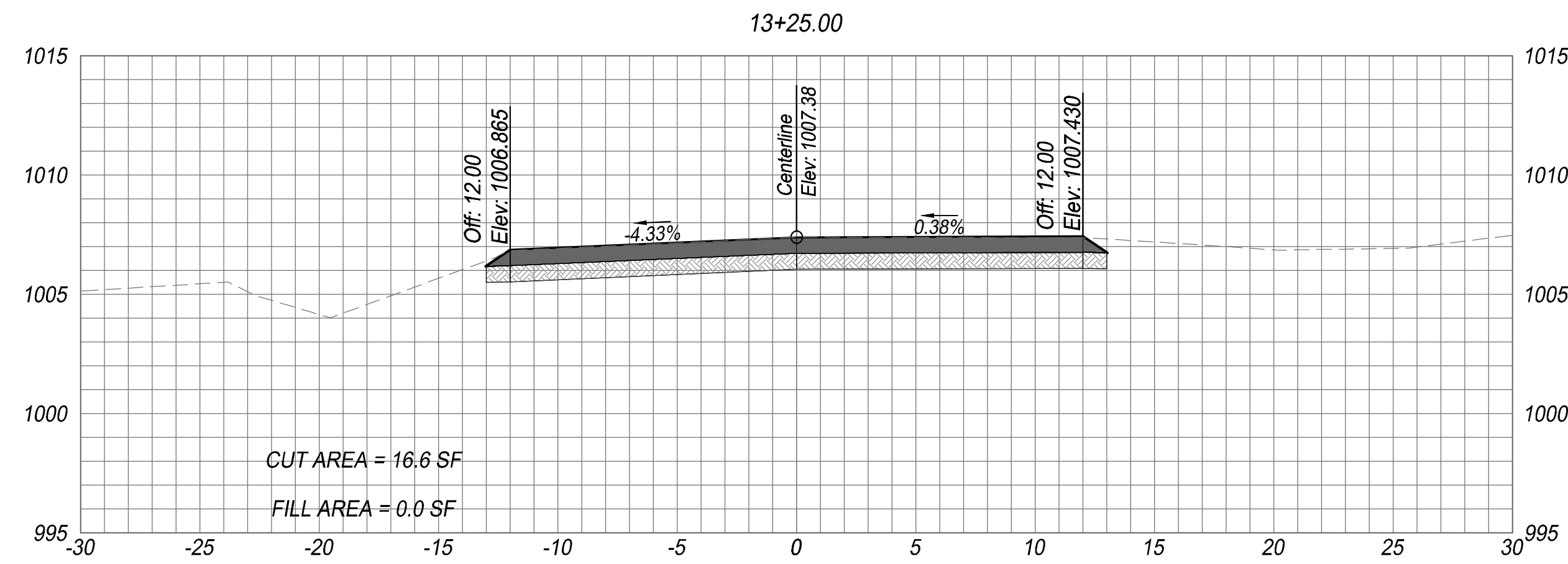
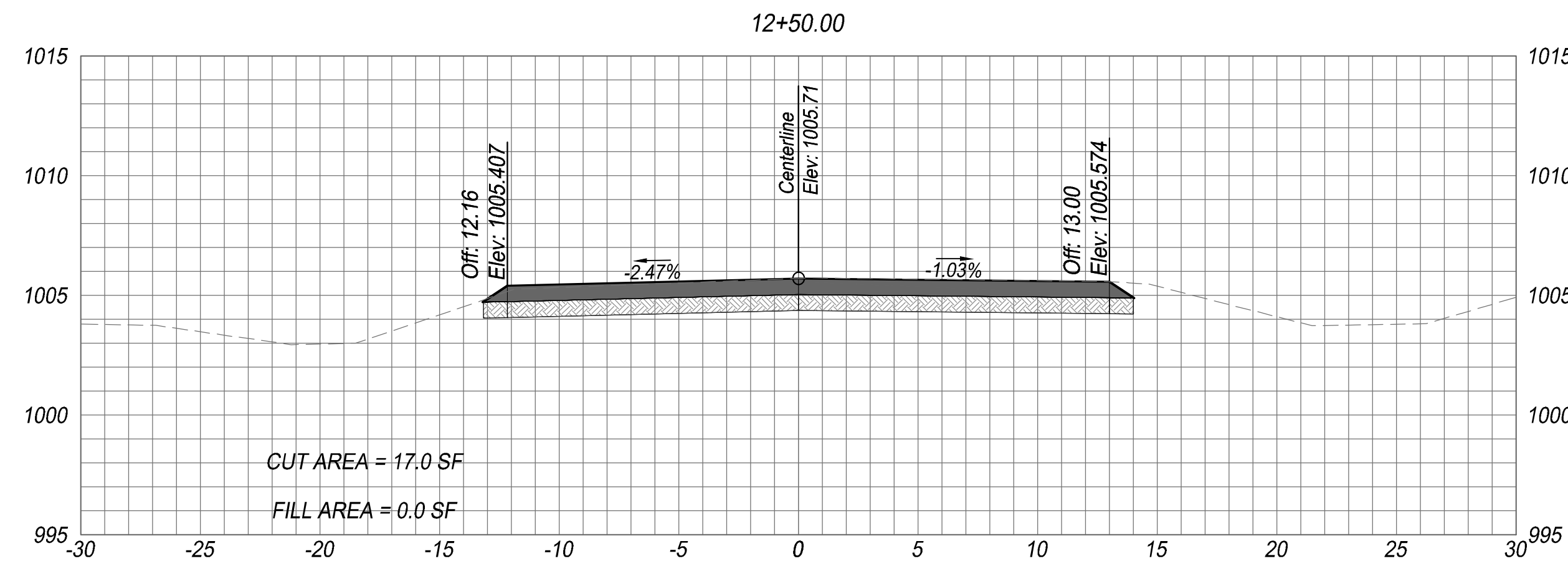
DRAWN BY: K.PELTON
APP'D BY: Linda Pelton



TRAFFIC CONTROL

DATE: 3/31/2023
PAGE: 16 OF 40
DRAWING: DT-121
PROJ. S-841012.00

[File Location: X:\11 SBB Drawings\0-2023\03-013 SWCO SW Nottingham\dwg\Design\Street Plans\23-013 X-secs.dwg] [Plot Date: 3/31/2023 12:19:35 PM] [Last Saved: 3/30/2023 8:53:35 AM] [Locomotion]



SBB PROJ. NO. 23-013

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| NO. | DATE: | REVISION | BY: | APPD |
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DRAWN BY: L. O'CONNOR
APP'D BY: B. AUSTIN
FIELD BOOKS: -
SURVEYED BY: SBB ENG.



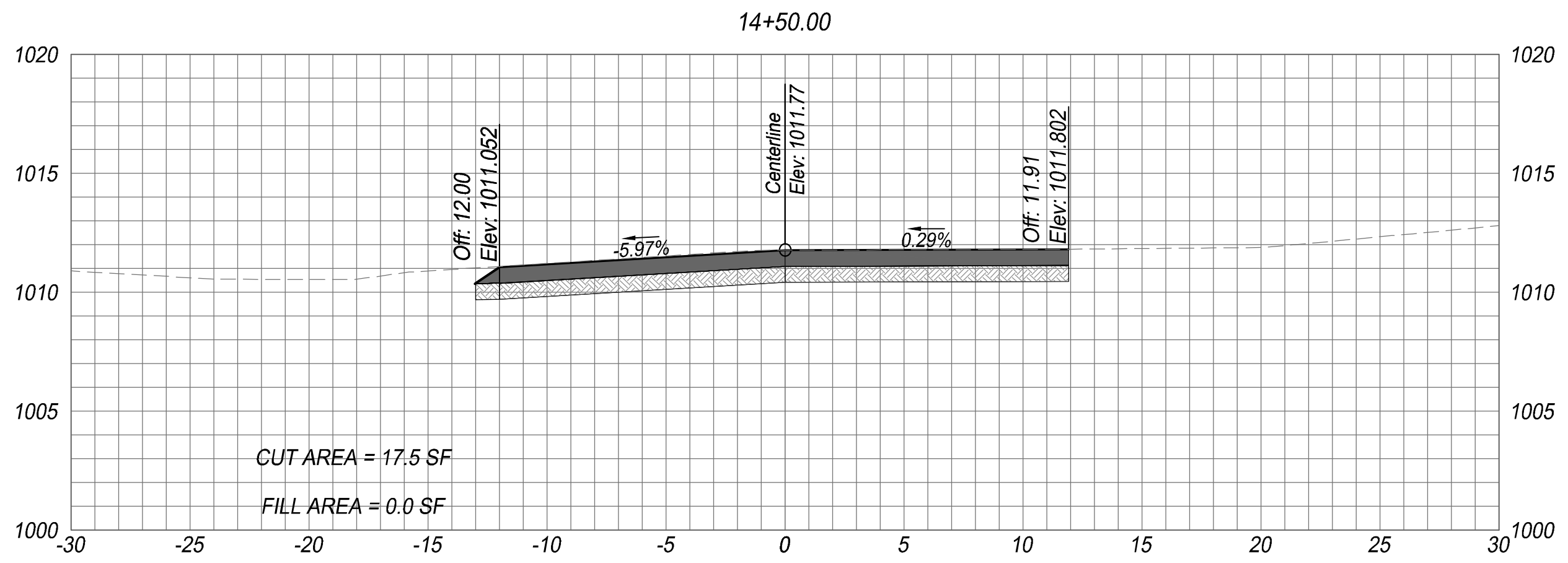
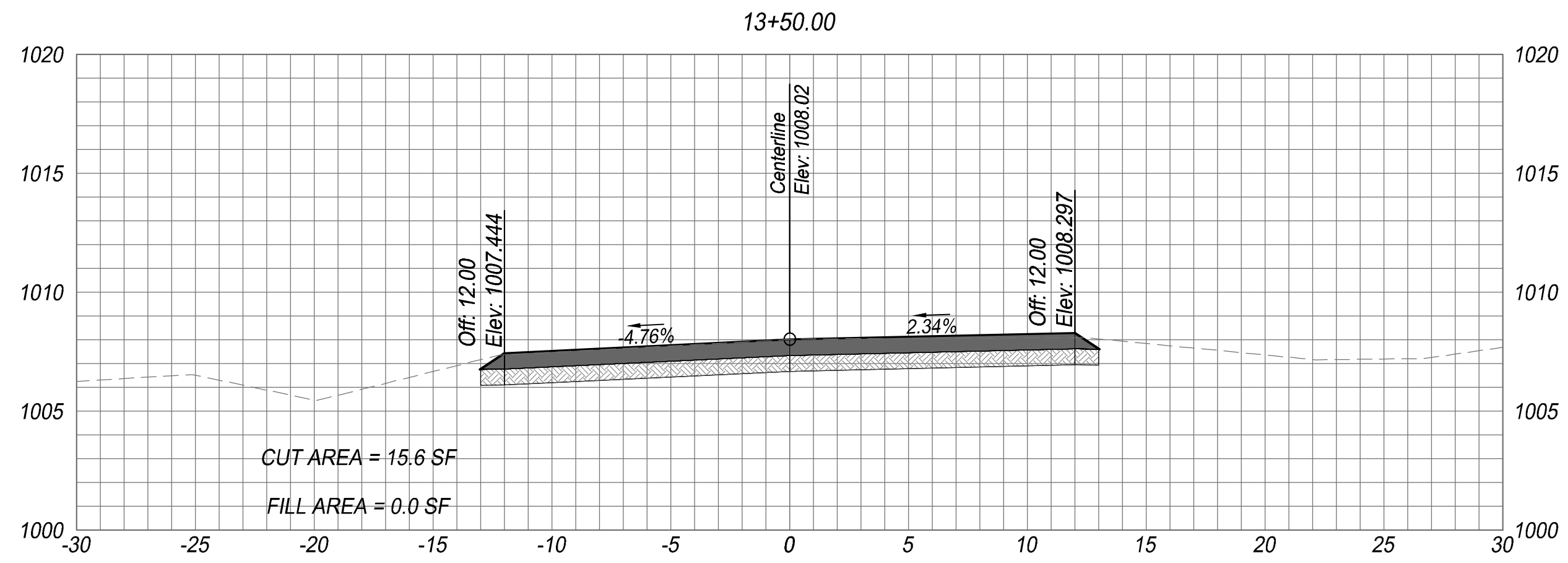
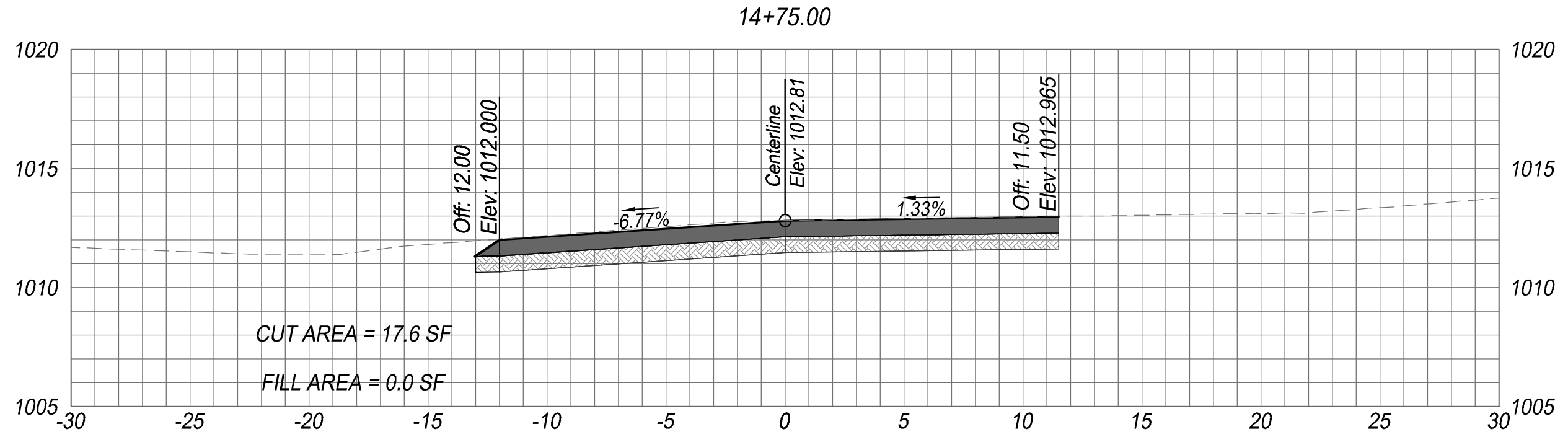
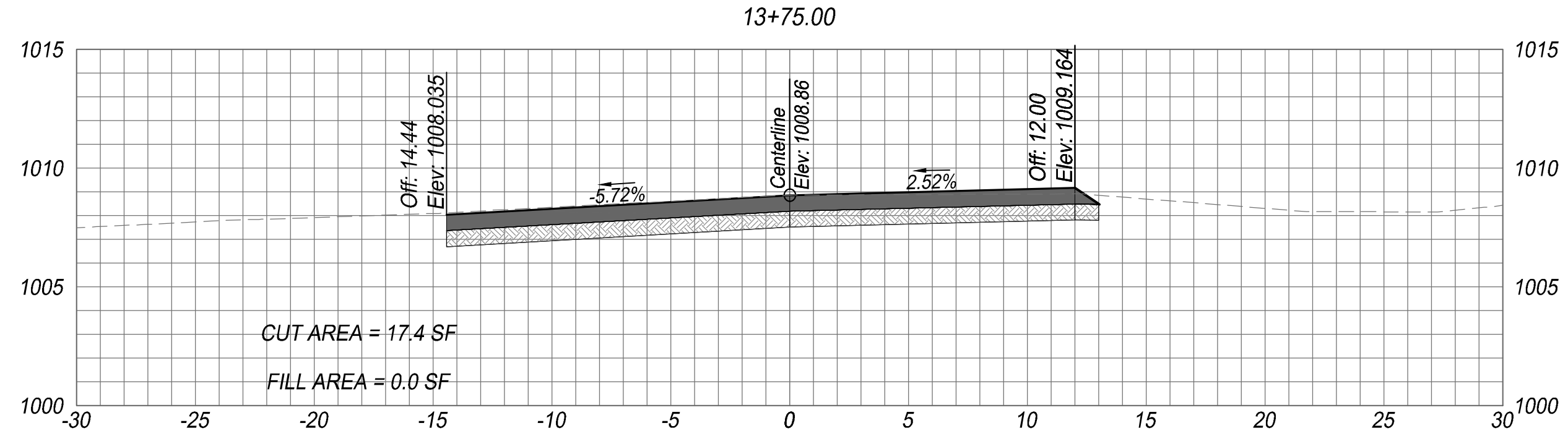
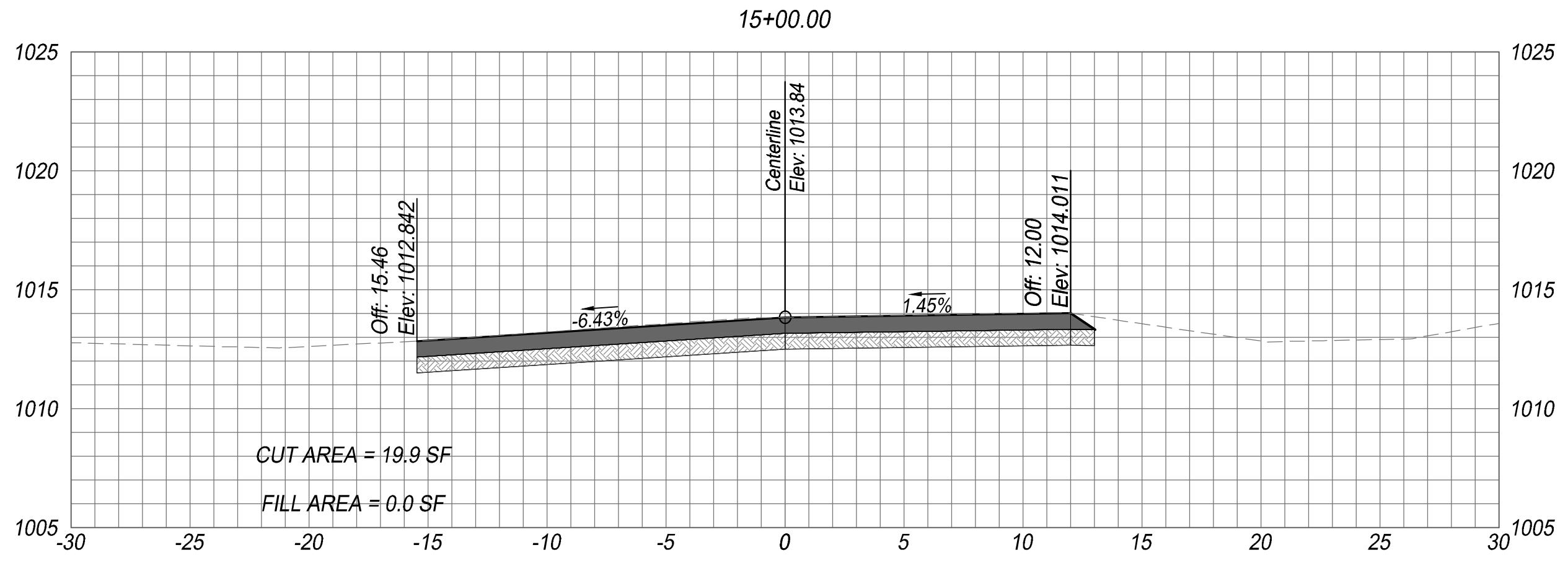
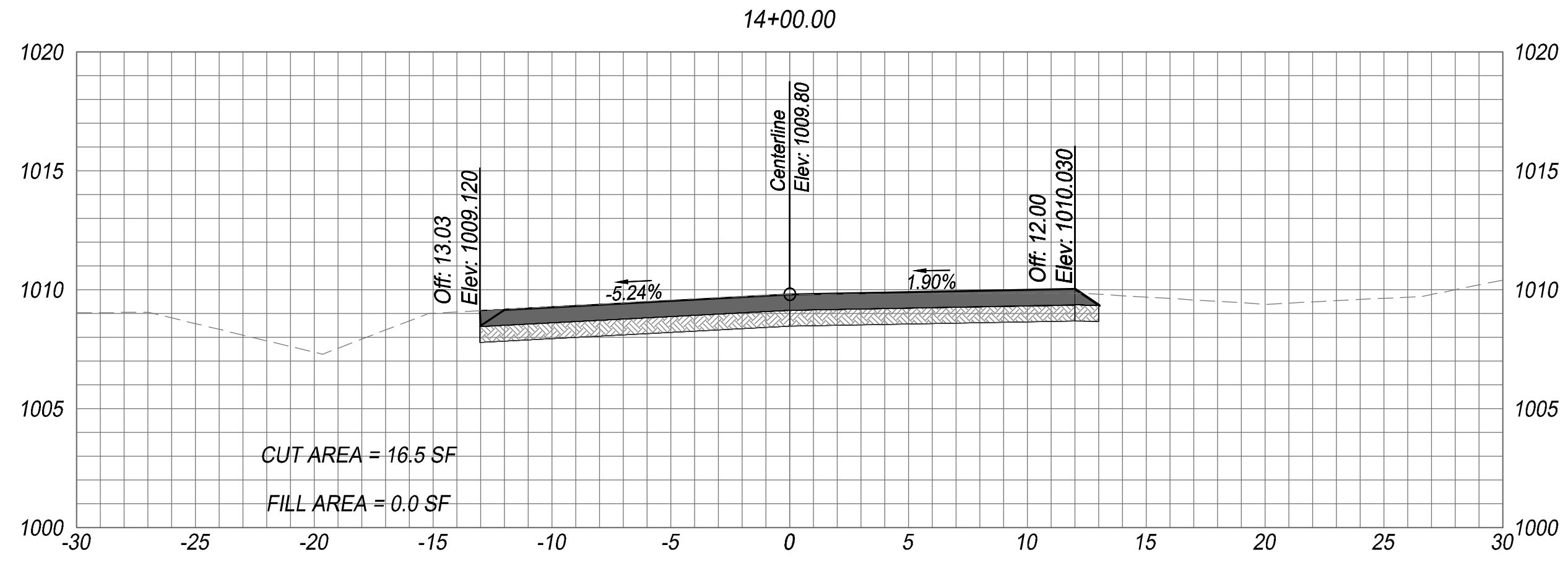
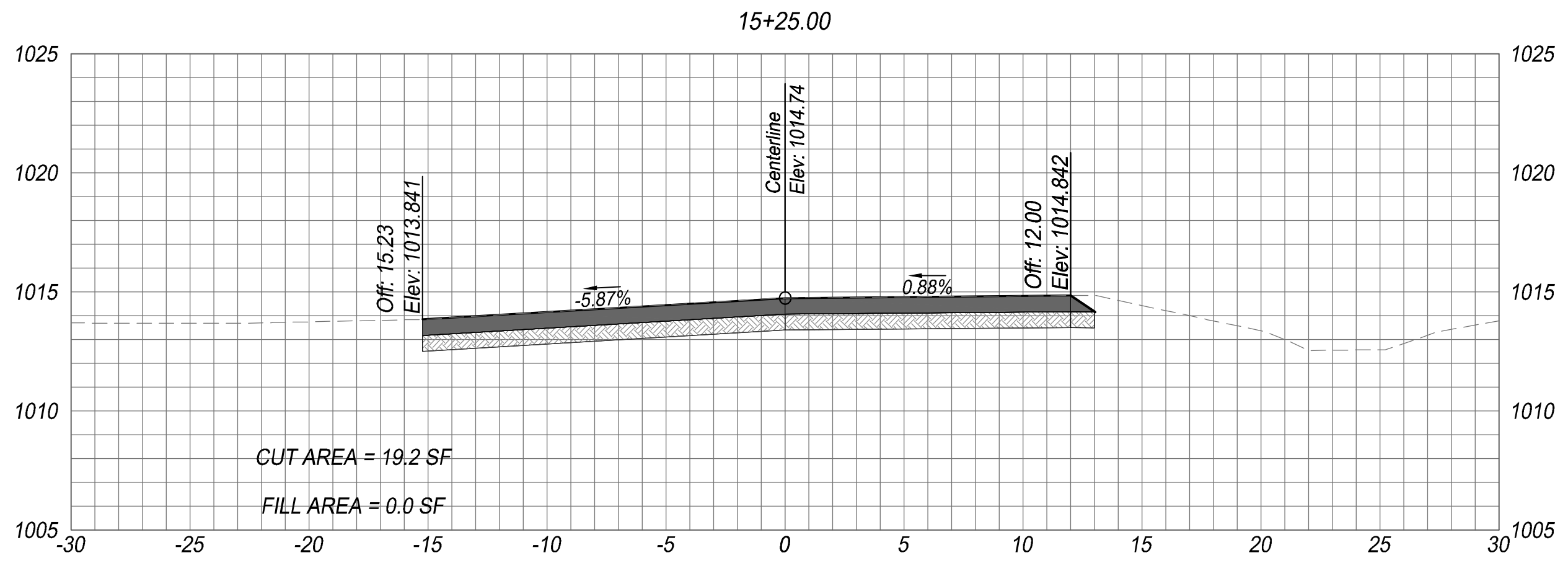
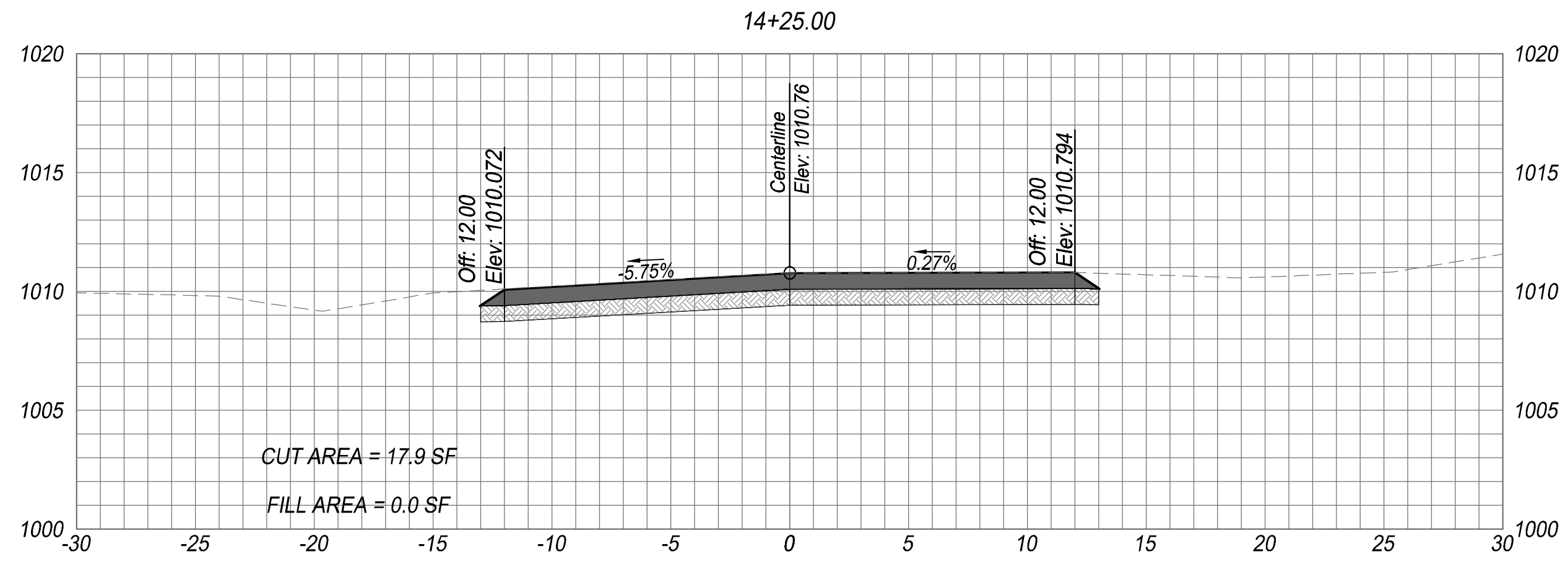
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Cross-Sections

DATE: 3/31/2023
SHEET: 17 OF 40
PROJ.: S-841012.00

[File Location: X:\11 SBB Drawings\0-2023\03-013 SWCO SW Nottingham\dwg\Design\Street Plans\23-013 X-sec's.dwg] [Plot Date: 3/31/2023 12:19:44 PM] [Last Saved: 3/30/2023 8:53:35 AM] [Location:]



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DRAWN BY: L. O'CONNOR
APP'D BY: B. AUSTIN
FIELD BOOKS: -
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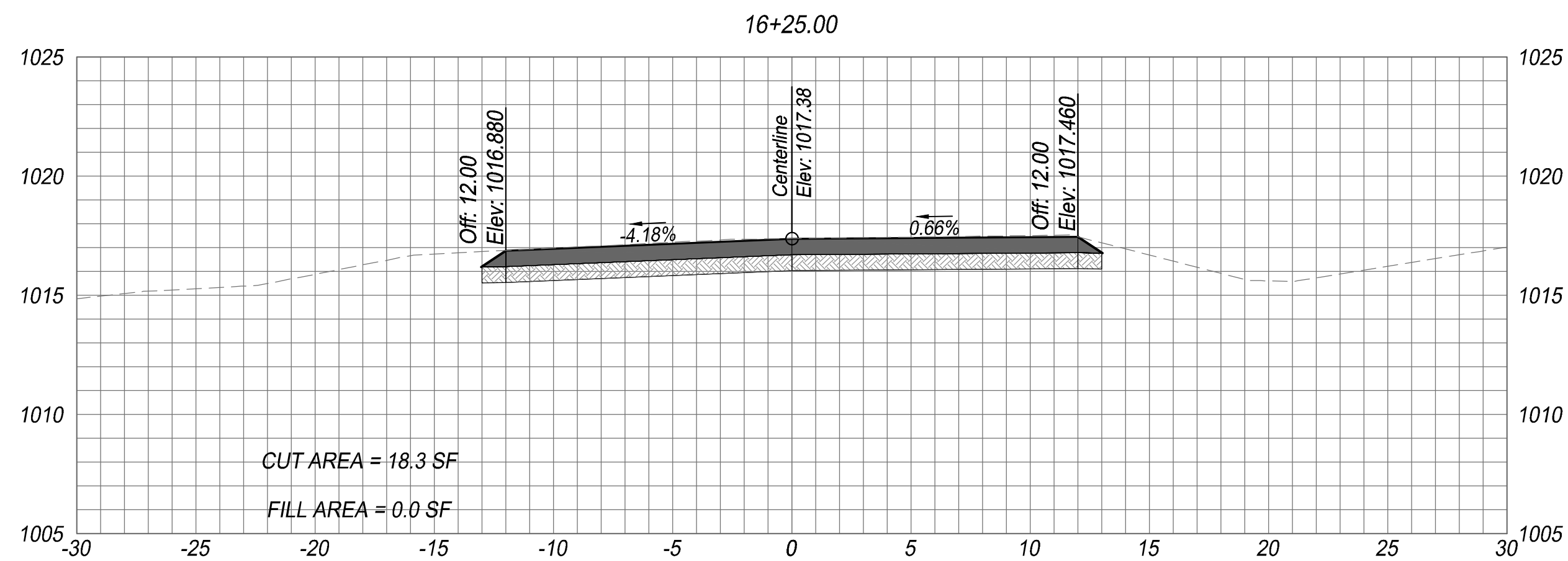
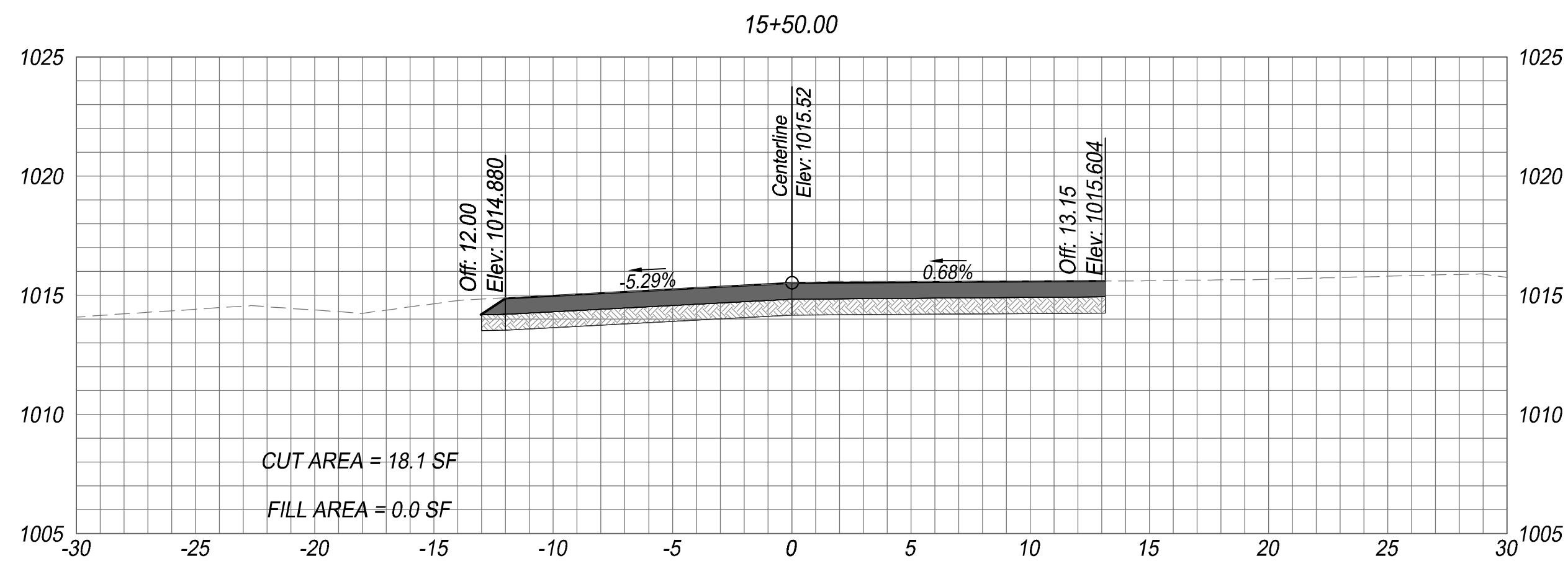
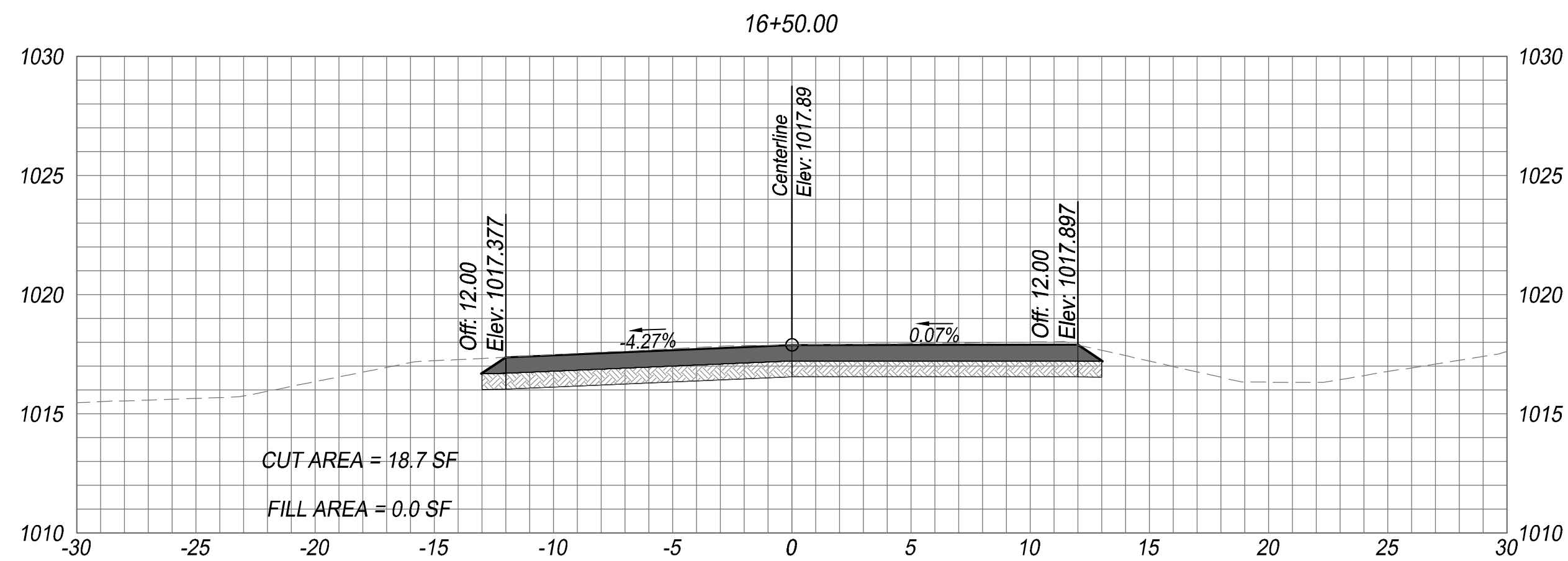
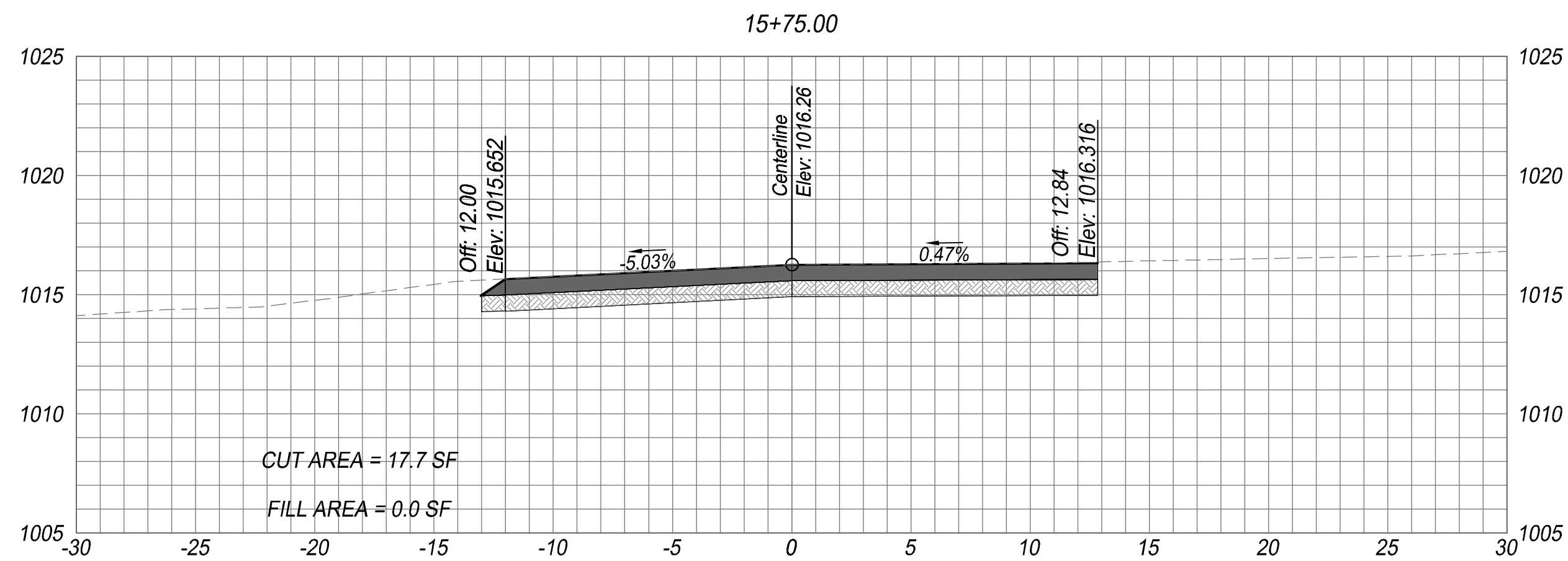
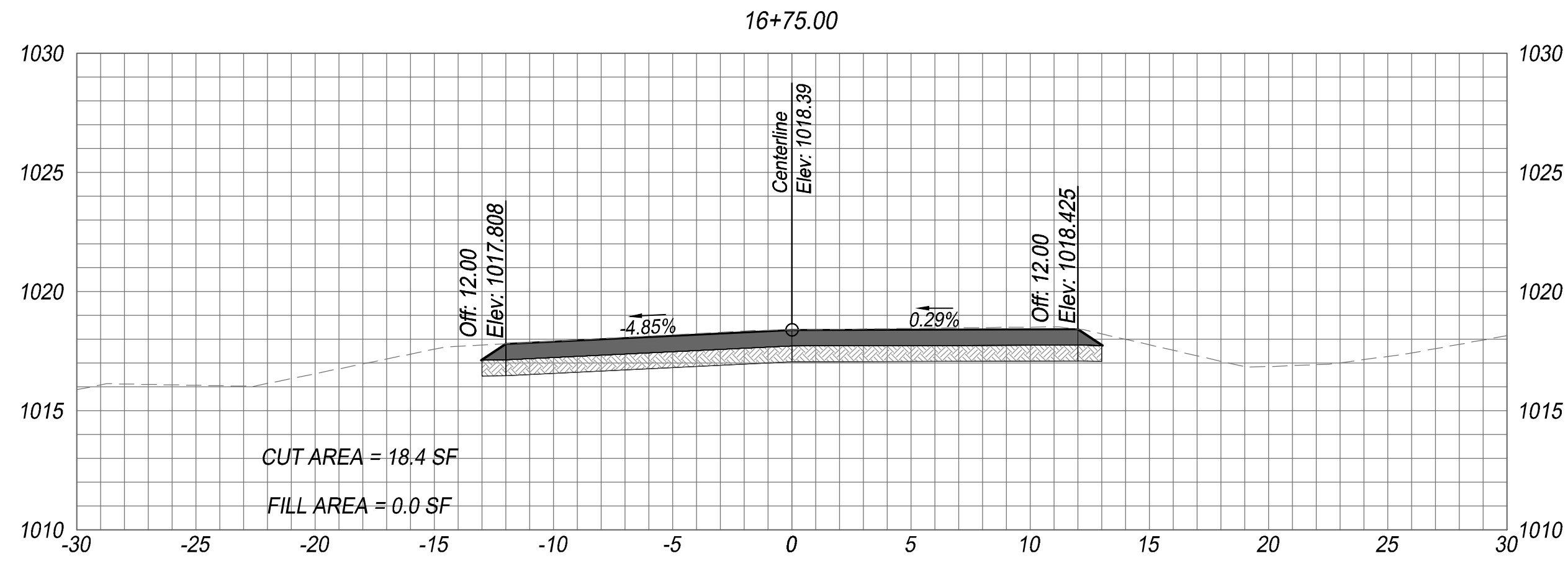
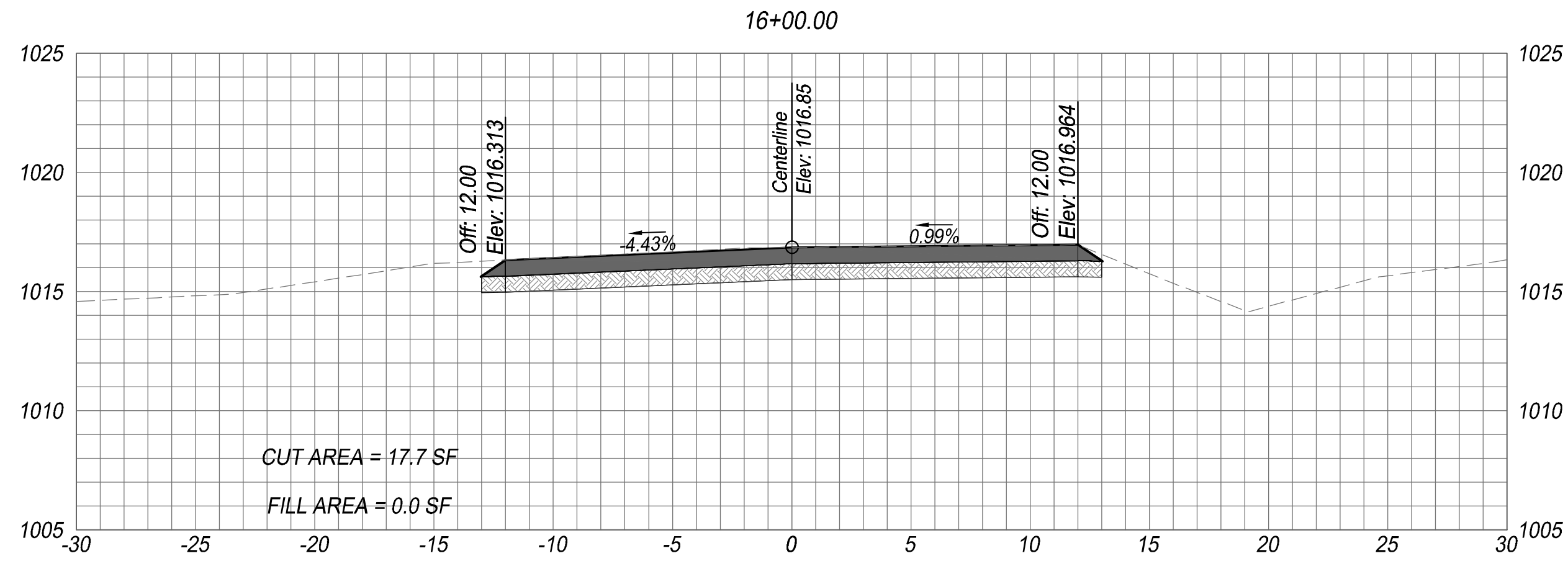
S-841012.00
SW Nottingham
(SW 33rd Street To SW 37th Street)

Cross-Sections

SBB PROJ. NO. 23-013

DATE: 3/31/2023
SHEET: 18 OF 40
PROJ.: S-841012.00

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SBB PROJ. NO. 23-013

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DRAWN BY: L. O'CONNOR
APP'D BY: B. AUSTIN
FIELD BOOKS: -
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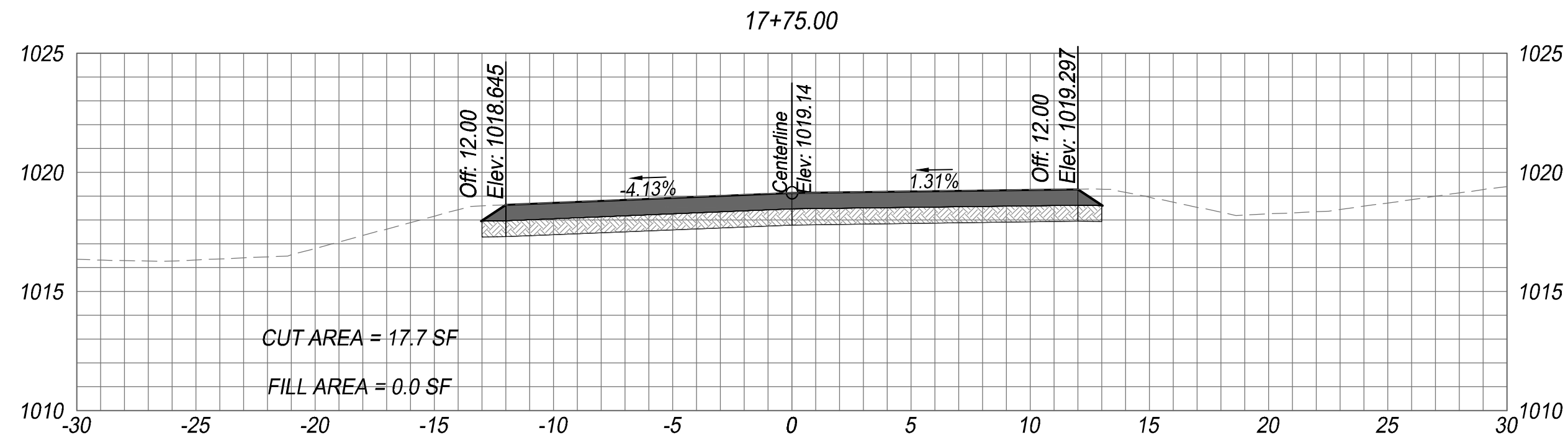
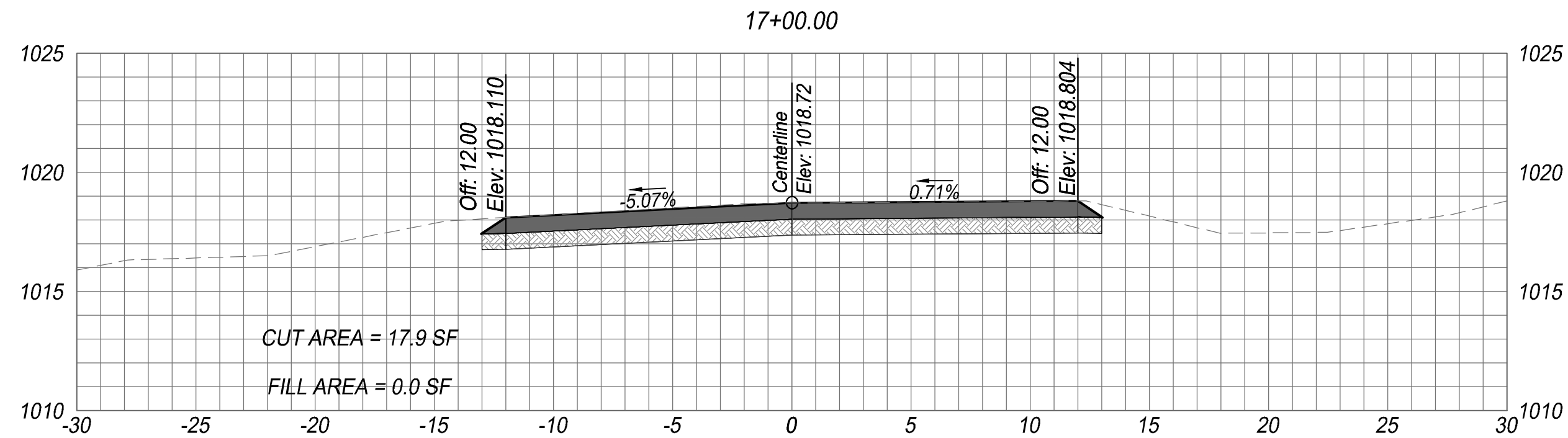
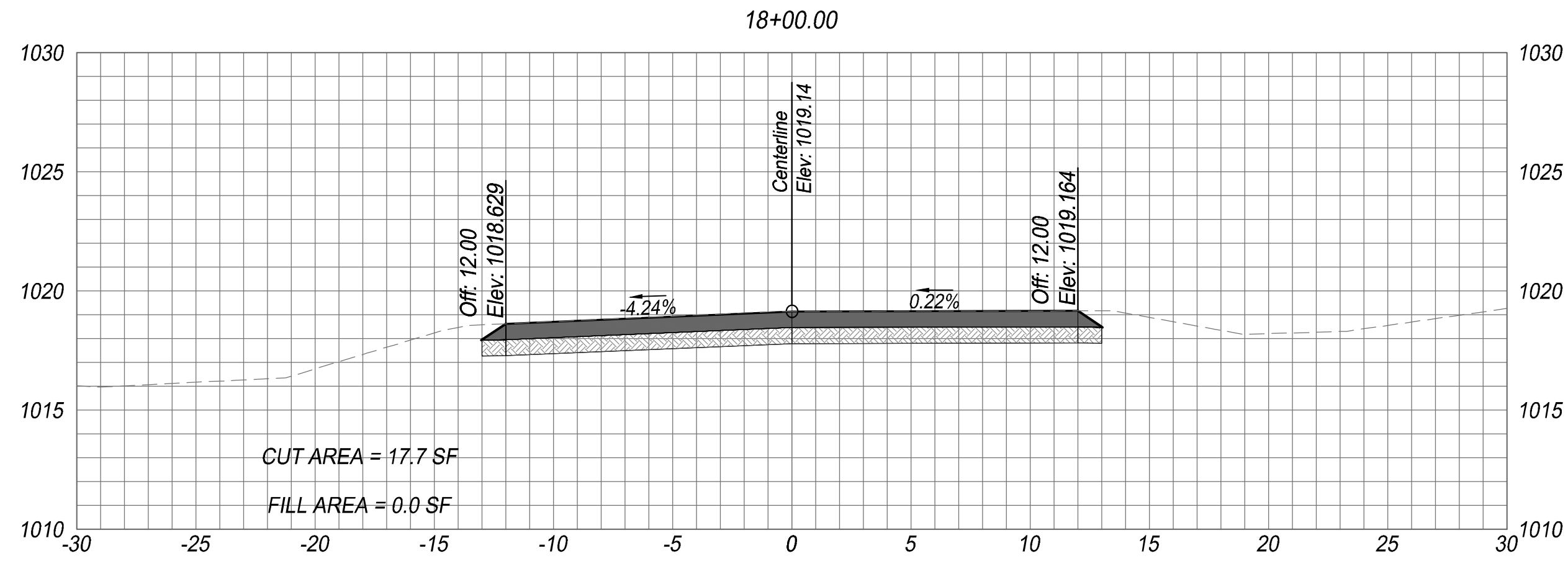
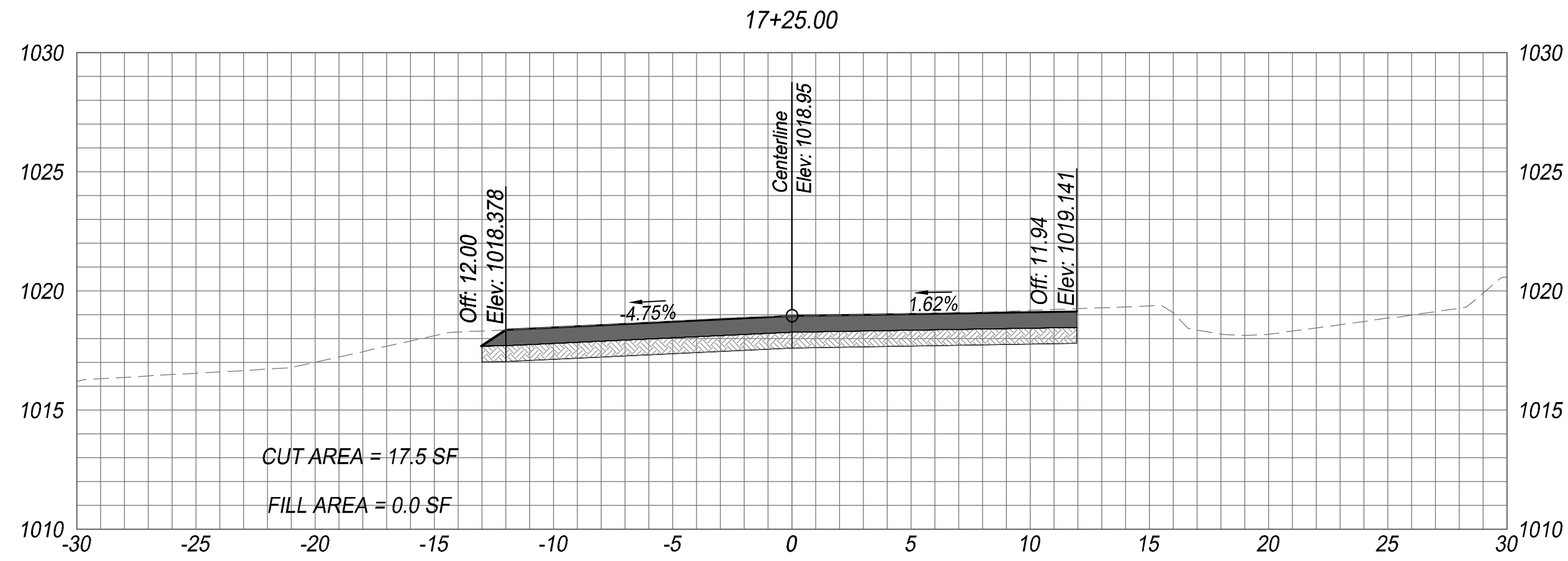
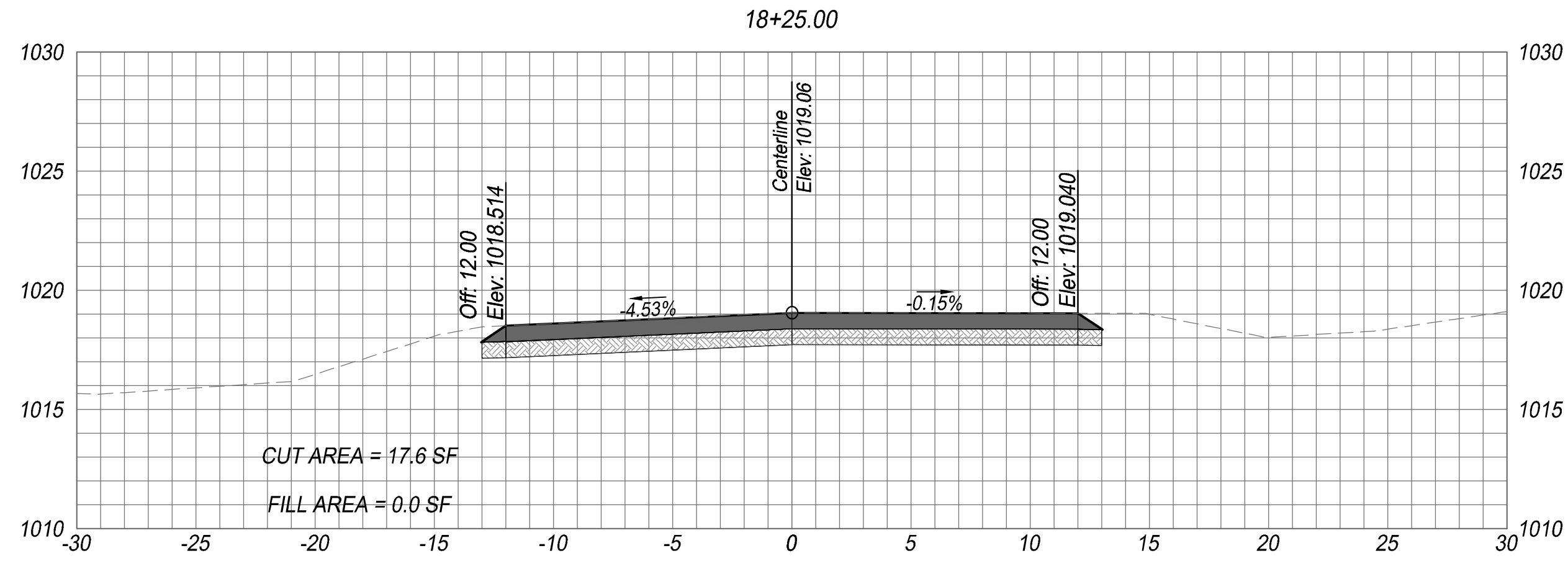
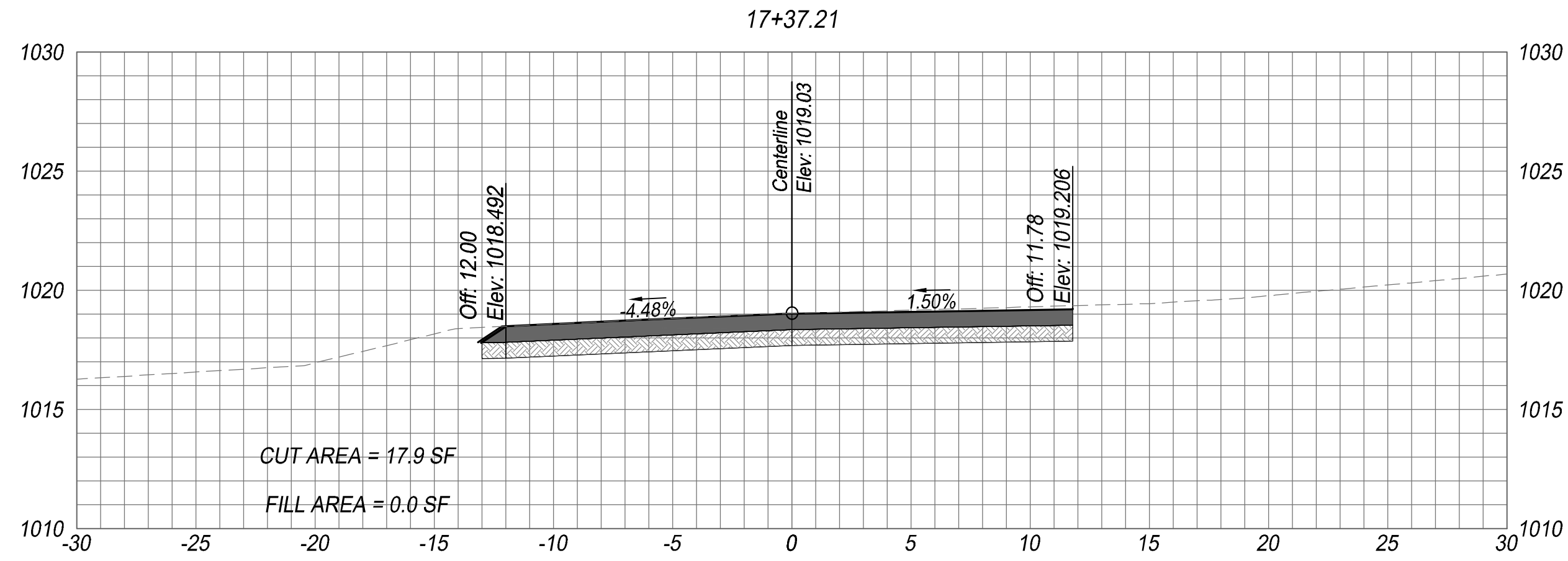
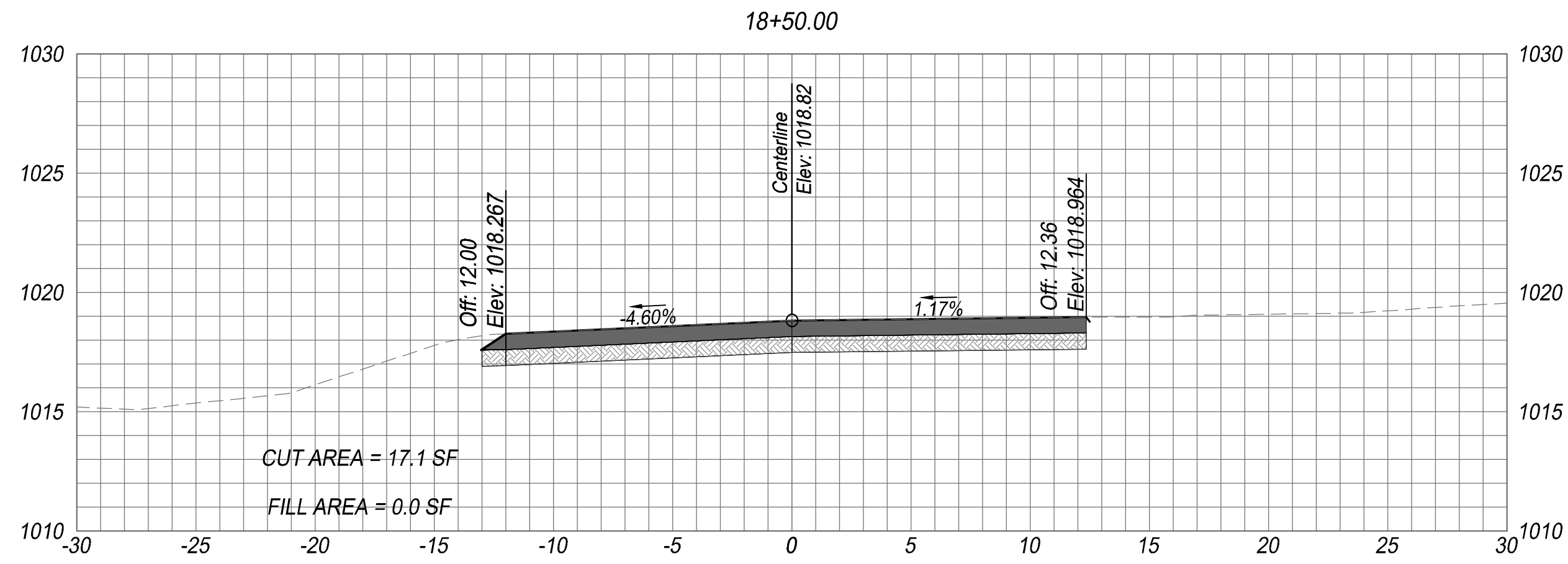
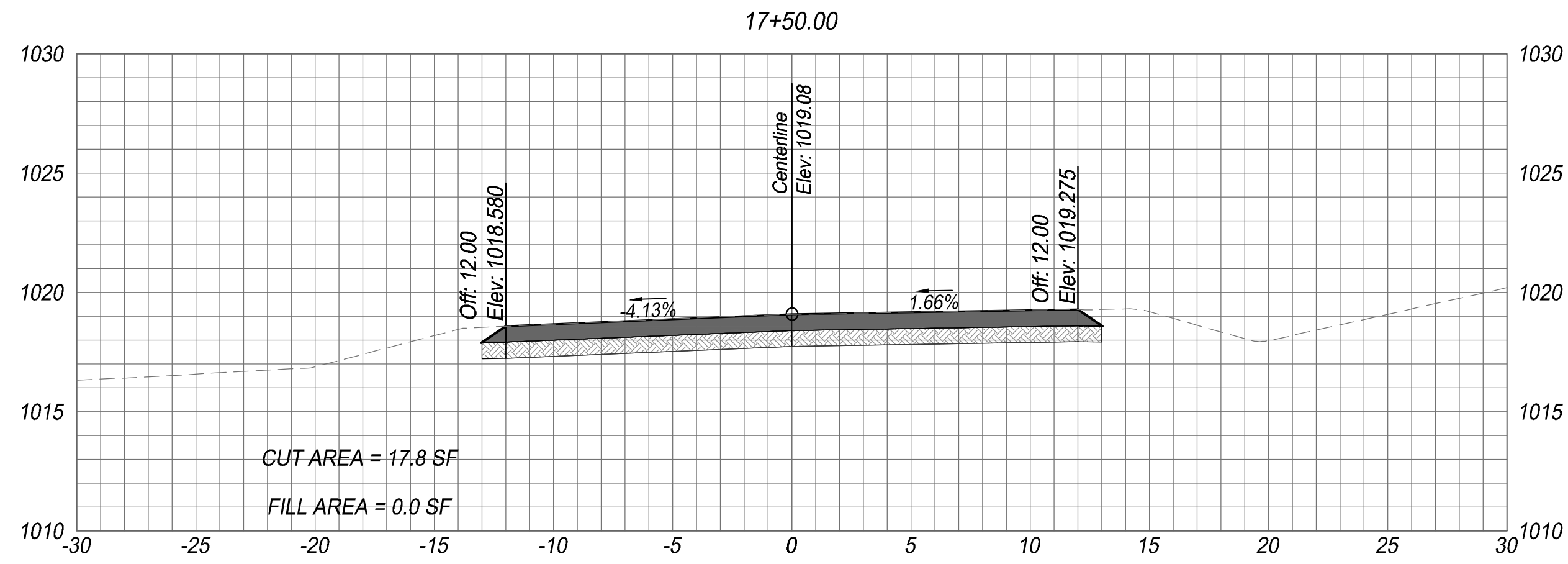
Cross-Sections

DATE: 3/31/2023

SHEET: 19 OF 40

PROJ.: S-841012.00

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SBB PROJ. NO. 23-013

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DRAWN BY: L. O'CONNOR
APP'D BY: B. AUSTIN
FIELD BOOKS: -
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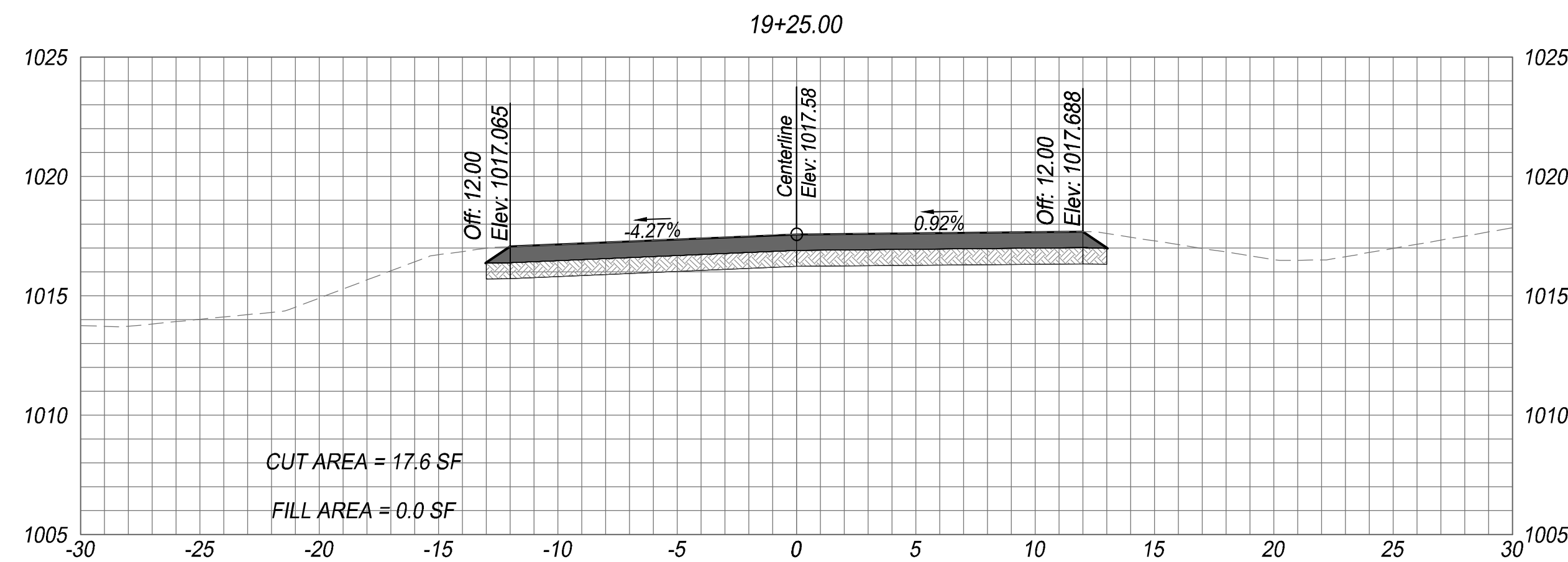
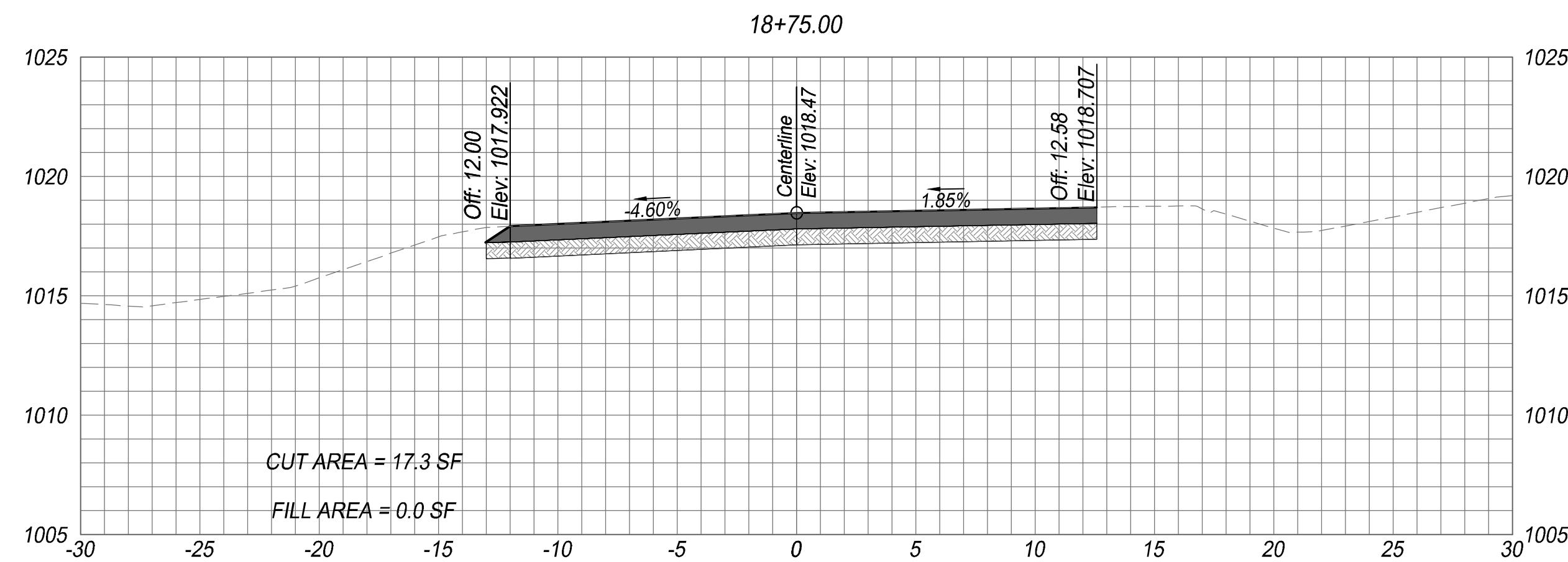
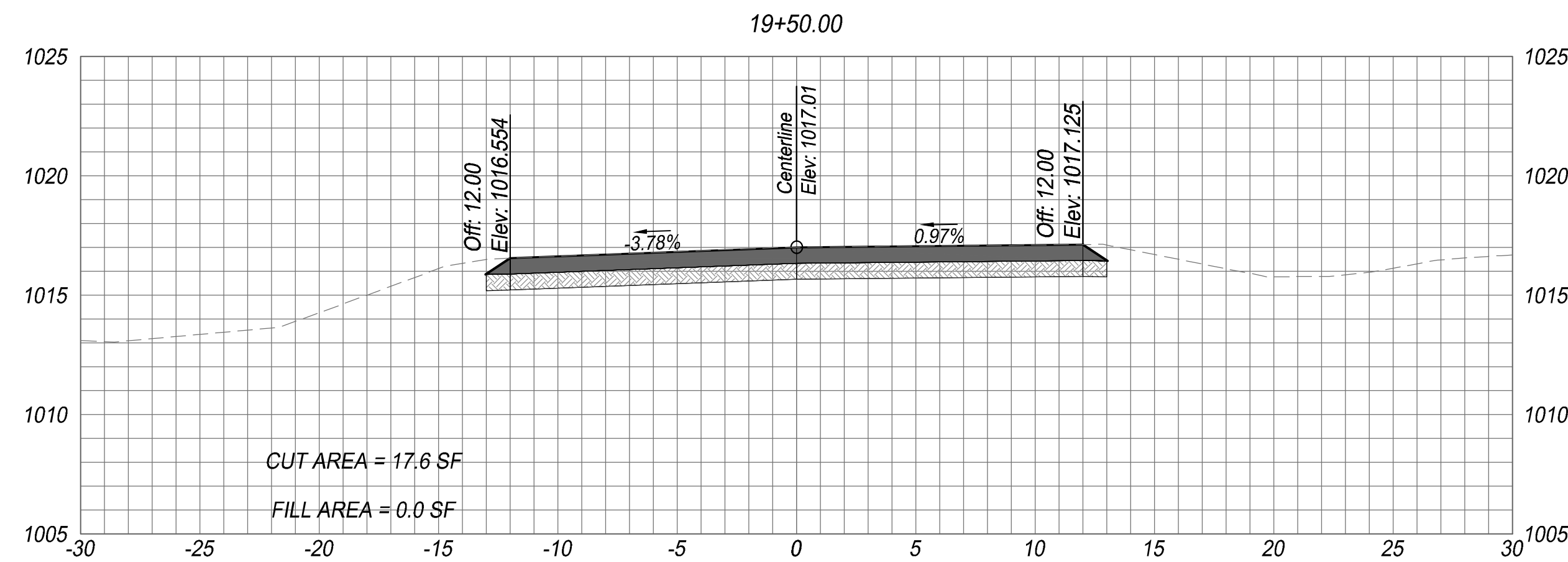
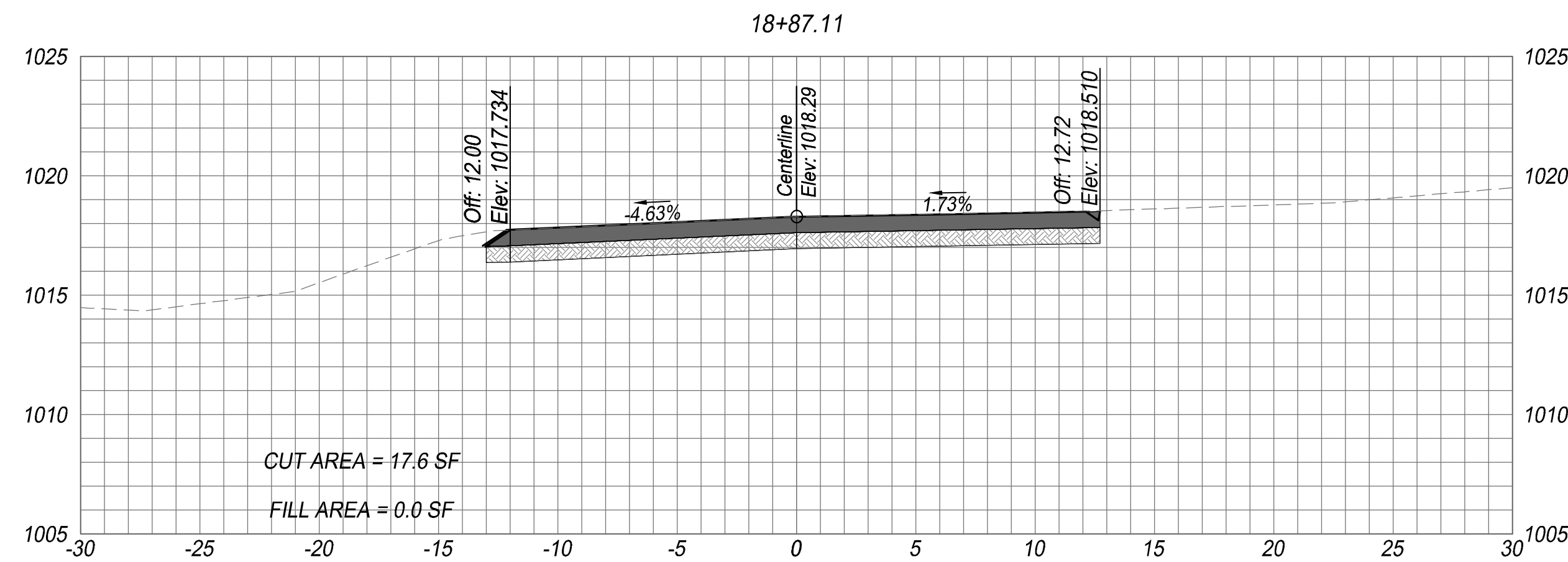
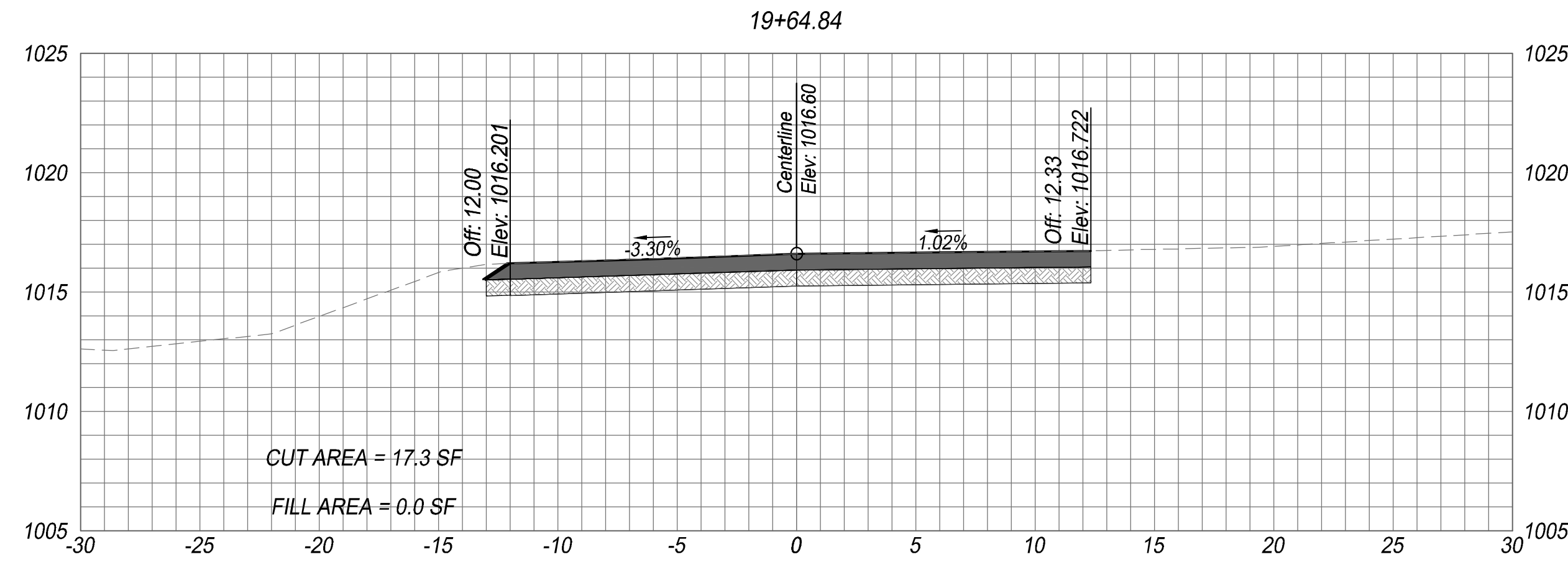
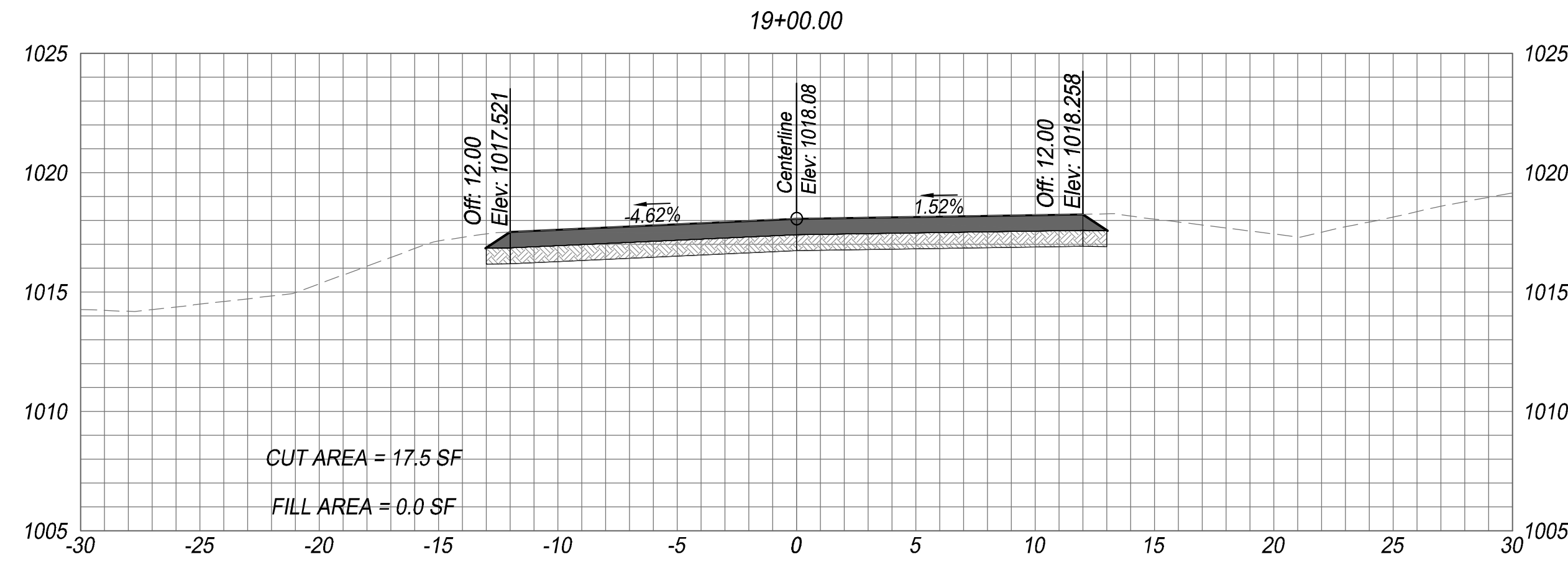
Cross-Sections

DATE: 3/31/2023

SHEET: 20 OF 40

PROJ.: S-841012.00

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DRAWN BY: L. O'CONNOR
APP'D BY: B. AUSTIN
FIELD BOOKS: -
SURVEYED BY: SBB ENG.



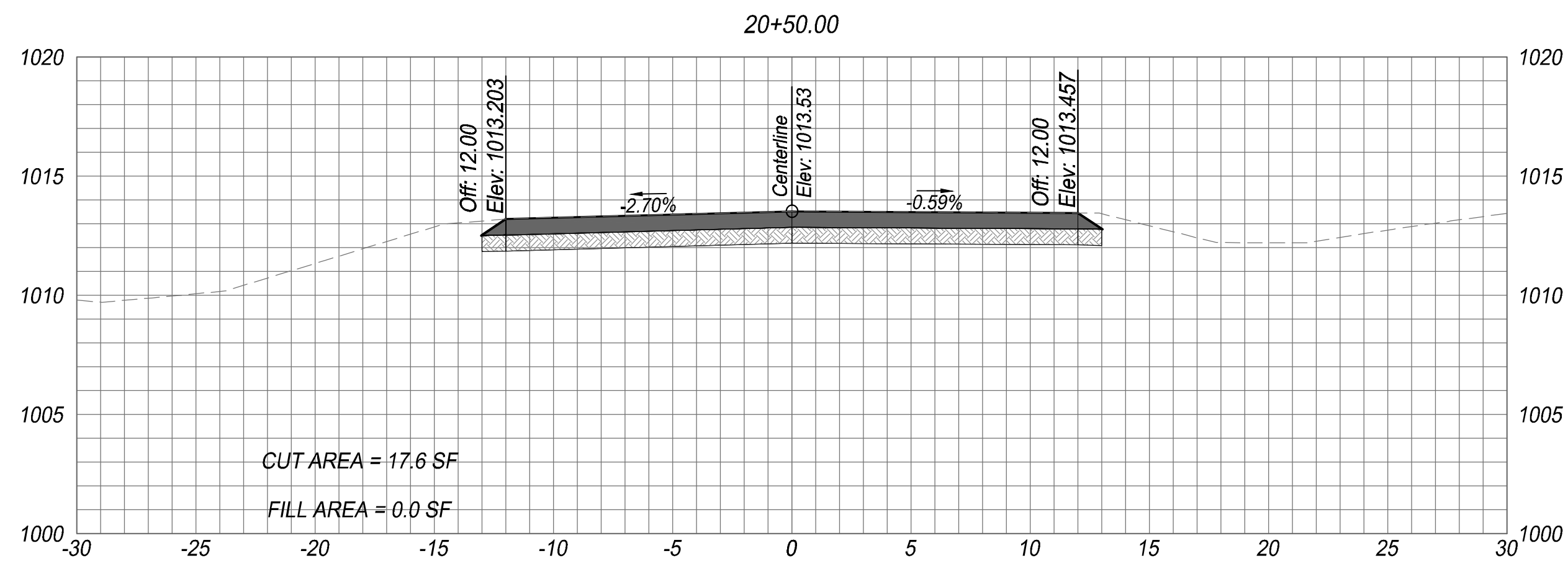
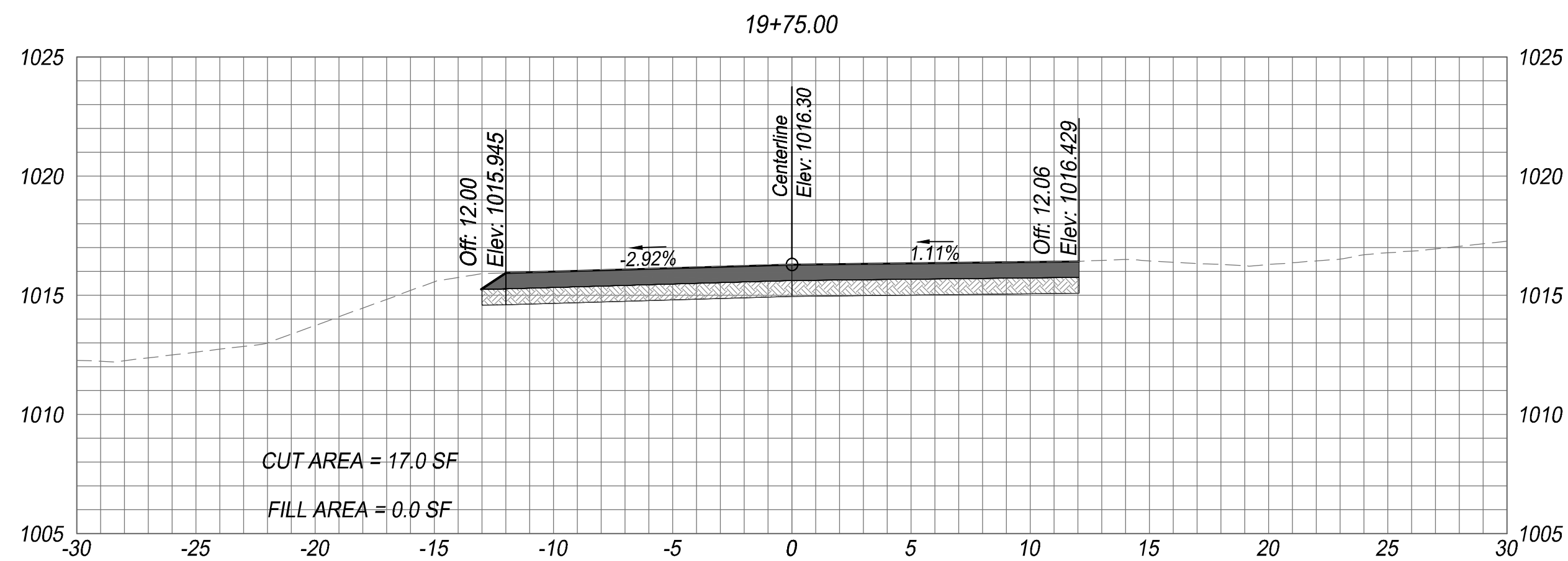
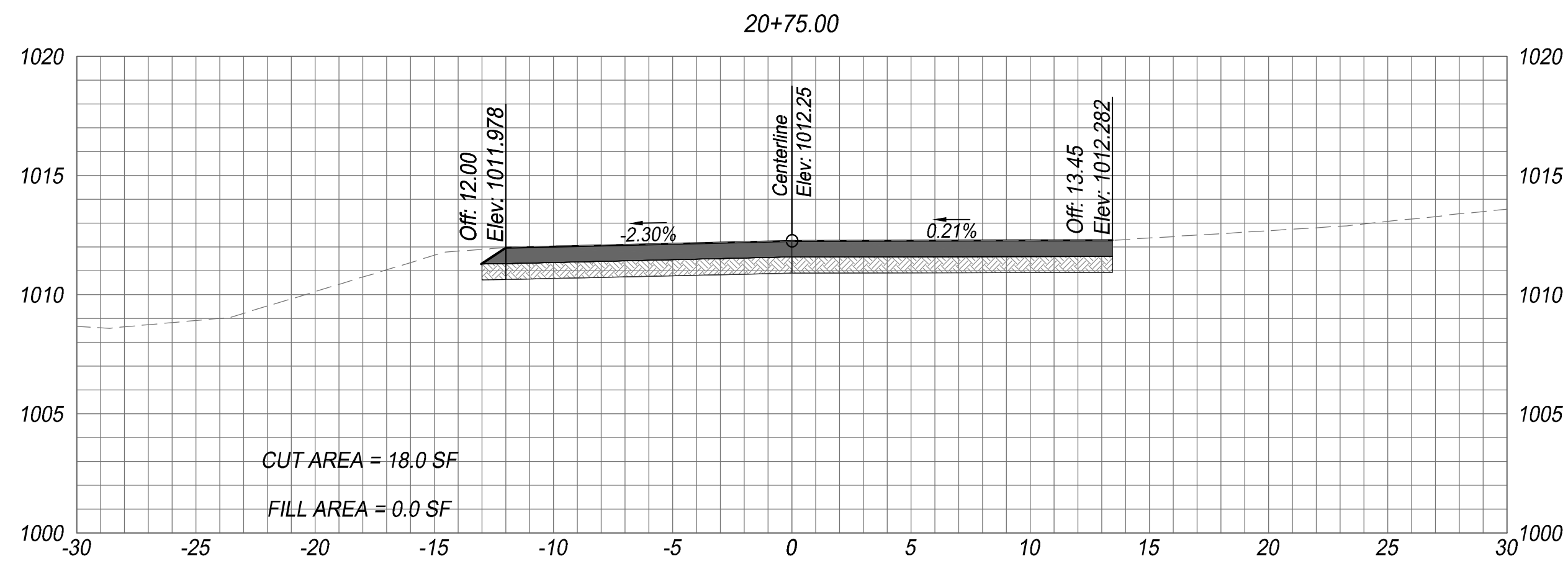
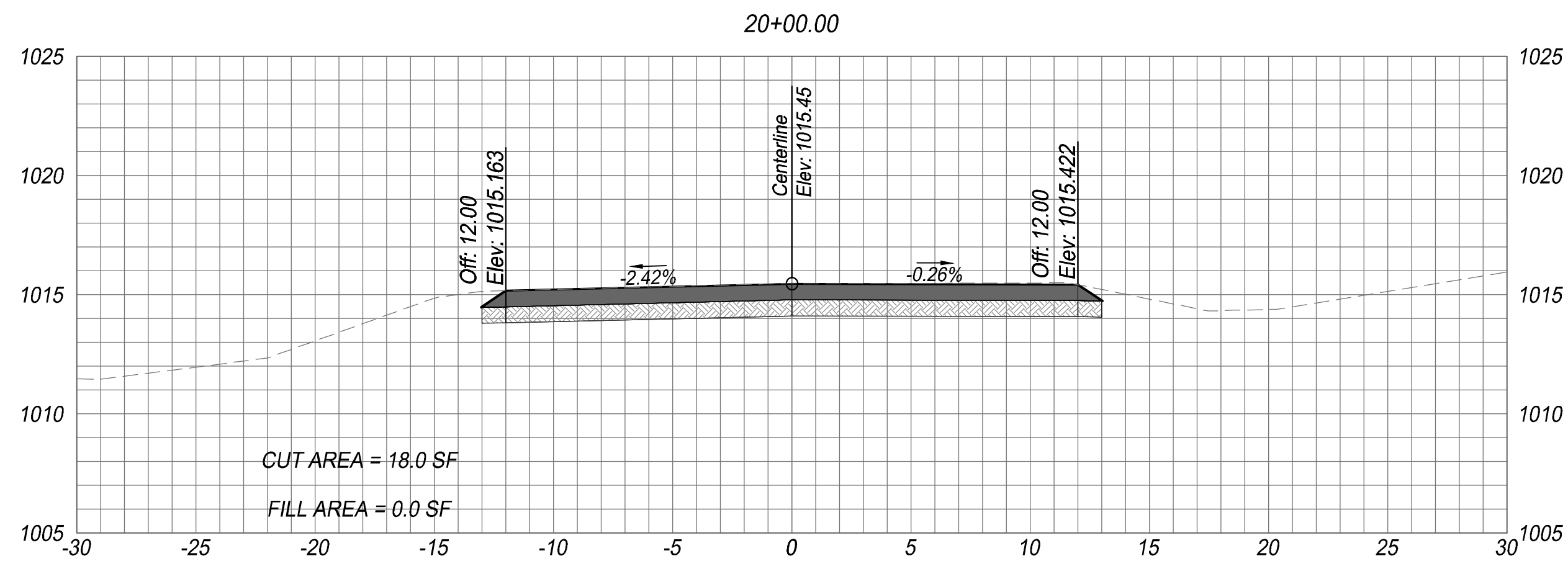
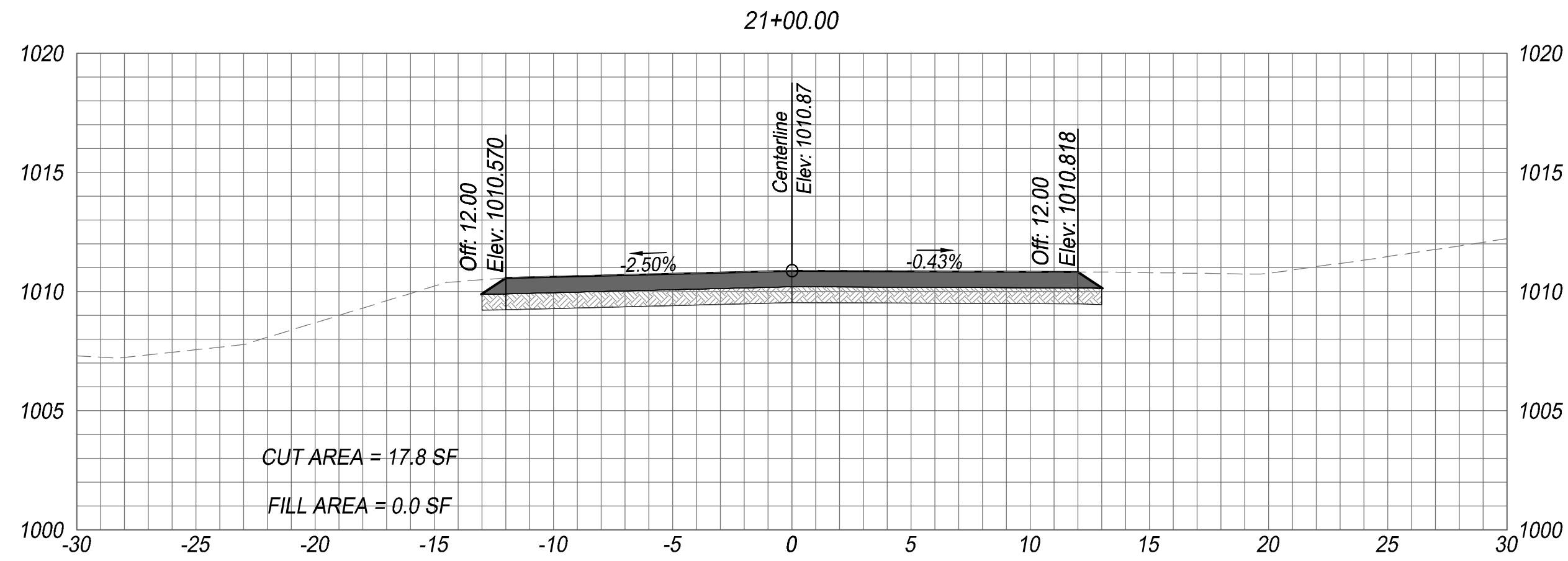
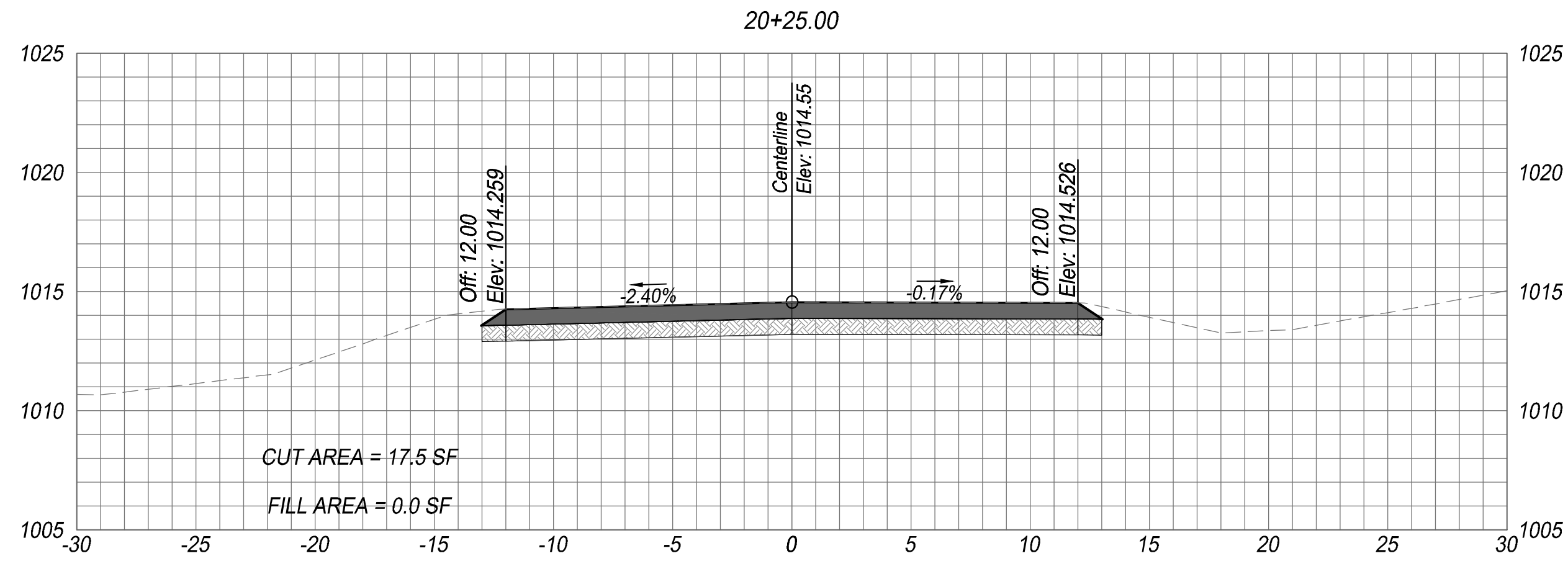
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Cross-Sections

DATE: 3/31/2023
SHEET: 21 OF 40
PROJ.: S-841012.00

[File Location: X:\11 SBB Drawings\0-2023\03-013 SWCO SW Nottingham\dwg\Design\Street Plans\23-013 X-secs.dwg] [Plot Date: 3/31/2023 12:20:04 PM] [Last Saved: 3/30/2023 8:53:35 AM] [Locomotion]



SBB PROJ. NO. 23-013

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APP'D BY: B. AUSTIN
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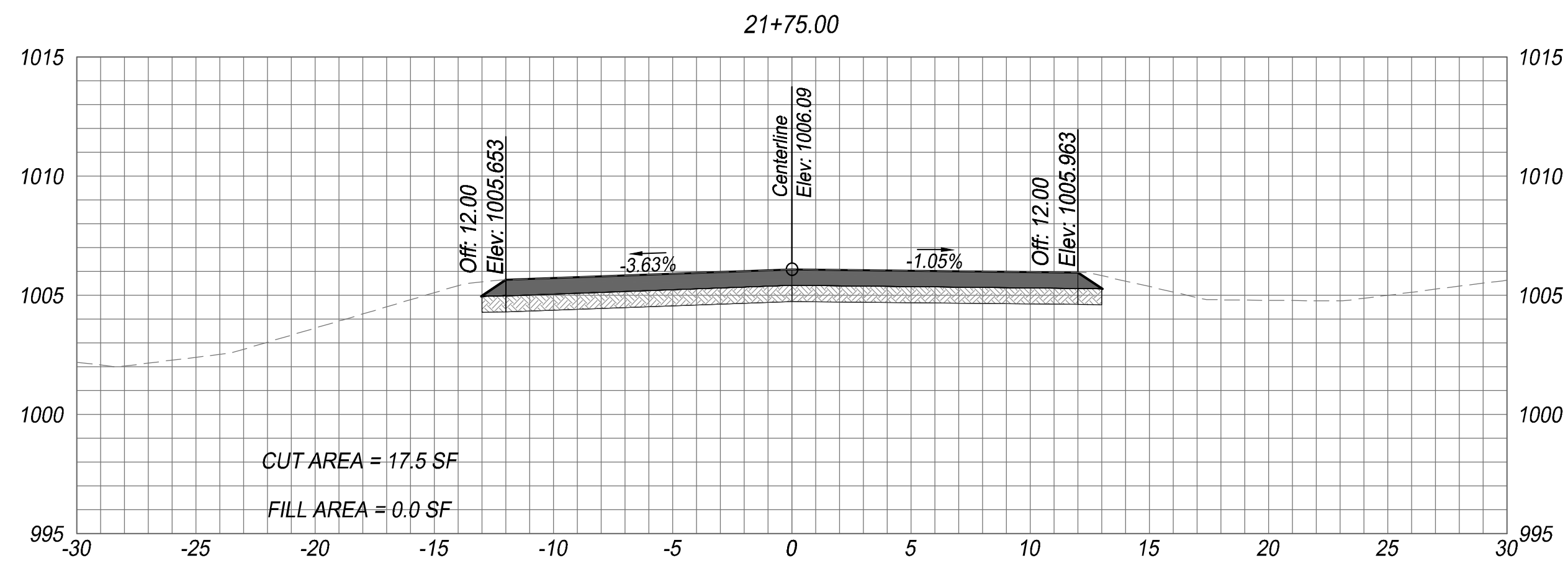
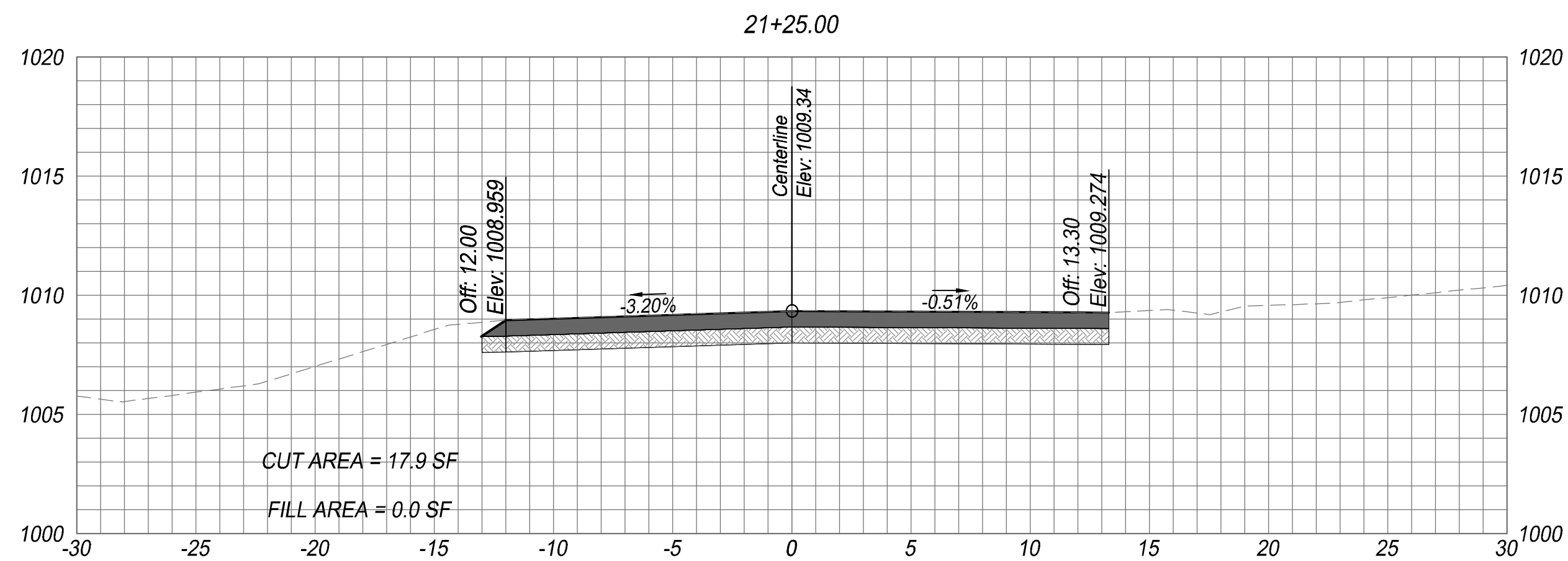
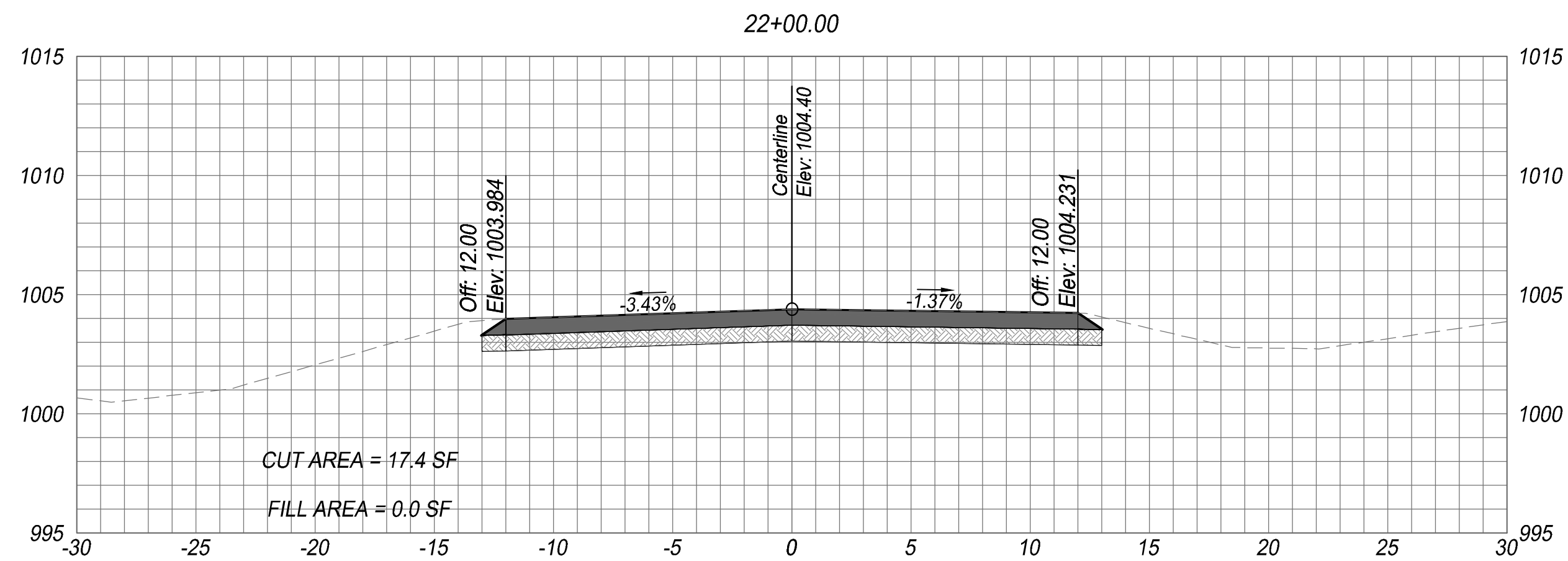
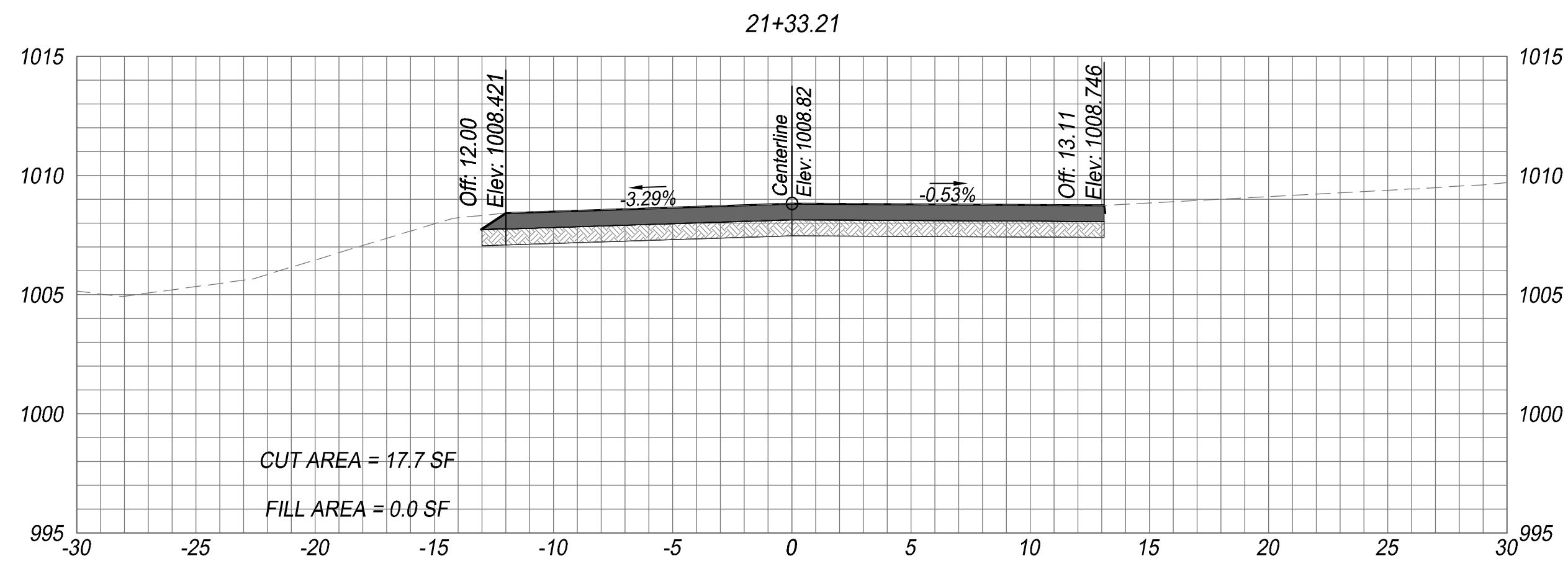
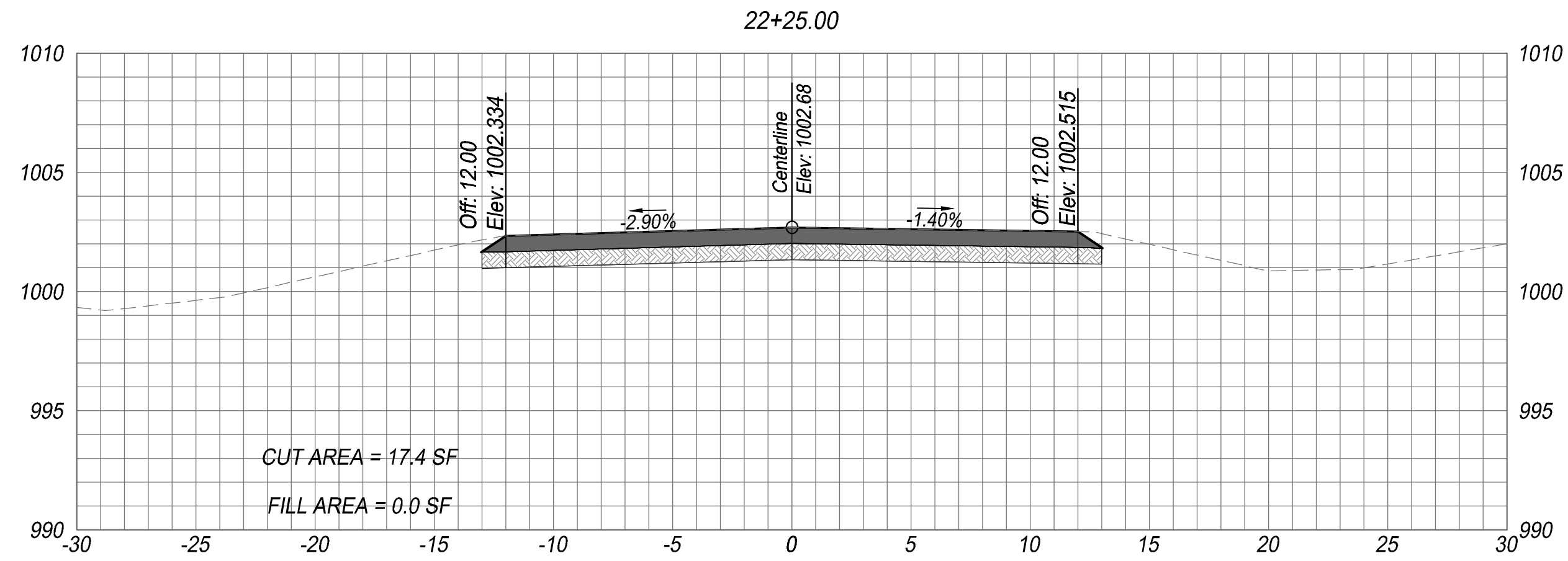
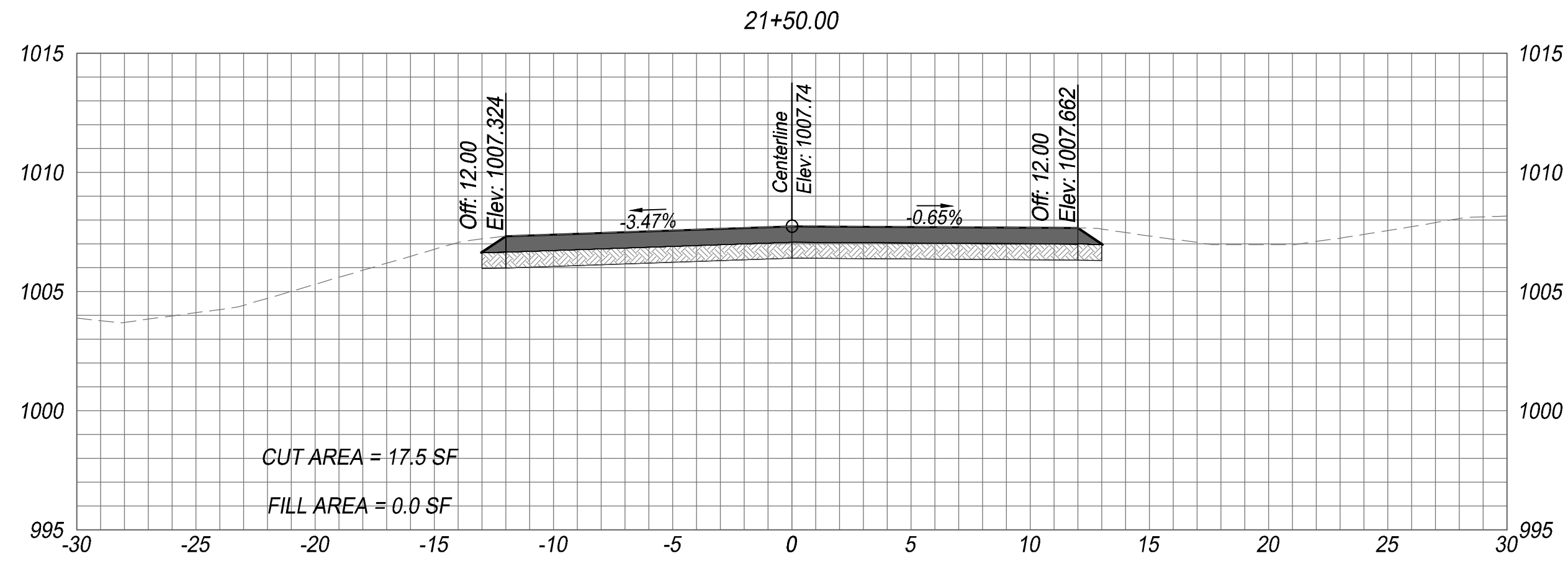
Cross-Sections

DATE: 3/31/2023

SHEET: 22 OF 40

PROJ.: S-841012.00

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APP'D BY: B. AUSTIN
FIELD BOOKS: -
SURVEYED BY: SBB ENG.



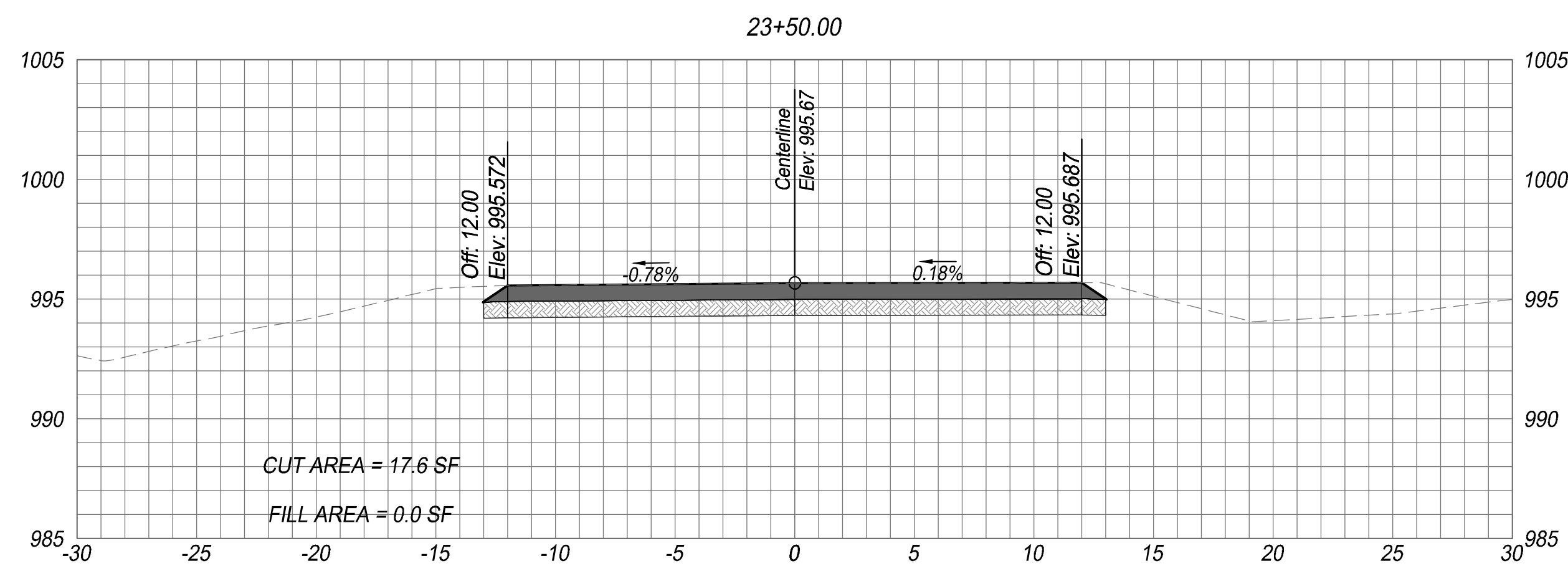
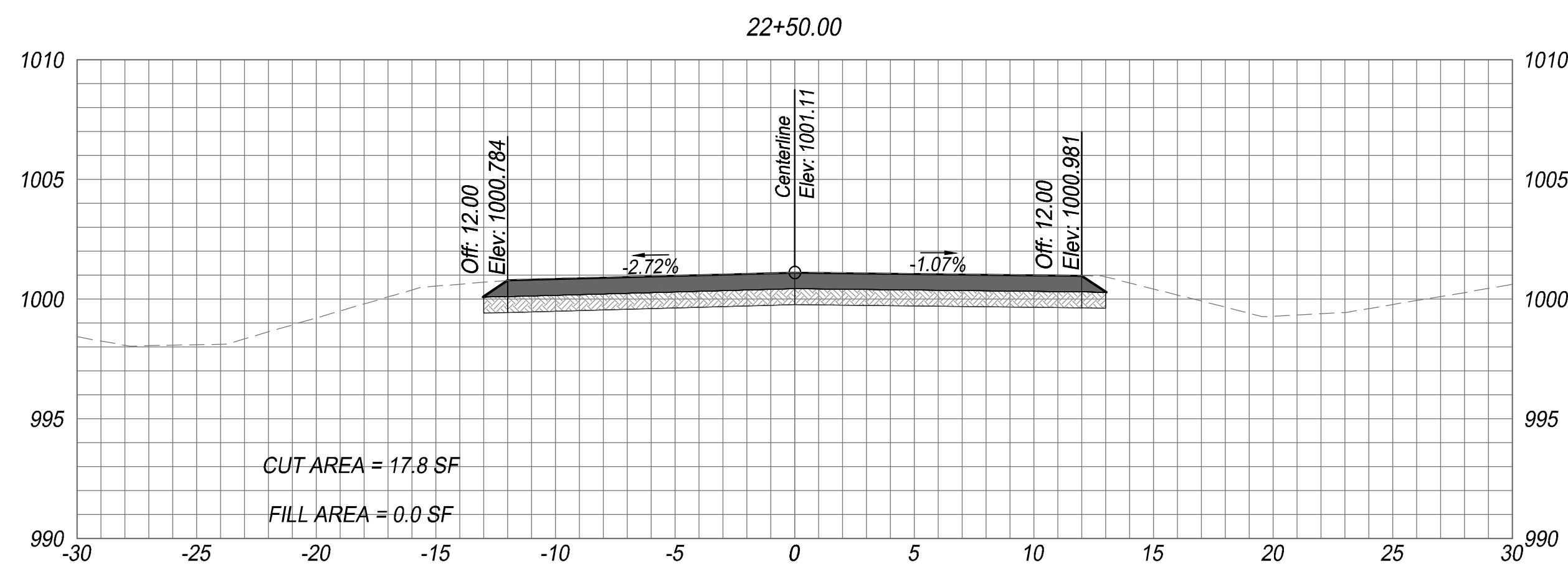
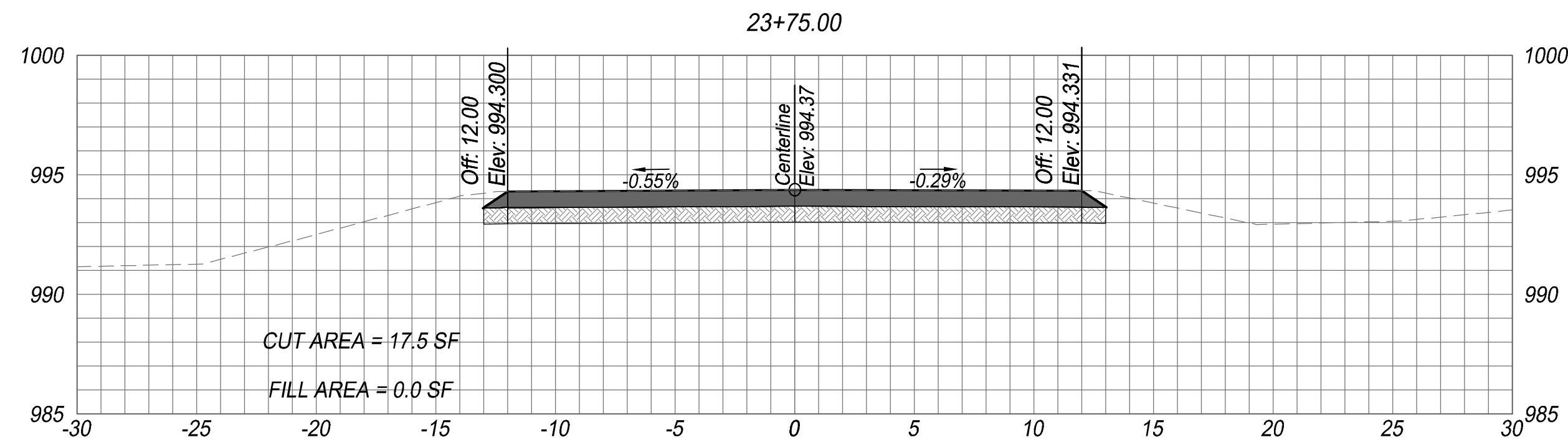
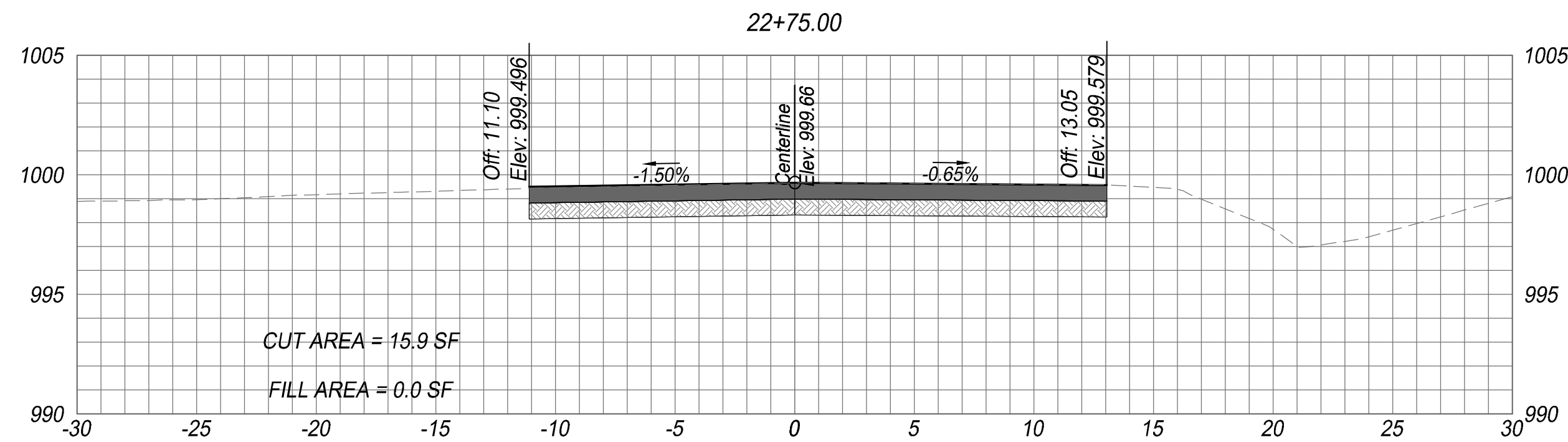
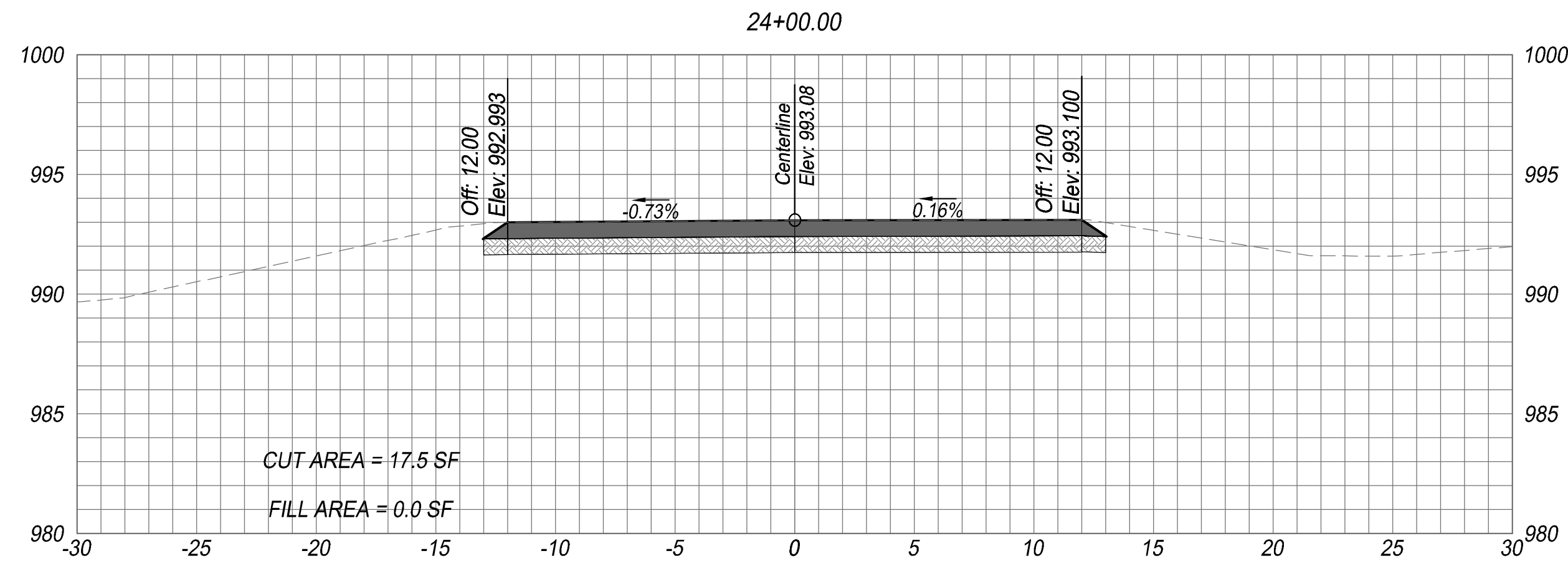
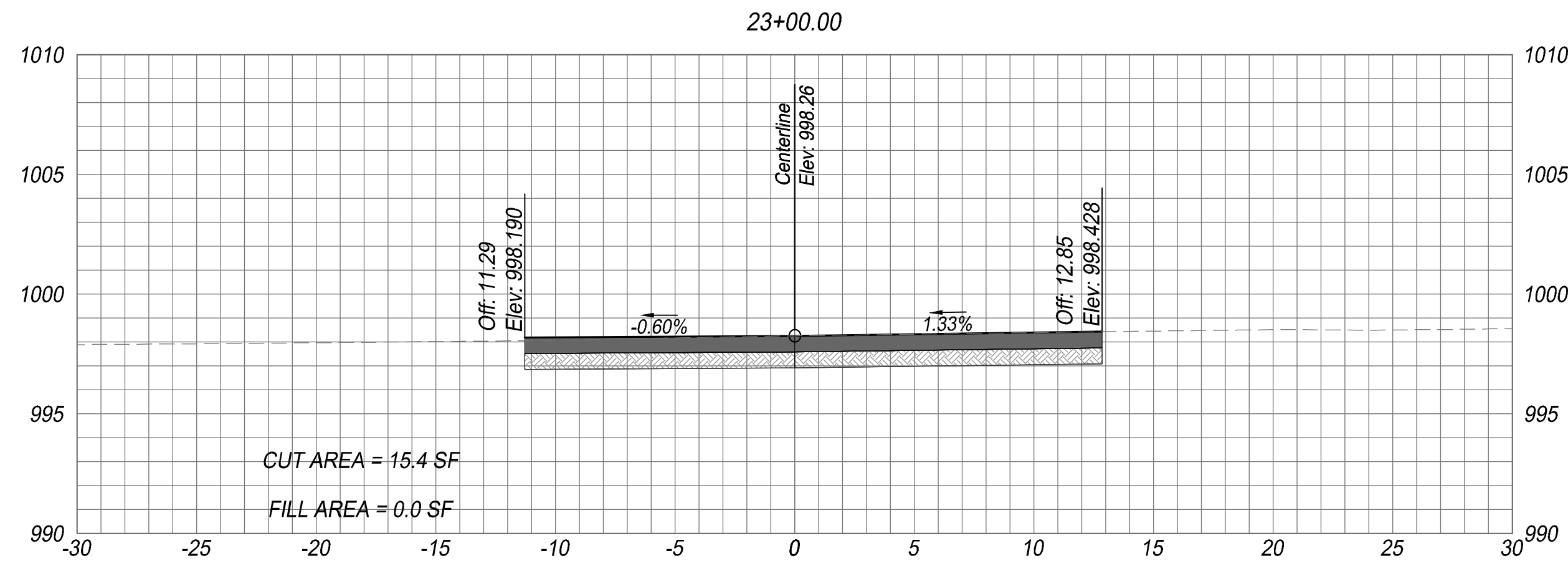
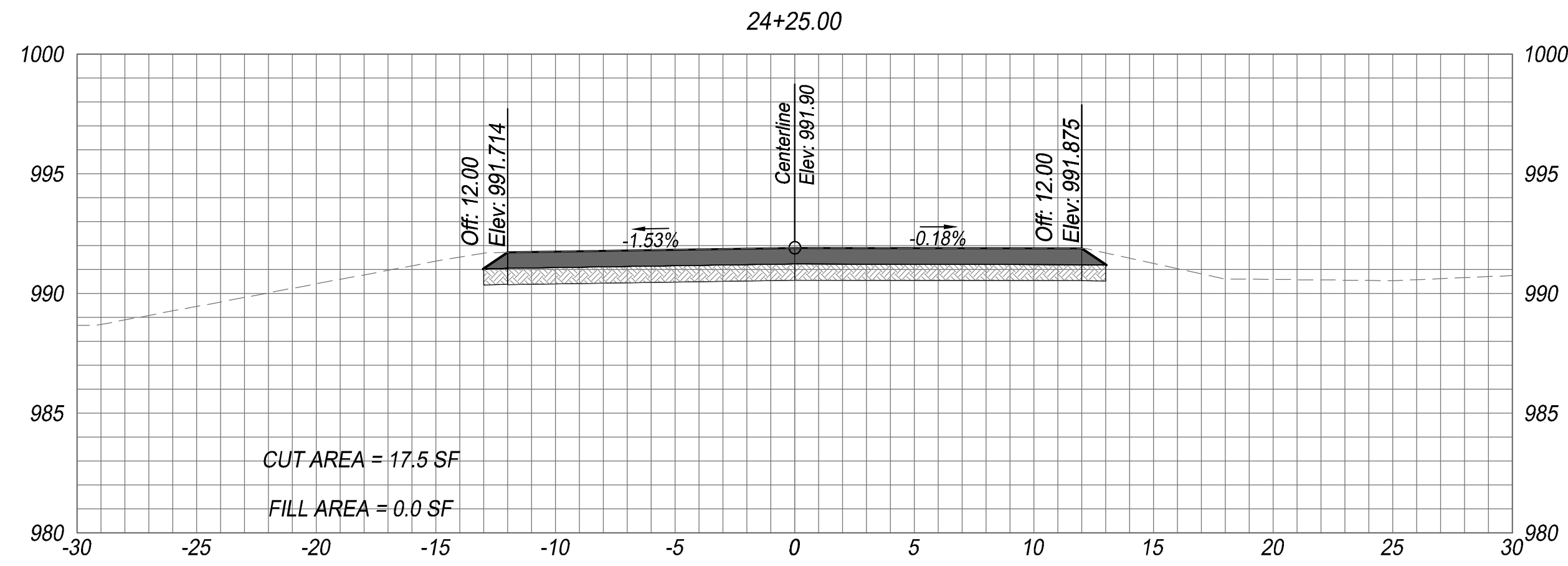
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Cross-Sections

DATE: 3/31/2023
SHEET: 23 OF 40
PROJ.: S-841012.00

[File Location: X:\11 SBB Drawings\0-2023\03-013 SWCO SW Nottingham\dwg\Design\Street Plans\23-013 X-sec's.dwg] [Plot Date: 3/31/2023 12:20:14 PM] [Last Saved: 3/30/2023 8:53:35 AM] [Location:]



SBB PROJ. NO. 23-013

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DRAWN BY: L. O'CONNOR
APP'D BY: B. AUSTIN
FIELD BOOKS: -
SURVEYED BY: SBB ENG.

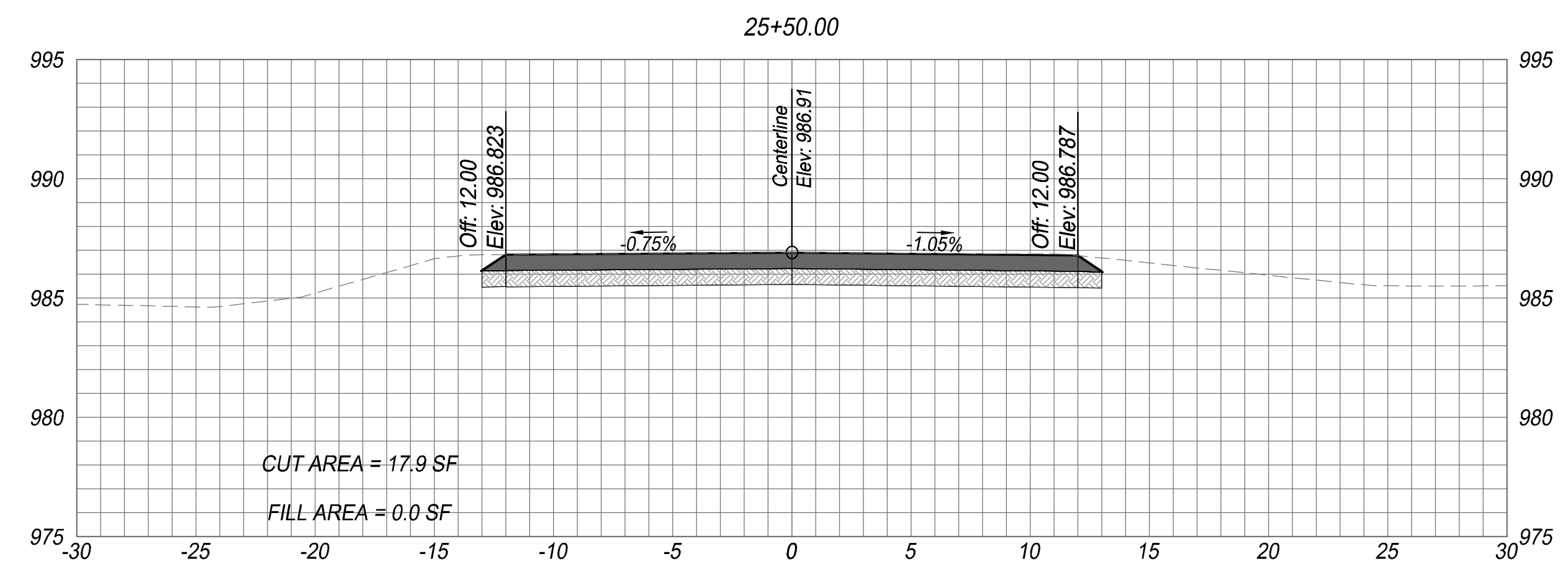
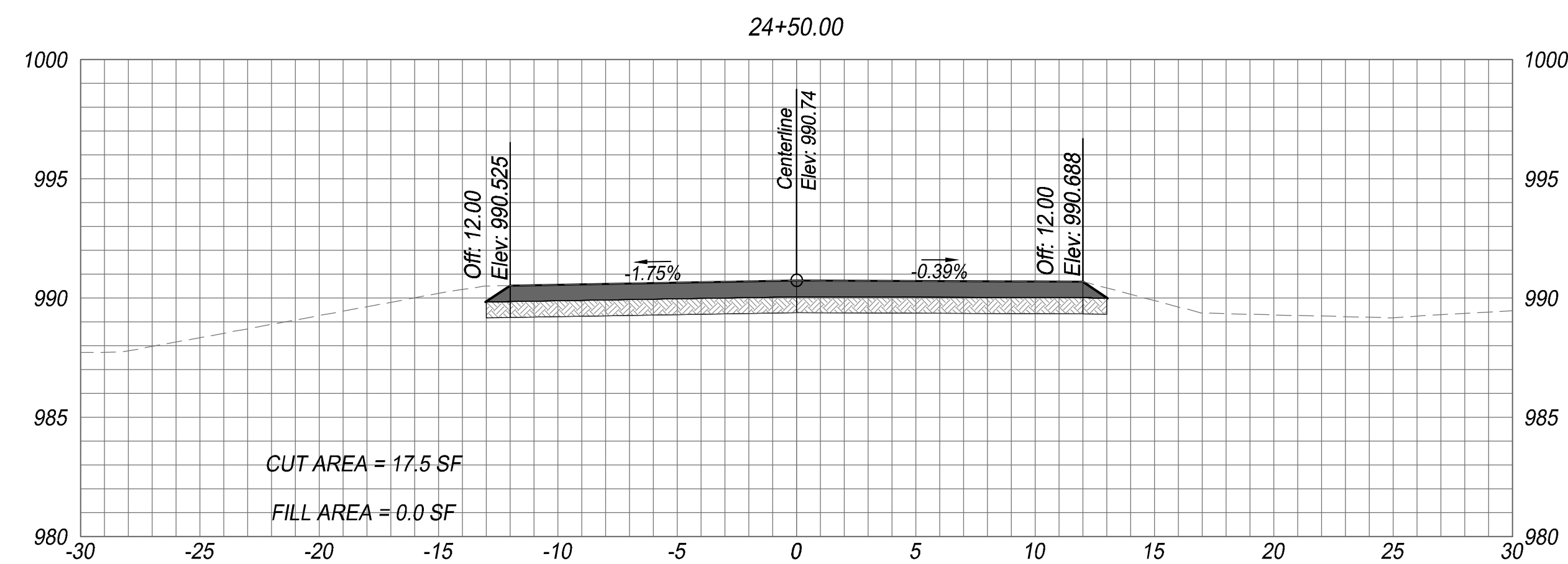
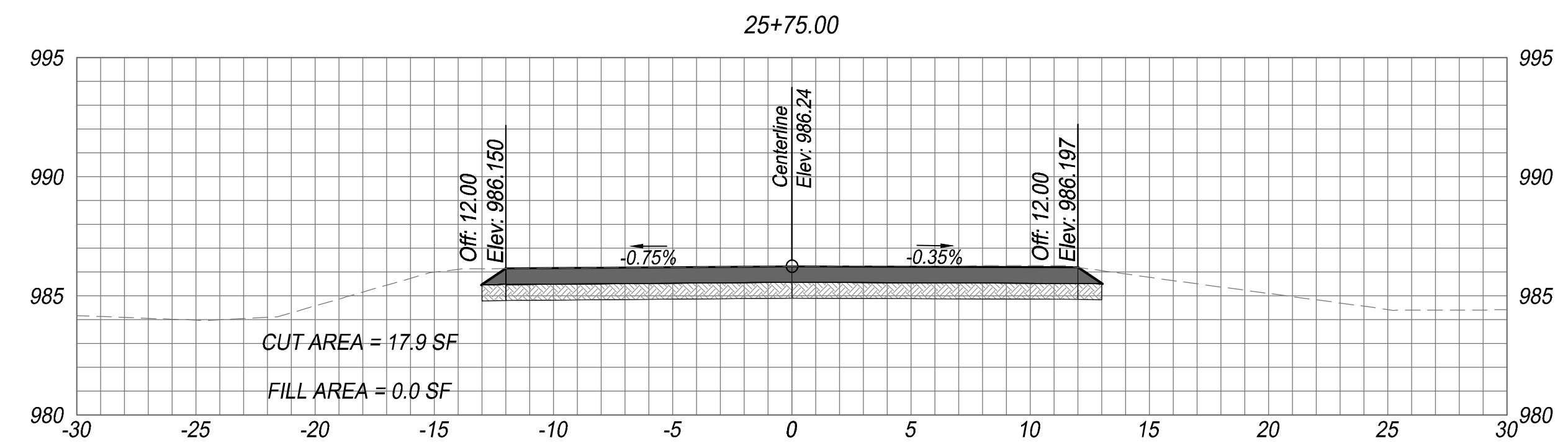
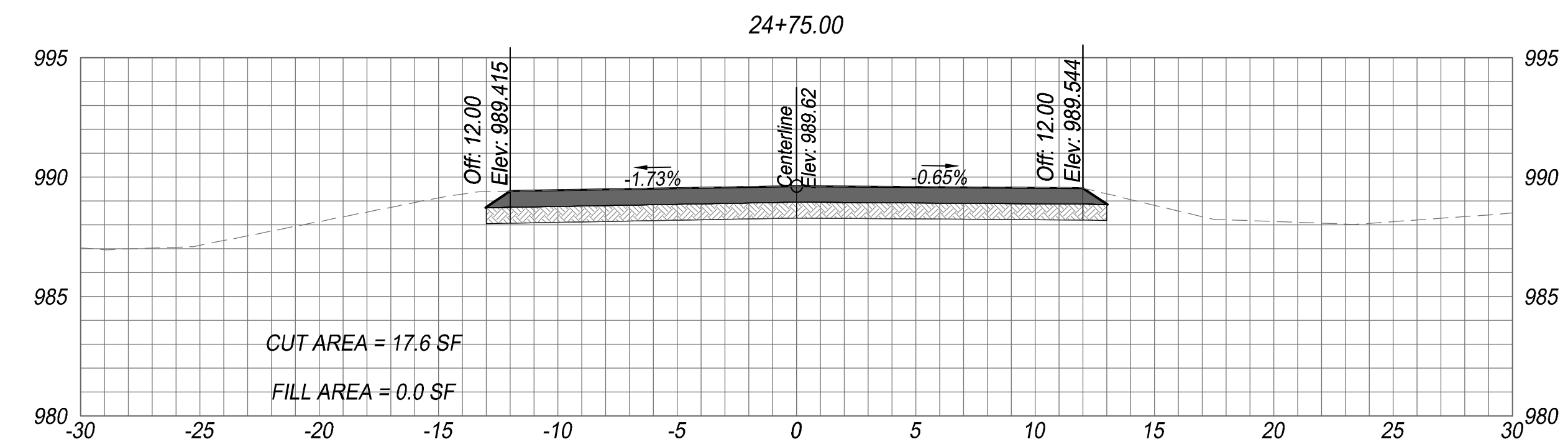
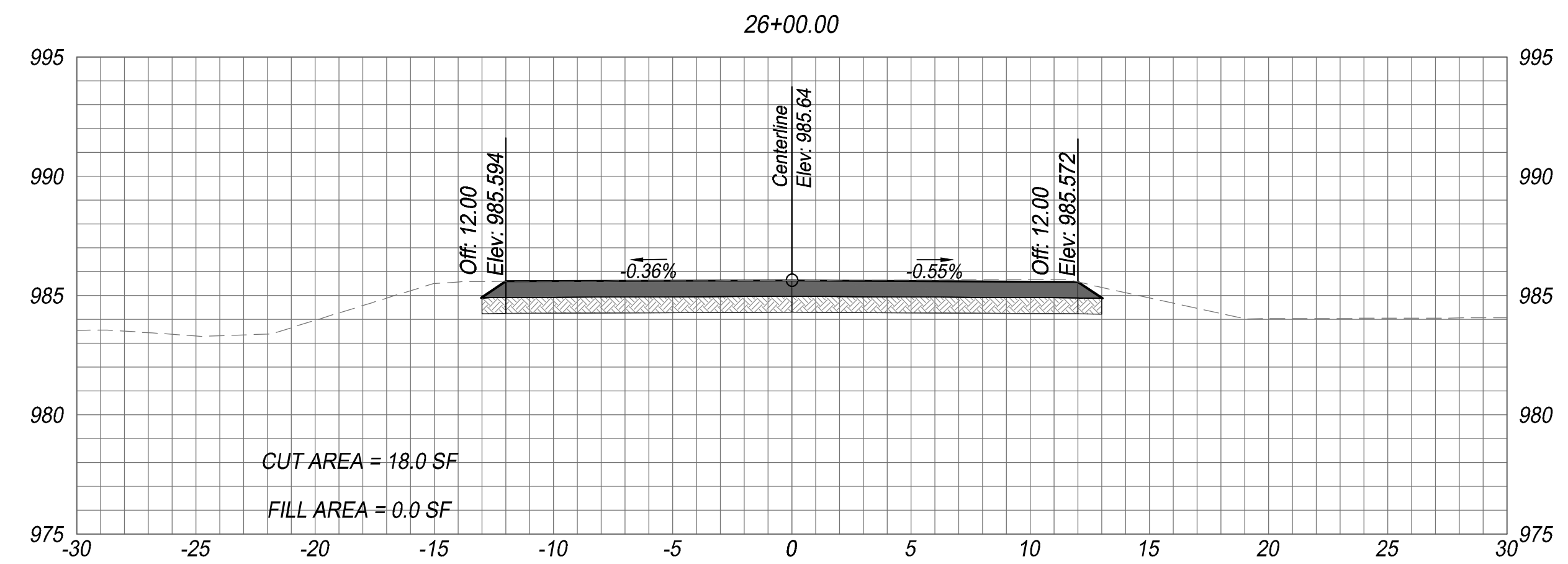
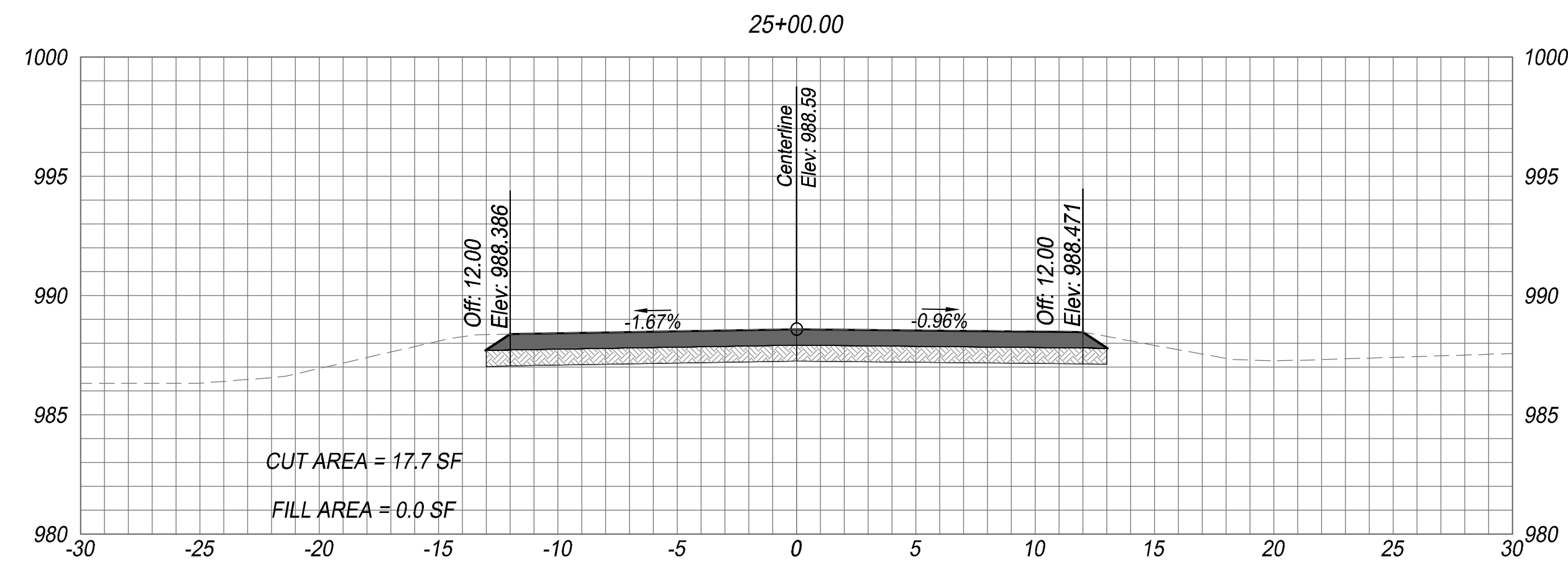
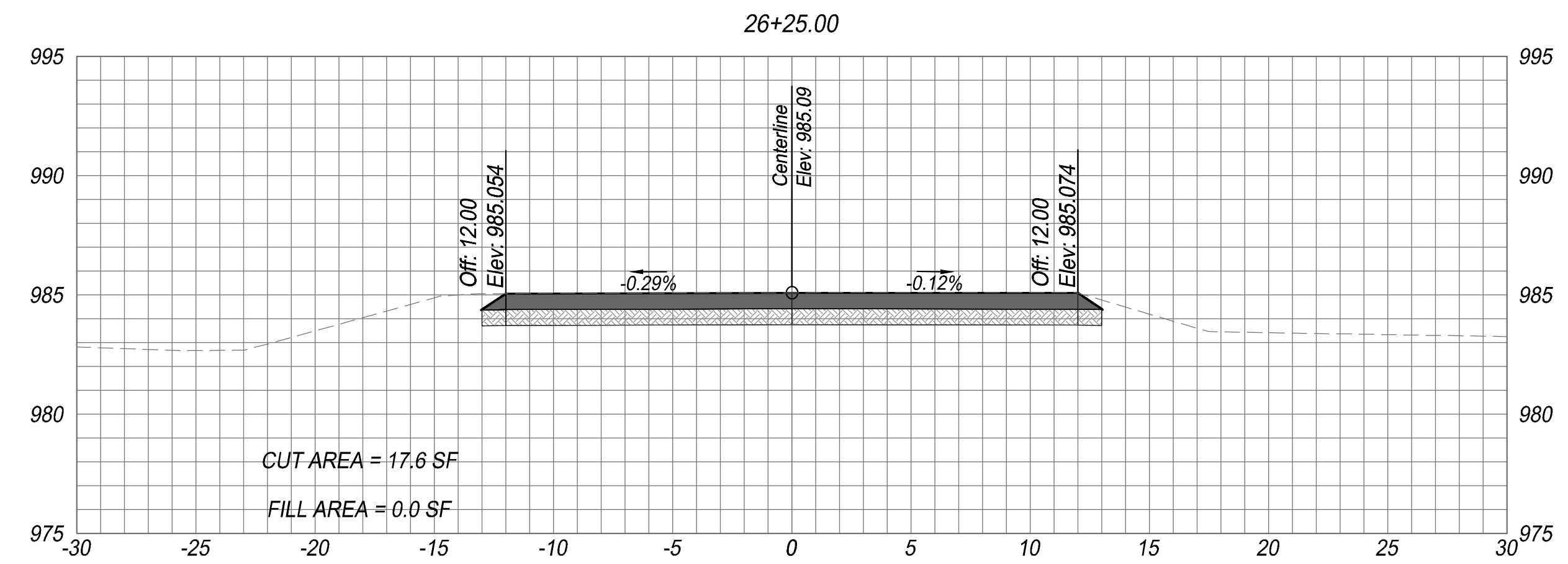
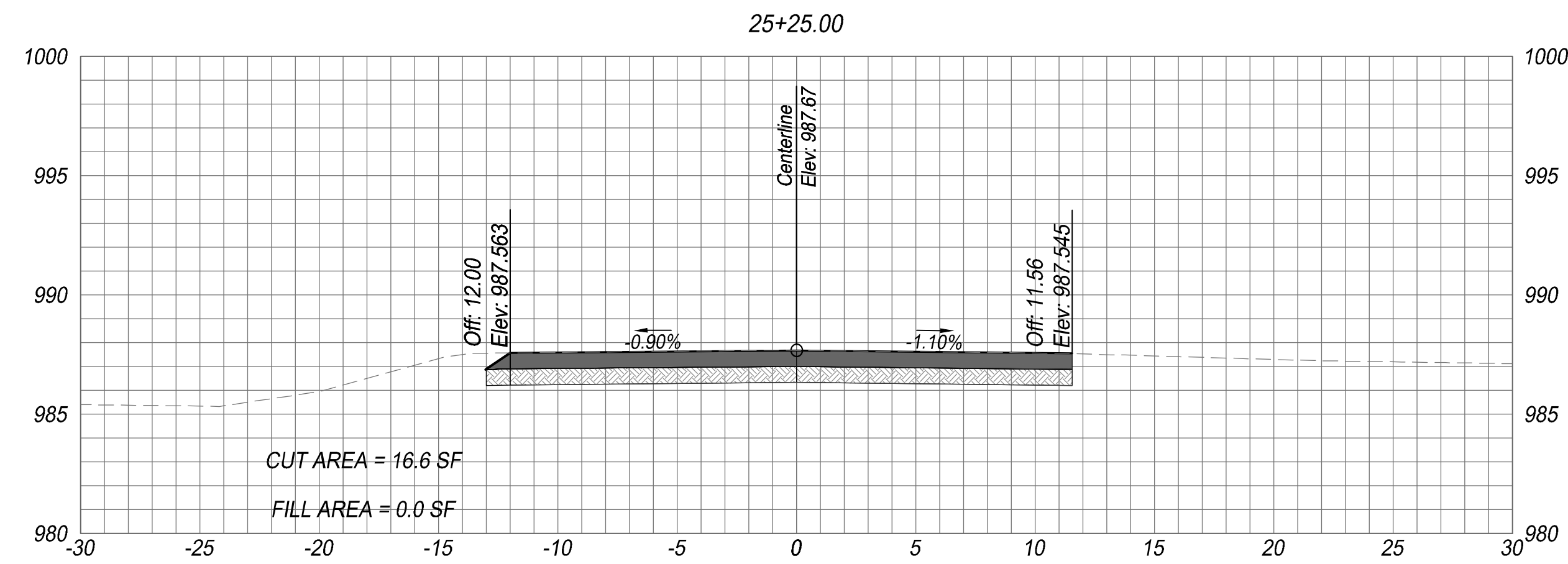


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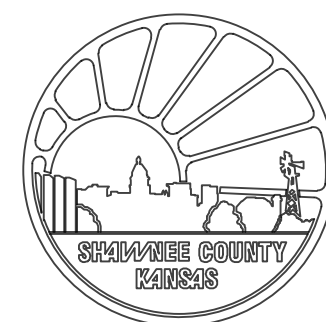
S-841012.00
SW Nottingham
(SW 33rd Street To SW 37th Street)

Cross-Sections

DATE: 3/31/2023
SHEET: 24 OF 40
PROJ.: S-841012.00



| | | | | | | DRAWN BY: L. O'CONNOR |
|-----|-------|----------|-----|-------|--|-----------------------|
| | | | | | | APP'D BY: B. AUSTIN |
| | | | | | | FIELD BOOKS: - |
| | | | | | | SURVEYED BY: SBB ENG. |
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SW Nottingham
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Cross-Sections

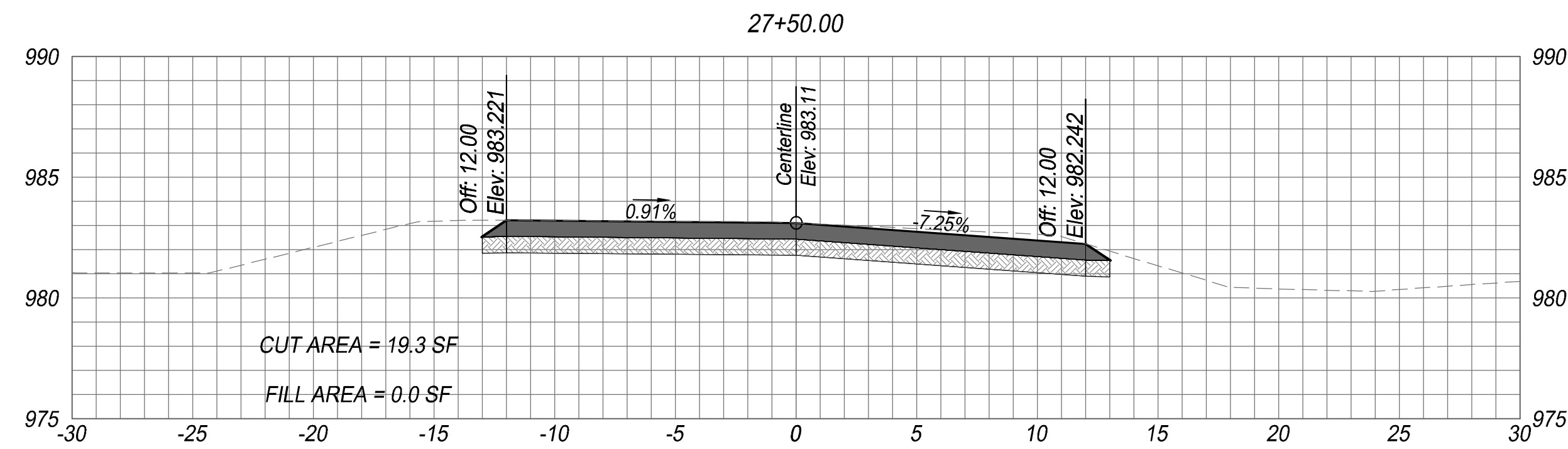
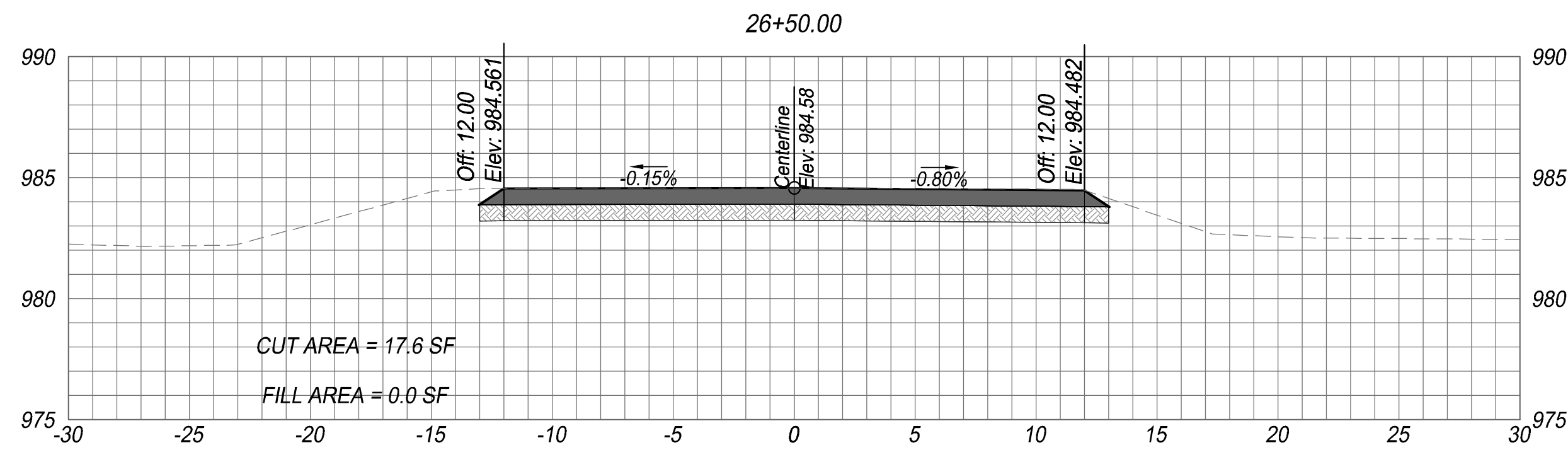
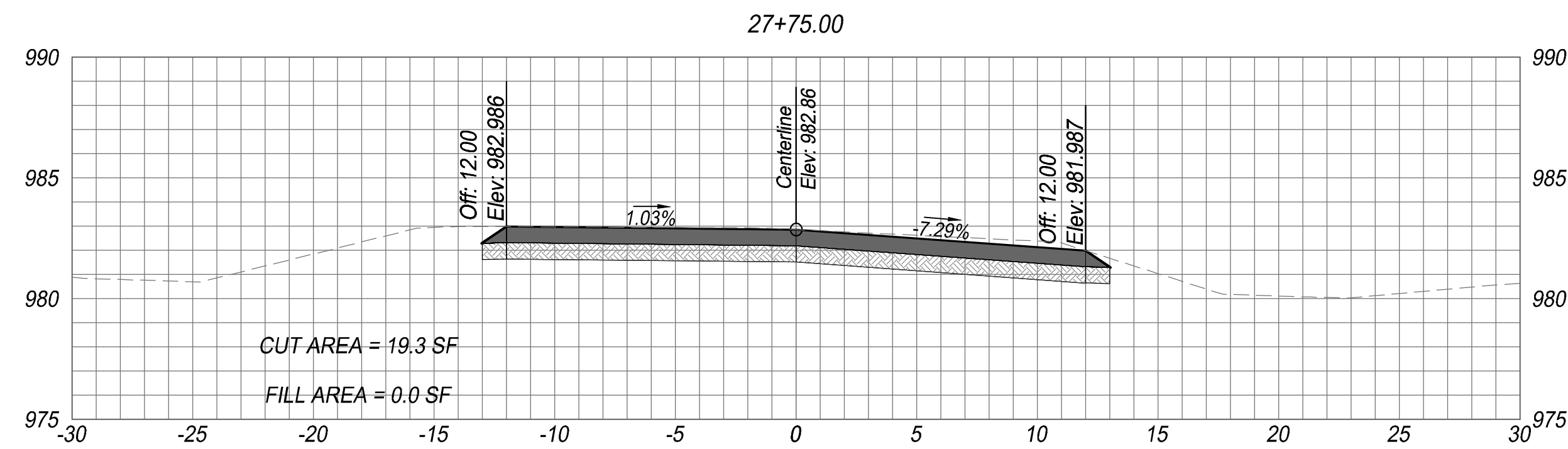
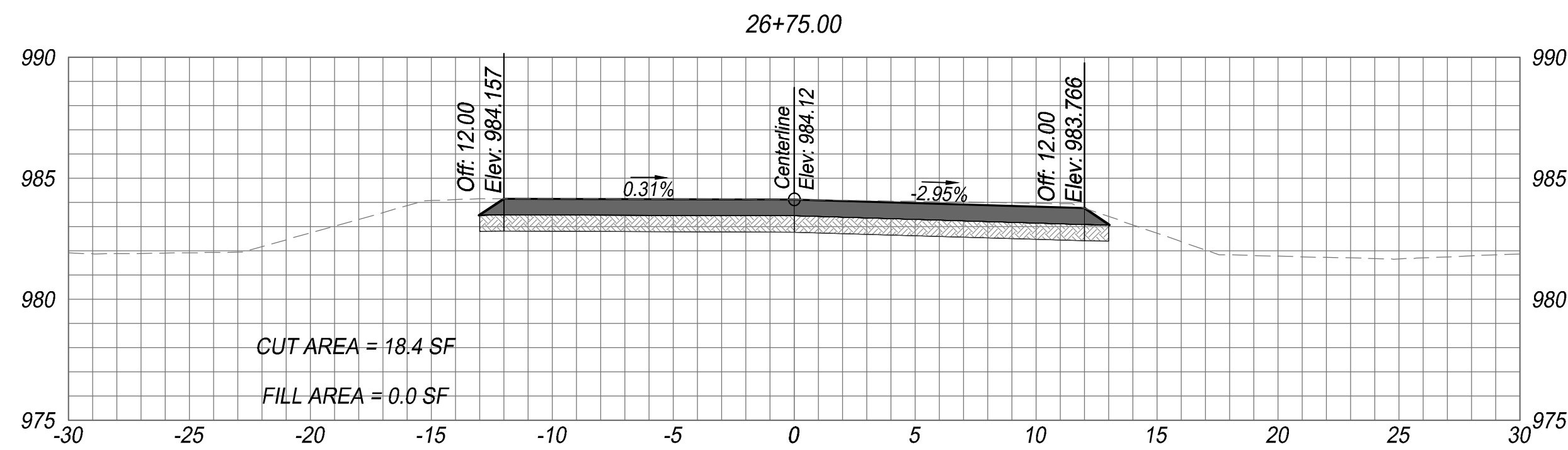
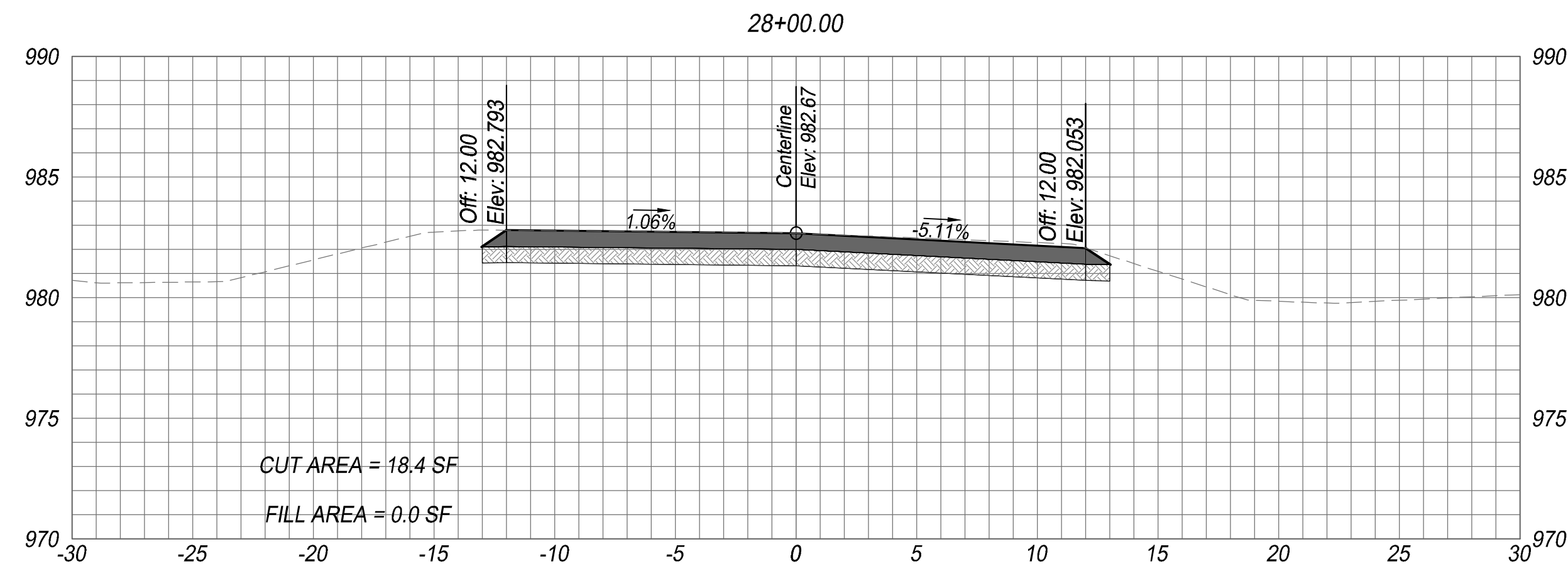
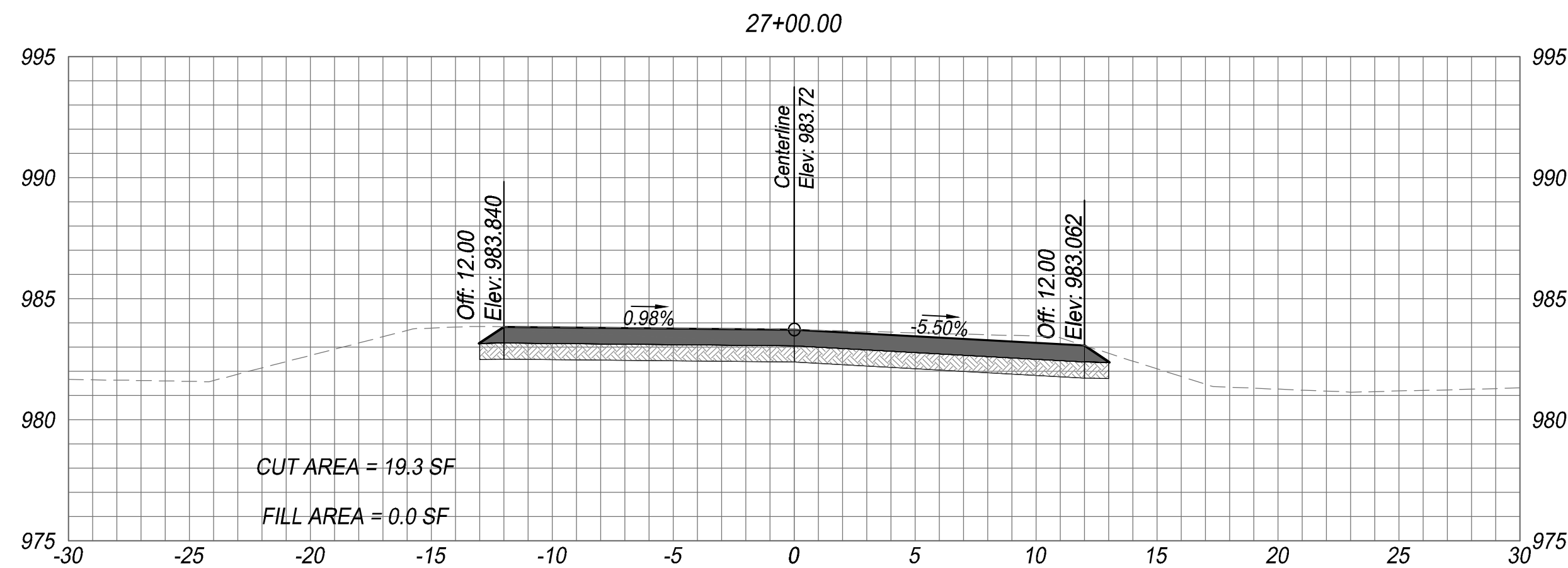
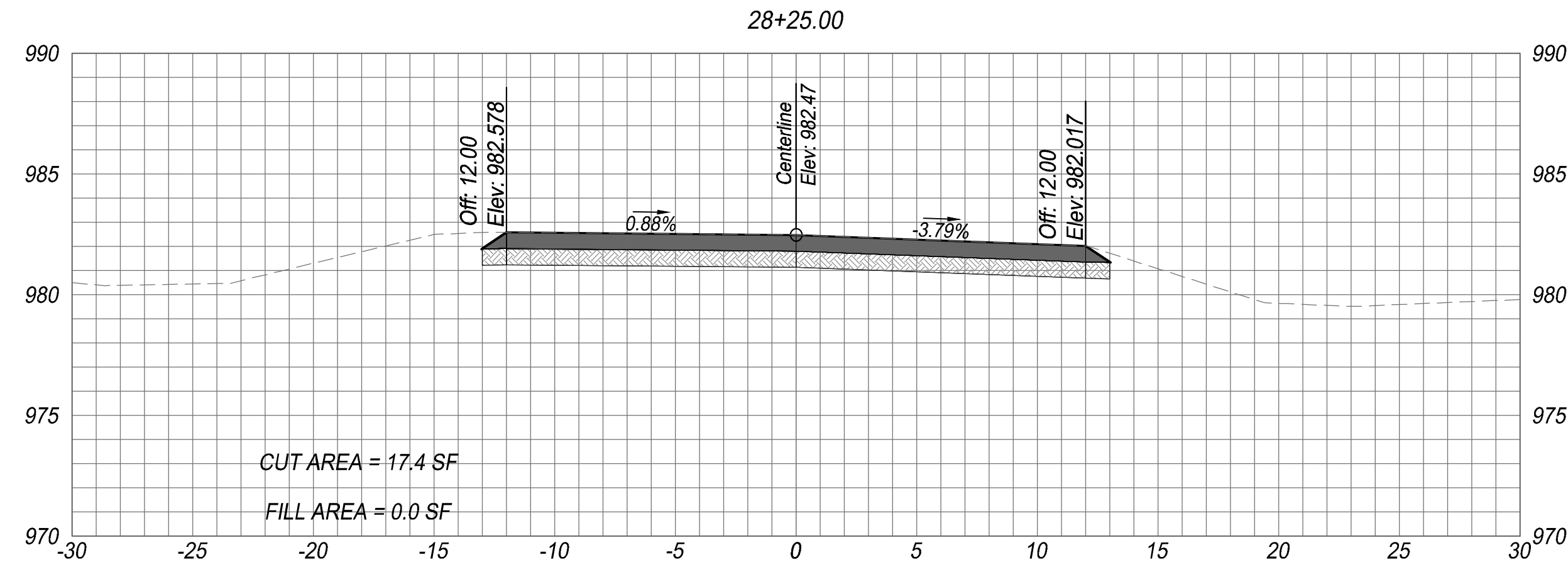
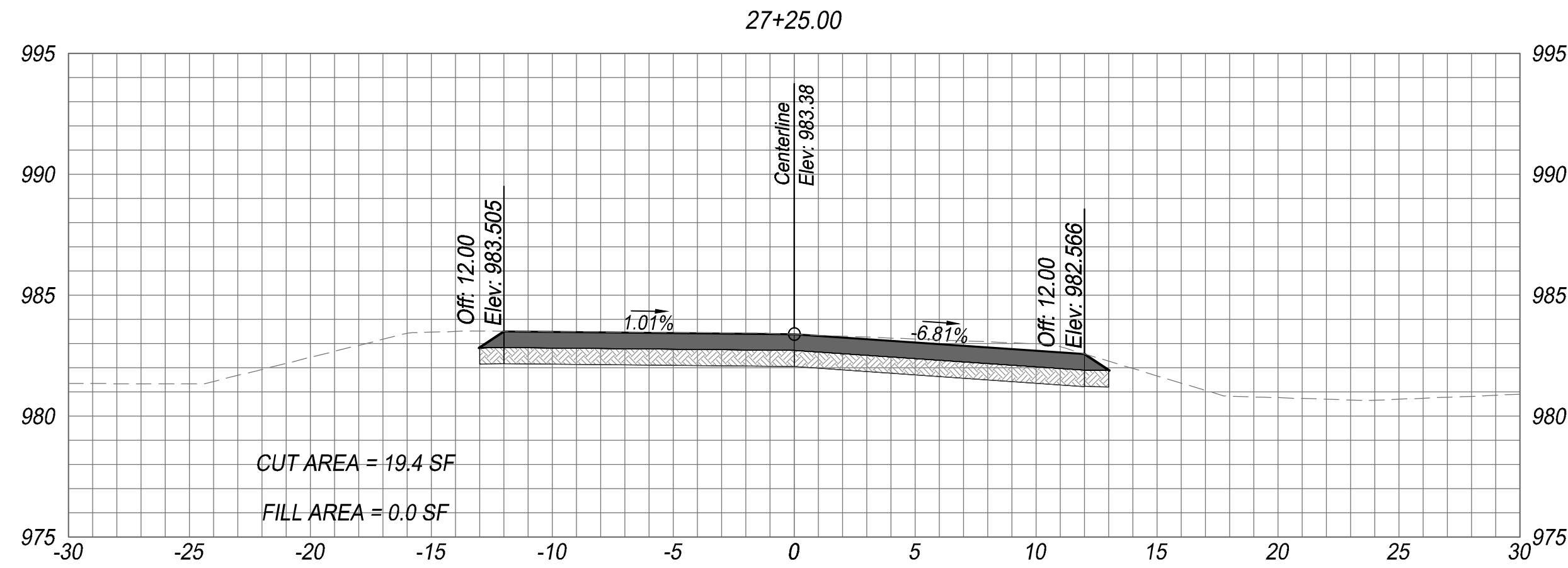
SBB PROJ. NO. 23-013

DATE: 3/31/2023

SHEET: 25 OF 40

PROJ.: S-841012.00

[File Location: X:\11 SBB Drawings\0-2023\03-013 SWCO SW Nottingham\dwg\Design\Street Plans\23-013 X-secs.dwg] [Plot Date: 3/31/2023 12:20:24 PM] [Last Saved: 3/30/2023 8:53:35 AM] [Locomotion]



SBB PROJ. NO. 23-013

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DRAWN BY: L. O'CONNOR
APP'D BY: B. AUSTIN
FIELD BOOKS: -
SURVEYED BY: SBB ENG.



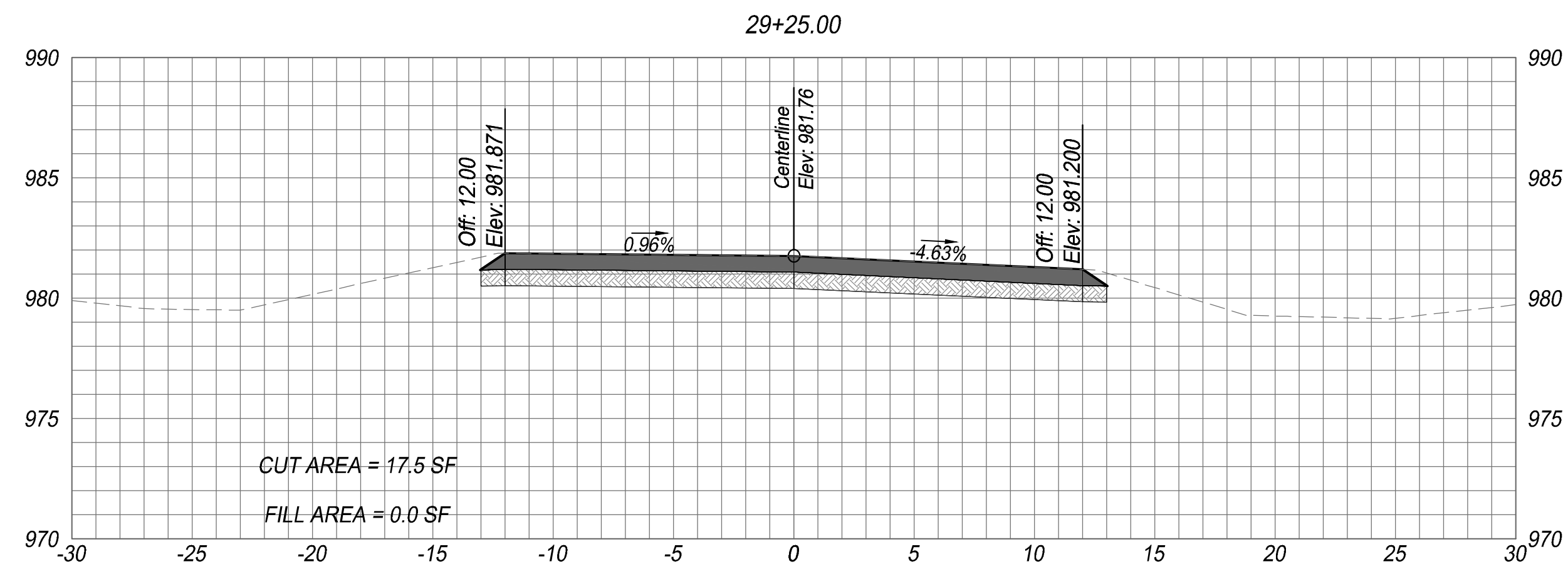
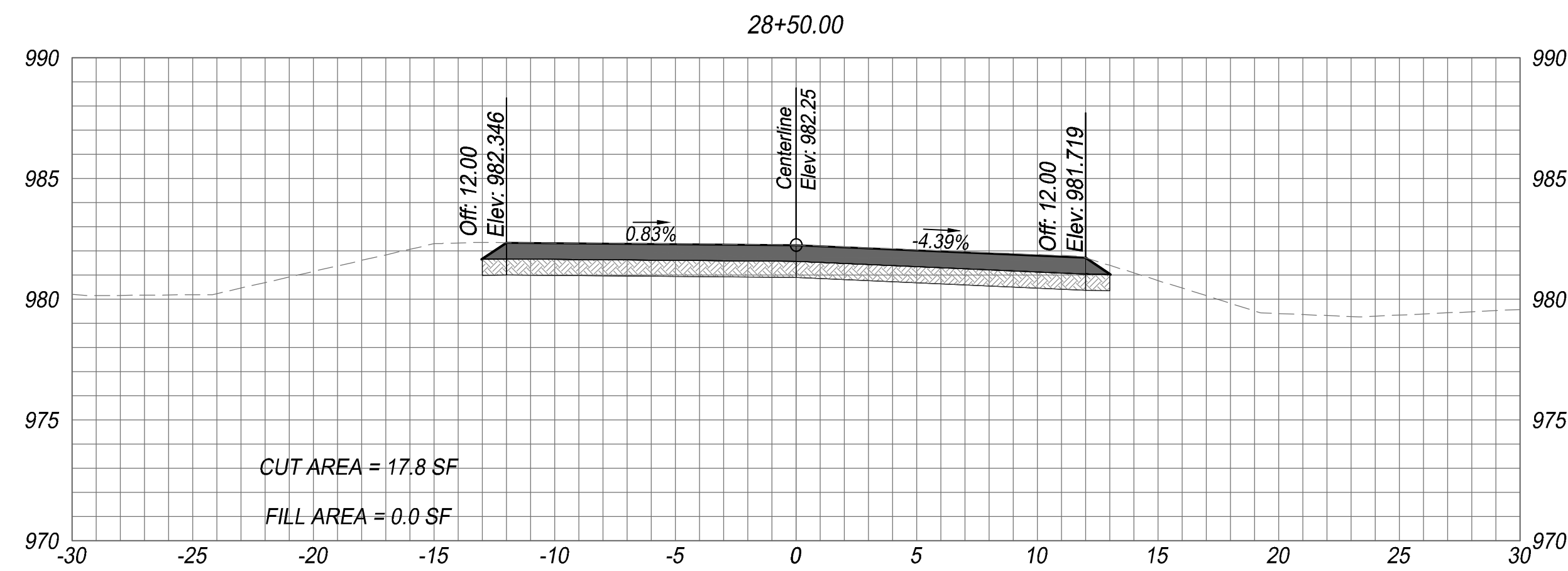
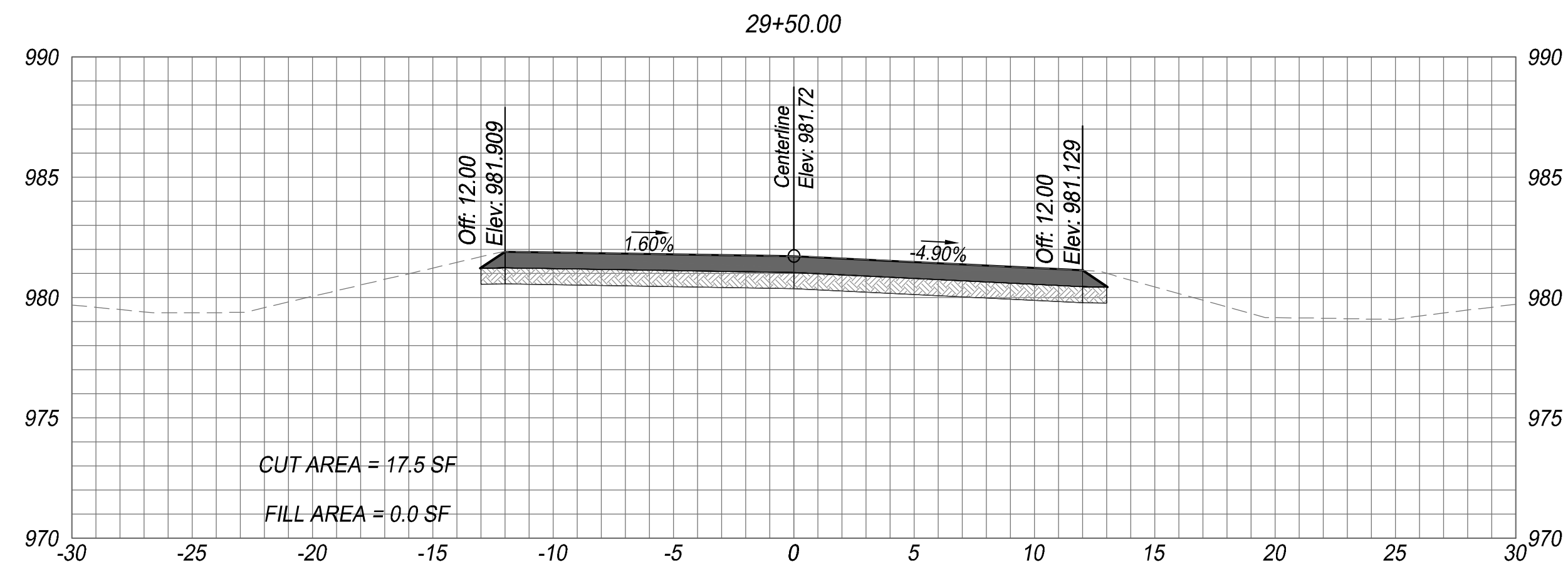
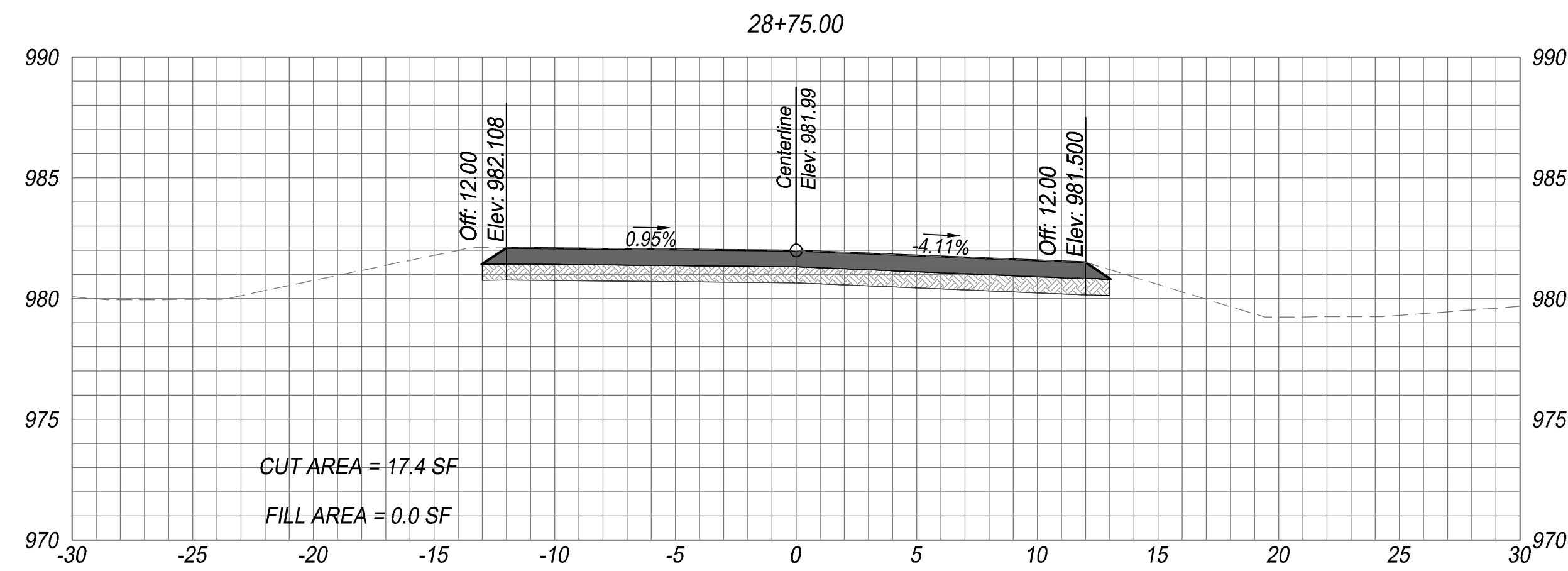
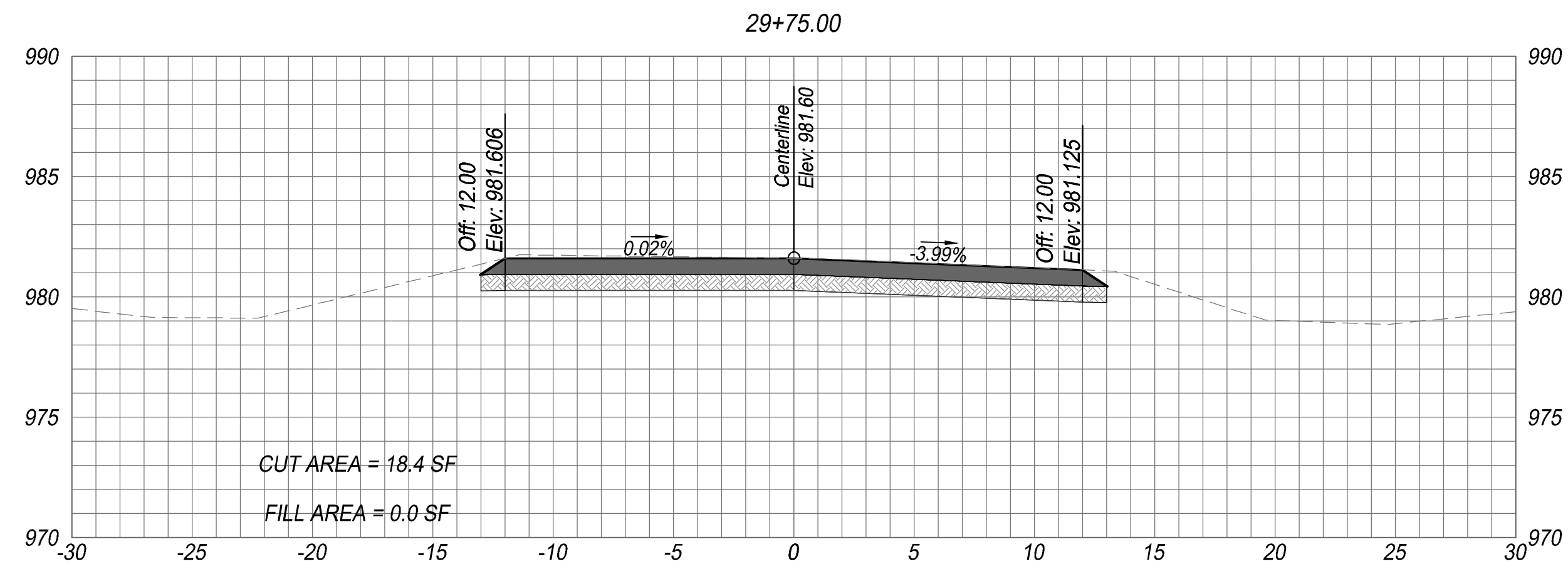
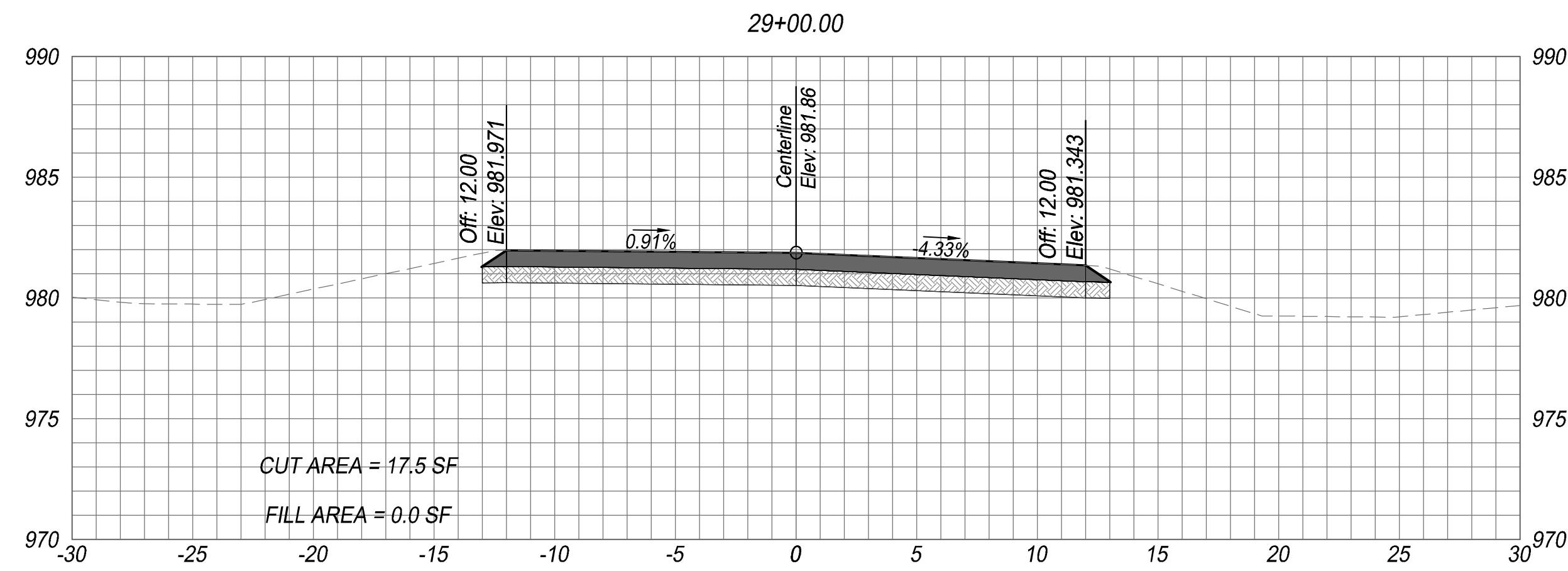
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Cross-Sections

DATE: 3/31/2023
SHEET: 26 OF 40
PROJ.: S-841012.00

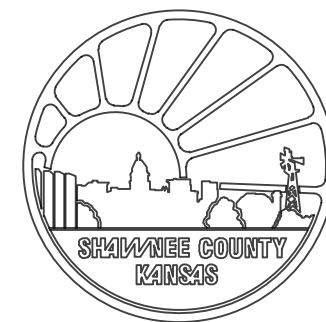
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SBB PROJ. NO. 23-013

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| NO. | DATE: | REVISION | BY: | APPD | |

DRAWN BY: L. O'CONNOR
APP'D BY: B. AUSTIN
FIELD BOOKS: -
SURVEYED BY: SBB ENG.

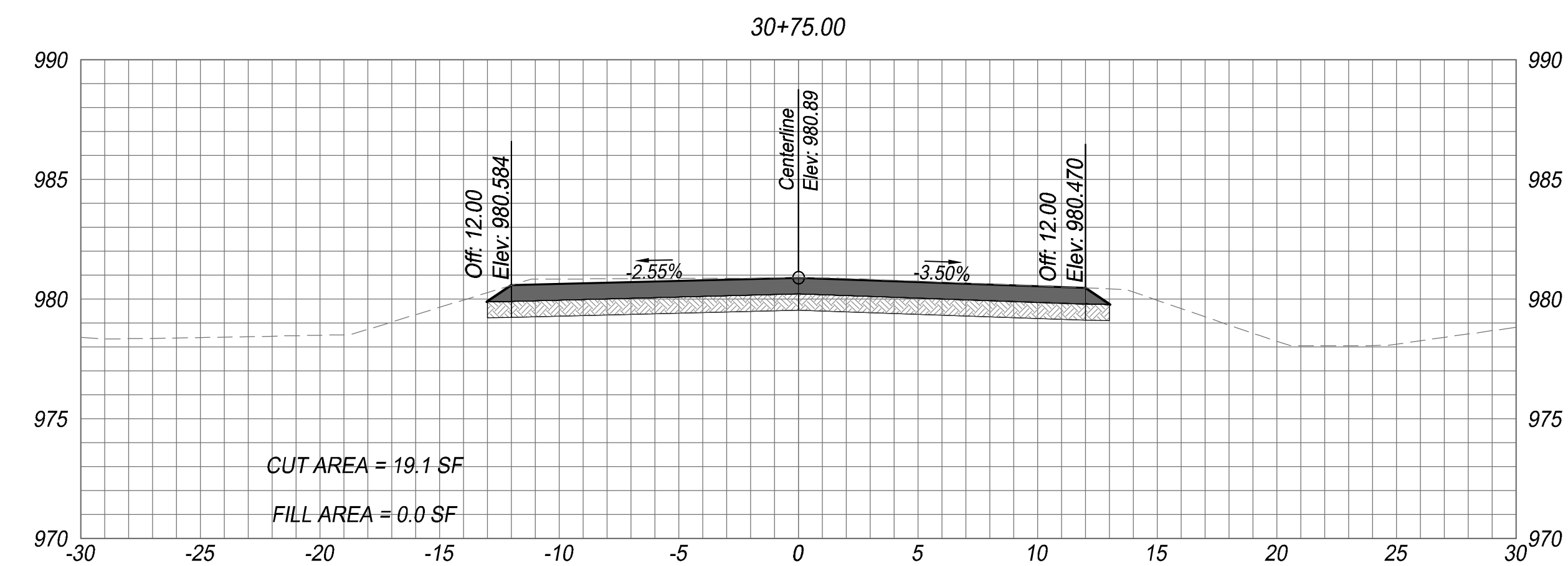
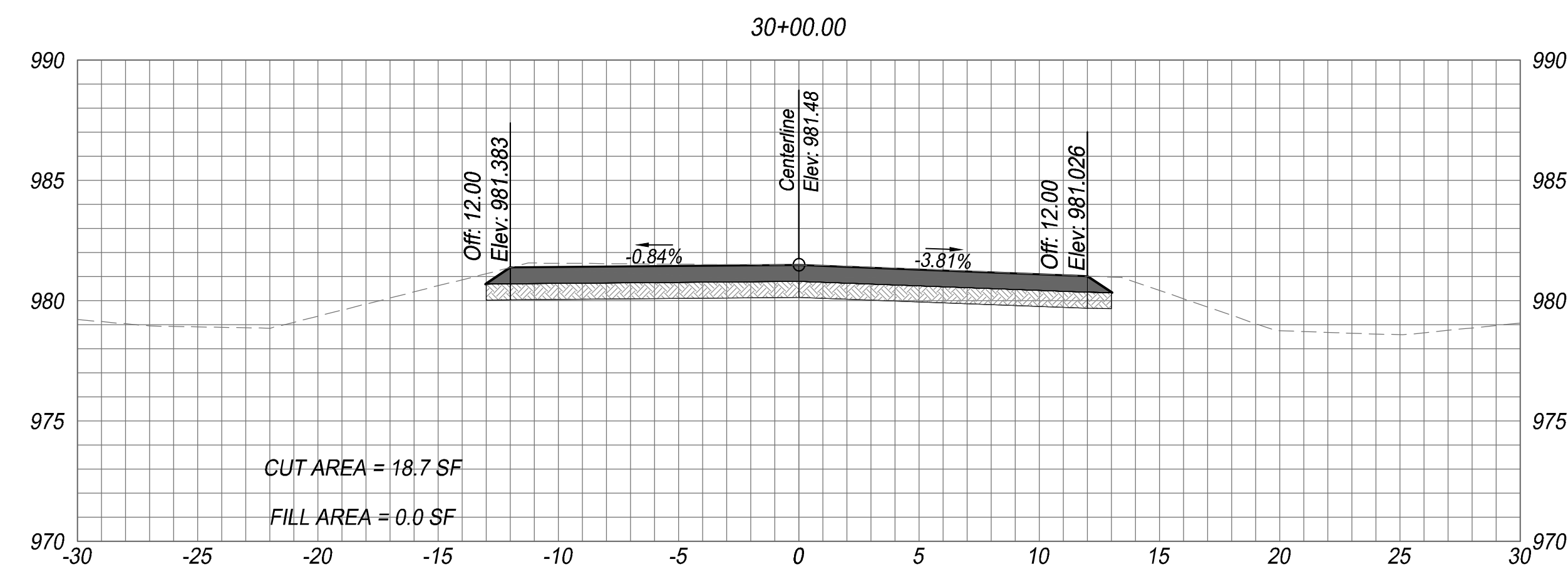
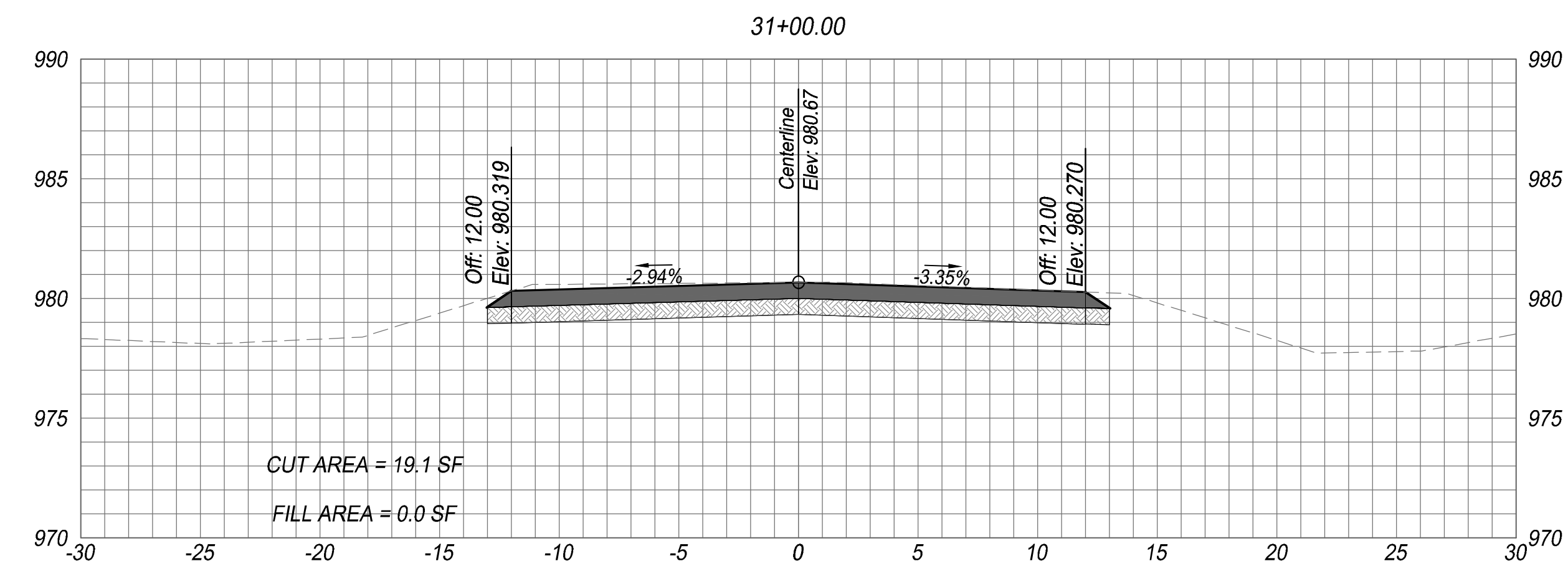
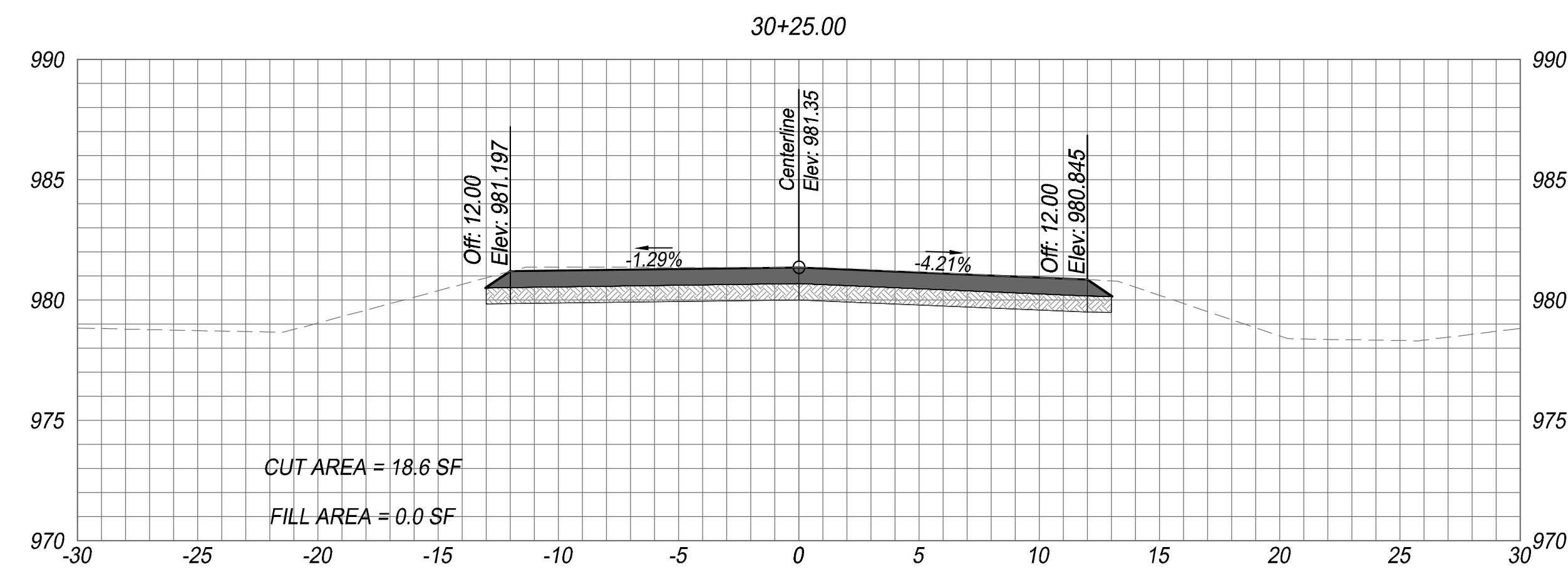
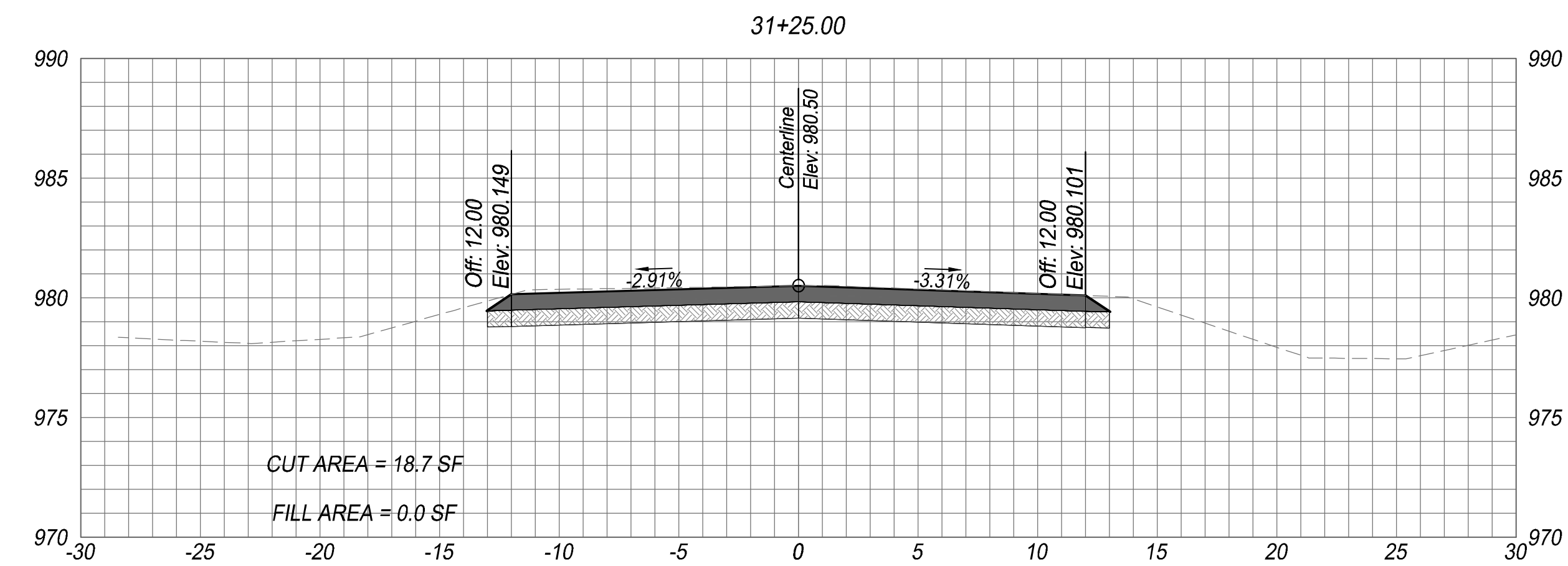
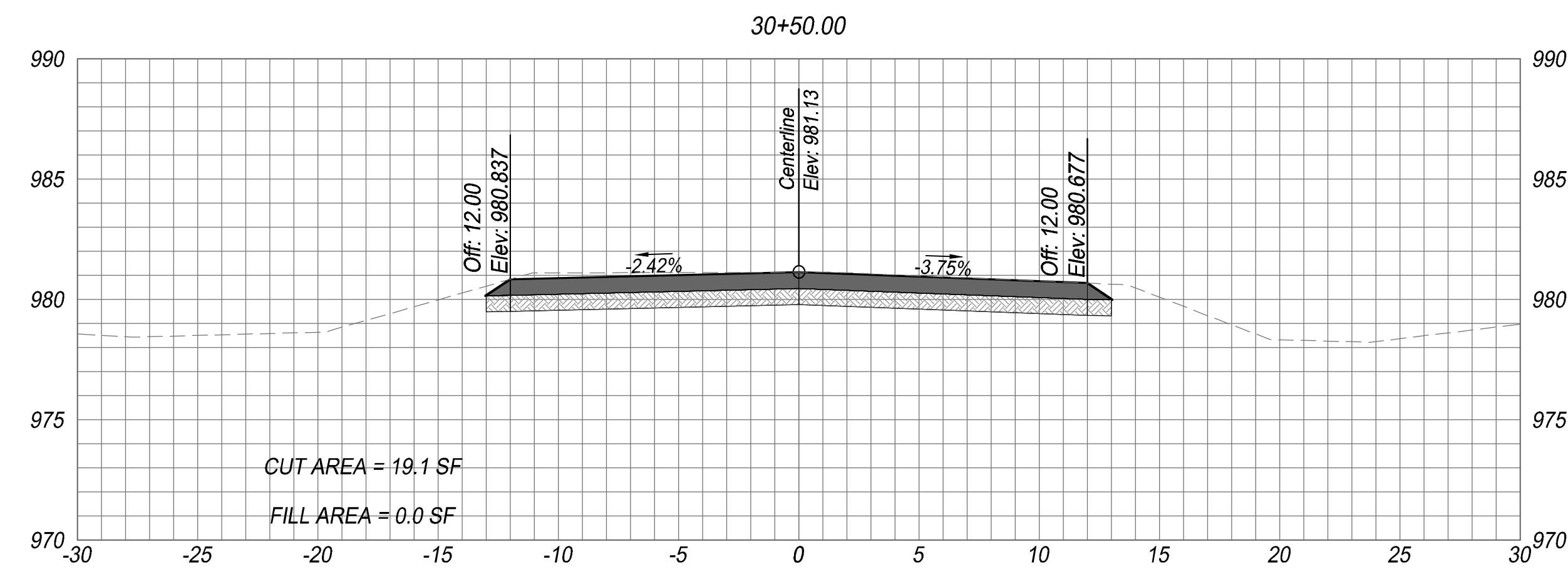


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DATE: 3/31/2023
SHEET: 27 OF 40
PROJ.: S-841012.00



SBB PROJ. NO. 23-013

| | | | | | | DRAWN BY: | L. O'CONNOR |
|-----|-------|----------|-----|-------|--|--------------|-------------|
| | | | | | | APP'D BY: | B. AUSTIN |
| | | | | | | FIELD BOOKS: | - |
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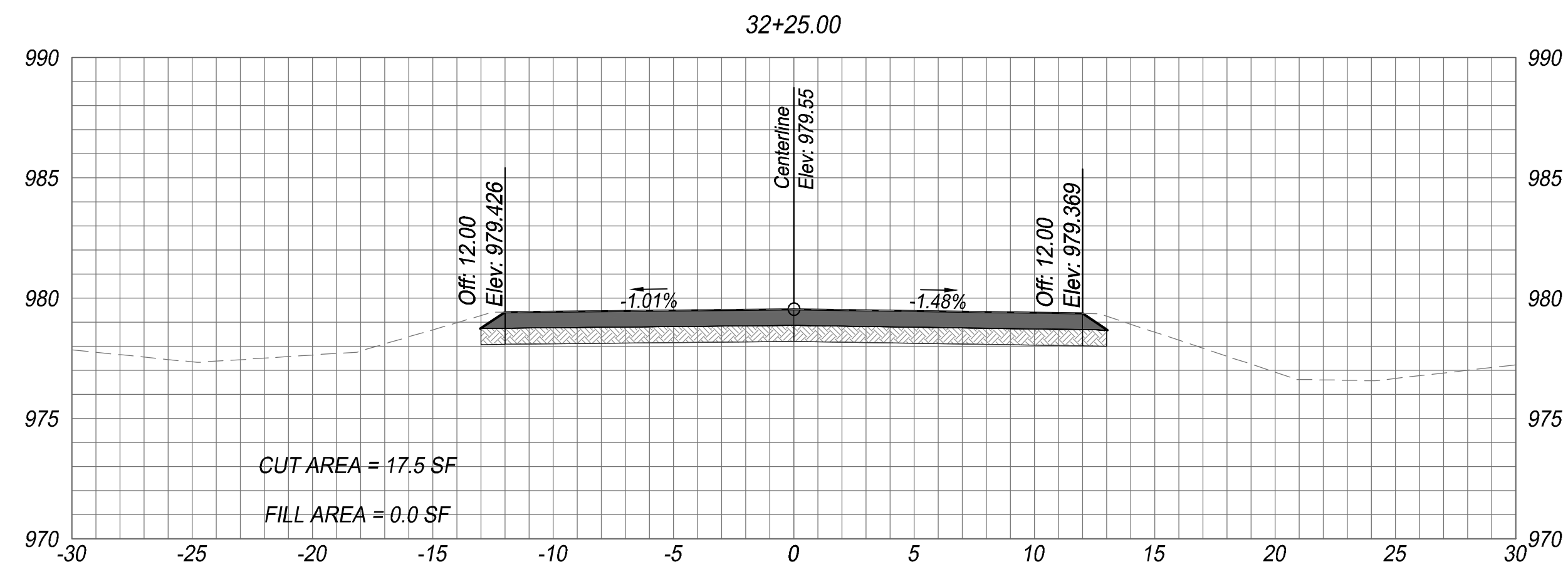
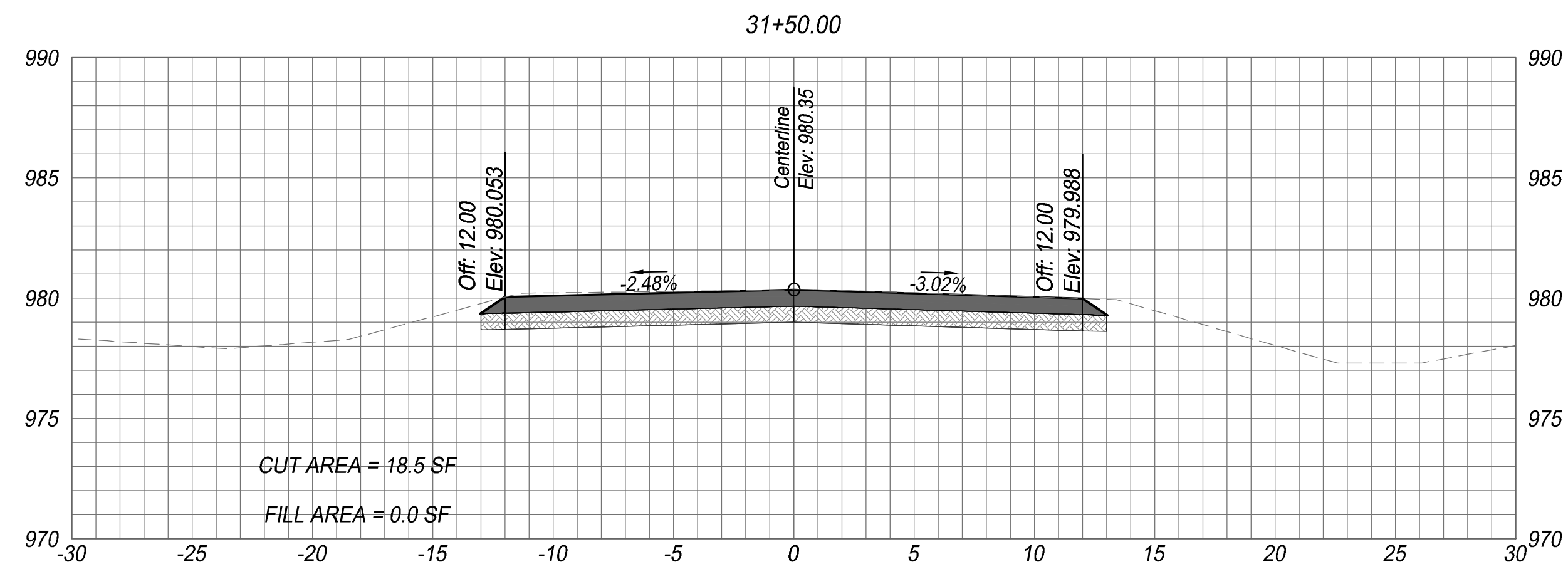
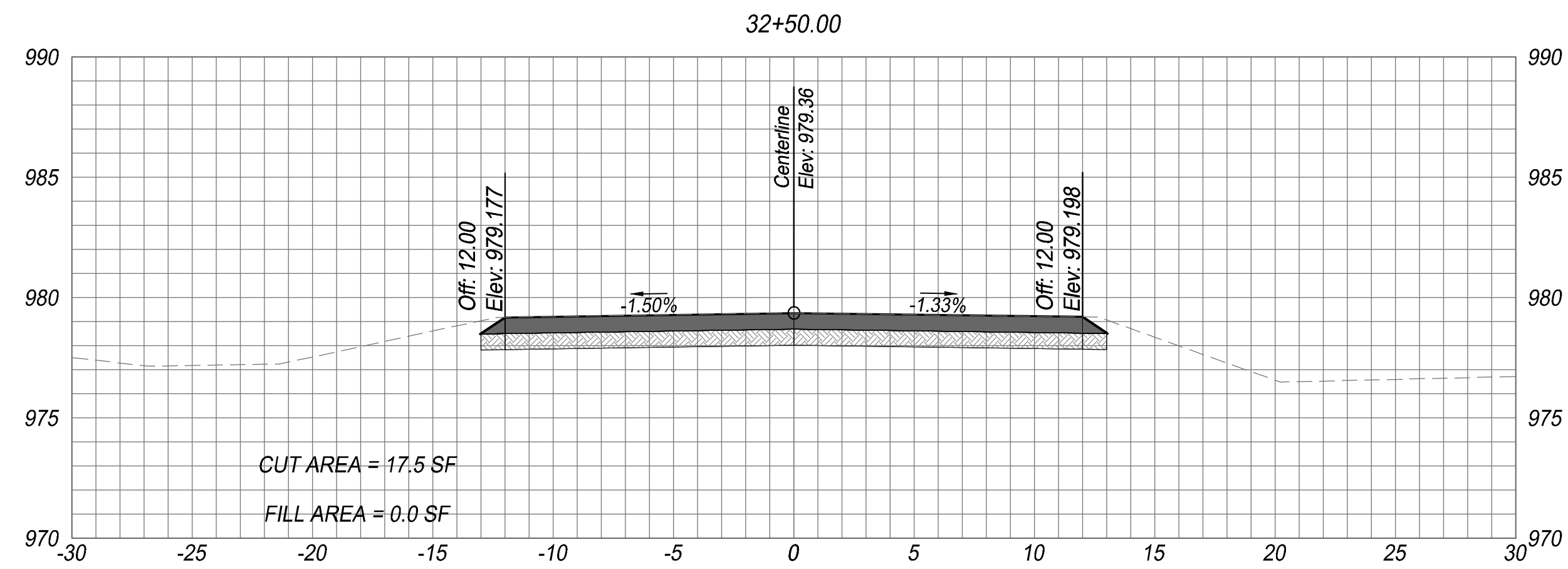
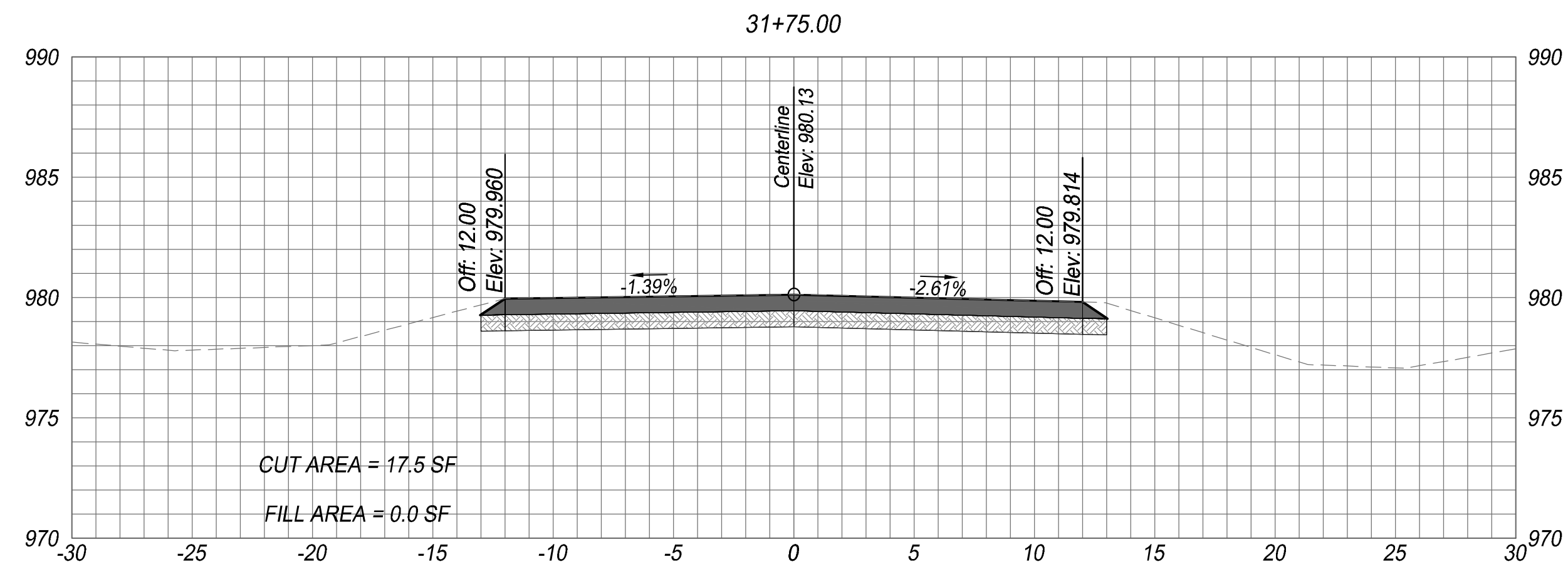
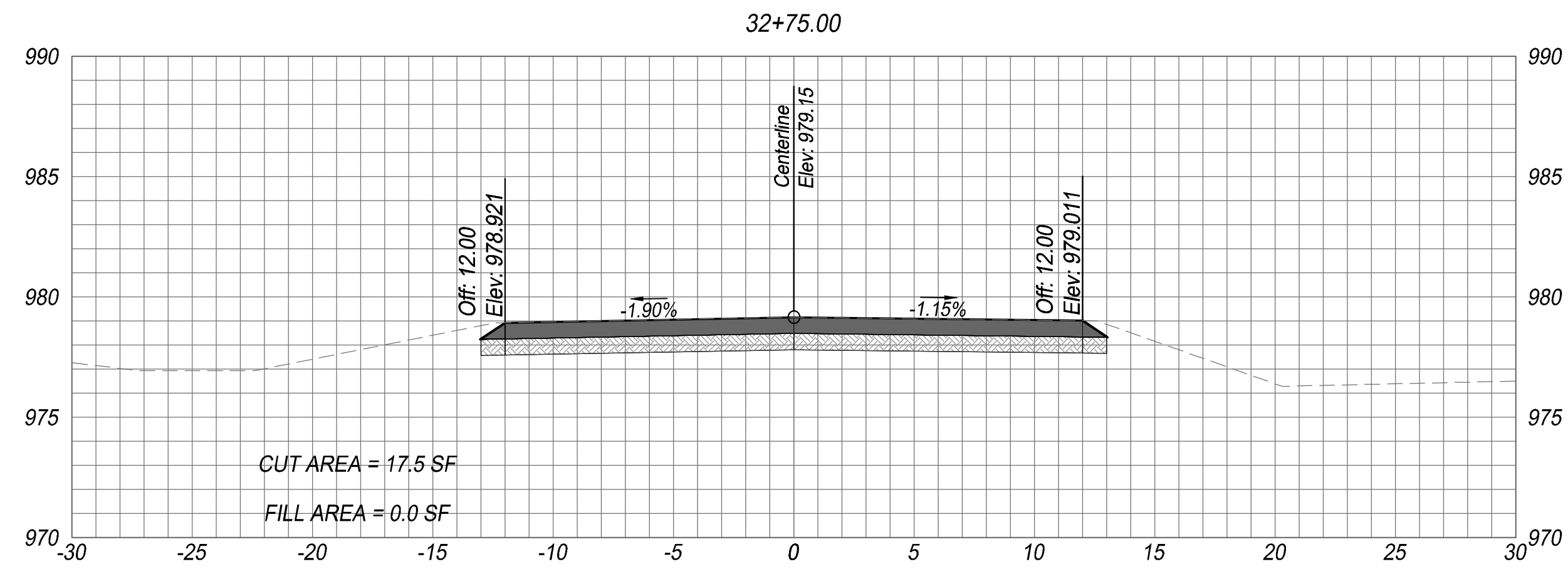
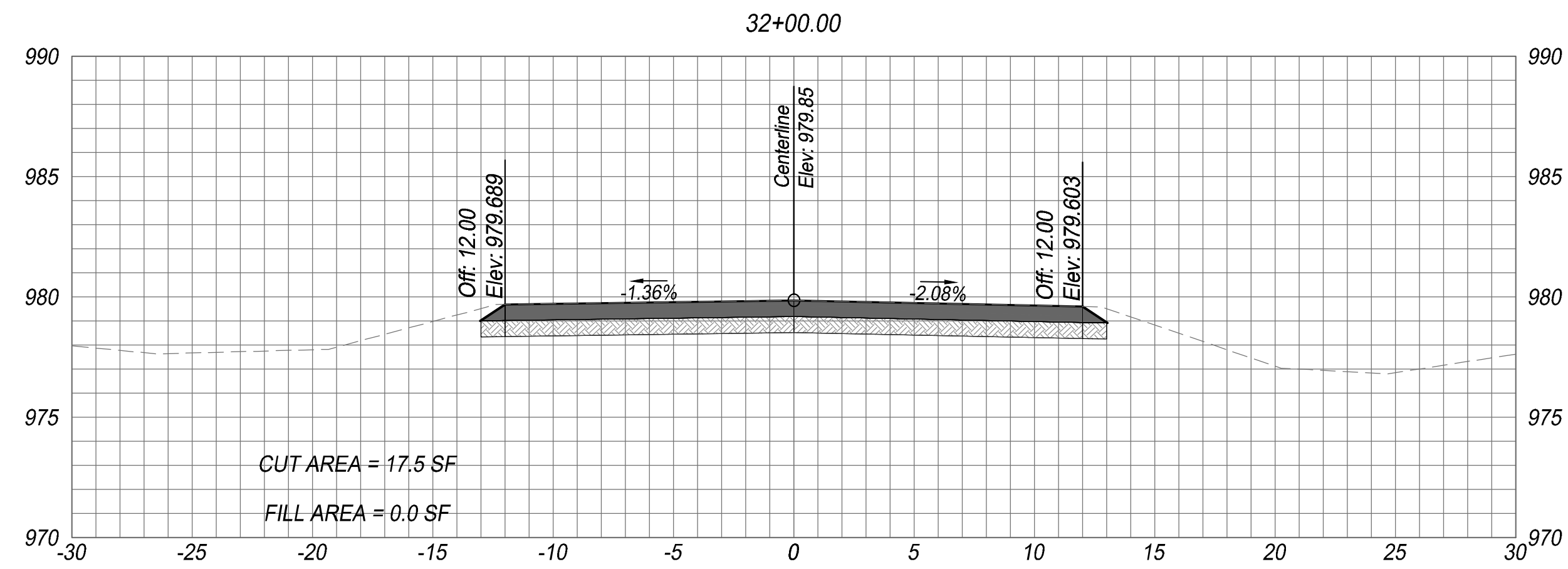
Cross-Sections

DATE: 3/31/2023

SHEET: 28 OF 40

PROJ.: S-841012.00

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DRAWN BY: L. O'CONNOR
APP'D BY: B. AUSTIN
FIELD BOOKS: -
SURVEYED BY: SBB ENG.



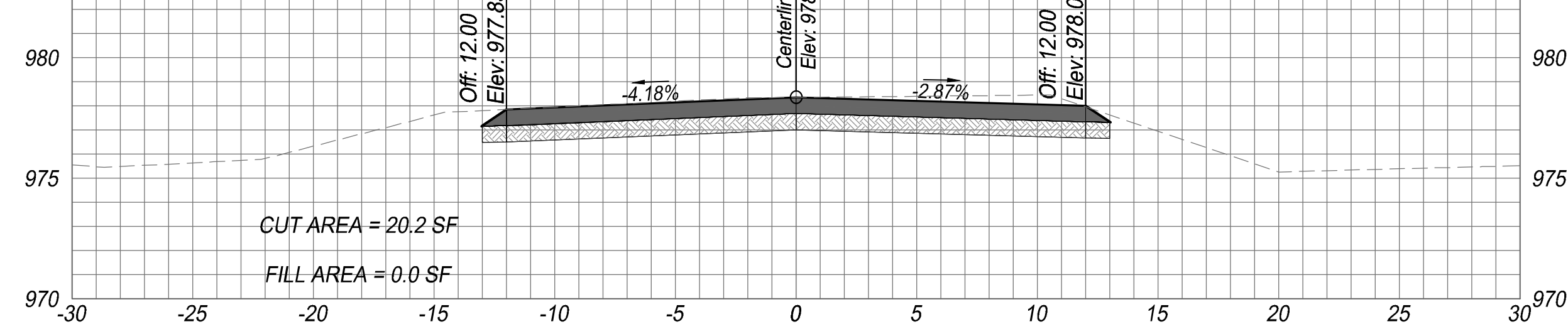
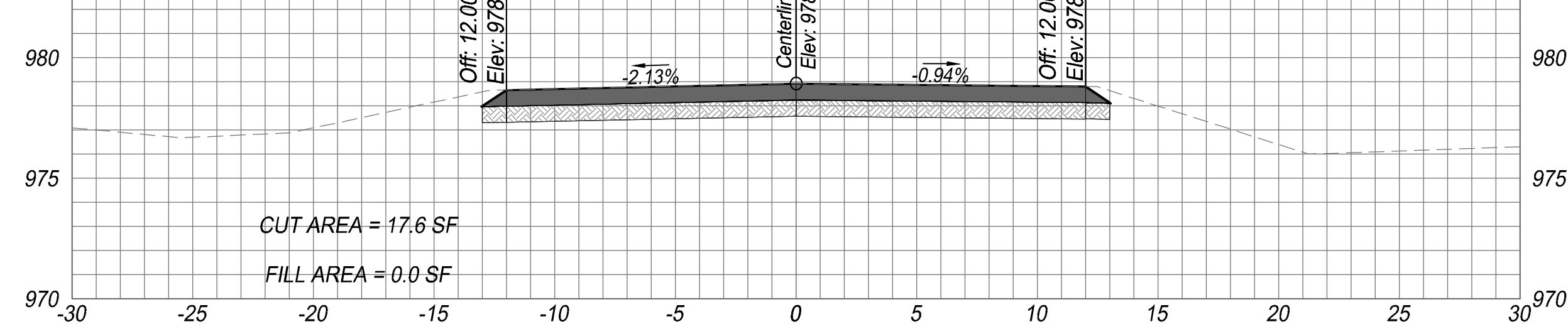
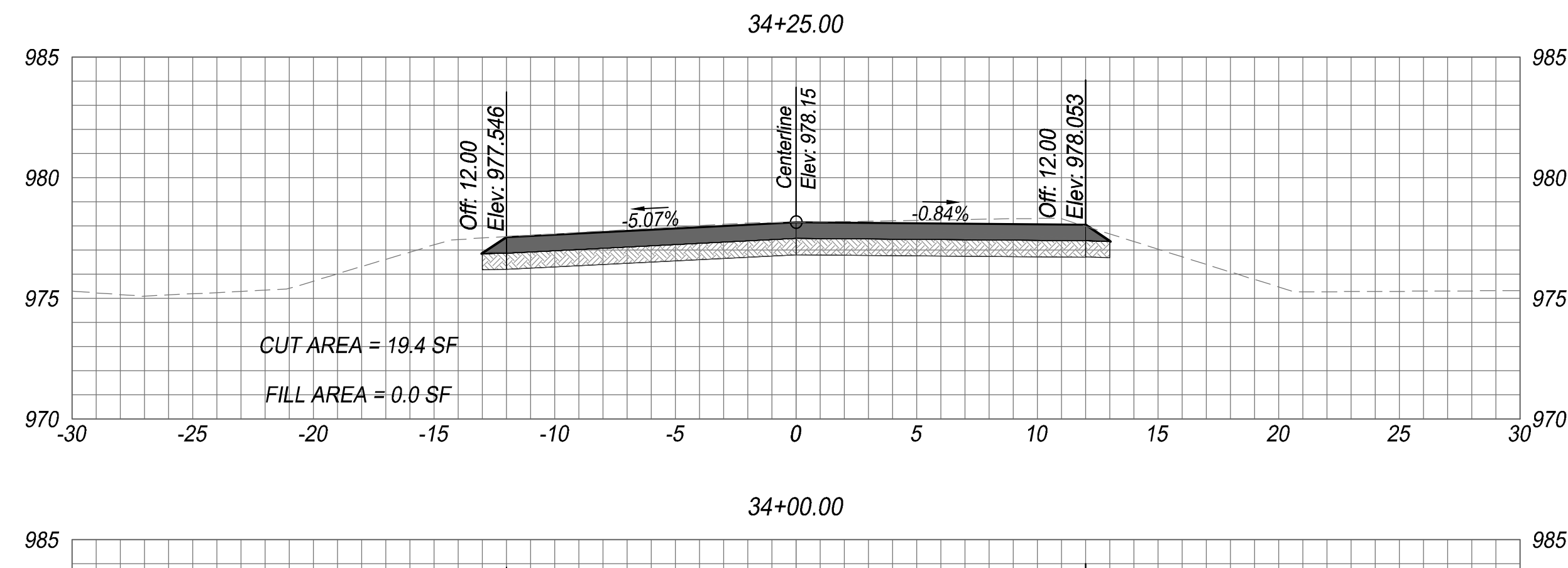
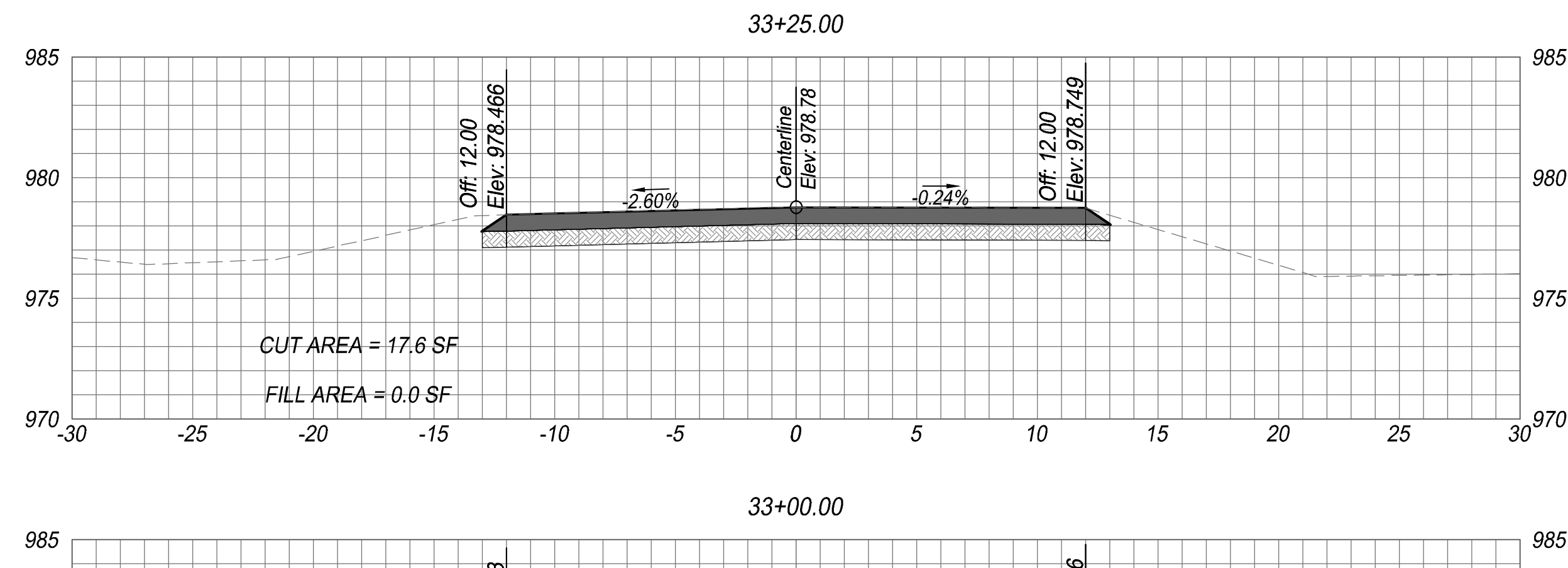
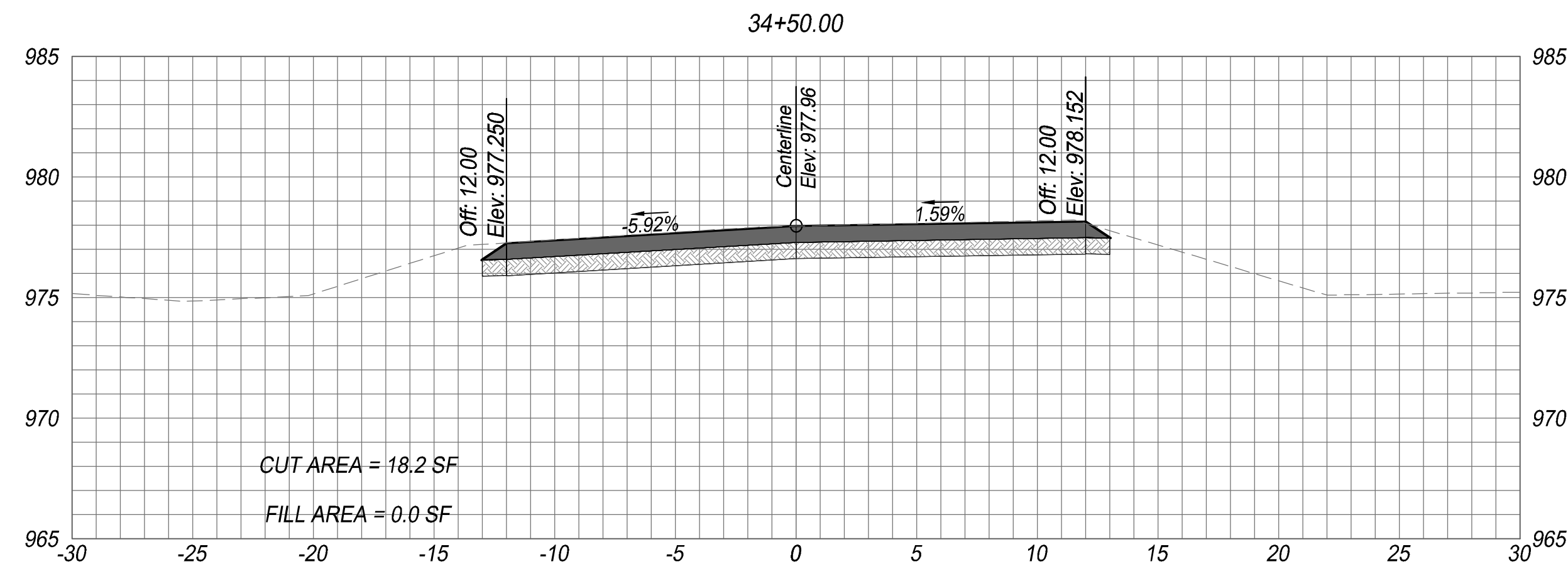
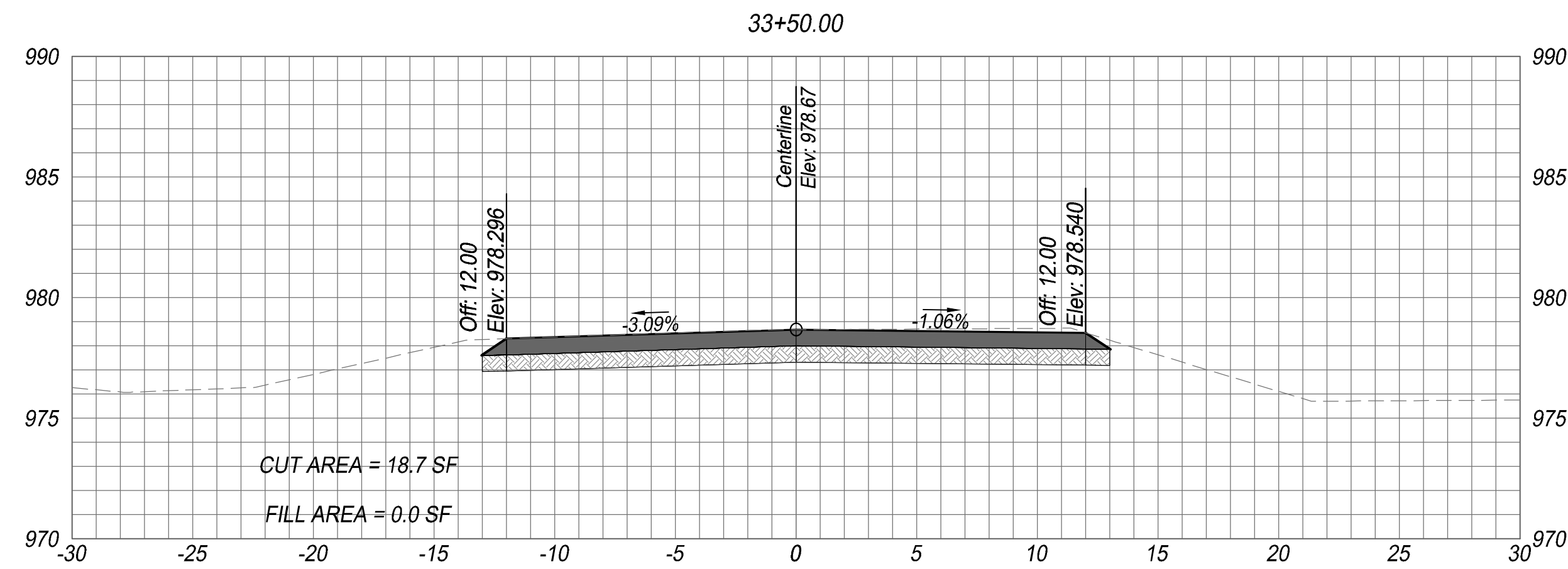
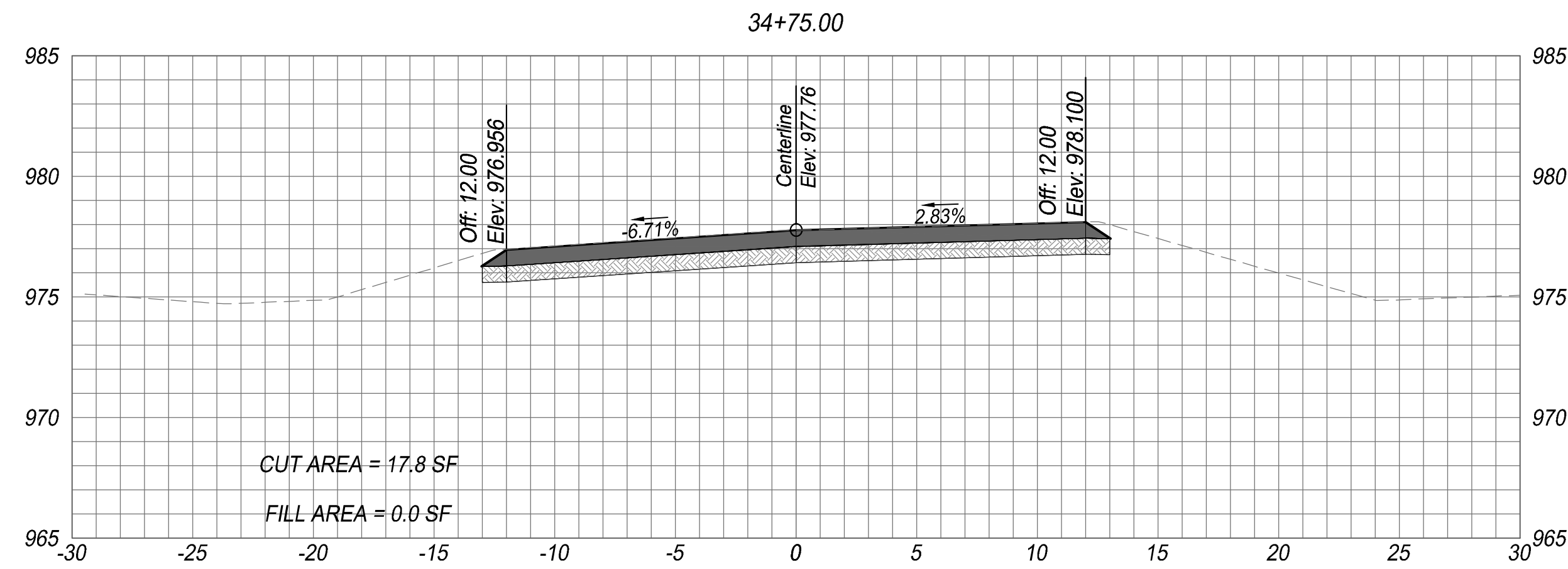
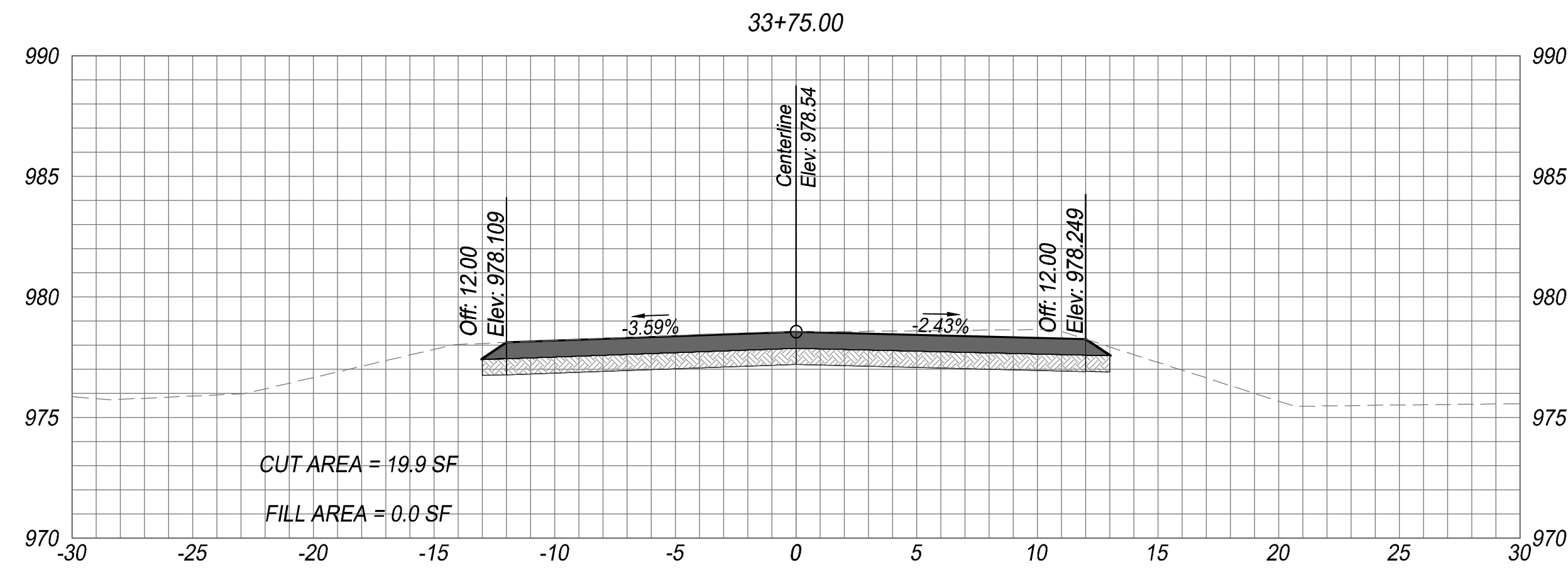
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DATE: 3/31/2023
SHEET: 29 OF 40
PROJ.: S-841012.00

[File Location: X:\11 SBB Drawings\0-2023\03-013 SWCO SWY Nottingham\dwg\Design\Street Plans\23-013 X-secs.dwg] [Plot Date: 3/31/2023 12:20:44 PM] [Last Saved: 3/30/2023 8:53:35 AM] [Location:]



SBB PROJ. NO. 23-013

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DRAWN BY: L. O'CONNOR
APP'D BY: B. AUSTIN
FIELD BOOKS: -
SURVEYED BY: SBB ENG.



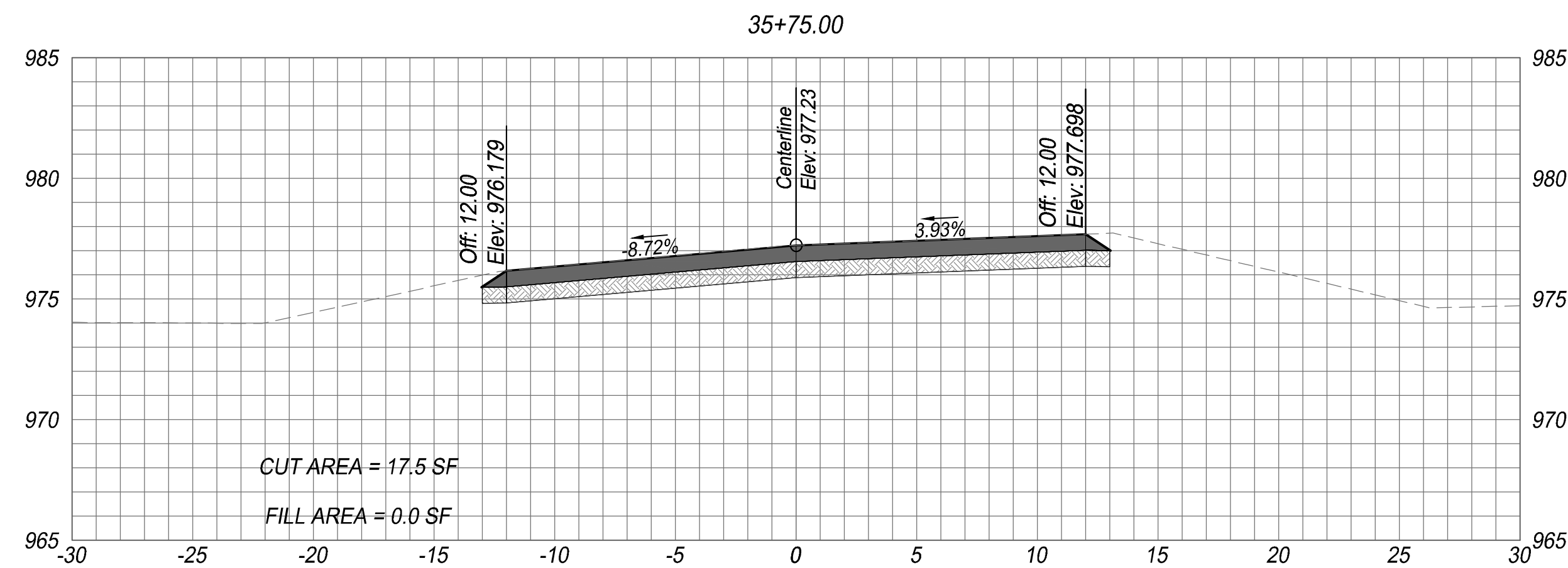
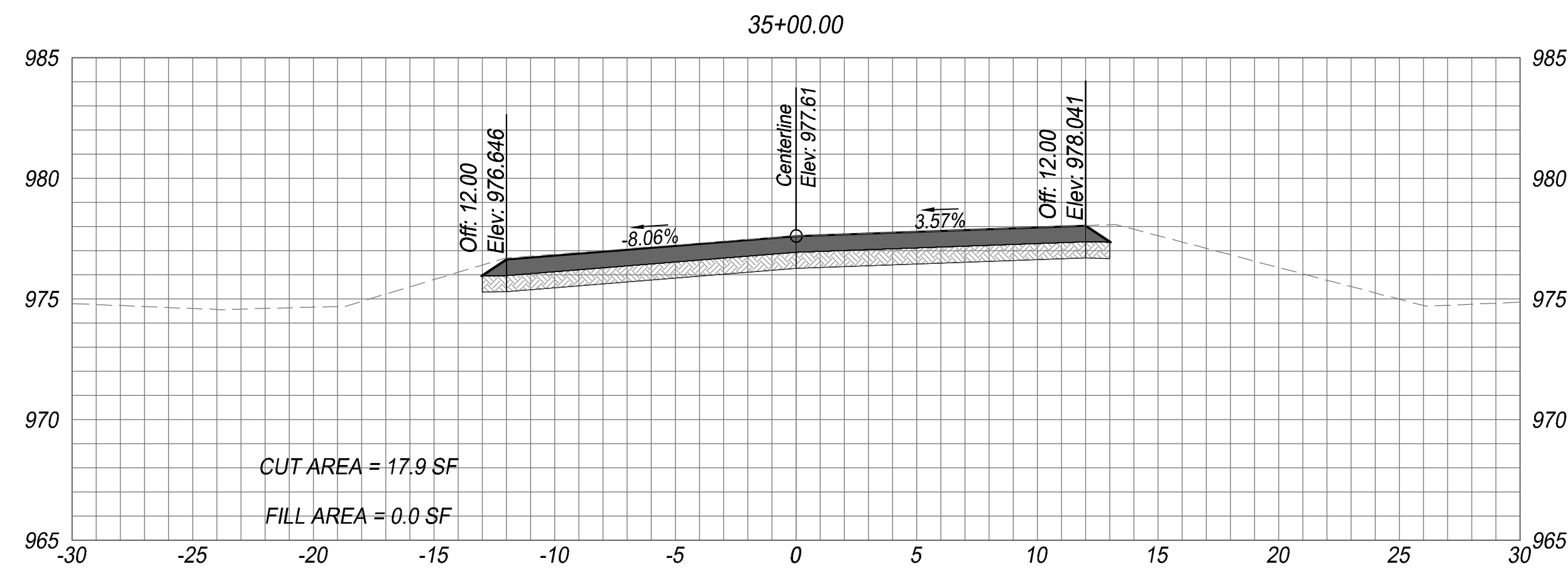
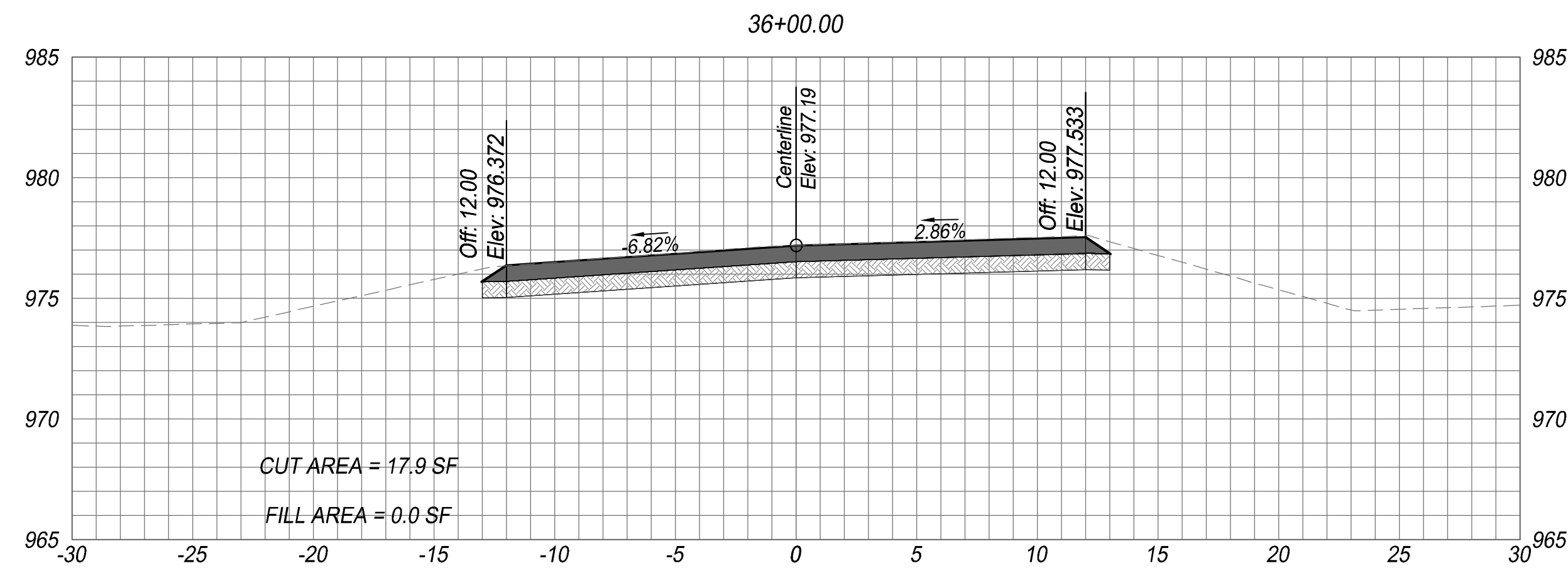
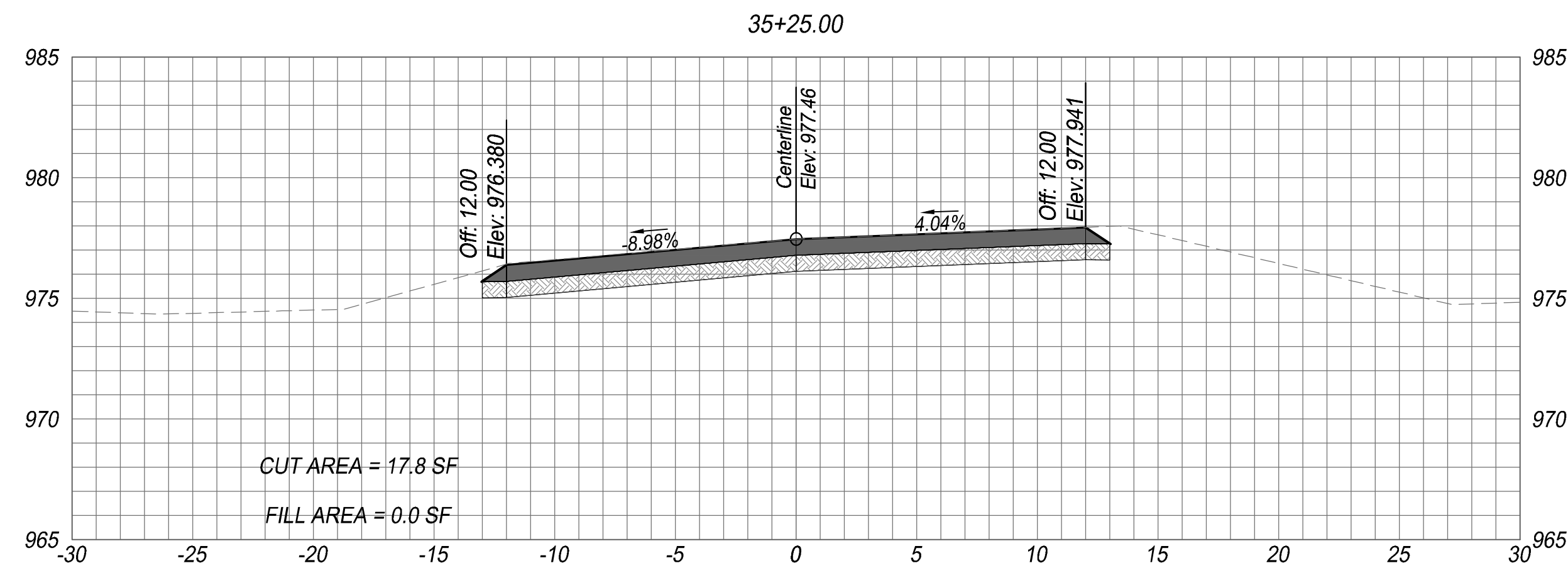
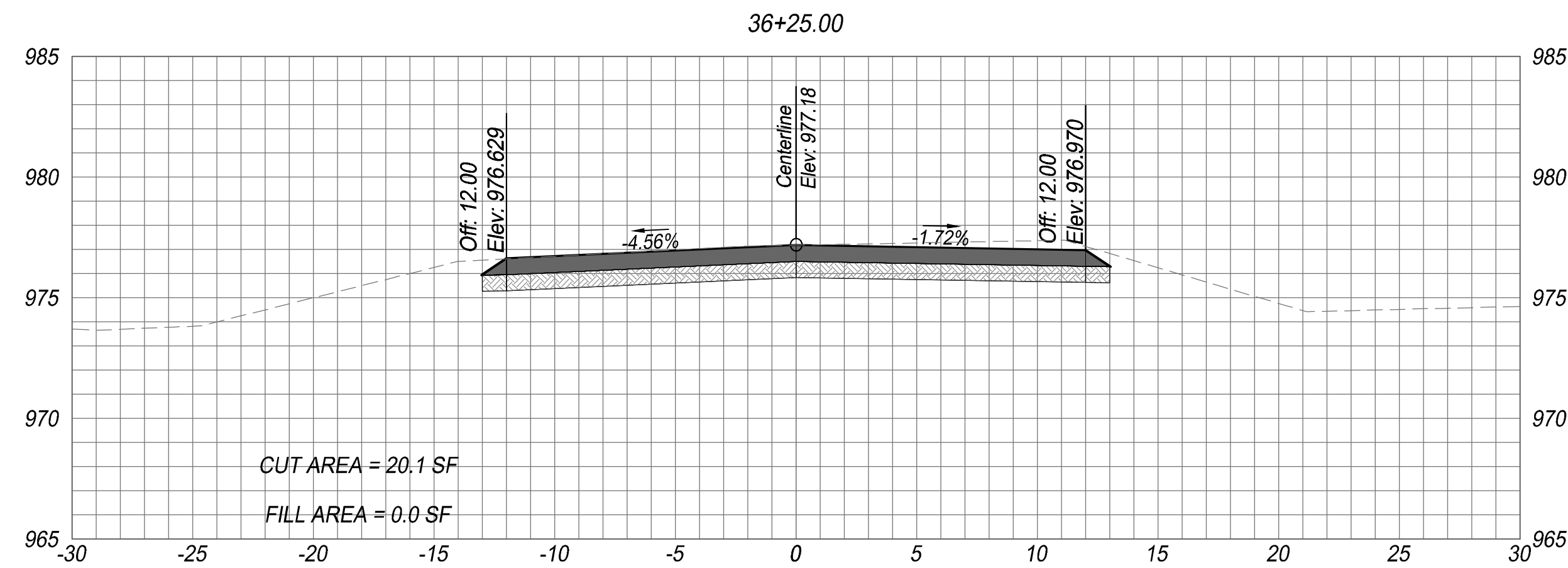
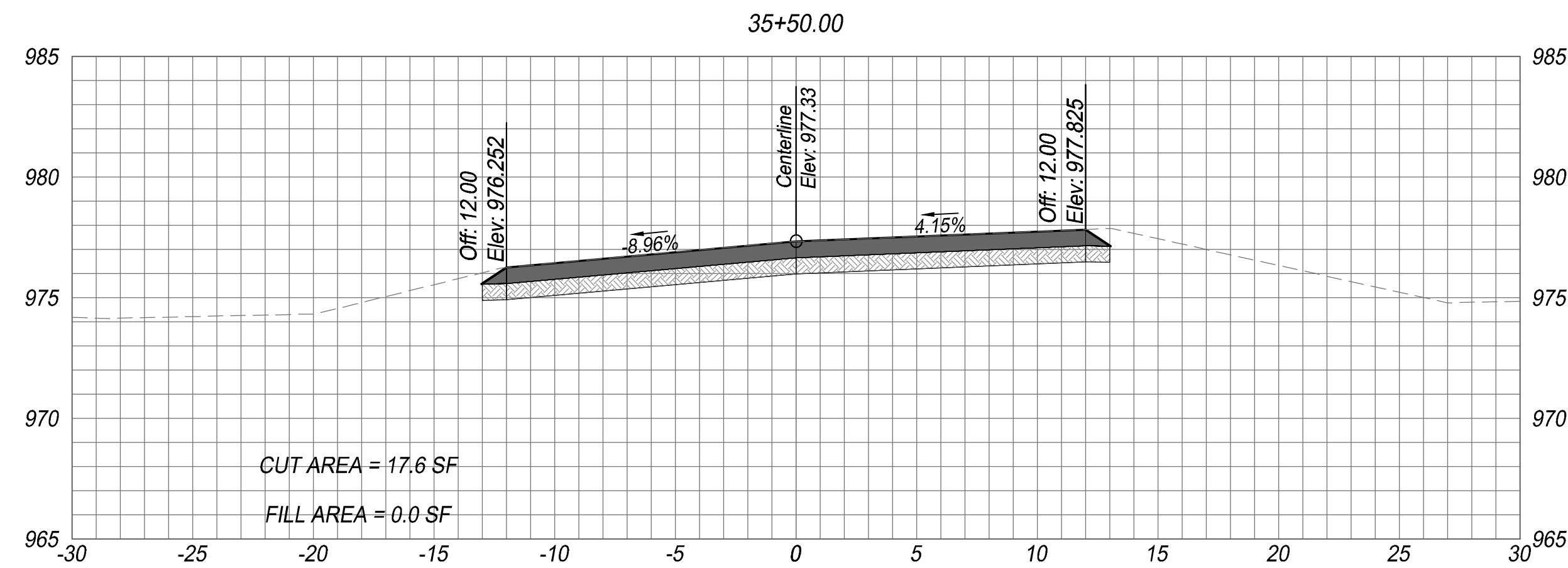
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DATE: 3/31/2023
SHEET: 30 OF 40
PROJ.: S-841012.00

[File Location: X:\11 SBB Drawings\0-2023\03-013 SWCO SWY Nottingham\dwg\Design\Street Plans\23-013 X-secs.dwg] [Plot Date: 3/31/2023 12:20:49 PM] [Last Saved: 3/30/2023 8:53:35 AM] [Location:]



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DRAWN BY: L. O'CONNOR
APP'D BY: B. AUSTIN
FIELD BOOKS: -
SURVEYED BY: SBB ENG.



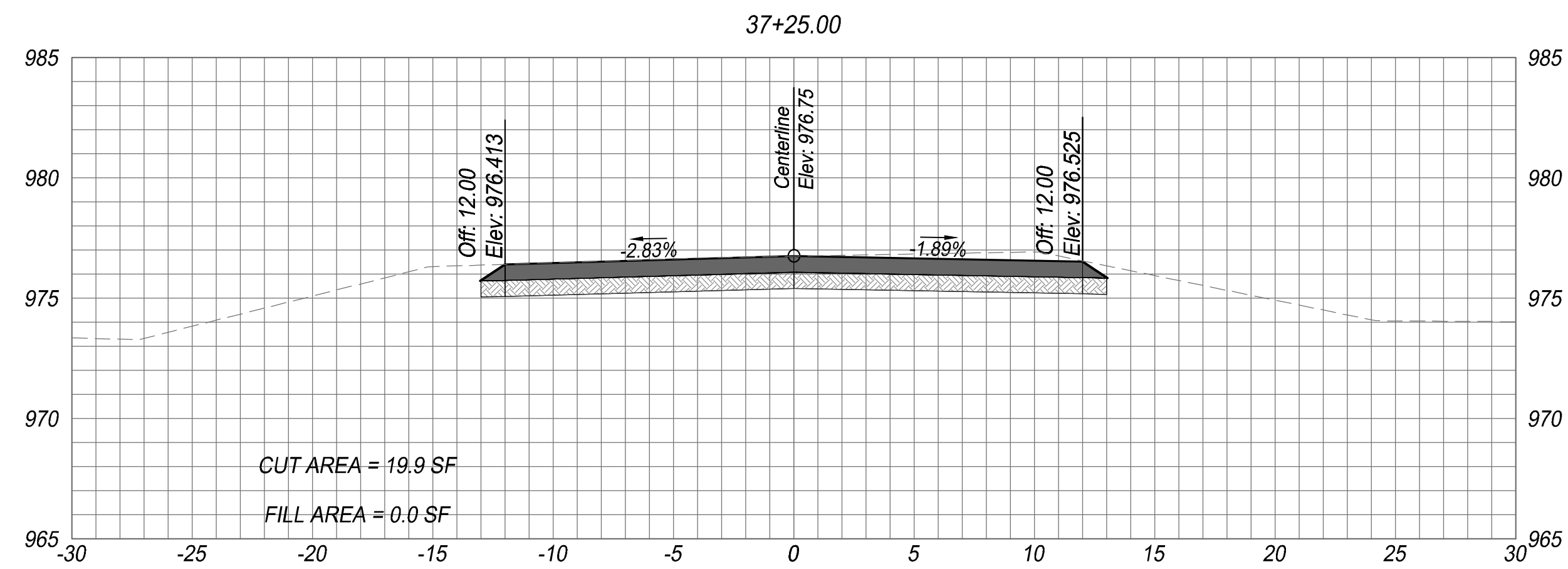
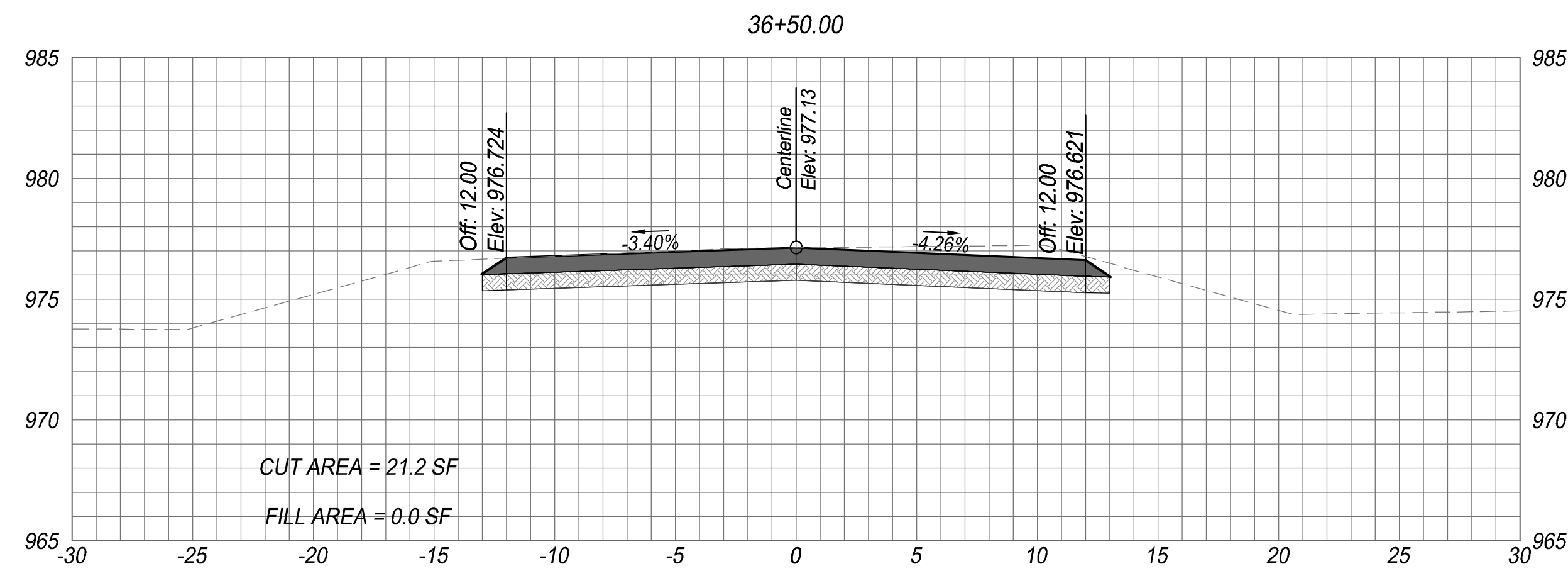
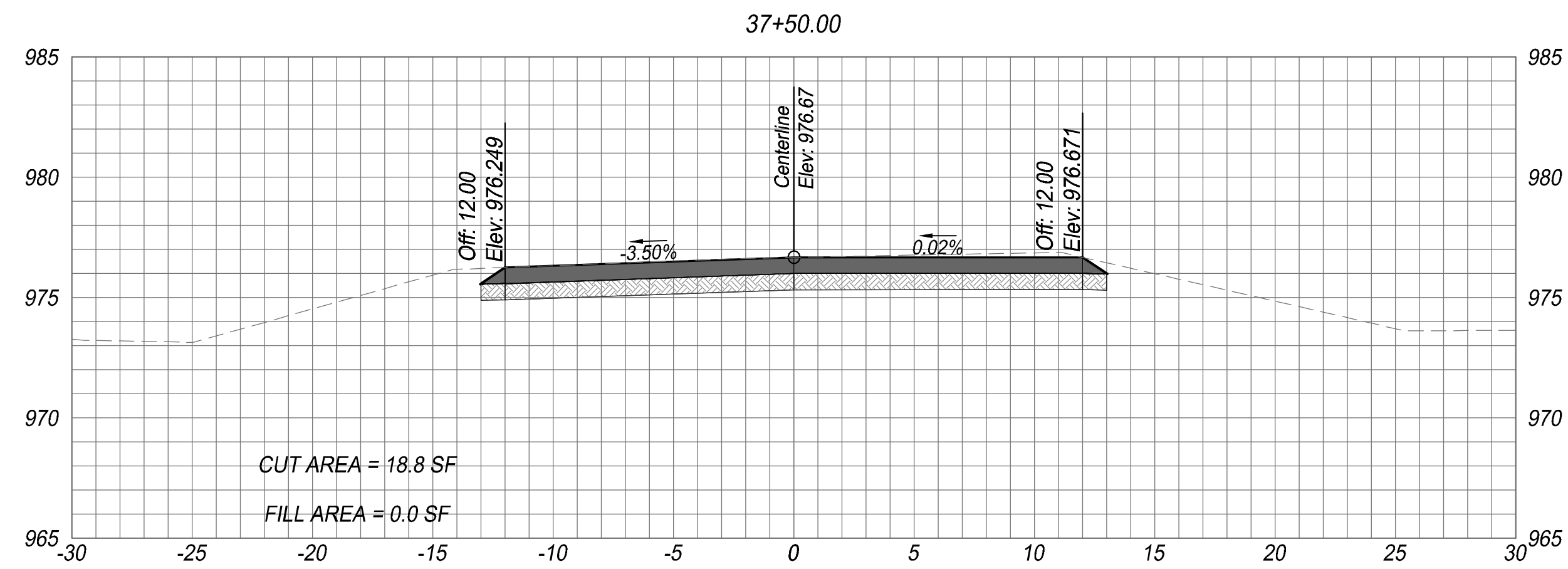
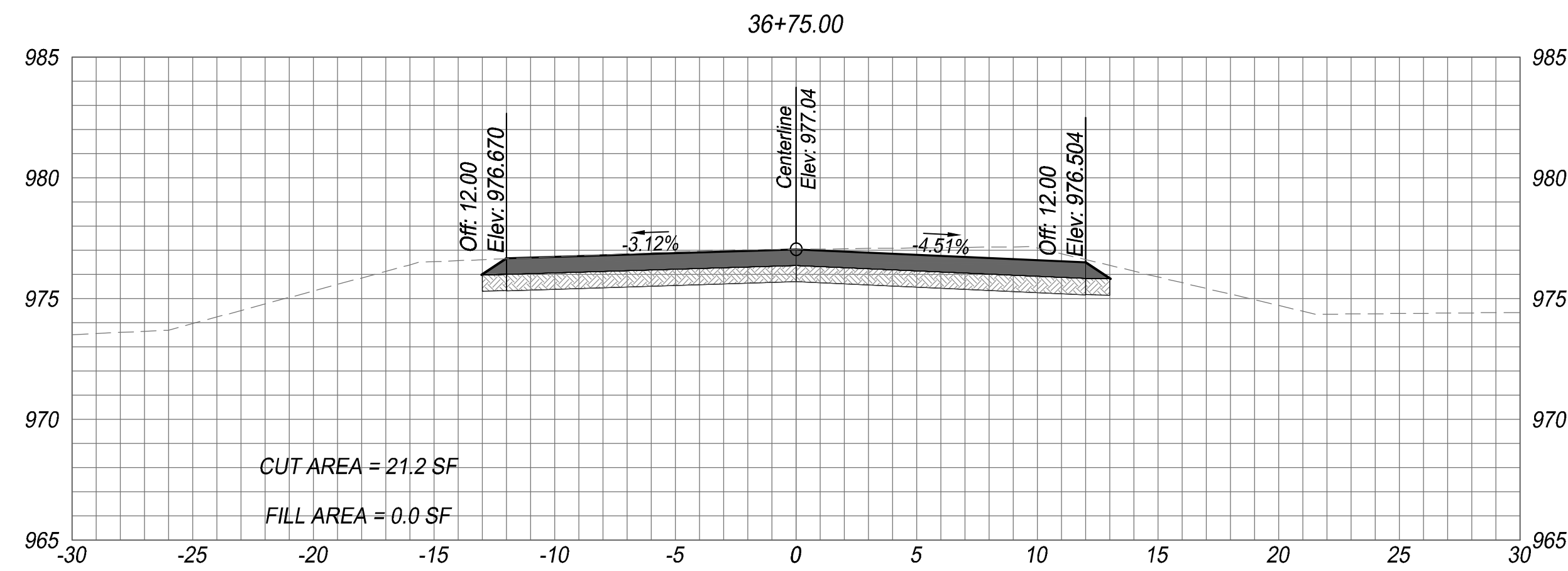
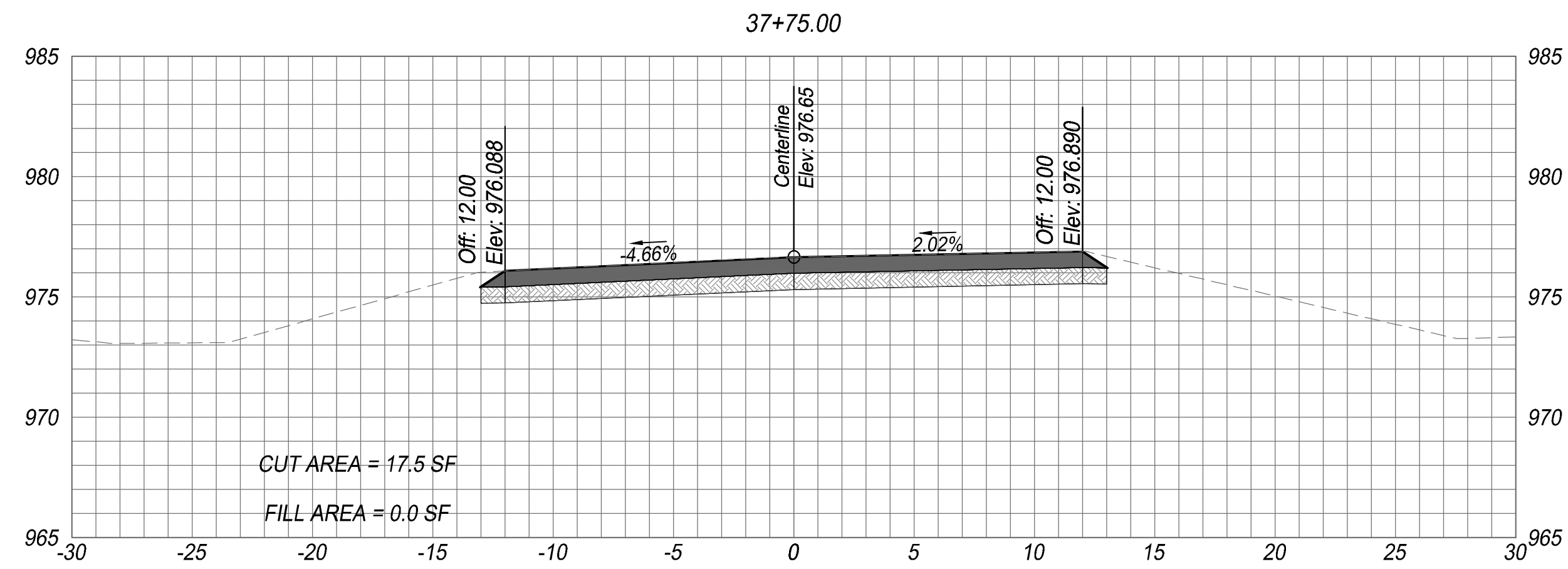
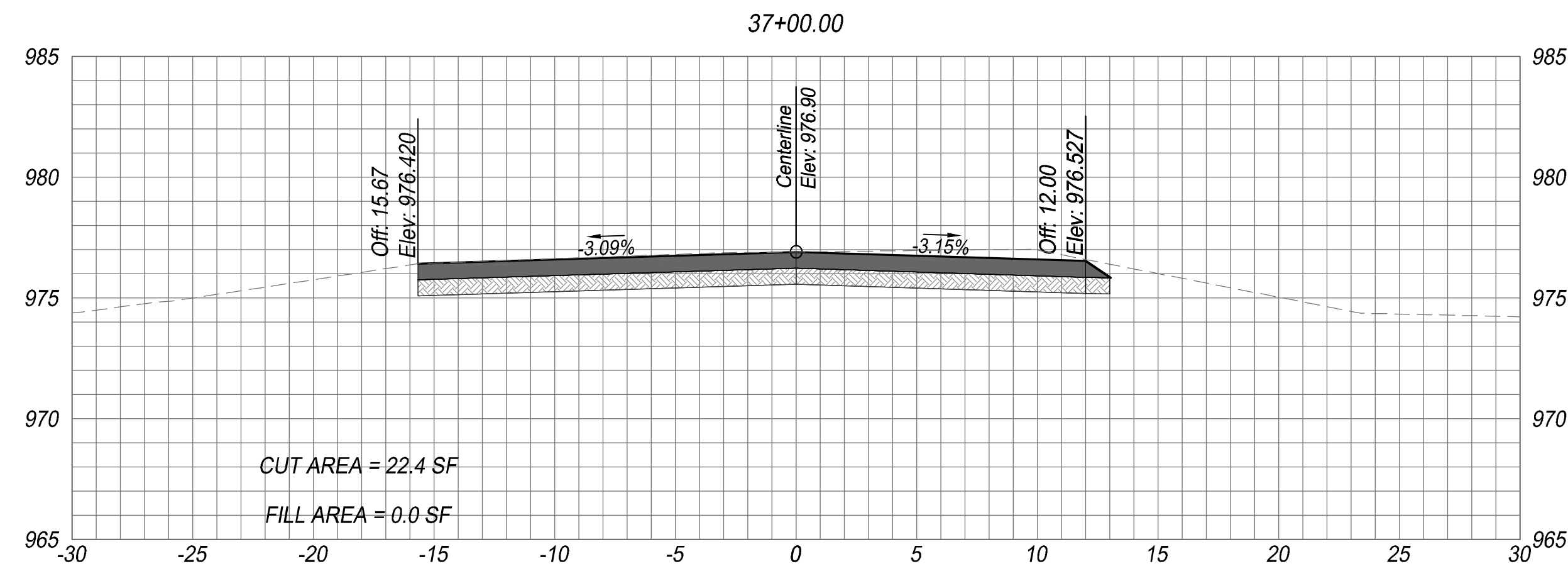
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DATE: 3/31/2023
SHEET: 31 OF 40
PROJ.: S-841012.00

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DRAWN BY: L. O'CONNOR
APP'D BY: B. AUSTIN
FIELD BOOKS: -
SURVEYED BY: SBB ENG.



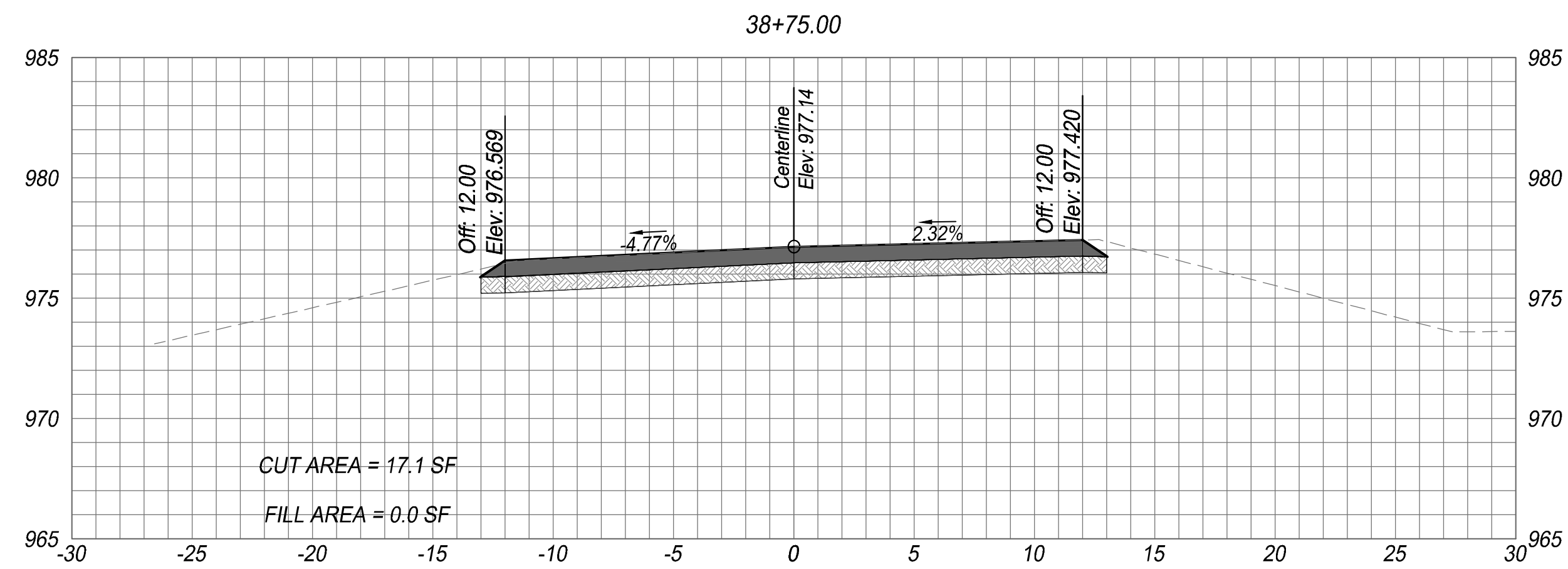
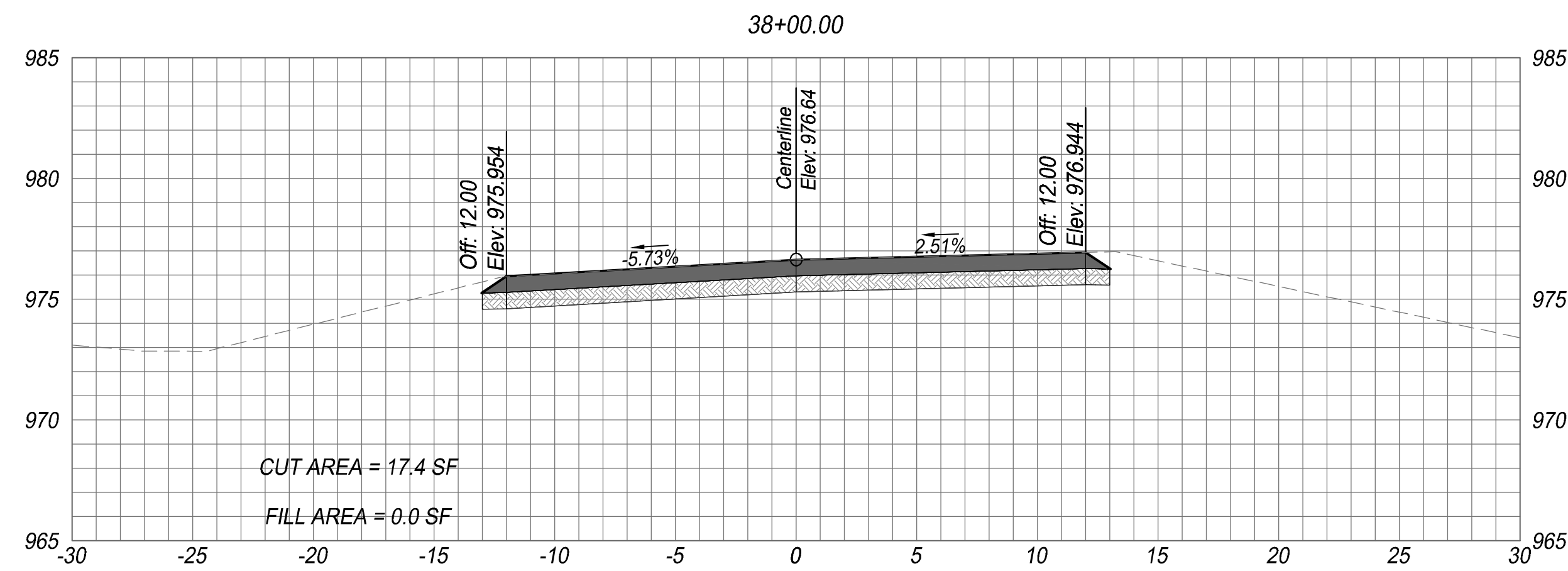
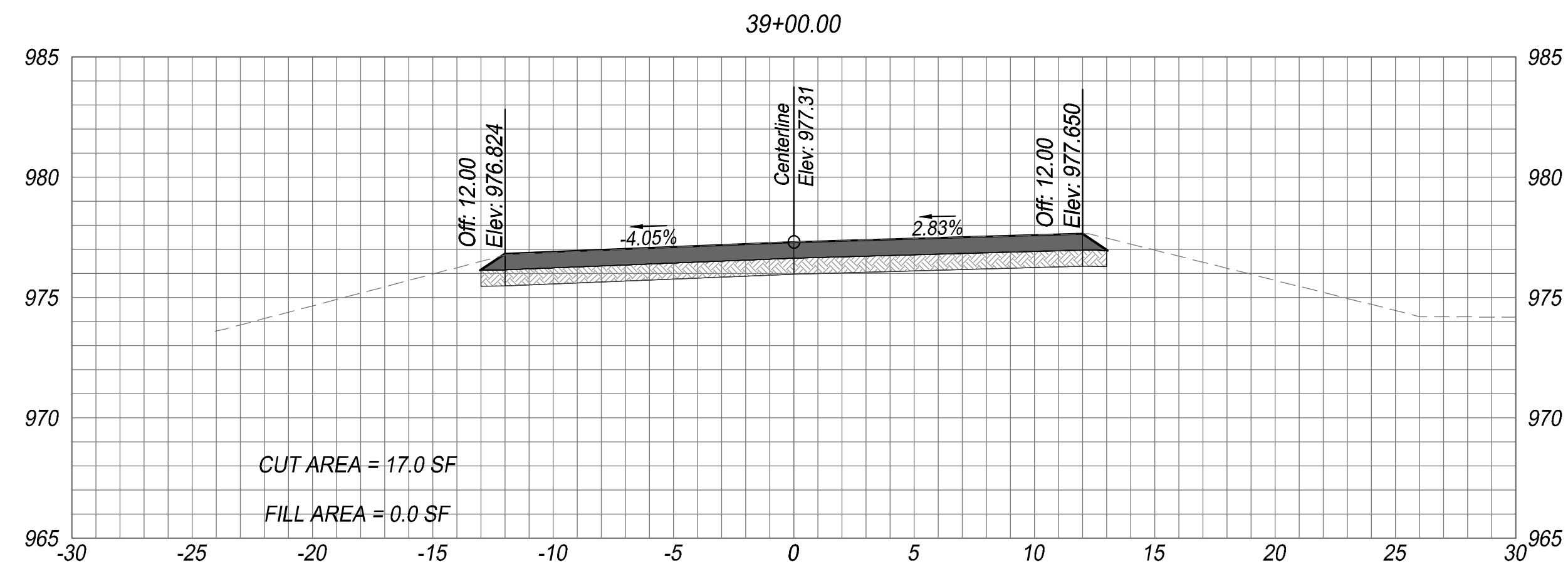
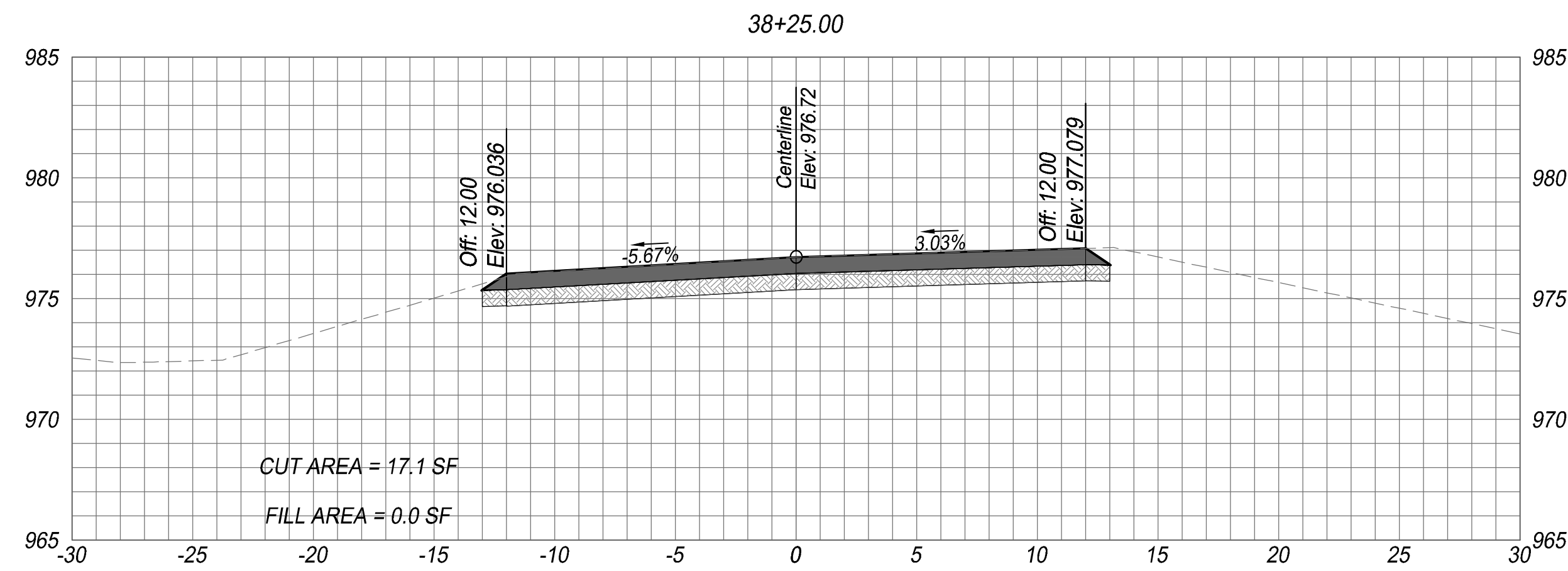
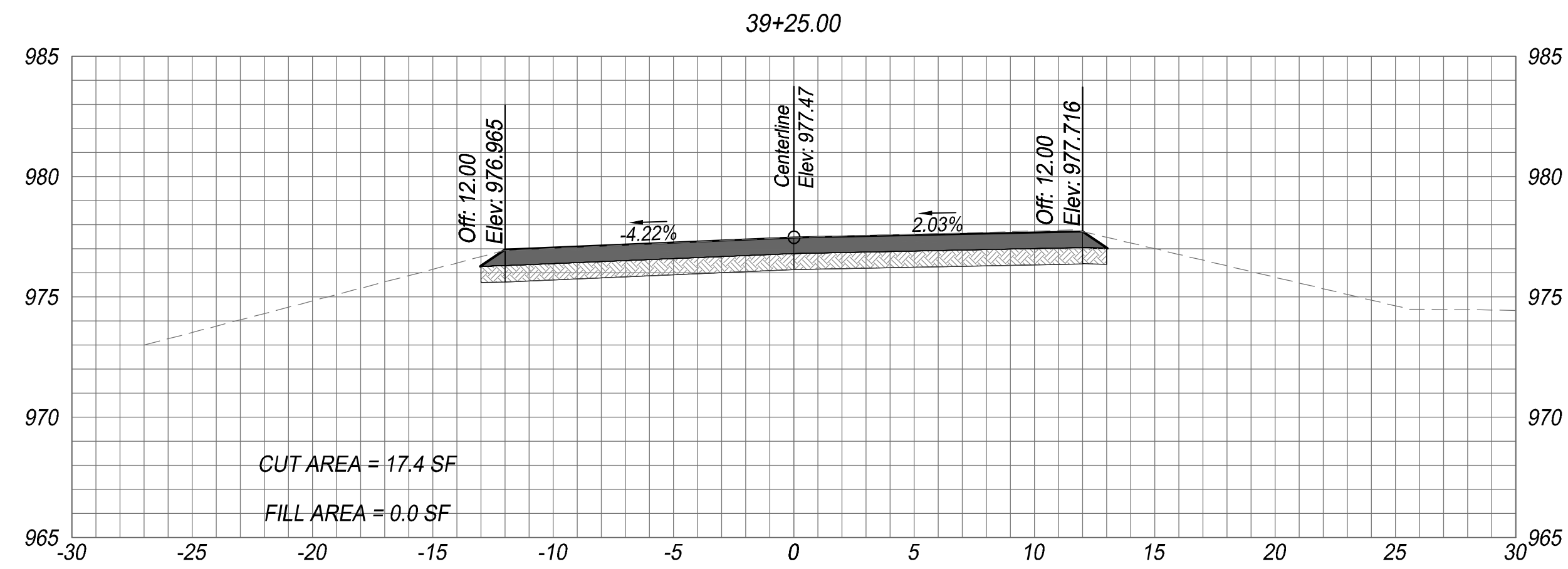
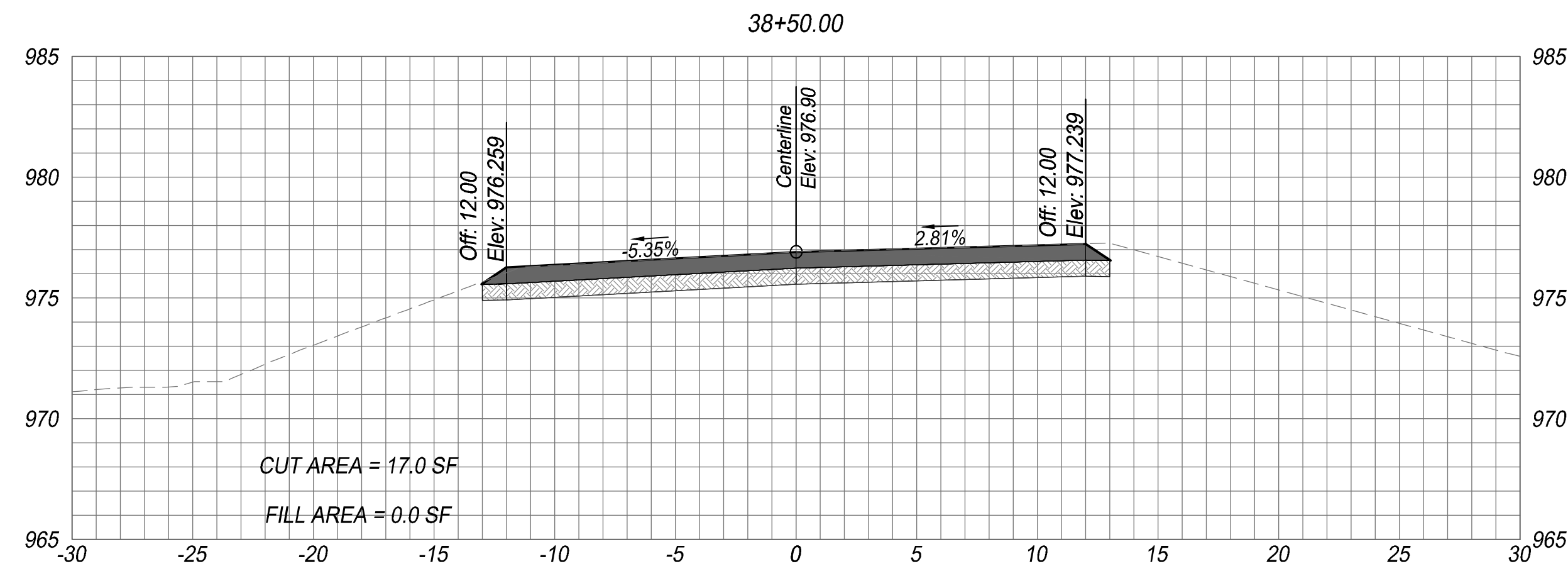
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Cross-Sections

DATE: 3/31/2023
SHEET: 32 OF 40
PROJ.: S-841012.00

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SBB PROJ. NO. 23-013

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DRAWN BY: L. O'CONNOR
APP'D BY: B. AUSTIN
FIELD BOOKS: -
SURVEYED BY: SBB ENG.



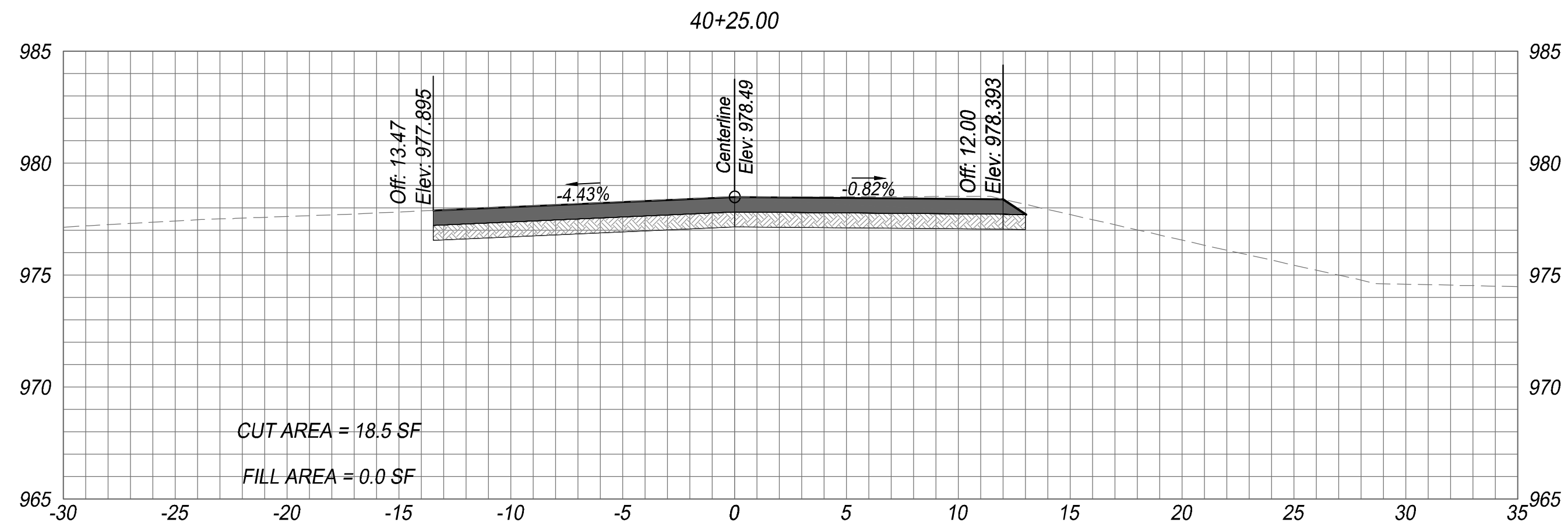
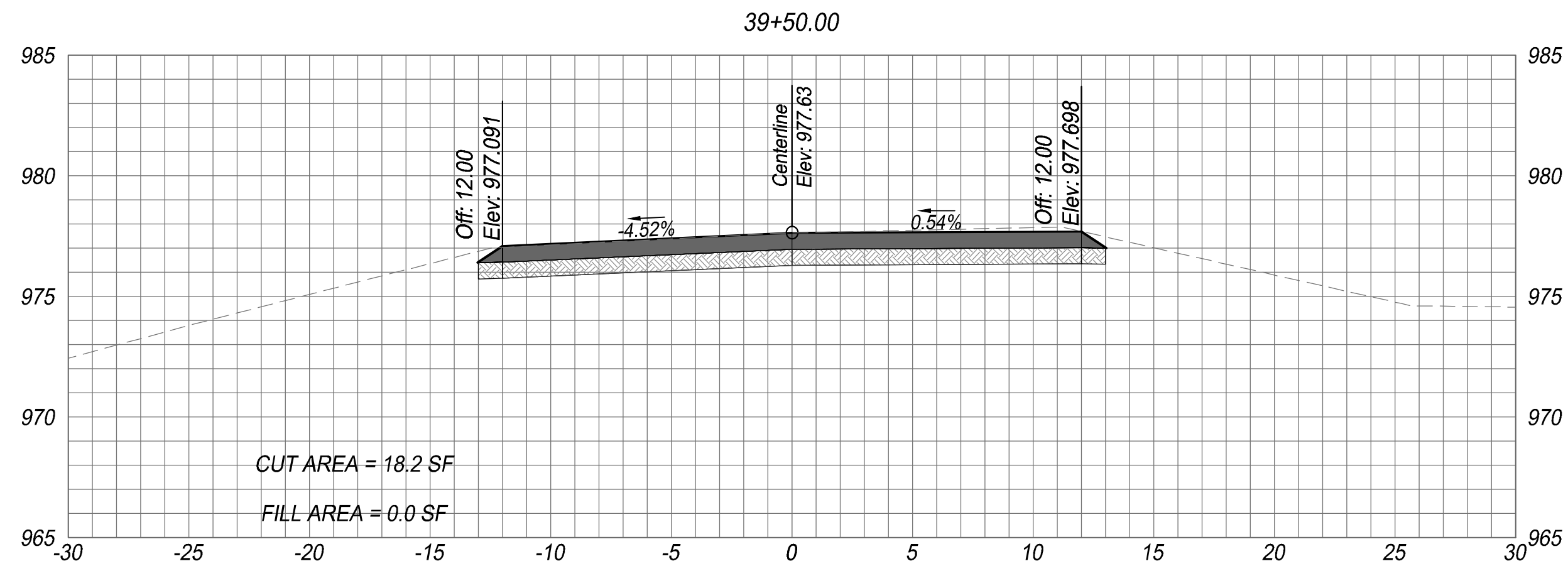
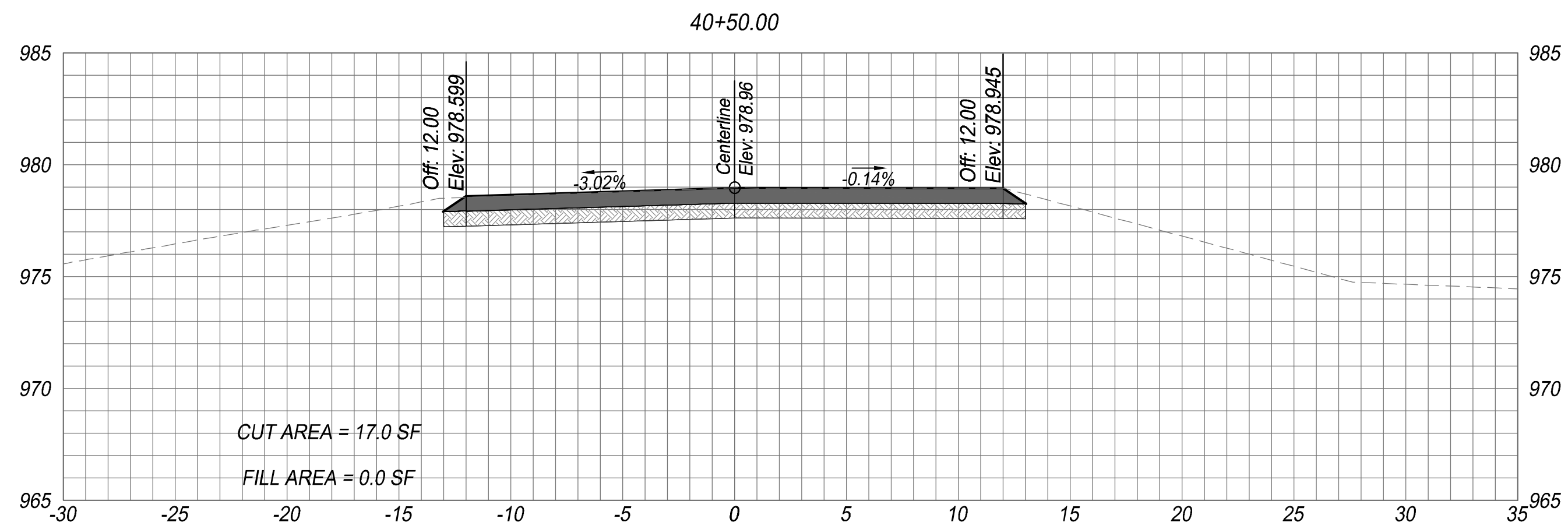
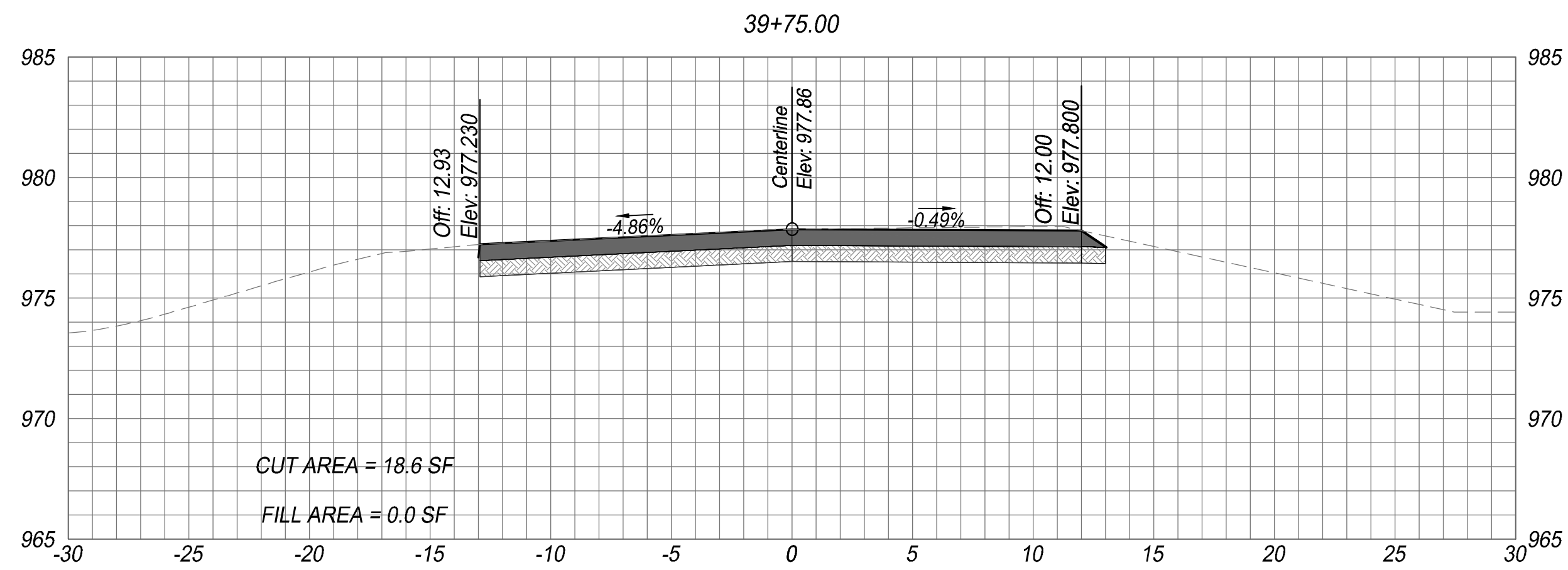
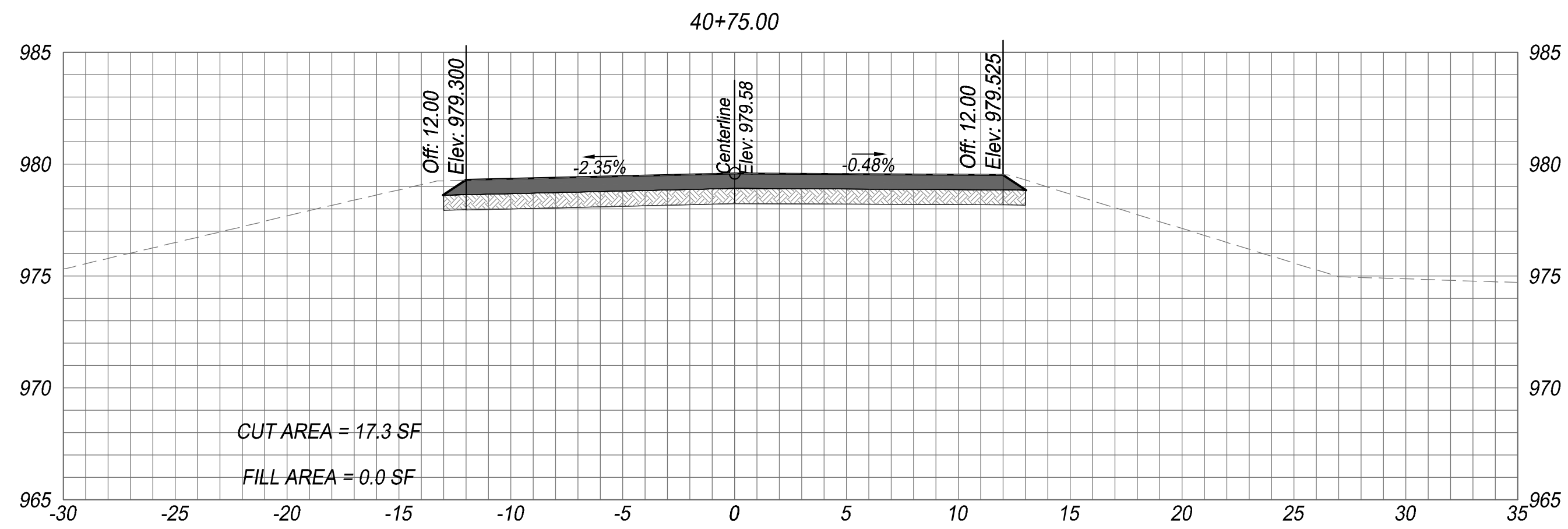
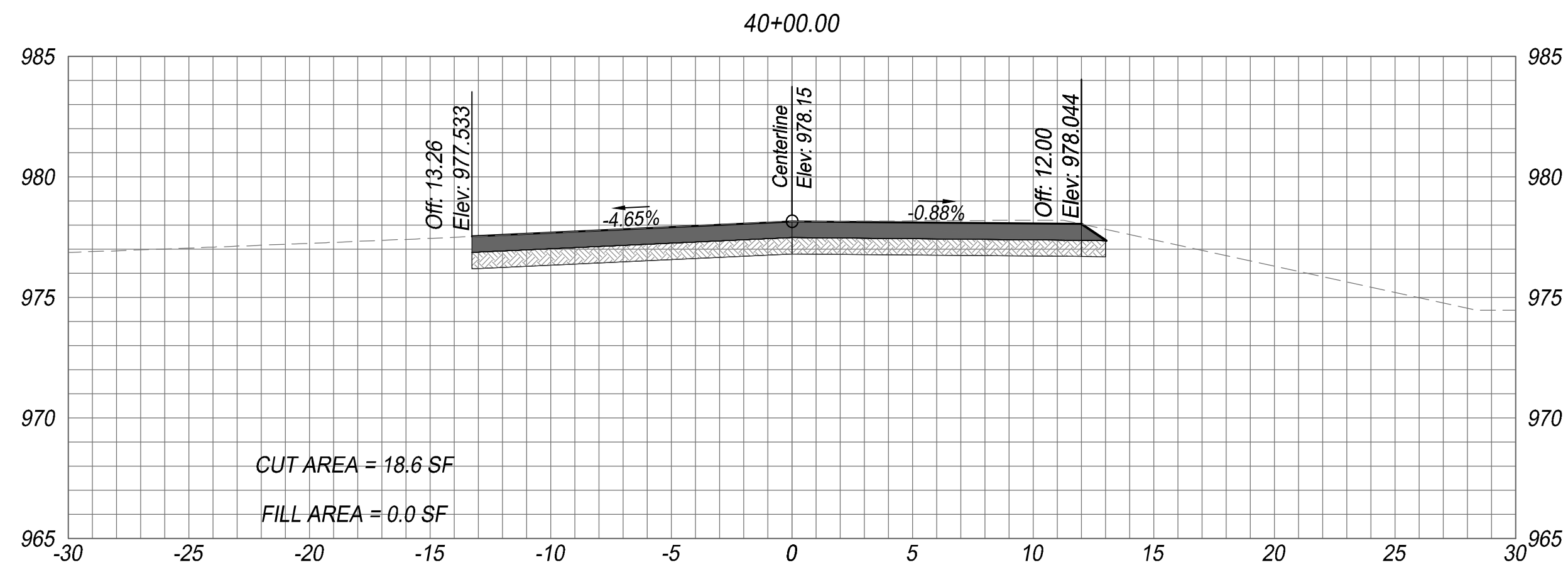
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Cross-Sections

DATE: 3/31/2023
SHEET: 33 OF 40
PROJ.: S-841012.00

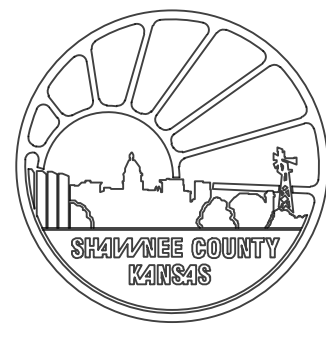
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DRAWN BY: L. O'CONNOR
APP'D BY: B. AUSTIN
FIELD BOOKS: -
SURVEYED BY: SBB ENG.



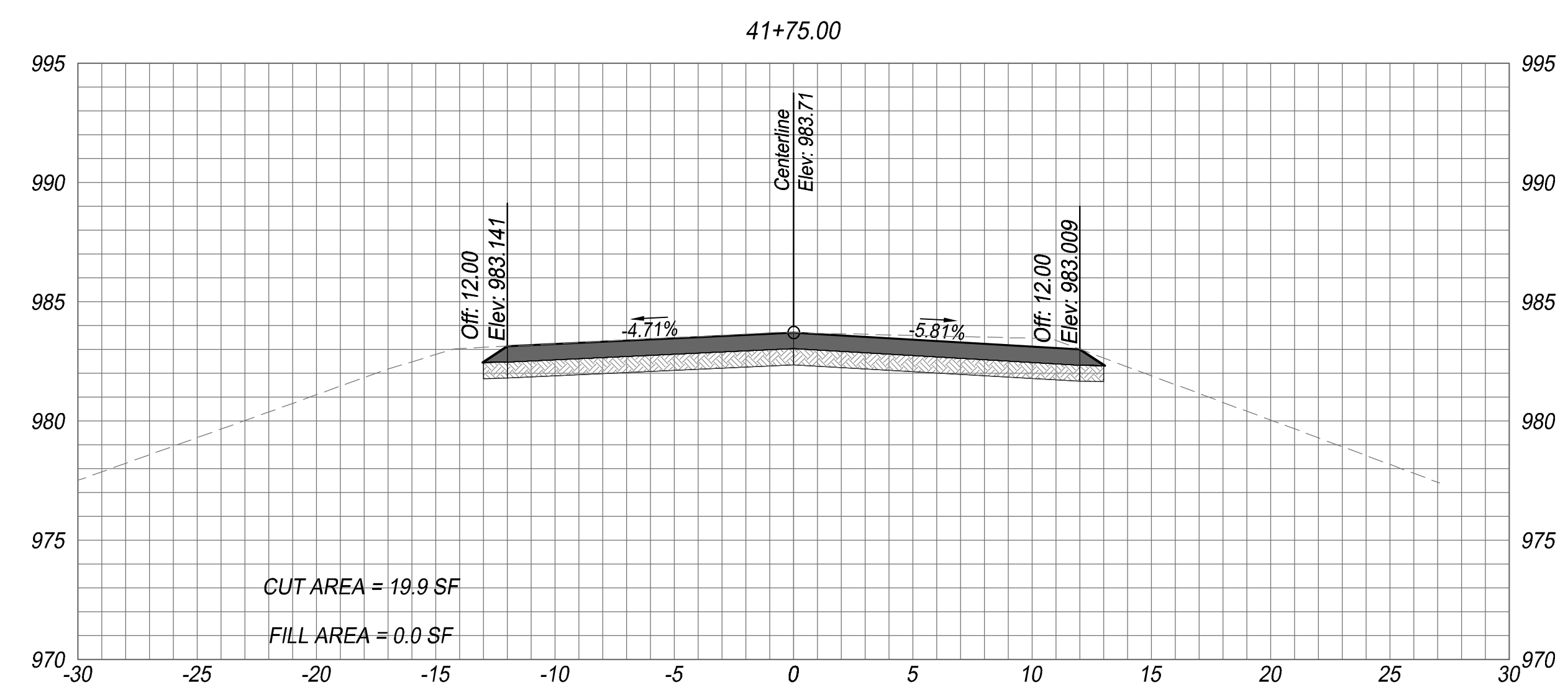
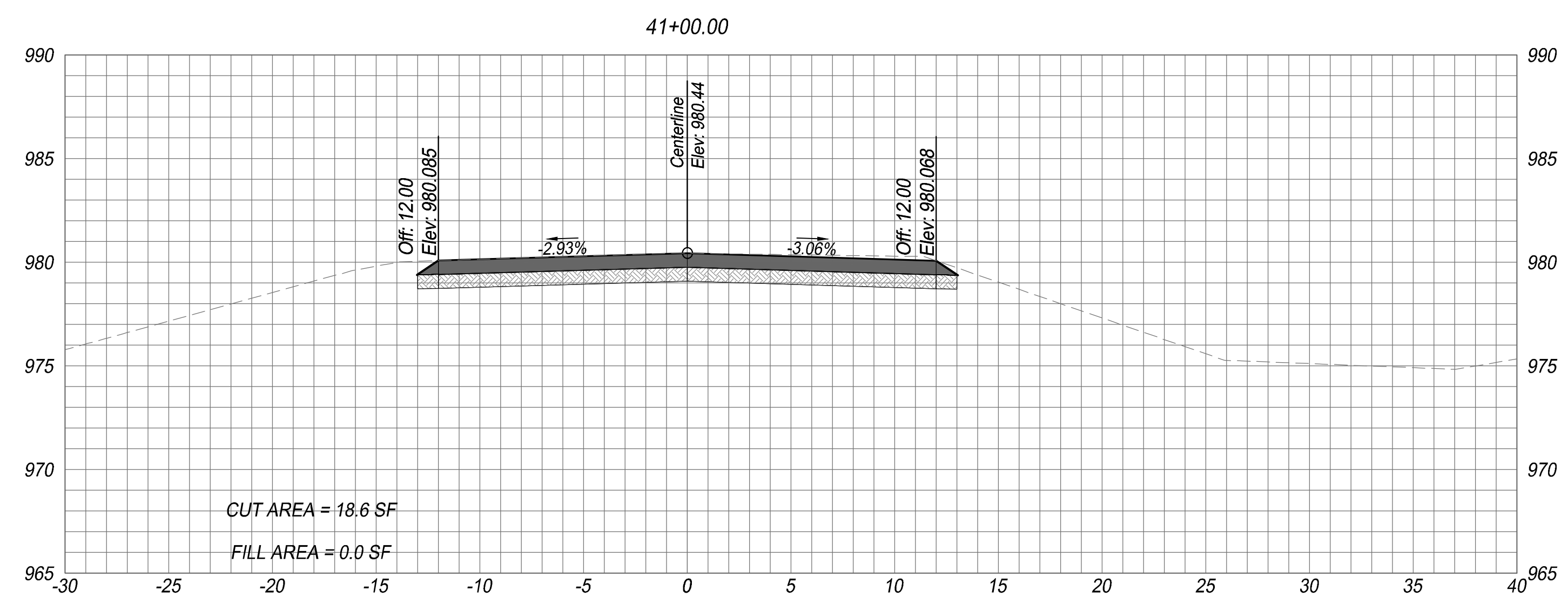
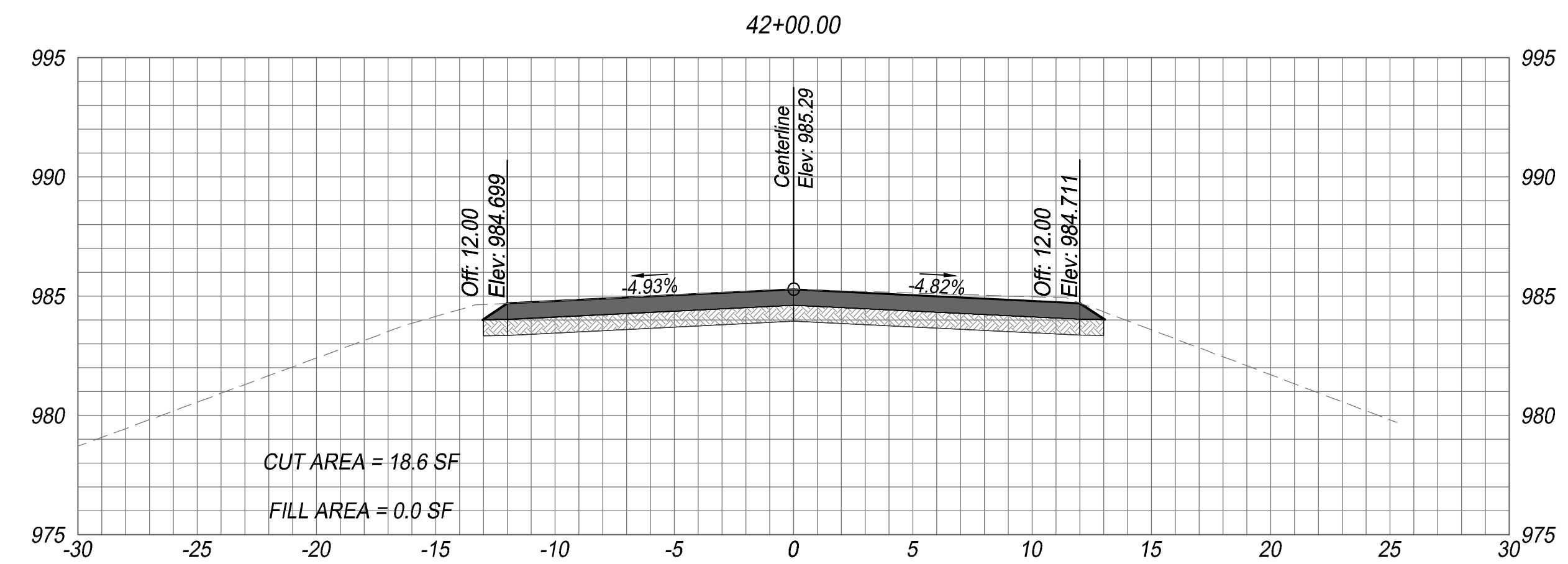
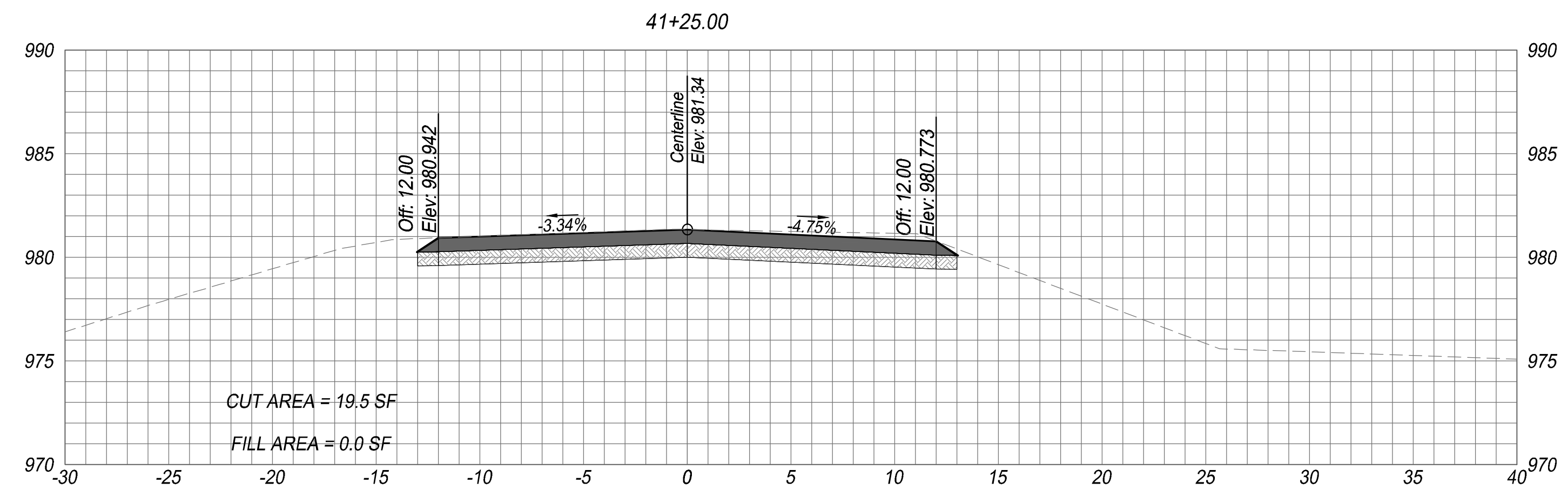
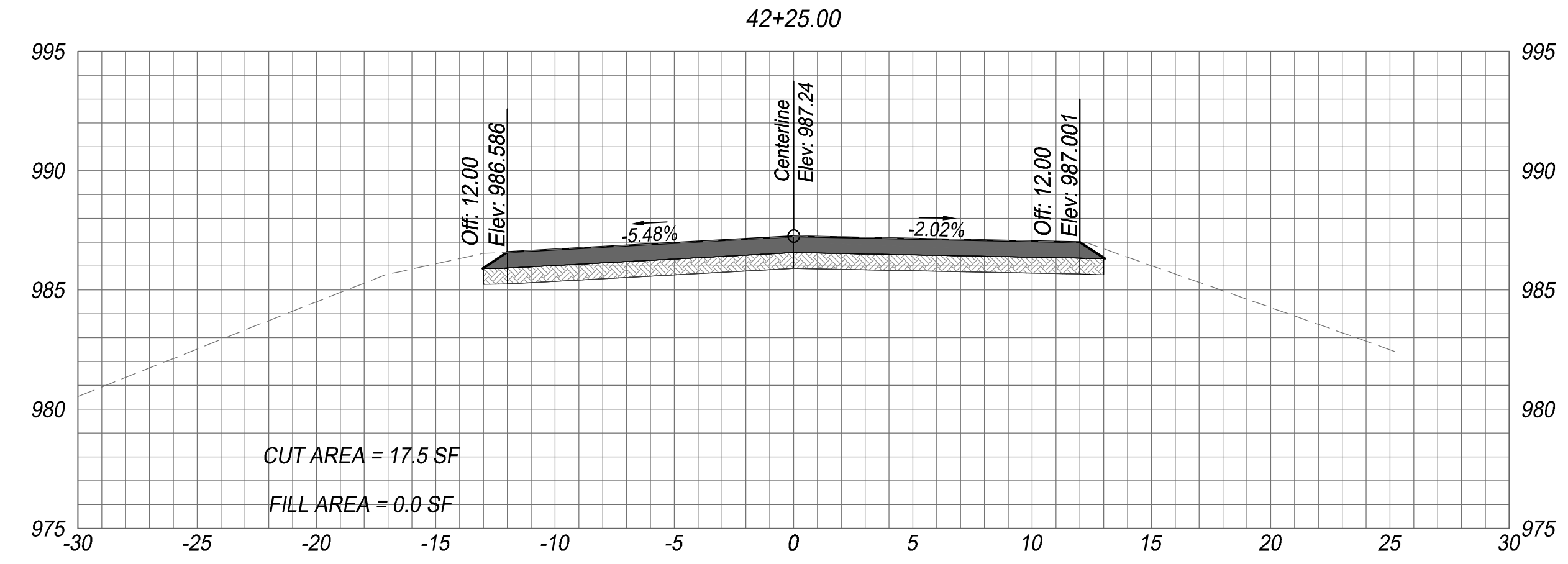
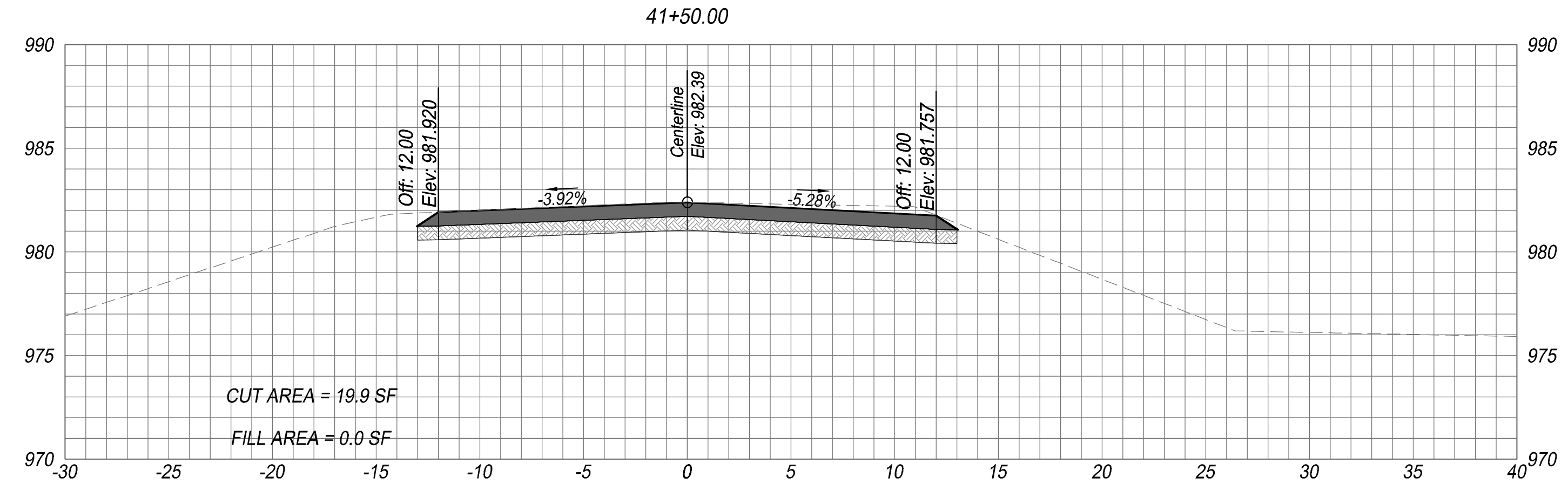
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DATE: 3/31/2023
SHEET: 34 OF 40
PROJ.: S-841012.00

[File Location: X:\11 SBB Drawings\0-2023\23-013 SWCO SWY Nottingham\dwg\Design\Street Plans\23-013 X-sec's.dwg] [Plot Date: 3/31/2023 12:21:09 PM] [Last Saved: 3/30/2023 8:53:35 AM] [Location:]



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DRAWN BY: L. O'CONNOR
APP'D BY: B. AUSTIN
FIELD BOOKS: -
SURVEYED BY: SBB ENG.



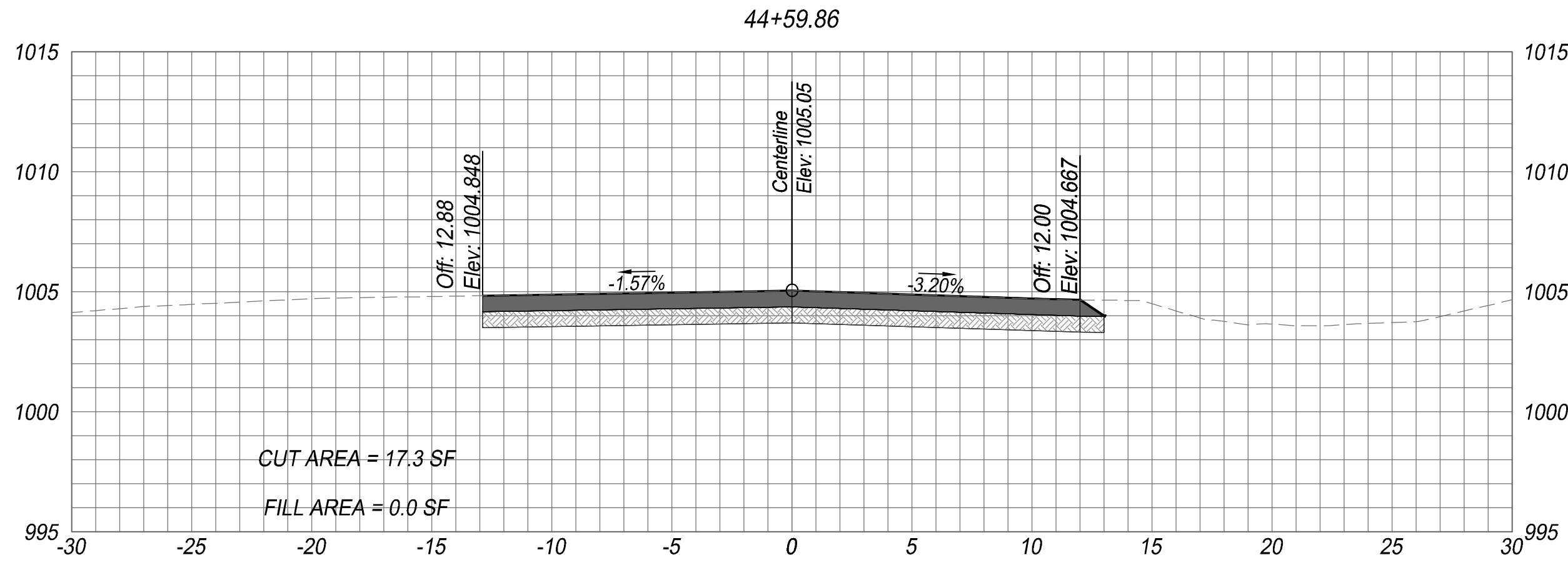
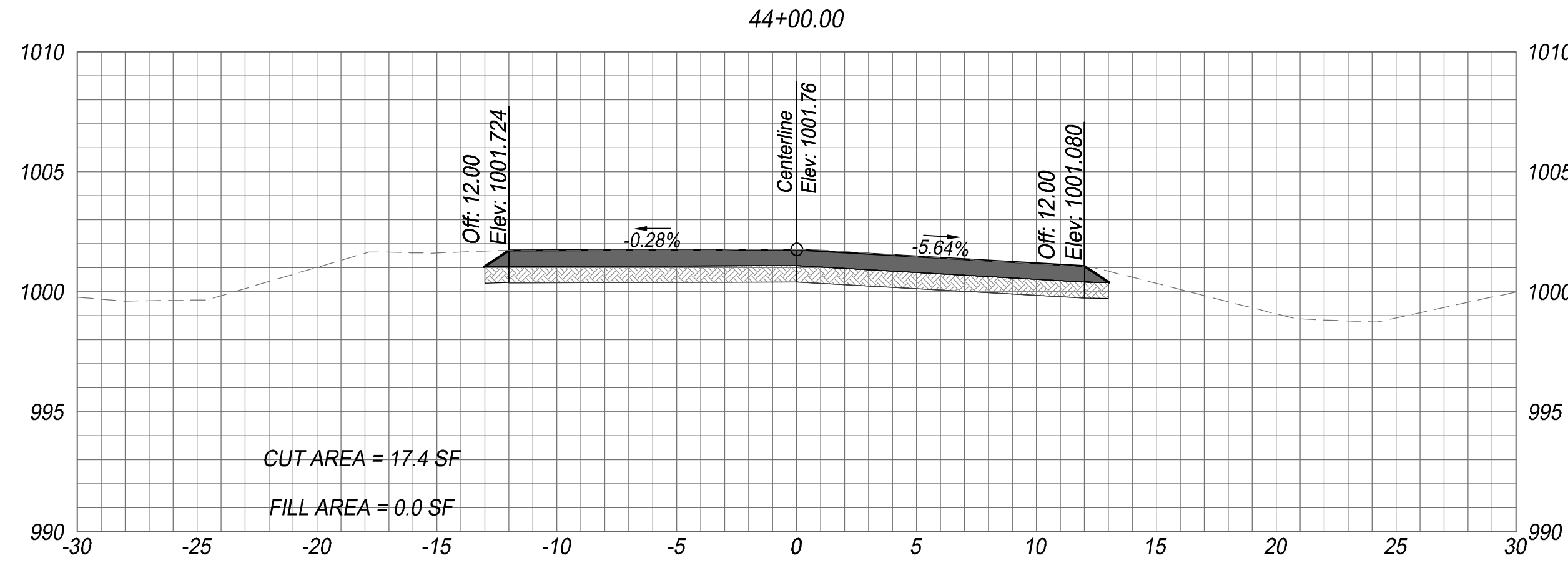
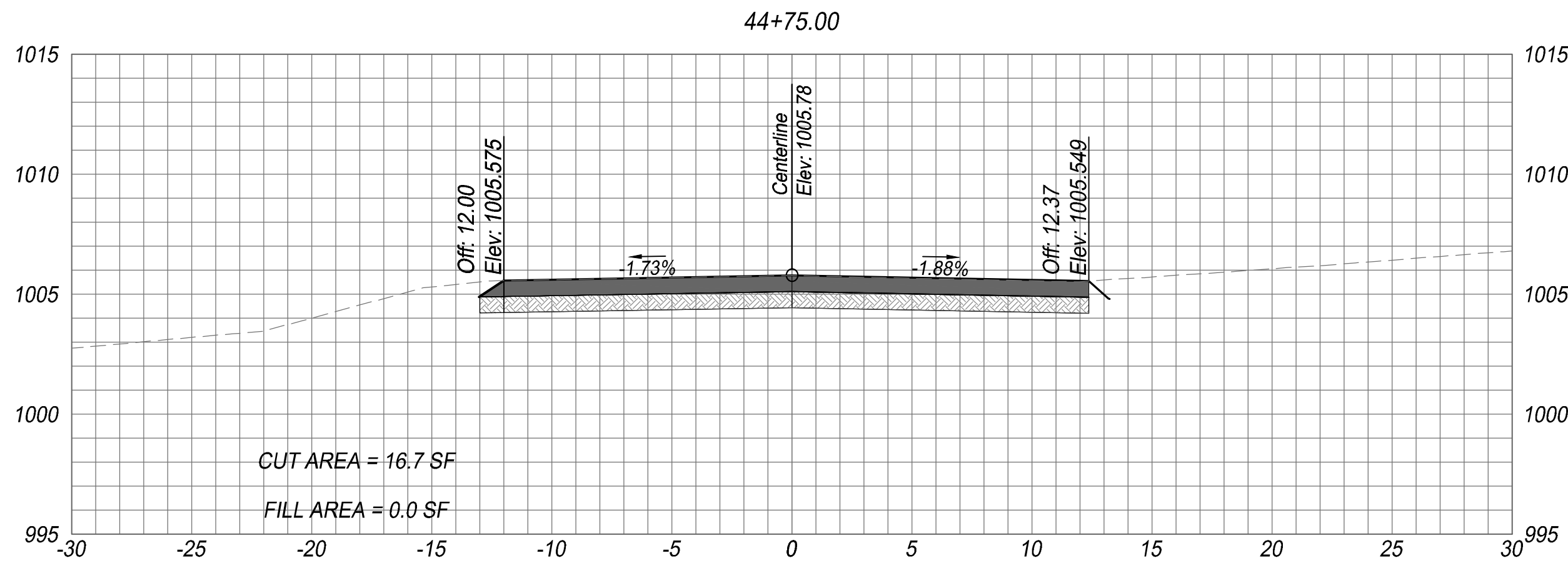
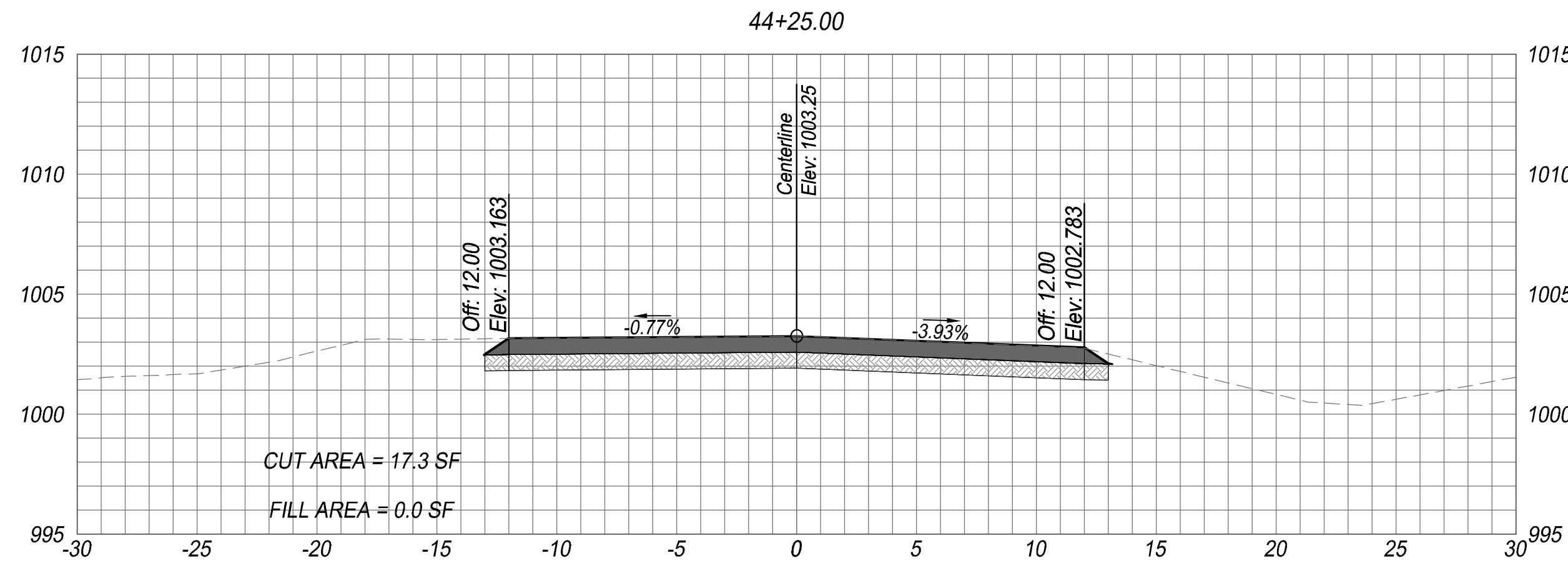
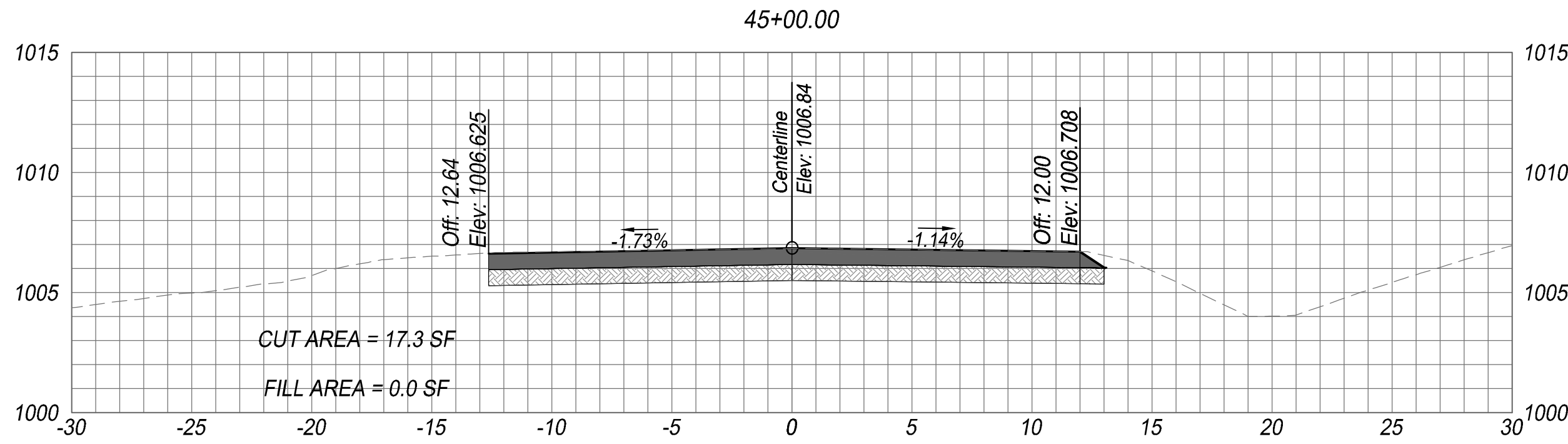
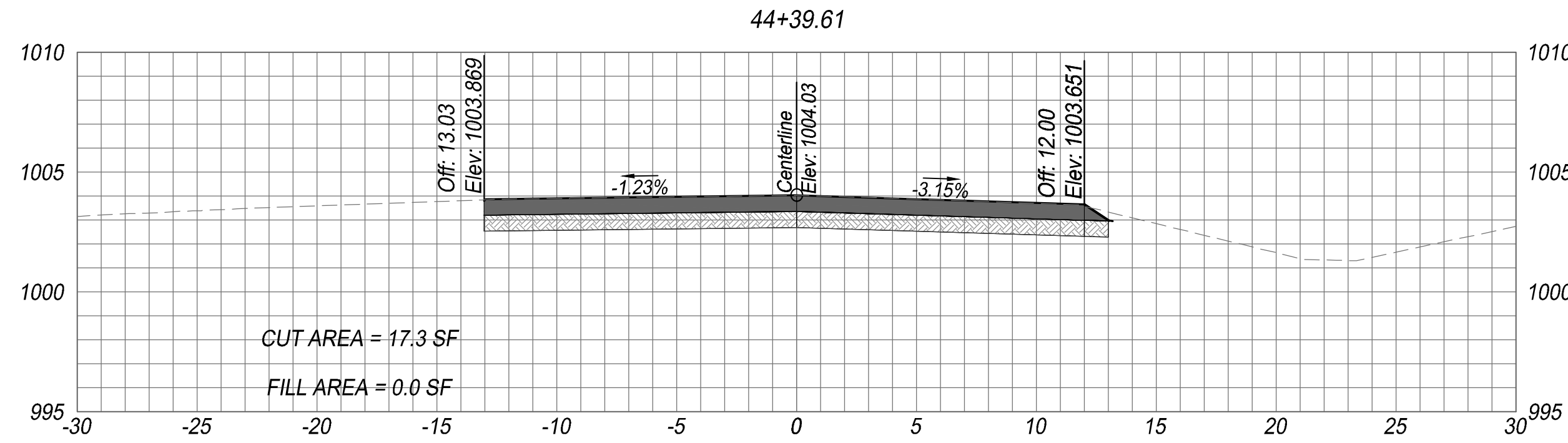
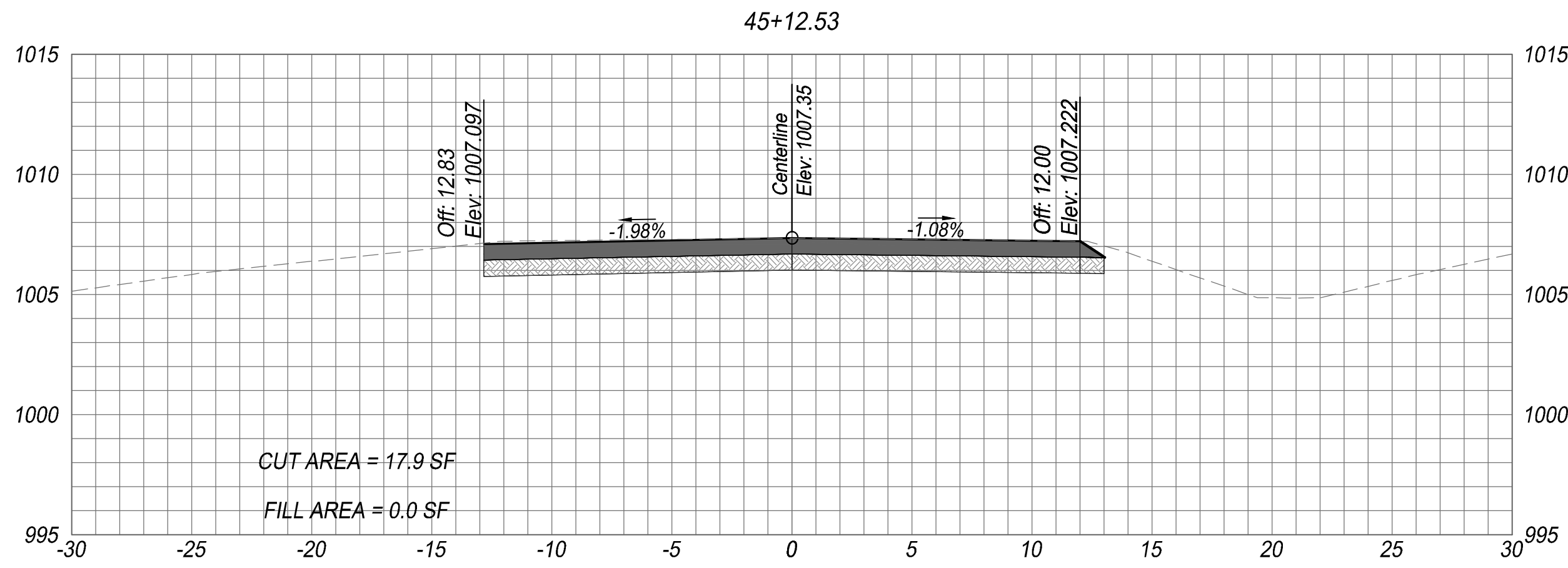
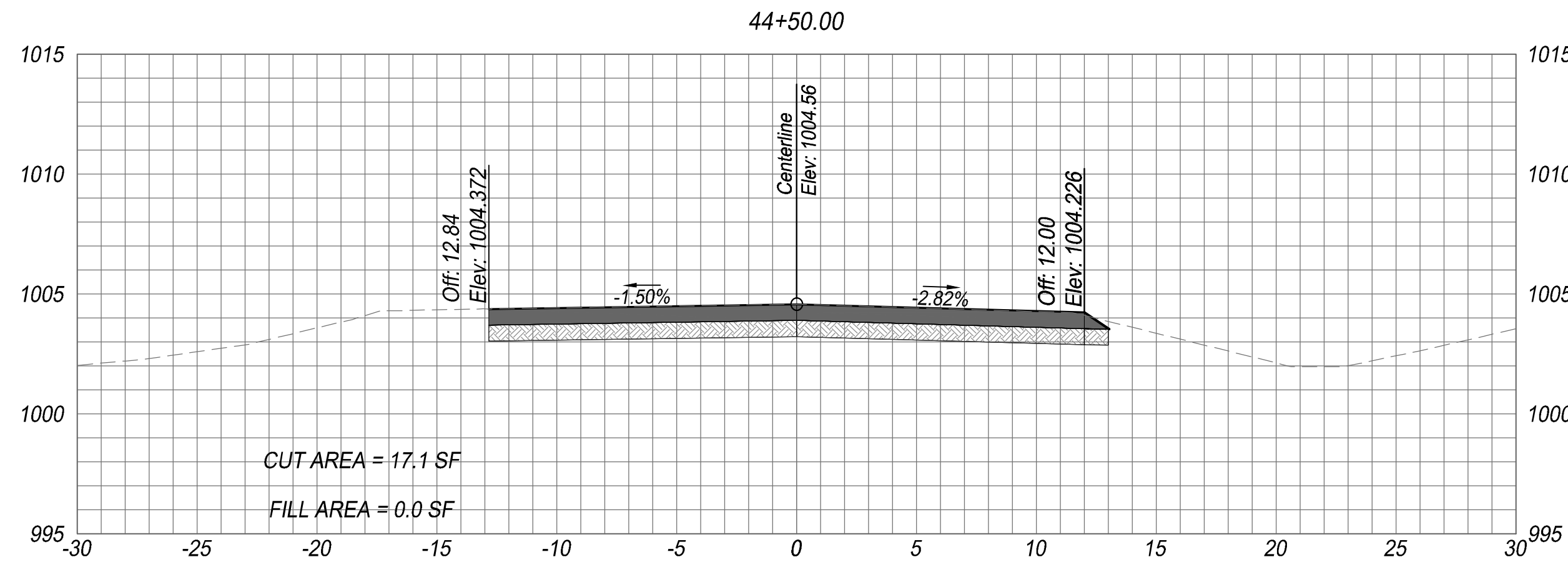
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[File Location: X:\11 SBB Drawings\0-2023\03-013 SWCO SWY Nottingham\dwg\Design\Street Plans\23-013 X-secs.dwg] [Plot Date: 3/31/2023 12:21:14 PM] [Last Saved: 3/30/2023 8:53:35 AM] [Locomotion]



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APP'D BY: B. AUSTIN
FIELD BOOKS: -
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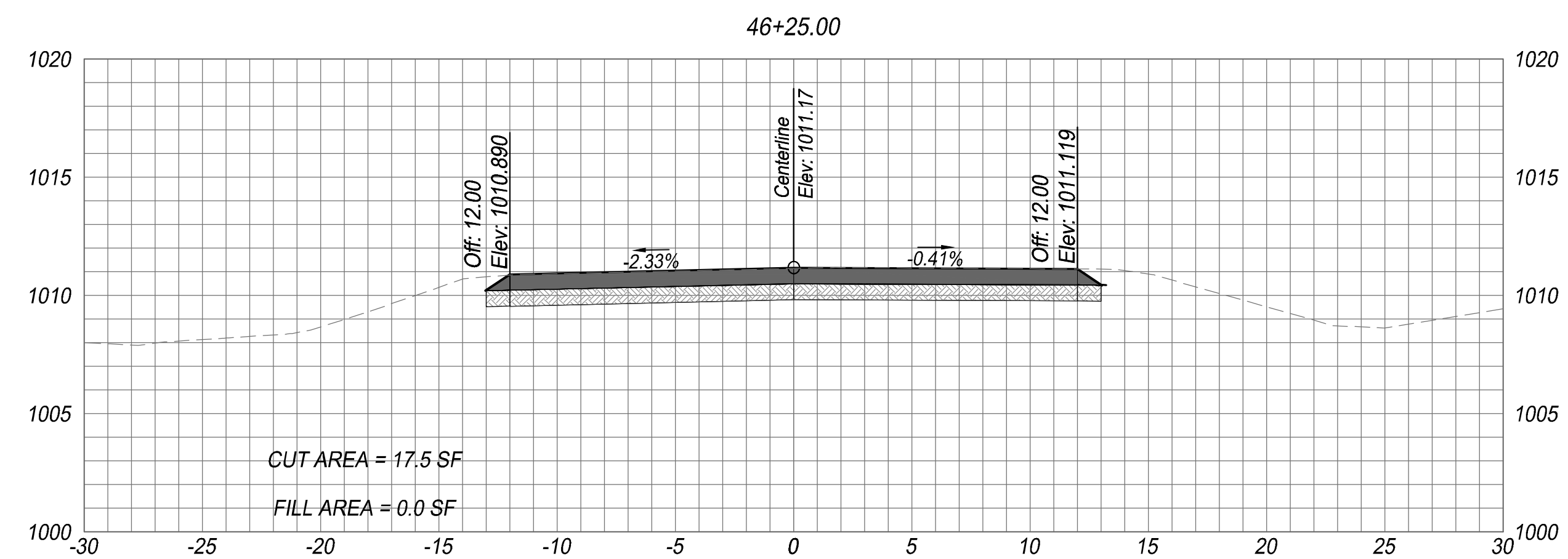
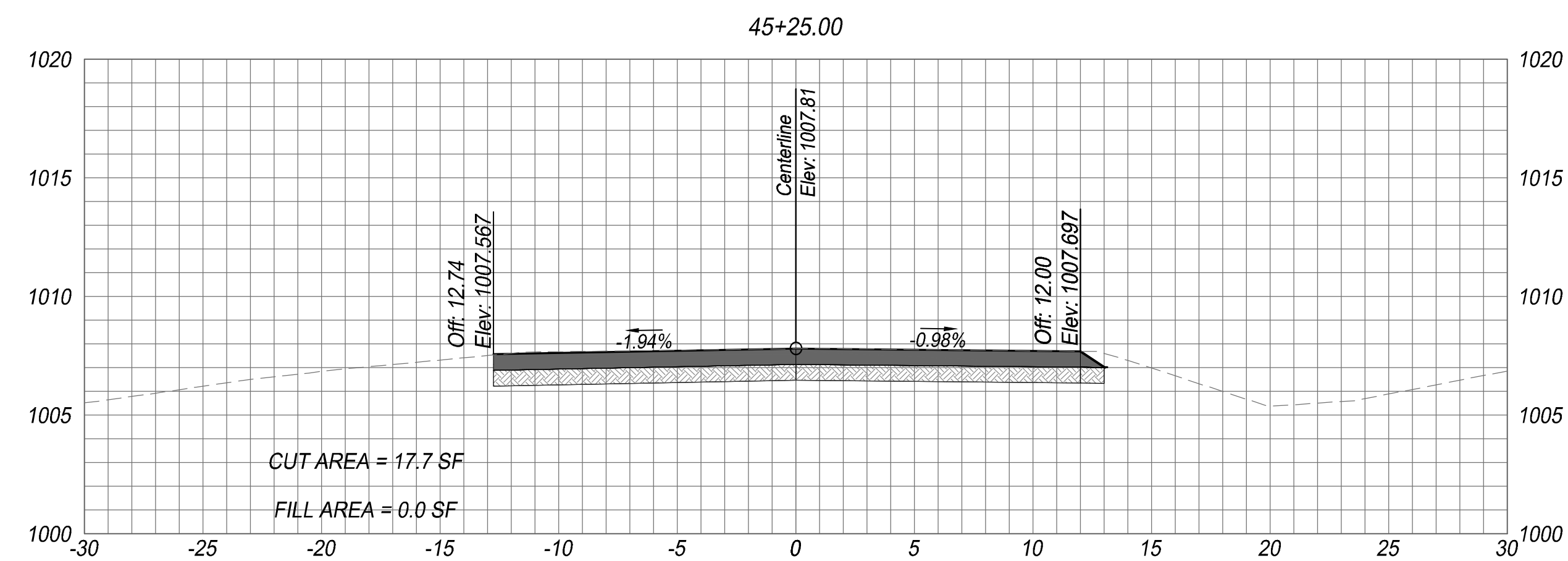
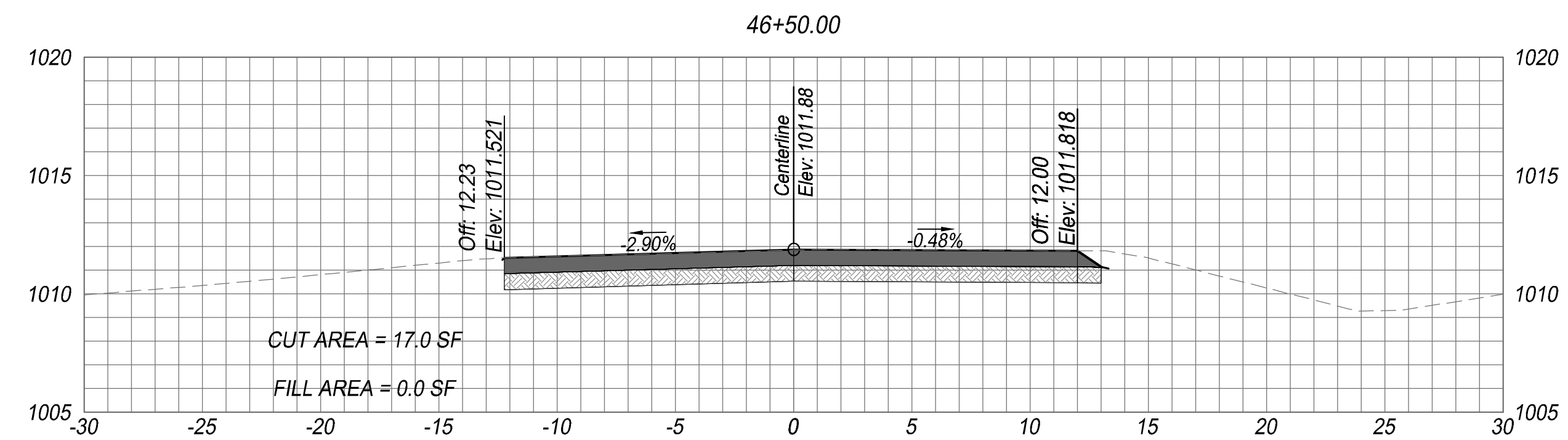
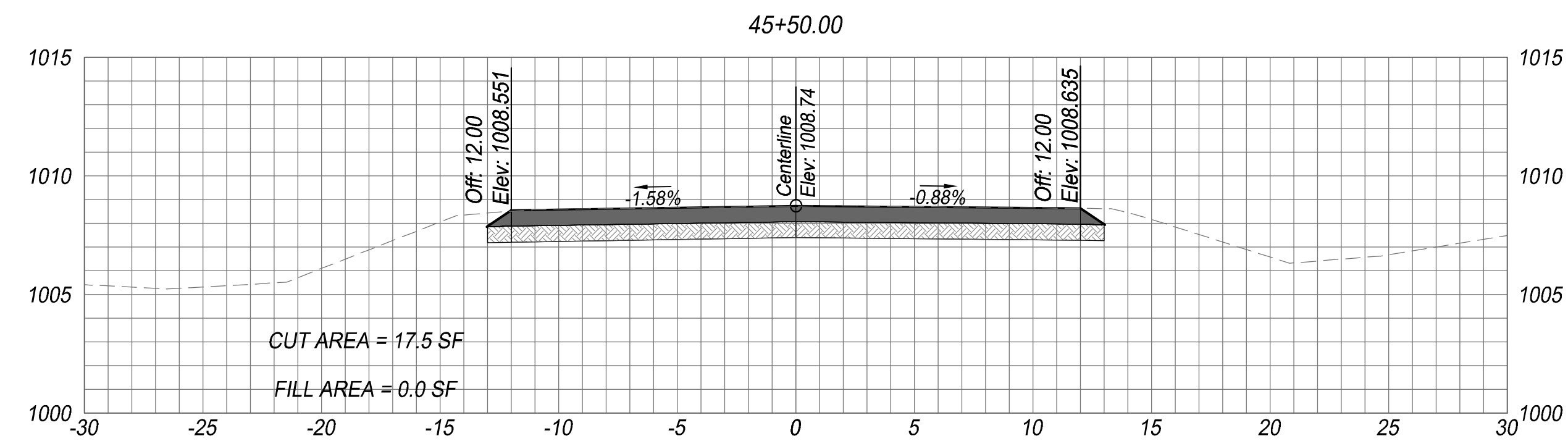
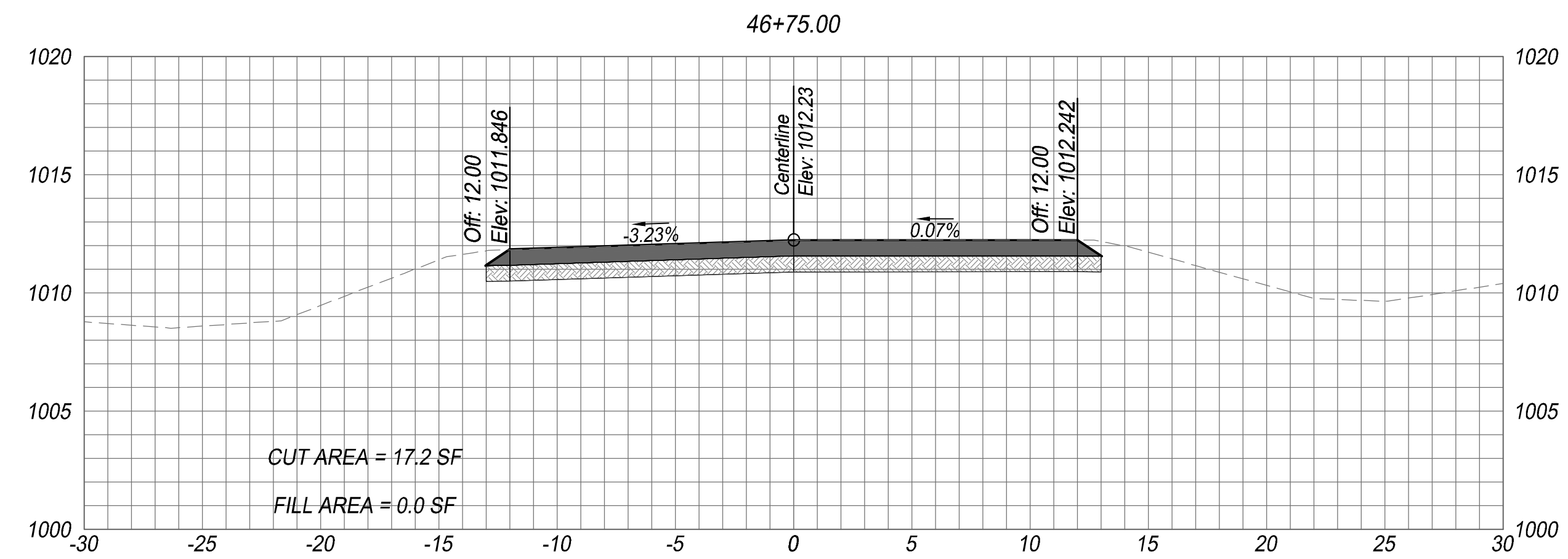
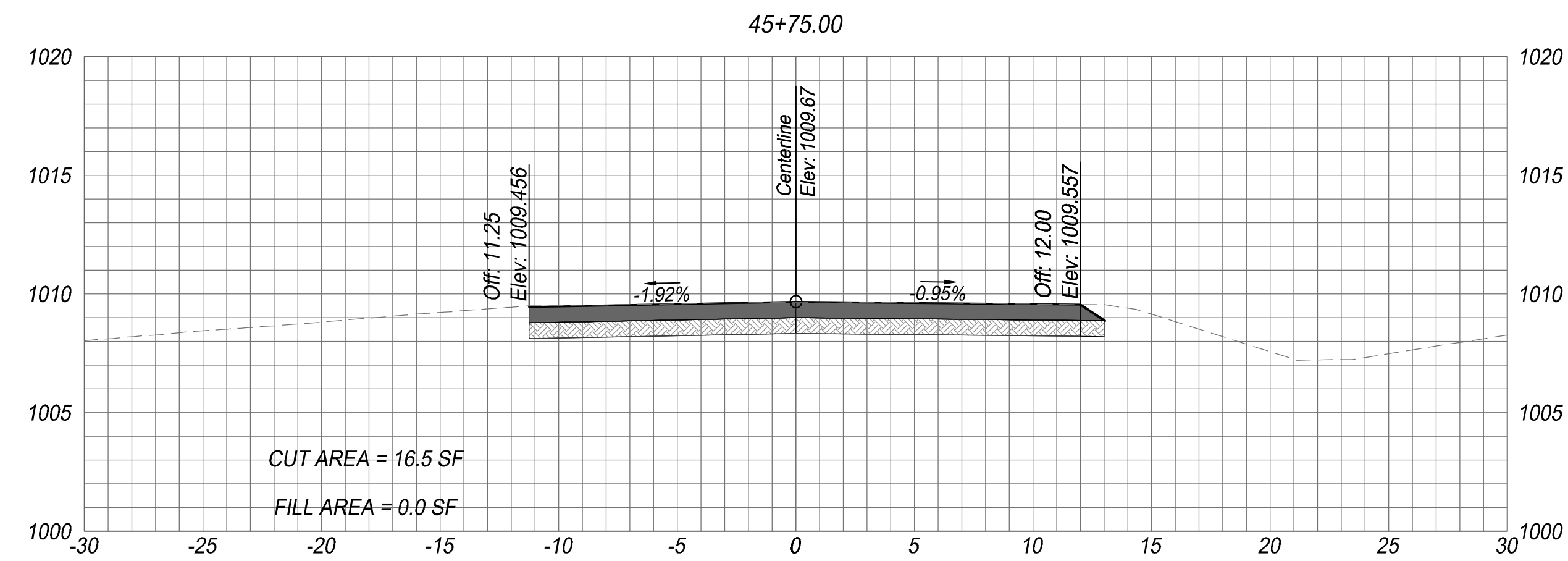
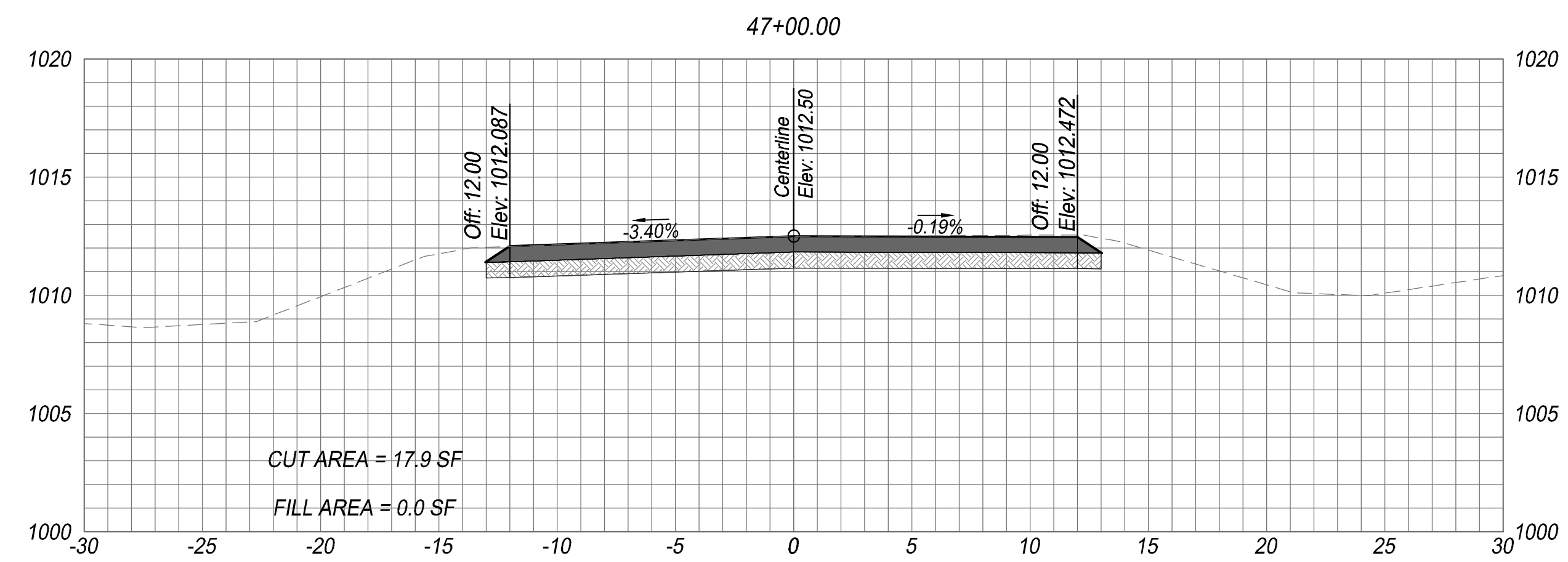
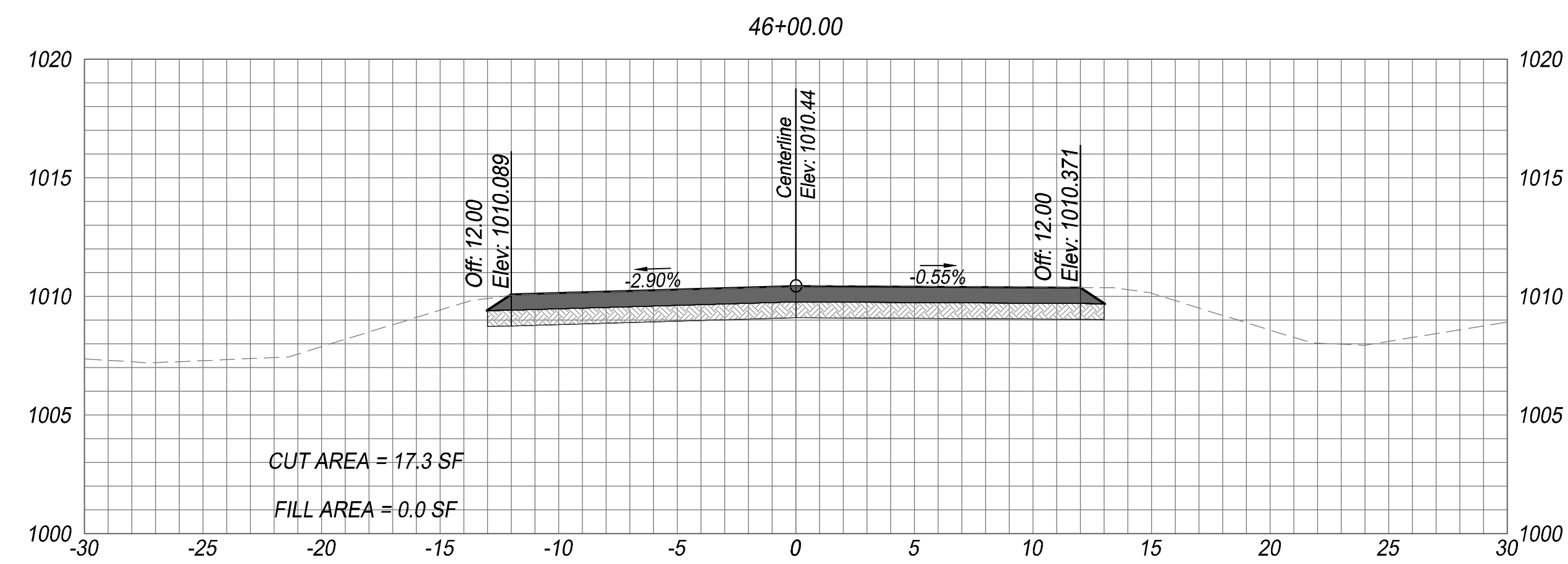


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SHEET: 36 OF 40
PROJ.: S-841012.00



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| | | | | | APP'D BY: <u>B. AUSTIN</u> | |
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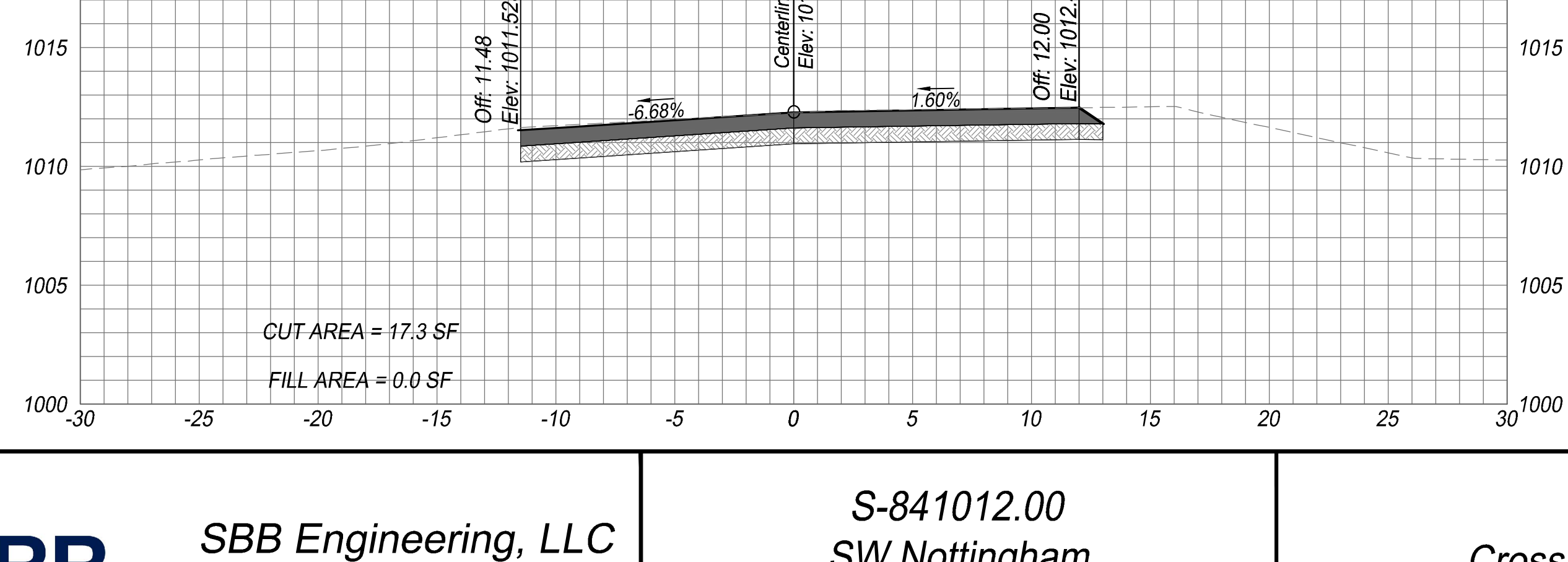
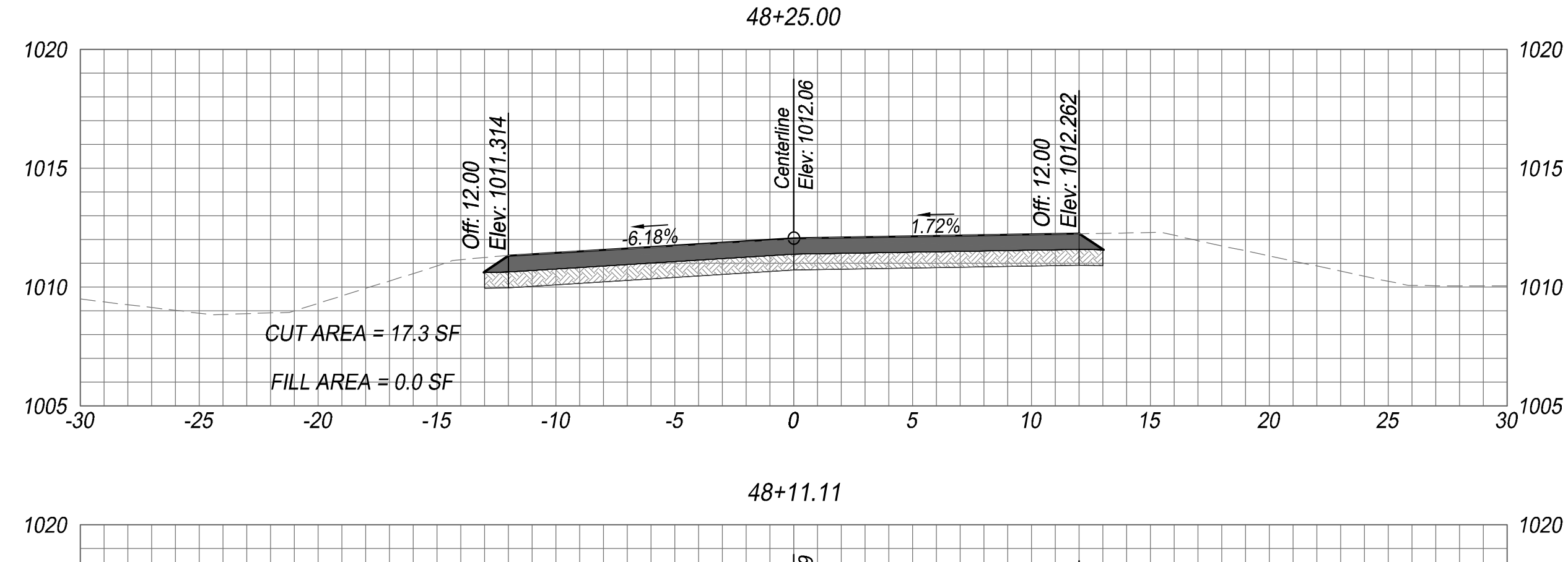
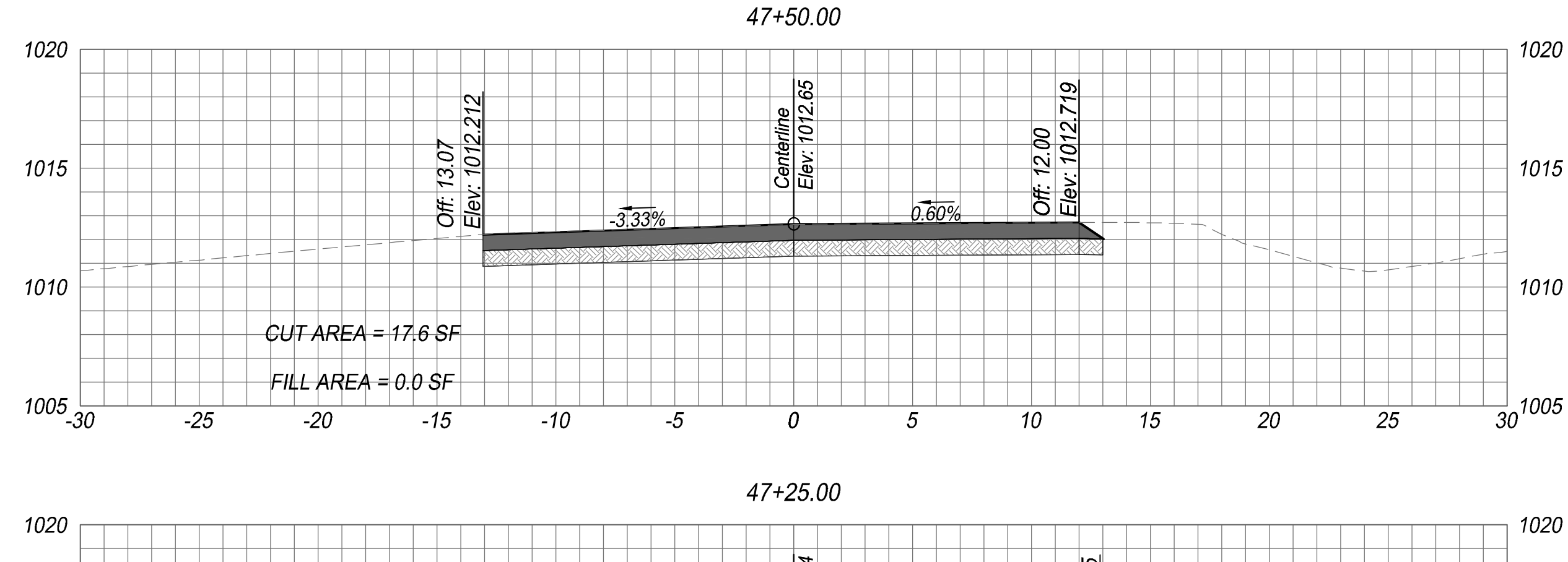
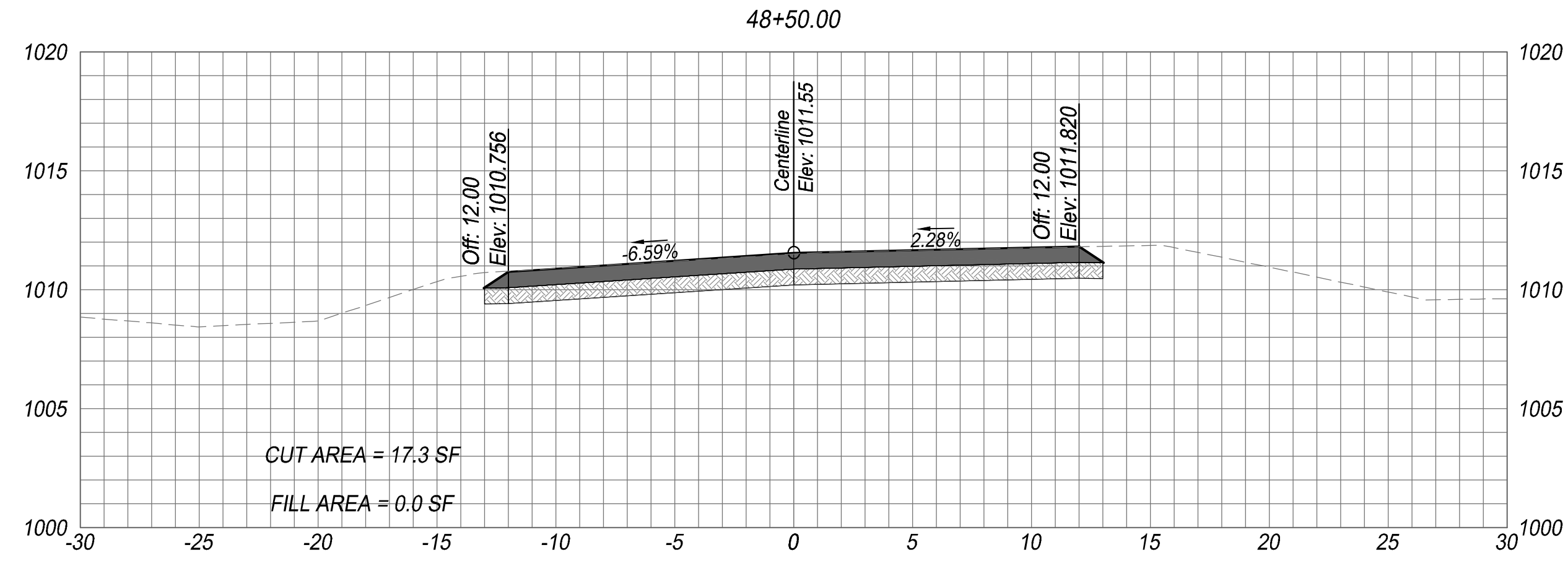
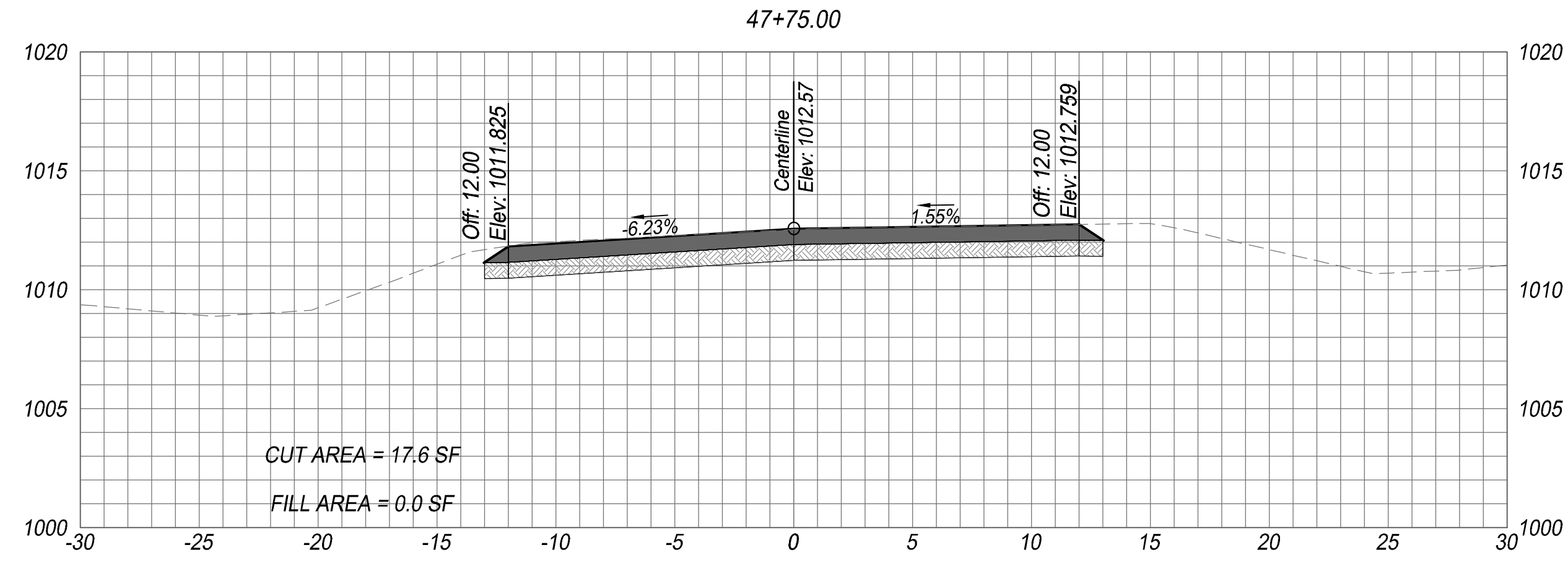
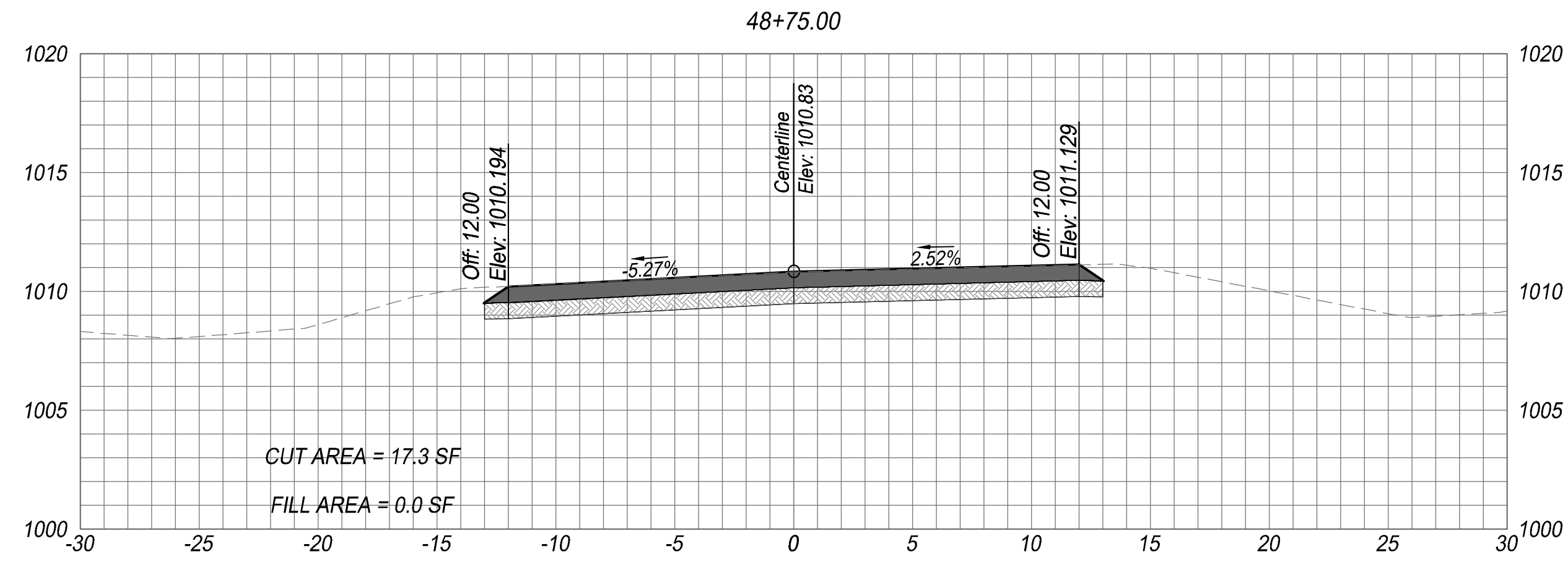
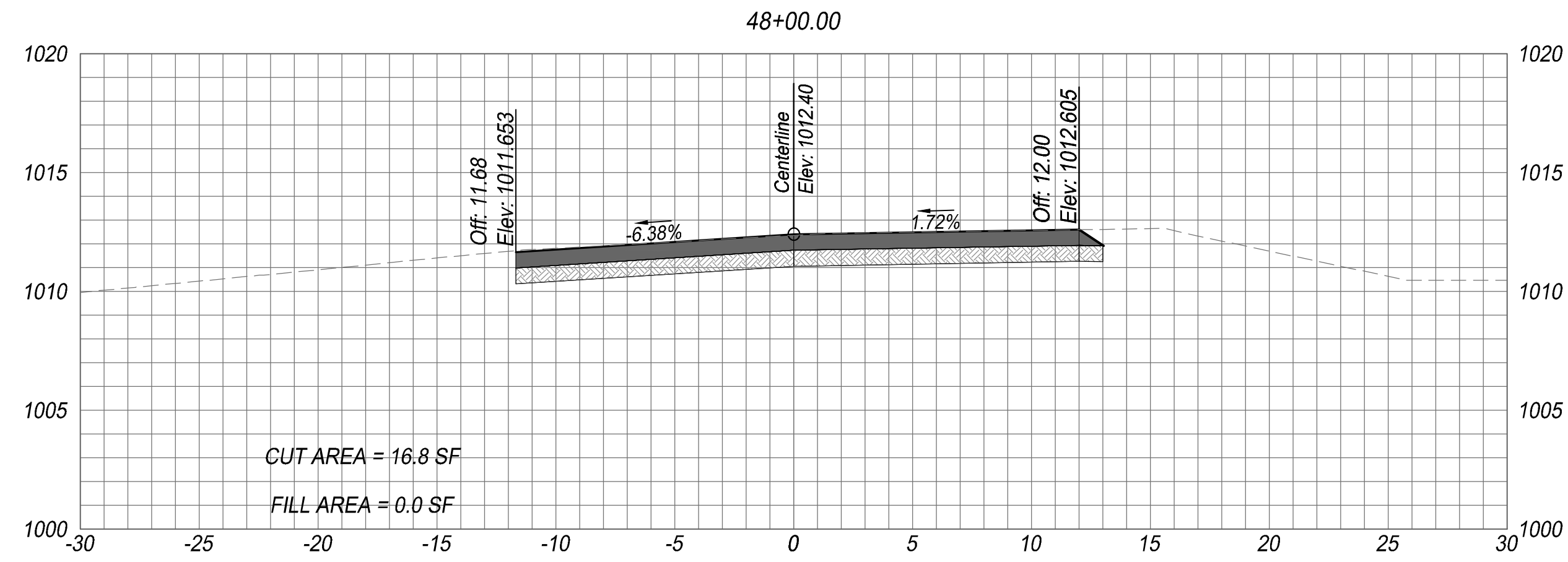
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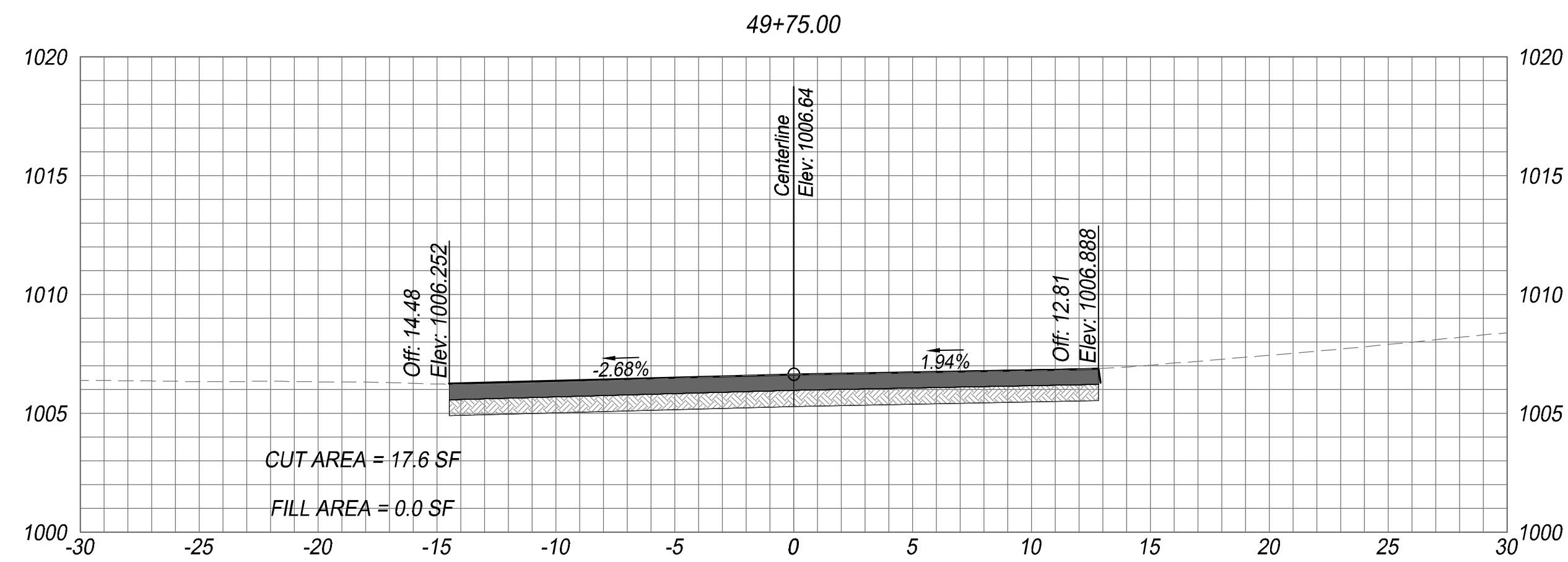
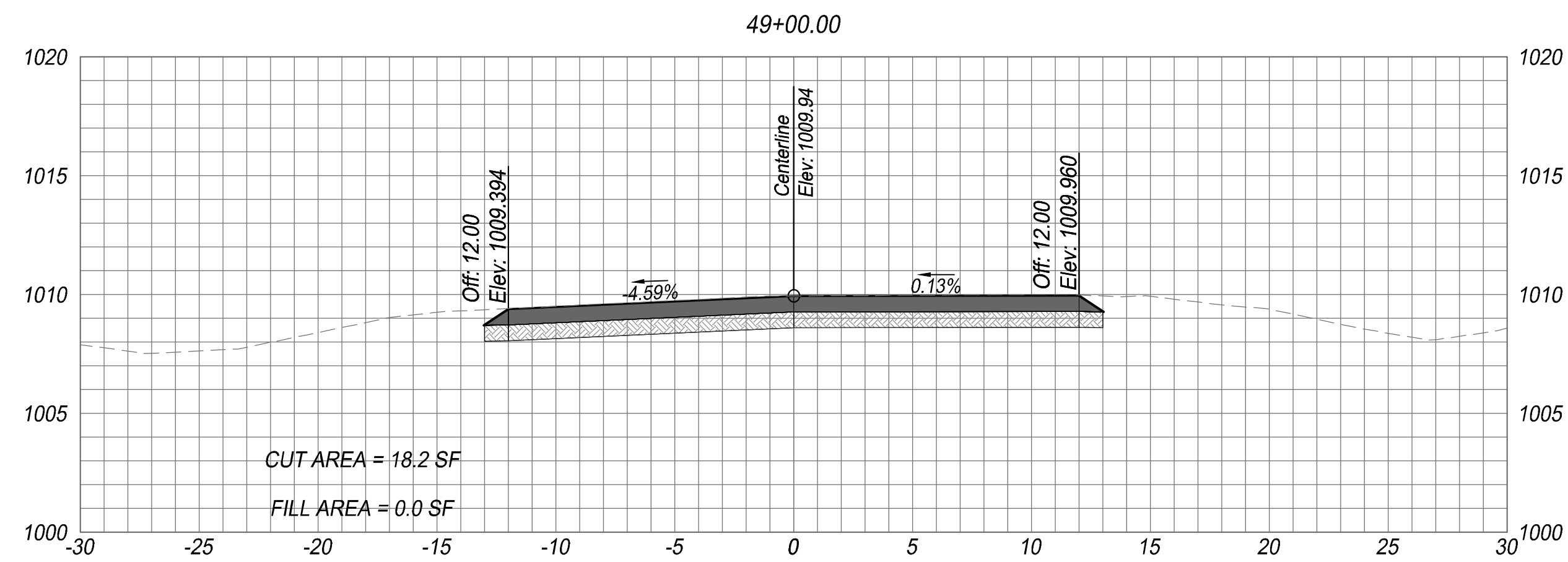
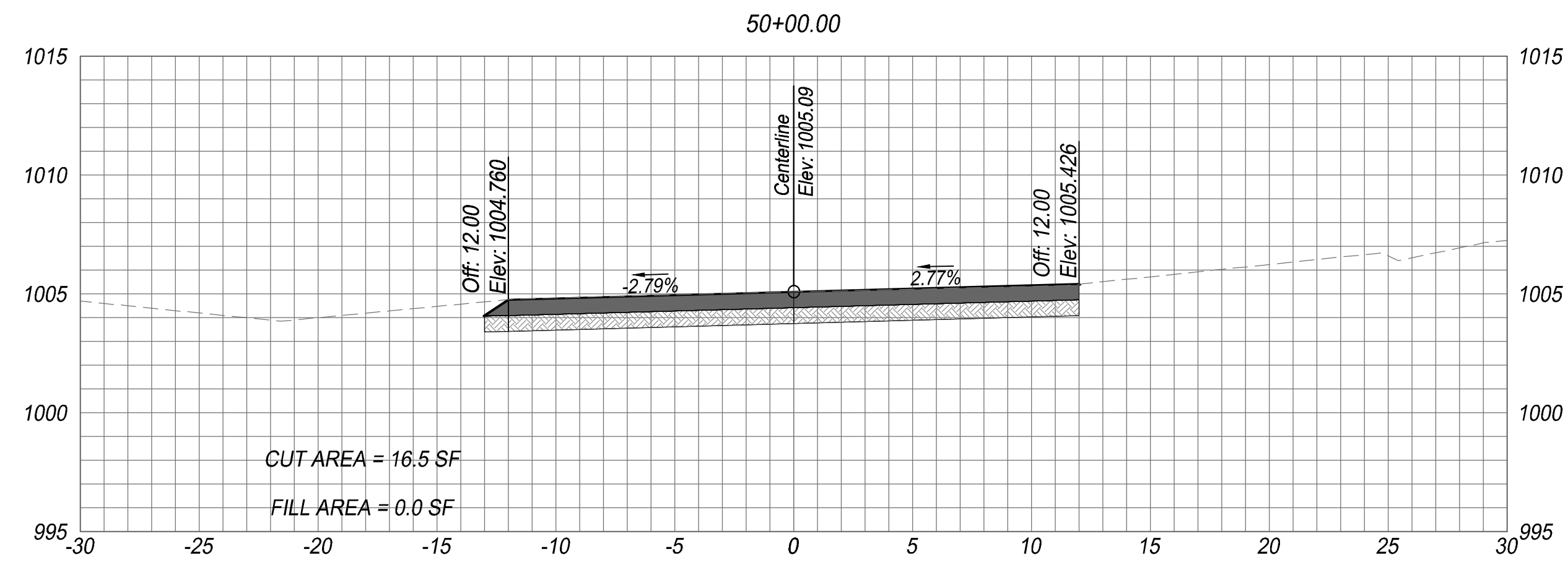
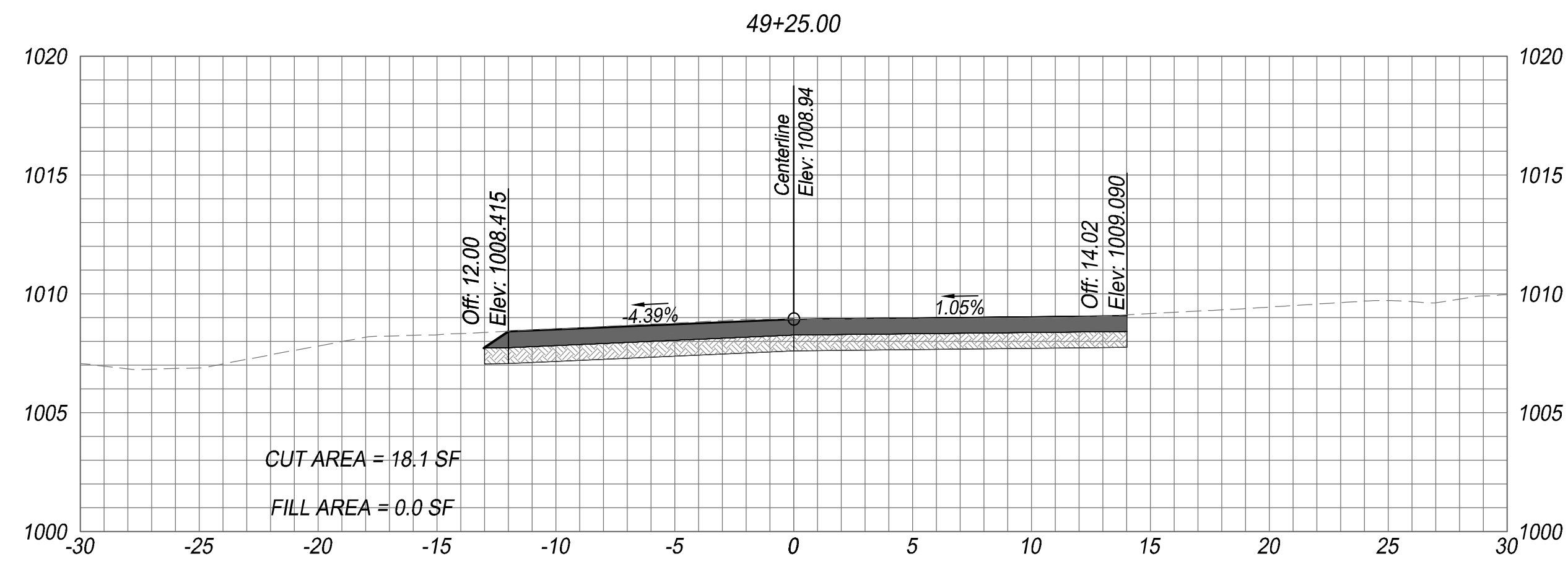
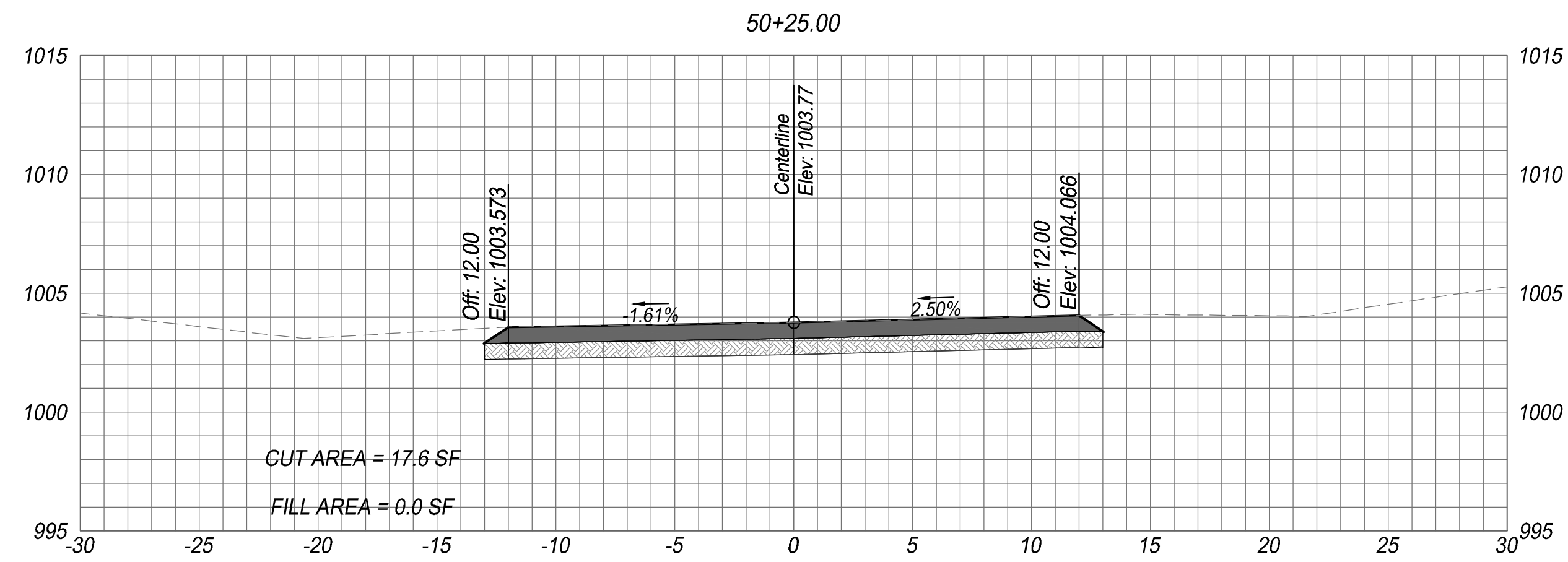
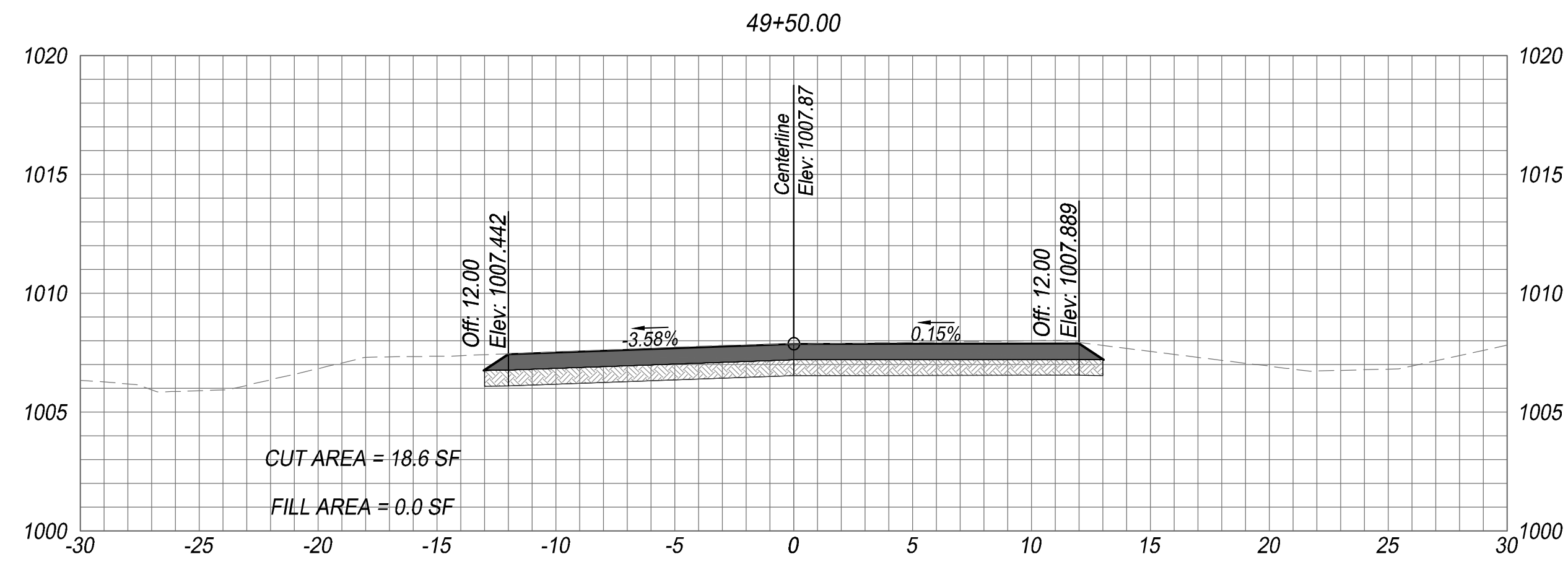
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PROJ.: S-841012.00

[File Location: X:\1 SBB Drawings\0-2023\03-013 SWCO SWY Nottingham\dwg\Design\Street Plans\03-013 X-section.dwg] [Plot Date: 3/31/2023 12:21:29 PM] [Last Saved: 3/30/2023 8:53:35 AM] [Locomotion]



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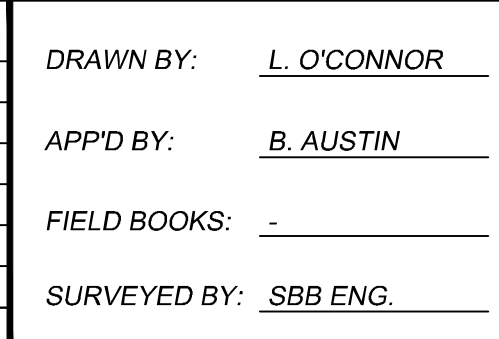
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