

STANDARD FORM CONSTRUCTION BID AGREEMENT

THIS AGREEMENT is dated as of the 13th day of July in the year 2021 by and between Santa Rosa County, a political subdivision of the state of Florida (hereinafter called Owner) and Roads, Inc. of NWF (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 Work is generally described as follows:

This project includes new sidewalks and bike path along Edgewood Drive, new right-turn lane on Edgewood at Hwy 98, clearing and cleaning existing ditches and modifying existing culverts. The project also includes a bid alternate to resurface Edgewood Drive once improvements are completed.

Article 2. ENGINEER.

The Project has been designed by:

Kenneth Horne & Associates, Inc. Civil Engineers

Who is hereinafter called Engineer and who is to act as Owner's 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. CONTRACT TIMES.

- 3.1 The Work will be substantially completed within **365** calendar days after the date when the Contract Times commence to run, and completed and ready for final payment within 395 calendar days after the date when the Contract Times commence to run.
- 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 within the times specified in paragraph 3.1 above, plus any extensions thereof allowed by the Owner. They also recognize the delays, expense and difficulties involved in proving the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring of such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty) Contractor shall pay Owner the amount specified in Paragraph 3.3. for each day that expires after the time specified in paragraph 3.1 for Substantial Completion until the Work is substantially complete. After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the time specified in paragraph 3.1 for completion and readiness for final payment or any proper extension thereof granted by Owner, Contractor shall pay Owner the amount specified in Paragraph 3.3. for each day that expires after the time specified in paragraph 3.1 for completion and readiness for final payment. The Contractor hereby expressly waives and relinquishes any right which it may have to seek to characterize the liquidated damages as a penalty, which the parties agree represents a fair and reasonable estimate of the Owner's actual damages at the time of contracting if the Contractor fails to substantially complete the Work in a timely manner.

3.3 Liquidated Damages are based upon the original contract amount, as established by Santa Rosa County. Liquidated damages, based upon the original contract amount of \$2,509,076.26, will be Two Thousand, Five Hundred dollars (\$2,500.00) per calendar day.

LIQUIDATED DAMAGES SCHEDULE

Phase	Begin Date	Consecutive Calendar Days to Complete	Liquidated Damages
1	Notice to Proceed	10	Daily Rate as Referenced on ITB 21-034
Entire Project	Notice to Proceed	365	Daily Rate as Referenced on ITB 21-034

Article 4. CONTRACT PRICE.

Owner shall pay Contractor for completion of the Work in accordance with the Contract Documents as specified in the Base Bid and Add Alternates One and Two an amount in current funds equal to the sum of the established unit price for each separately identified item of Unit Price Work times the estimated quantity of that item as indicated in the Bid Schedule submitted in the Bid Form. The cost of this project is \$ 2,509,076.26 as per the attached Contractor bid.

Estimated quantities are not guaranteed, and determinations of actual quantities and classification are to be made by Engineer.

Article 5. PAYMENT PROCEDURES

Contractor shall submit Application for Payment in accordance with Contract. Applications for Payment will be processed by Engineer as provided in the contract.

5.1 *Progress Payments; Retainage.* Owner shall make progress payments on account of the Contract Price on the basis of Contractor's Applications for Payment as recommended by Engineer, on or about the fifteenth (15th) day of each month during construction as provided in paragraphs 5.1.1 and 5.1.2 below. All such payments will be measured based on the number of units completed. Payments to the Contractor shall in no way imply approval or acceptance of Contractor's work

5.1.1 Prior to Substantial completion, 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.

95 % of Work completed (with the balance being retainage). Once the Contractor completes at least 50% of the Work based on approved pay applications, the retainage will be reduced from 10% to 5% for the remainder of the project. Therefore, following completion of at least 50% of the Work, the Contractor may be paid 95 % of Work completed (with the balance being retainage).

95 % (with the balance being retainage) of materials and equipment not incorporated in the Work (but delivered, suitably stored and accompanied by documentation satisfactory to Owner). Once the Contractor completes at least 50% of the Work based on approved pay applications, the retainage will be reduced from 10% to 5% for the remainder of the project. Therefore, following completion of at least 50% of the Work, the Contractor may be paid 95 % of materials and equipment not incorporated in the Work (but delivered, suitably stored and accompanied by documentation satisfactory to Owner).

5.1.2 Upon Substantial Completion, in an amount sufficient to increase total payments to Contractor to 95 % of the Contract Price (with the balance being retainage), less such amounts as Engineer shall determine, or Owner may withhold..

5.1.3 Retainage requirements may be changed to reflect a proposed change to state regulatory statutes.

5.2 *Final Payment.* Upon final completion and acceptance of the Work, Owner shall pay the remainder of the Contract Price as recommended by Engineer.

5.2.1 Contractor's acceptance of final payment shall constitute a full waiver of any and all claims by Contractor against the County arising out of this Agreement or otherwise relating to the Project, except those previously made in writing and identified by Contractor as unsettled at the time of the final Application for Payment. Neither the acceptance of the Work nor payment by the County shall be deemed to be a waiver of the County's right to enforce any obligations of the Contractor hereunder or to the recovery of damages for defective Work not discovered by the Engineer or the County at the time of final inspection.

5.3 Payments Withheld

5.3.1 The Engineer or the County may decline to approve any Applications for Payment, or portions thereof, because of subsequently discovered evidence or subsequent inspections. The Engineer or the County may nullify the whole or any part of any inspections. The Engineer or the County may nullify the whole or any part of any approval for payment previously issued and the County may withhold any payments otherwise due Contractor under this Agreement or any other agreement between the County and the Contractor, to such extent as may be necessary in the County's opinion to protect it from loss because of:

5.3.1.1 Defective Work not remedied;

5.3.1.2 Third party claims filed or reasonable evidence indicating probable filing of such claims;

5.3.1.3 Failure of Contractor to make payment properly to subcontractors or for labor, materials or equipment;

5.3.1.4 Reasonable doubt that the Work can be completed for the unpaid balance of the Contract Amount;

5.3.1.5 Reasonable indication that the Work will not be completed within the Contract Time;

5.3.1.6 Unsatisfactory prosecution of the Work by the Contractor;

5.3.1.7 Failure to provide accurate and current "As-Builts"; or

5.3.1.8 Any other material breach of the Contract Documents.

5.3.2 If these conditions in Subsection 5.3.1 are not remedied or removed, the County may after three (3) days written notice, rectify the same at Contractor's expense. The County also may offset against any sums due Contractor the amount of any liquidated or unliquidated

obligations of Contractor to the County, whether relating to or arising out of his Agreement or any other agreement between Contractor and the County.

Article 6. CONTRACTOR'S REPRESENTATIONS.

In order to induce Owner to enter into this Agreement Contractor makes the following representations:

6.1 Contractor has examined and carefully studied the Contract Documents (including the Addenda listed in Article 7) and the other related data identified in the Project Documents including "technical data."

6.2 Contractor has visited the site and become familiar with and is satisfied as to the general, local, and site conditions that may affect cost, progress, performance or furnishing of the Work.

6.3 Contractor is familiar with and is satisfied as to all federal, state, and local Laws and Regulations that may affect cost, progress, performance and furnishing of the Work.

6.4 Contractor has carefully studied all reports of explorations and tests of subsurface conditions at or contiguous to site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the site (except Underground Facilities) which have been identified in the Bid documents. Contractor acknowledges that such reports and drawings are not Contract Documents and may not be complete for Contractor's purposes. Contractor acknowledges that Owner and Engineer do not assume responsibility for the accuracy or completeness of information and data shown, indicated in the Contract Documents with respect to Underground Facilities at, or contiguous to the site. Contractor has obtained and carefully studied (or assumes responsibility for having done so) all such additional supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the site or otherwise which may affect cost, progress, performance, or furnishing of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor and safety precautions, and programs incident thereto. Contractor does not consider that any additional examinations, investigations, explorations, tests, studies, or data are necessary for the performance and furnishing of the Work at the Contract Price, within the Contract Times and in accordance with the other terms and conditions of the Contract Documents.

6.5 Contractor is aware of the general nature of work to be performed by Owner and others at the site that relates to the Work as indicated in the Contract Documents.

6.6 Contractor has correlated the information known to Contractor, information and observation obtained from visits to the site, reports, and drawings identified in the Contract Documents and all additional examinations, investigations, explorations, tests, studies, and data with the Contract Documents.

6.7 Contractor has given Engineer written notice of all conflicts, errors, ambiguities or discrepancies that Contractor has discovered in the Contract Documents and the written resolution thereof by Engineer is acceptable to Contractor, and the Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

Article 7. CONTRACT DOCUMENTS

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

- 7.1 This Agreement
- 7.2 Exhibit A- Invitation to Bid 21-034 and Contractor's Bid
- 7.3 Exhibit B- Civil Rights Clauses
- 7.4 Exhibit C- Vendors on Scrutinized Companies List
- 7.5 Any other documents necessary to clarify and memorialize the agreement between Contractor and Owner.

Article 8. PUBLIC RECORDS

Any record created by either party in accordance with this Contract shall be retained and maintained in accordance with the public records law, Florida Statutes, Chapter 119.

IF THE CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT WANDA PITTS, (850) 963-1925, wandap@santarosa.fl.gov, 6945 Caroline Street, Milton, FL 32570.

Contractor must comply with the public records laws, Florida Statute chapter 119, specifically Contractor must:

- 8.1 Keep and maintain public records required by the County to perform the service.
- 8.2 Upon request from the County's custodian of public records, provide the County with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in chapter 119 Florida Statutes or as otherwise provided by law.
- 8.3 Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the contract term and following completion of the contract if the consultant does not transfer the records to the County.
- 8.4 Upon completion of the contract, transfer, at no cost, to the County all public records in possession of the contractor or keep and maintain public records required by the County to perform the service. If the contractor transfers all public records to the public agency upon completion of the contract, the consultant shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If the consultant keeps and maintains public records upon completion of the contract, the contractor shall meet all applicable requirements for retaining the public records. All records stored electronically must be provided to the public agency, upon the request from the public agency's custodian of public records, in a format that is compatible with the information technology systems of the public agency.

Article 9. AUDIT

The County and/or its designee shall have the right from time to time at its sole expense to audit the

compliance by the Contractor with the terms, conditions, obligations, limitations, restrictions, and requirements of this Contract and such right shall extend for a period of three (3) years after termination of this Contract.

Article 10. TERMINATION FOR CONVENIENCE

Owner may at any time and for any reason terminate Contractor's services and work at Owner's convenience. Upon receipt of such notice, Contractor shall, unless the notice directs otherwise, immediately discontinue the work and placing of orders for materials, facilities and supplies in connection with the performance of this Agreement.

Upon such termination, Contractor shall be entitled to payment only as follows: (1) the actual cost of the work completed in conformity with this Agreement; plus, (2) such other costs actually incurred by Contractor as are permitted by the prime contract and approved by Owner; (3) plus ten percent (10%) of the cost of the work referred to in subparagraph (1) above for overhead and profit. There shall be deducted from such sums as provided in this subparagraph the amount of any payments made to Contractor prior to the date of the termination of this Agreement. Contractor shall not be entitled to any claim or claim of lien against Owner for any additional compensation or damages in the event of such termination and payment. Further, Owner may terminate this contract immediately for failure of contractor to comply with Chapter 119, Florida Statutes.

Article 11. VIOLATIONS OF CHAPTER 119 FLORIDA STATUTES

The County reserves the right to terminate this agreement immediately for failure of Contractor to adhere to the requirements of Florida Statutes Chapter 119.

Article 12. MISCELLANEOUS.

12.1 Terms used in this Agreement which are defined in the Bid documents.

12.2 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.

12.3 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 to all covenants, agreements, and obligations contained in the Contract Documents.

12.4 Any provisions or part of the Contract Documents held to be void or unenforceable under any Law or Regulation shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon Owner and Contractor, who agree that the Contract Documents shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision

12.5 All documents prepared by the Contractor pursuant to this Agreement and related Services to this Agreement are intended and represented for the ownership of the County only. Any other use by Contractor or other parties shall be approved in writing by the County. If requested, Contractor shall

deliver the documents to the County within fifteen (15) calendar days.

Article 13. GOVERNING LAW, VENUE AND WAIVER OF JURY TRIAL.

This Agreement shall be interpreted and construed in accordance with and governed by the laws of the State of Florida. All parties agree and accept that jurisdiction of any dispute or controversy arising out of this Agreement, and any action involving the enforcement or interpretation of any rights hereunder shall be brought exclusively in the 1st Judicial Circuit in and for Santa Rosa County, Florida, and venue for litigation arising out of this Agreement shall be exclusively in such state courts, forsaking any other jurisdiction which either party may claim by virtue of its residency or other jurisdictional device. In the event it becomes necessary for the County to file a lawsuit to enforce any term or provision under this Agreement, then the County shall be entitled to its costs and attorney's fees at the pretrial, trial and appellate levels. BY ENTERING INTO THIS AGREEMENT, CONTRACTOR AND COUNTY HEREBY EXPRESSLY WAIVE ANY RIGHTS EITHER PARTY MAY HAVE TO A TRIAL BY JURY OF ANY CIVIL LITIGATION RELATED TO THIS AGREEMENT. Nothing in this Agreement is intended to serve as a waiver of sovereign immunity, or of any other immunity, defense, or privilege enjoyed by the County pursuant to Section 768.28, Florida Statutes.

Article 14. CIVIL RIGHTS.

The Contractor agrees to comply with pertinent statutes, Executive Orders and such rules as are promulgated to ensure that no person shall, on the grounds of race, creed, color, national origin, sex, age, or disability be excluded from participating in any activity conducted with or benefiting from Federal assistance. This provision binds the Contractor and subcontractors from the bid solicitation period through the completion of the contract. This provision is in addition to that required by Title VI of the Civil Rights Act of 1964.

ARTICLE 15. COMPLIANCE WITH NONDISCRIMINATION REQUIREMENTS.

During the performance of this Agreement, the Contractor, for itself, its assignees, and successors in interest, agrees as follows:

- a. Compliance with Regulations: The Contractor will comply with the Title VI List of Pertinent Nondiscrimination Acts and Authorities, as they may be amended from time to time, which are herein incorporated and attached hereto as Attachment "C".
- b. Nondiscrimination: The Contractor, with regard to the work performed by it during the Agreement, will not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The Contractor will not participate directly or indirectly in the discrimination prohibited by the Nondiscrimination Acts and Authorities, including employment practices when the contract covers any activity, project, or program set forth in Appendix B of 49 CFR part 21.
- c. Solicitations for Subcontracts, including Procurements of Materials and Equipment: In all solicitations, either by competitive bidding or negotiation made by the Contractor for work to be performed under a subcontract, including procurements of materials, or leases of equipment, each potential subcontractor or supplier will be notified by the Contractor of the contractor's obligations under this contract and the Nondiscrimination Acts and Authorities on the grounds of race, color, or national origin.

d. Information and Reports: The Contractor will provide all information and reports required by the Acts, the Regulations, and directives issued pursuant thereto and will permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the County or other governmental entity to be pertinent to ascertain compliance with such Nondiscrimination Acts and Authorities and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish the information, the Contractor will so certify to the County or the other governmental entity, as appropriate, and will set forth what efforts it has made to obtain the information.

e. Sanctions for Noncompliance: In the event of a Contractor's noncompliance with the non-discrimination provisions of this contract, the County will impose such contract sanctions as it or another applicable state or federal governmental entity may determine to be appropriate, including, but not limited to:

a. Withholding payments to the Contractor under the Agreement until the Contractor complies; and/or

b. Cancelling, terminating, or suspending the Agreement, in whole or in part.

f. Incorporation of Provisions: The Contractor will include the provisions of paragraphs one through six in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Acts, the Regulations, and directives issued pursuant thereto. The Contractor will take action with respect to any subcontract or procurement as the County may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, that if the Contractor becomes involved in, or is threatened with litigation by a subcontractor, or supplier because of such direction, the Contractor may request the County to enter into any litigation to protect the interests of the County. In addition, the Contractor may request the United States to enter into the litigation to protect the interests of the United States.

ARTICLE 16. COMPLIANCE WITH LAWS.

Contractor shall secure any and all permits, licenses and approvals that may be required in order to perform the Services, shall exercise full and complete authority over Contractor's personnel, shall comply with all workers' compensation, employer's liability and all other federal, state, county, and municipal laws, ordinances, rules and regulations required of an employer performing services such as the Services, and shall make all reports and remit all withholdings or other deductions from the compensation paid to Contractor's personnel as may be required by any federal, state, county, or municipal law, ordinance, rule, or regulation.

ARTICLE 17. CONFLICT OF INTEREST.

The Contractor covenants that it presently has no interest and shall not acquire any interest, directly or indirectly which could conflict in any manner or degree with the performance of the Services. The Contractor further covenants that in the performance of this Agreement, no person having any such interest shall knowingly be employed by the Contractor. The Contractor guarantees that he/she has not offered or given to any member of, delegate to the Congress of the United States, any or part of this contract or to any benefit arising therefrom.

ARTICLE 18. INDEPENDENT CONTRACTOR.

Contractor enters into this Agreement as, and shall continue to be, an independent contractor. All services shall be performed only by Contractor and Contractor's employees. Under no circumstances shall Contractor or any of Contractor's employees look to the County as his/her employer, or as partner, agent or principal. Neither Contractor, nor any of Contractor's employees, shall be entitled to any benefits accorded to the County's employees, including without limitation worker's compensation, disability insurance, vacation or sick pay. Contractor shall be responsible for providing, at Contractor's expense, and in Contractor's name, unemployment, disability, worker's compensation and other insurance as well as licenses and permits usual and necessary for conducting the services to be provided under this Agreement.

ARTICLE 19. THIRD PARTY BENEFICIARIES.

It is specifically agreed between the parties executing this Agreement that it is not intended by any of the provisions of any part of the Agreement to create in the public or any member thereof, a third party beneficiary under this Agreement, or to authorize anyone not a party to this Agreement to maintain a suit for personal injuries or property damage pursuant to the terms or provisions of this Agreement.

ARTICLE 20. INDEMNIFICATION AND WAIVER OF LIABILITY.

The Contractor agrees, to the fullest extent permitted by law, to defend, indemnify and hold harmless the County, its agents, representatives, officers, directors, officials and employees from and against claims, damages, losses and expenses (including but not limited to attorney's fees, court costs and costs of appellate proceedings) relating to, arising out of or resulting from the Contractor's negligent acts, errors, mistakes or omissions relating to professional Services performed under this Agreement. The Contractor's duty to defend, hold harmless and indemnify the County its agents, representatives, officers, directors, officials and employees shall arise in connection with any claim, damage, loss or expense that is attributable to bodily injury; sickness; disease; death; or injury to impairment, or destruction of tangible property including loss of use resulting therefrom, caused by any negligent acts, errors, mistakes or omissions related to Services in the performance of this Agreement including any person for whose acts, errors, mistakes or omissions the Contractor may be legally liable. The parties agree that TEN DOLLARS (\$10.00) represents specific consideration to the Contractor for the indemnification set forth herein.

The waiver by a party of any breach or default in performance shall not be deemed to constitute a waiver of any other or succeeding breach or default. The failure of the County to enforce any of the provisions hereof shall not be construed to be a waiver of the right of the County thereafter to enforce such provisions.

ARTICLE 21. TAXES AND ASSESSMENTS.

Contractor agrees to pay all sales, use, or other taxes, assessments and other similar charges when due now or in the future, required by any local, state or federal law, including but not limited to such taxes and assessments as may from time to time be imposed by the County in accordance with this Agreement. Contractor further agrees that it shall protect, reimburse and indemnify County from and assume all liability for its tax and assessment obligations under the terms of the Agreement.

The County is exempt from payment of Florida state sales and use taxes. The Contractor shall not be exempted from paying sales tax to its suppliers for materials used to fulfill contractual obligations with the County, nor is the Contractor authorized to use the County's tax exemption number in securing such materials.

The Contractor shall be responsible for payment of its own and its share of its employees' payroll, payroll taxes, and benefits with respect to this Agreement.

ARTICLE 22. PROHIBITION AGAINST CONTRACTING WITH SCRUTINIZED COMPANIES.

Pursuant to Florida Statutes Section 215.4725, contracting with any entity that is listed on the Scrutinized Companies that Boycott Israel List or that is engaged in the boycott of Israel is prohibited. Contractors must certify that the company is not participating in a boycott of Israel. Any contract for goods or services of One Million Dollars (\$1,000,000) or more shall be terminated at the County's option if it is discovered that the entity submitted false documents of certification, is listed on the Scrutinized Companies with Activities in Sudan List, the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or has been engaged in business operations in Cuba or Syria after July 1, 2018.

Any contract entered into or renewed after July 1, 2018 shall be terminated at the County's option if the company is listed on the Scrutinized Companies that Boycott Israel List or engaged in the boycott of Israel. Contractors must submit the certification that is attached to this agreement as Attachment "D". Submitting a false certification shall be deemed a material breach of contract. The County shall provide notice, in writing, to the Contractor of the County's determination concerning the false certification. The Contractor shall have ninety (90) days following receipt of the notice to respond in writing and demonstrate that the determination was in error. If the Contractor does not demonstrate that the County's determination of false certification was made in error, then the County shall have the right to terminate the contract and seek civil remedies pursuant to Florida Statute Section 215.4725.

ARTICLE 23. INCONSISTENCIES AND ENTIRE AGREEMENT.

If there is a conflict or inconsistency between any term, statement, requirement, or provision of any attachment attached hereto, any document or events referred to herein, or any document incorporated into this Agreement, the term, statement, requirement, or provision contained in this Agreement shall prevail and be given superior effect and priority over any conflicting or inconsistent term, statement, requirement or provision contained in any other document or attachment, including but not limited to Attachments listed in Section 1.

ARTICLE 24. SEVERABILITY.

If any term or condition of this Contract shall be deemed, by a court having appropriate jurisdiction, invalid or unenforceable, the remainder of the terms and conditions of this Contract shall remain in full force and effect. This Contract shall not be more strictly construed against either party hereto by reason of the fact that one party may have drafted or prepared any or all the terms and provisions hereof.

ARTICLE 25. ENTIRE AGREEMENT.

This Agreement and Exhibits A-C contains the entire agreement of the parties, and may be amended, waived, changed, modified, extended or rescinded only by in writing signed by the party against whom any such amendment, waiver, change, modification, extension and/or rescission is sought.

ARTICLE 26. REPRESENTATION OF AUTHORITY TO CONTRACTOR/SIGNATORY.

The individual signing this Agreement on behalf of Contractor represents and warrants that he or she is duly authorized and has legal capacity to execute and deliver this Agreement. The signatory represents and warrants to the County that the execution and delivery of this Agreement and the performance of the

Services and obligations hereunder have been duly authorized and that the Agreement is a valid and legal agreement binding on the Contractor and enforceable in accordance with its terms.

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

This Agreement will be effective on July 13, 2021 (which is the Effective Date of the Agreement).


WITNESS:



Signature


Darrin Johnson

Print Name

BY: 

Cody Rawson, President

ATTEST:



Donald C. Spencer, Clerk of Court



SANTA ROSA COUNTY, FLORIDA

BY: 

David C. Piech, Chairman

SANTA ROSA COUNTY, FLORIDA



ITB 21-034 Edgewood Drive Roadway and Drainage Improvements

June 2021

**OWNER: BOARD OF COUNTY COMMISSIONERS
SANTA ROSA COUNTY, FLORIDA**

**SAM PARKER
ROBERT A. "BOB" COLE
JAMES CALKINS
DAVE PIECH
COLTEN WRIGHT**

**-DISTRICT I
-DISTRICT II
-DISTRICT III
-DISTRICT IV
-DISTRICT V**

SECTION I.
INVITATION TO BID

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SANTA ROSA COUNTY PROCUREMENT DEPARTMENT

6495 Caroline Street, Suite L | Milton, Florida 32570 850-983-1870 procurement@santarosa.fl.gov

MEMORANDUM

SRC Procurement Form Memo 015_00_082719

TO: Company Addressed DATE: May 20, 2021

FROM: Santa Rosa County Procurement Office

SUBJECT: **ITB 21-034 Edgewood Drive Roadway and Drainage Improvements**

Notice is hereby given that the Santa Rosa County Board of County Commissioners will receive sealed bids from qualified licensed contractors for drainage and roadway improvements to Edgewood Drive. This project includes new sidewalks and bike path along Edgewood Drive, new right-turn lane on Edgewood at Hwy 98, clearing and cleaning existing ditches and modifying existing culverts. The project also includes a bid alternate to resurface Edgewood Drive once improvements are completed.

All bids must be in writing and delivered by hand, overnight courier service, or U.S. Mail to the Santa Rosa County Procurement Department, 6495 Caroline Street, Suite M, Milton, Florida 32570, and **must be received by 10:00 a.m. on June 10, 2021** at which time will be publicly opened. Only proposals received by the afore stated time and date will be considered. E-mailed proposal responses will be rejected. All proposals shall be sealed and clearly labeled, "**ITB 21-034 Edgewood Drive Roadway and Drainage Improvements**". Please provide the original proposal, labeled "ORIGINAL", and one (1) electronic file in OCR (readable) PDF format.

A pre-bid conference will be held **on May 27, 2021 at 10:00 A.M.** at the Santa Rosa County Public Services Media Room, 6051 Old Bagdad Highway, Suite 202, Milton, Florida 32583. All interested parties are strongly encouraged to attend.

Specifications may be secured by download from the Santa Rosa County Website: <https://www.santarosa.fl.gov/391/Procurement-Office> "Bid Opportunities". Questions concerning this request should be directed to the Santa Rosa County Procurement Office in writing at bidinfo@santarosa.fl.gov prior to 4:30 p.m. on June 3, 2021.

Santa Rosa County Board of County Commissioners encourages all segments of the business community to participate in its procurement opportunities, including small businesses, minority/women owned businesses, disable veterans and disadvantaged business enterprises. The Board does not discriminate on the basis of race, color, religion, national origin, disability, sex, or age in the administration of contracts.

The Board of County Commissioners reserves the right to waive irregularities in bids, to reject any or all bids with or without cause, and to award the bid that it determines to be in the best interest of Santa Rosa County.

By order of the Board of County Commissioners of Santa Rosa, Florida

SECTION II.
STD ITB – BID INSTRUCTIONS, SUBMITTAL
REQUIREMENTS AND GENERAL BID
REQUIREMENTS

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BID INSTRUCTIONS, SUBMITTAL REQUIREMENTS AND GENERAL BID CONDITIONS

PRE-BID ACTIVITY

Except as provided in this section, respondents are prohibited from contacting or lobbying the County, County Administrator, Commissioners, County staff, and Review Committee members, or any other person authorized on behalf of the County related or involved with the solicitation. All inquiries on the scope of work, specifications, additional requirements, attachments, terms and general conditions or instructions, or any issue must be directed in writing, by US mail or email to: Santa Rosa County Procurement Office, 6495 Caroline Street, Suite L Milton Fl. 32570. Email; Bidinfo@santarosa.fl.gov.

All questions or inquiries must be received no later than the last day for questions stated in the ITB & Legal Notice. Any addenda or other modification to the bid documents will be issued by the County five (5) days prior to the date and time of bid closing, as written addenda, and will be posted to the Santa Rosa County website at <https://www.santarosa.fl.gov> keyword; Bids.

Such written addenda or modification shall be part of the bid documents and shall be binding upon each respondent. Each respondent is required to acknowledge receipt of any and all addenda in writing and submit with their bid. No respondent may rely upon any verbal modification or interpretation.

PROPOSED SCHEDULE

Invitation to Bid Published	May 20, 2021
Pre-Bid Conference;	May 27, 2021 @ 10:00 a.m.
Deadline for Questions	June 3, 2021 @ 4:30 p.m.
Bids Due	June 10, 2021 @ 10:00 a.m.
Bid Reviews/Evaluation	June 10-17, 2021
Recommendation Due	June 18, 2021
Notification of Award	June 21, 2021 (tentatively) *Contingent on BOCC approval
Award by BOCC	July 13, 2021 (tentatively)

PREPARATION OF BID

A Bid form is included in these specifications. The Owner may consider as informal any bid on which there is an alteration of or departure from the Bid Form hereto attached. The respondent shall submit bids in accordance with the public notice.

All blanks in the bid documents shall be completed by printing in ink or by typewriter in both words and numbers with the amounts extended, totaled and the bid signed. A bid price shall be indicated for each section, bid item, alternative, adjustment unit price item, and unit price item listed therein, or the words “No Bid”, “No Change”, or “Not Applicable” entered. No changes shall be made to the phraseology of the form or in the items mentioned therein. In case of any discrepancy between the written amount and the numerical figures, the written amount shall govern. Any bid which contains any omissions, erasures, alterations, additions, irregularities of any kind, or items not called for which shall in any manner fail to conform

BID INSTRUCTIONS, SUBMITTAL REQUIREMENTS AND GENERAL BID CONDITIONS

to the conditions of public notice inviting bids may be rejected.

A bid submitted by a partnership shall be executed in the partnership name and signed by a partner (whose title must appear under the signature). The official address of the partnership shall be shown below the signature.

A bid submitted by a limited liability company shall be executed in the name of the firm by a member and accompanied by evidence of authority to sign. The state of formation of the firm and the official address of the firm must be shown below the signature.

A bid submitted by an individual shall show the respondent's name and official address.

A bid submitted by a joint venture shall be executed by each joint venture in the manner indicated on the bid form. The official address of the joint venture must be shown below the signature.

It is preferred that all signatures be in blue ink with the names type or printed below the signature. Santa Rosa County does not accept electronic signatures in bid submissions.

The bid shall contain an acknowledgement of receipt of all Addenda, the numbers of which shall be filled in on the form. The address and telephone # for communications regarding the bid shall be shown.

If the respondent is an out-of-state corporation, the bid shall contain evidence of respondent's authority and qualification to do business as an out-of-state corporation in the State of Florida. A state contractor license # for the State of Florida shall also be included on the bid form. Respondent shall be licensed in accordance with the requirements of Chapter 489, Florida Statutes.

The Bid shall be based upon the completion of the Work according to the drawings and specifications, together with all addenda thereto.

Bids must include lump sum pricing. Use Bid Form provided in this document. All proposed fees and costs must be broken down and disclosed in the bid.

SUBMITTAL OF BID

A bid shall be submitted no later than the date and time prescribed and at the place indicated in the advertisement or invitation to bid and shall be sealed and clearly labeled with the words "**ITB 21-034 Edgewood Drive Roadway and Drainage Improvements**", name of bidder and date and time of opening so as to guard against premature opening of any bid and shall be accompanied by the bid security and other required documents. It is the respondent's responsibility to assure that its bid is delivered at the proper time and place. Offers by email, facsimile, or telephone will NOT be accepted.

Each contractor's submittal shall include all the items listed on the Bidders Submission Checklist, in order, with the Checklist on the top of the submission.

BID INSTRUCTIONS, SUBMITTAL REQUIREMENTS AND GENERAL BID CONDITIONS

INTEGRITY OF BID DOCUMENTS

Respondents shall use the original Bid documents provided by the Santa Rosa County Procurement Office and enter information only in the spaces where a response is requested. Respondents may use an attachment to the Bid documents if sufficient space is not available. Any modifications or alterations to the original bid documents by the respondent, whether intentional or otherwise, will constitute grounds for rejection of a bid. Any such modification or alteration that a respondent wishes to propose must be clearly stated in the respondent's response in the form of an addendum to the original bid documents.

WITHDRAWAL OF SUBMITTALS

Any Respondent may withdraw its Submittal, either personally or by written request, at any time prior to the scheduled time for opening Submittals.

INTERPRETATION

No oral interpretation will be made to any Bidder as to the meaning of the drawings or specifications. Every interpretation made to a Bidder will be in the form of an Addendum to the specifications. Addenda will be furnished to each Bidder, but it shall be the Bidder's responsibility to make inquiry as to Addenda issued. All such addenda shall become part of the contract and all Bidders shall be bound by such Addenda whether or not received by the Bidders.

BIDS TO REMAIN SUBJECT TO ACCEPTANCE

All bids will remain subject to acceptance or rejection by Santa Rosa County for sixty (60) calendar days after the day of the bid opening. The County may, in its sole discretion, release any bid and return the bid security prior to the end of this period.

CONDITIONAL & INCOMPLETE BIDS

Santa Rosa County specifically reserves the right to reject any conditional bid.

ADDITION/DELETION OF ITEM

The County reserves the right to add or delete any item from this bid or resulting contract when deemed to be in the County's best interest.

SPECIFICATION EXCEPTIONS

Specifications are based on the most current literature available. Respondent shall clearly list any change in the manufacturer's specifications which conflict with the bid specifications. Respondent must also explain any deviation from the bid specification in writing, as a foot note on the applicable bid page and enclose a copy of the manufacturer's specifications data detailing the changed item(s) with their bid. Failure of the respondent to comply with these

BID INSTRUCTIONS, SUBMITTAL REQUIREMENTS AND GENERAL BID CONDITIONS

provisions will result in respondents being held responsible for all costs required to bring the equipment in compliance with bid specifications.

FAMILIARITY WITH LAWS

All applicable Federal and State laws, County and municipal ordinances, orders, rules and regulations of all authorities having jurisdiction over the project shall apply to the bid throughout, and they will be deemed to be included in the contract the same as though they were written in full therein.

EXAMINATION OF DOCUMENTS AND SITE

Before submitting their proposal, the Bidder shall familiarize themselves with the nature and extent of the work and any local conditions that may in any manner affect the work to be done and the equipment, materials, and labor required. Bidder shall also examine all drawings, specifications, addenda and other Contract Documents to be thoroughly informed regarding any and all conditions and requirements that may in any manner affect the work to be performed under the contract.

RIGHT TO REJECT PROPOSAL

The Owner reserves the right to waive informalities in bids to reject any or all bids with or without cause and accept the bid that in its judgment is in the best interest of the County.

DISQUALIFICATION OF RESPONDENTS

Any of the following reasons may be considered as sufficient for the disqualification of a respondent and the rejection of its bid:

Submission of more than one proposal for the same work from an individual, firm or corporation under the same or different name. Evidence that the respondent has a financial interest in the firm of another respondent for the same work.

Evidence of collusion among respondents. Participants in such collusion will receive no recognition as respondents for any future work of the County until such participant has been reinstated as a qualified respondent.

Uncompleted work which in the judgment of the County might hinder or prevent the prompt completion of additional work if awarded.

Failure to pay or satisfactorily settle all bills due for labor and material on former contracts in force at the time of advertisement of proposals. Default under previous contract.

Listing of the respondent by any Local, State or Federal Government on its barred/suspended vendor list.

DISCRIMINATION

An entity or affiliate who has been placed on the discriminatory vendor list may not submit a bid on a contract to provide goods or services to a public entity, may not submit a bid on a contract with a public entity for the construction or repair of a public building or public work,

BID INSTRUCTIONS, SUBMITTAL REQUIREMENTS AND GENERAL BID CONDITIONS

may not submit bids on leases of real property to a public entity, may not award or perform work as a contractor, supplier, subcontractor, or consultant under contract with any public entity, and may not transact business with any public entity.

REVIEW OF PROCUREMENT DOCUMENTS

Per Florida Statute 119.071 (1) 2, sealed bids, proposals, or replies received by the County pursuant to a competitive solicitation are exempt from public disclosure until such time as the County provides notice of an intended decision or until 30 days after opening the bids, proposals, or final replies, whichever is earlier.

COMPLIANCE WITH FLORIDA STATUTE 119.0701

The Respondent shall comply with all the provisions of section 119.0701, Florida Statutes relating to the public records which requires, among other things, that the Respondent: (a) Keep and maintain public records; (b) Provide the public with access to public records on the same terms and conditions that the public agency would provide the records; (c) ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law; and (d) Meet all requirements for retaining public records and transfer, at no cost, to the public agency all public records in possession of the respondent upon termination of the contract.

IF THE CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT (850) 983-1925, wandap@santarosa.fl.gov; 6495 CAROLINE STREET, SUITE C, MILTON, FLORIDA 32570.

SUSPENSION OR TERMINATION FOR CONVENIENCE

The County may, at any time, without cause, order Respondent in writing to suspend, delay or interrupt the work in whole or in part for such period of time as the County may determine, or to terminate all or a portion of the Contract for the County's convenience. Upon such termination, the Contract Price earned to the date of termination shall be paid to Respondent, but Respondent waives any claim for damages, including loss of profits arising out of or related to the early termination. Those Contract provisions which by their nature survive final acceptance shall remain in full force and effect. If the County orders a suspension, the Contract price and Contract time may be adjusted for increases in the cost and time caused by suspension, delay or interruption. No adjustment shall be made to the extent that performance is, was or would have been so suspended, delayed or interrupted by reason for which Respondent is responsible; or that an equitable adjustment is made or denied under another provision of this Contract.

BID INSTRUCTIONS, SUBMITTAL REQUIREMENTS AND GENERAL BID CONDITIONS

FAILURE OF PERFORMANCE/DELIVERY

In case of default by the respondent, the County after due notice (oral or written) may procure the necessary supplies or services from other sources and hold the respondent responsible for difference in cost incurred. Continuous instances of default shall result in cancellation of the award and removal of the respondent from the bid list for duration of one (1) year, at the option of the County.

AUDIT

If requested, respondent shall permit the County or an authorized, independent audit agency to inspect all data and records of respondent relating to its performance and its subcontracts under this bid from the date of the award through three (3) years after the expiration of contract.

NON-COLLUSION

Respondent certifies that it has entered into no agreement to commit a fraudulent, deceitful, unlawful or wrongful act, or any act which may result in an unfair advantage over other respondents. See Florida Statute 838.22.

PUBLIC ENTITY CRIME INFORMATION

Pursuant to Florida Statute 287.133, a respondent may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity; and may not transact business with any public entity in excess of the threshold amount provided in s. 287.017 for CATEGORY TWO for a period of 36 months following the date of being placed on the convicted vendor list.

Note: For respondent's convenience, this certification form is enclosed and is made a part of the bid package.

INVESTIGATION OF RESPONDENT

The County may make such investigations, as it deems necessary to determine the stability of the respondent to perform the work and that there is no conflict of interest as it relates to the project. The respondent shall furnish to the Owner any additional information and financial data for this purpose as the County may request.

CONE OF SILENCE CLAUSE

The Santa Rosa County Board of County Commissioners has established a solicitation silence policy (Cone of Silence Clause) that prohibits oral and written communication regarding all formal solicitations for goods and services (formal bids, Request for Proposals, Requests for Qualifications) issued by the Board through the Procurement Office. The period commences from the date of advertisement until award of contract. All communications shall be directed to the Procurement Office.

BID INSTRUCTIONS, SUBMITTAL REQUIREMENTS AND GENERAL BID CONDITIONS

Note: For respondent's convenience, this certification form is enclosed and is made a part of the bid package.

TIME OF COMPLETION

The entire project shall be completed within **365 calendar days** after the Notice to Proceed date. The date of substantial completion of the work or designated portion thereof is the date certified by the Engineer when construction is sufficiently complete and approved in accordance with the Contract Documents so the Owner can occupy or utilize the work for the use which it was intended.

The date of substantial completion of the work or designated portion thereof is the date certified by the Engineer when construction is sufficiently complete and approved in accordance with the Contract Documents so the Owner can occupy or utilize the work for the use which it was intended.

Liquidated damages will be established in the amount of **\$2,500.00 per calendar day** for each calendar day after completion date if the work is not substantially complete as certified by the Engineer.

Payment requests approved by the Engineer for work completed satisfactorily in accordance with the Contract Documents shall be reduced by a ten percent (10%) retainer. The ten percent (10%) retainer shall be retained by the Owner until final completion and acceptance of the work by the Engineer and Santa Rosa County, Florida.

EVALUATION OF BIDS AND AWARD OF CONTRACT

Santa Rosa County Staff will review all bids and will provide the recommendation to award to the Procurement Office, the County Administrator and the Board of County Commissioners. The County will award the bid to the responsive and responsible vendor(s) with the lowest responsive bid(s). The County reserves the right to award the bid to the respondent submitting a responsive bid with a resulting negotiated agreement which is most advantageous and in the best interest of the County, and to reject any and all bids or to waive any irregularity or technicality in bids received. Santa Rosa County shall be the sole judge of the bid and the resulting negotiated agreement that is in its best interest and its decision shall be final.

Santa Rosa County reserves its right to reject any or all Bids, including without limitation nonconforming, nonresponsive, unbalanced or conditional Bids. The County further reserves the right to reject the Bid of any Bidder whom it finds after reasonable inquiry and evaluation to not be responsible. In evaluating Bidders, the County may consider the qualifications of Bidders and may consider the qualifications and experience of Subcontractors, Suppliers, and other individuals or entities proposed for those portions of the Work for which the identity of Subcontractors, Suppliers, and other individuals or entities must be submitted with the Bid Form.

BID INSTRUCTIONS, SUBMITTAL REQUIREMENTS AND GENERAL BID CONDITIONS

Santa Rosa County reserves the right to waive any informalities or reject any and all bids, in whole or part, to utilize any applicable state contracts in lieu of or in addition to this bid and to accept the bid that in its judgment will best serve the interest of the County.

Santa Rosa County reserves the right to reject any conditional bids and will normally reject those which made it impossible to determine the true amount of the bid. Each item must be bid separately, and no attempt is to be made to tie any item or items to any other item or items.

FORM OF AGREEMENT:

The Contract form shall be provided by the Procurement Office. The successful contractor shall, within 10 days after receipt of the Notice of Award and the contract forms or documents, sign and deliver to the County Procurement Office all required contract documents. The awarded contractor shall also deliver the policies of insurance or insurance certificate as required. All insurance documents shall be approved by Santa Rosa County Procurement Office before the successful contractor may proceed with the work.

BID GUARANTEE:

Each bid shall be submitted on the bid form provided and must be accompanied by a Certified Check or Bid Bond in the amount of five percent (5%) of the Base Bid, and copies of all required licenses. Such Bid Bond or Check is given with the understanding and agreement that it guarantees:

(1) that the bidder will not withdraw his bid for a period of 60 days after the bids have been opened; and, (2) that if his bid is accepted, the Bidder will enter into the written Contract with Santa Rosa County and furnish the required Performance Bond Payment Bond Insurance Certificates, within 10 days after receipt of Notice of Award of his bid. Pursuant to Florida Statutes, Section 255.05, should the contract exceed \$100,000, the Contractor shall be required to execute and record performance and payment bonds. These bonds must state the name and principal business address of both the principal and the surety and a description of the project sufficient to identify it. In the event the bidder fails to comply with any of these conditions and requirements in whole or in part, the full amount of the bond or check shall be automatically forfeited to Santa Rosa County as damages on account of the default of the bidder.

Santa Rosa County
Insurance Requirements
March 2021

Workers' Compensation – meet statutory limits in compliance with the Workers Compensation Laws of Florida. This policy must include Employer Liability with a limit of \$100,000 for each accident, \$500,000 disease policy limit and \$100,000 disease each employee limit.

Commercial General Liability – coverage shall provide minimum limits of liability of \$1,000,000 per occurrence, \$2,000,000 Aggregate, for bodily injury and property damage. This shall include coverage for:

- a. Premises/operations
- b. Products/complete operations
- c. Contractual liability
- d. Independent contractors

Business Auto Liability – coverage shall provide minimum limits \$500,000. Combined Single Limit for bodily injury and property damage. If Split limit coverage is provided Limits of 500,000 per person/500,000 per accident and 500,000 for property damage are required.

This shall include coverage for:

- a. Owned autos
- b. Hired autos
- c. Non-owned autos

Special Requirements:

- 1) Prior to execution of a contract or agreement, certificates of insurance will be produced that shall provide for the following:
 - a. Santa Rosa County shall be named as an additional insured on all coverages except workers' compensation.

b. Santa Rosa County will be given thirty (30) days' notice prior to cancellation or modification of any stipulated insurance.

2) It is the responsibility of the contractor to ensure that all subcontractors comply with all insurance requirements.

3) It should be noted that these are minimum requirements which are subject to modification in response to specialized or high hazard operations.

In the event of unusual circumstances, the County Administrator, or his designee, may adjust these insurance requirements.

Insurance Checklist

Proposal/Project Reference _____

Required Coverage (Marked by "X")	Minimum Limits
1. <input type="checkbox"/> Workers Compensation Proprietor/Executive Officers Exclusion not allowed	\$100,000. Employers Liab. \$100,000. Accident –Disease \$500,000. Disease policy Limit
2. <input type="checkbox"/> Commercial General Liability Including Premises operations-Products completed ops Contractual Liability and Personal and advertising Liability	\$1,000,000. CSL \$2,000,000. Annual Aggregate
3. <input type="checkbox"/> Automobile Liability – including Hired and Non-Owned	\$1,000,000. CSL
4. <input type="checkbox"/> Professional Liability coverage	\$1,000,000. Per Occurrence
5. <input type="checkbox"/> Asbestos Removal Liability	\$2,000,000. Per Occurrence
6. <input type="checkbox"/> Medical Malpractice	\$1,000,000 Per Occurrence
7. <input type="checkbox"/> Garage Liability	\$1,000,000. BI/PD- Occurrence
8. <input type="checkbox"/> Garage Keepers Liability	\$500,000. Comprehensive \$500,000. Collision
9. <input type="checkbox"/> Inland Marine- Bailee’s Insurance	\$ _____
10. <input type="checkbox"/> Moving and Rigging Floater	Endorsement to CGL
11. <input type="checkbox"/> Crime/Dishonesty Bond	\$ _____
12. <input type="checkbox"/> Builders Risk/Installation Floater – Provide coverage in Full amount of Contract.	
13. <input type="checkbox"/> Owner’s Protective Liability	\$ _____
14. <input type="checkbox"/> Excess/Umbrella Liability	\$ _____

General Requirements

- A. Carrier rating shall be A.M. Best rating of B++V or Better.
- B. Notice of Cancellation or Non-renewal or material change in coverage shall be provided to Santa Rosa County at least 30 days prior to action.
- C. Santa Rosa County shall be named as Additional Insured on all policies except Workers' Compensation.

Approved by the BOCC March 23, 2021

SANTA ROSA COUNTY
BOARD OF COUNTY COMMISSIONERS
GENERAL PROVISIONS
SRC Procurement Form GP 019_01_090519

ARTICLE 1: GENERAL PROVISIONS

1.1 BASIC DEFINITIONS

1.1.1 THE CONTRACT DOCUMENTS

The Contract Documents consist of the Agreement between Owner and Contractor (hereinafter the Agreement), Conditions of the Contract (General, Supplementary and other Conditions), Drawings/maps/sketches, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive or (4) a written order for a minor change in the Work issued by the Engineer. Unless specifically enumerated in the Agreement, the Contract Documents do not include other documents such as bidding requirements (advertisement or invitation to bid, Instructions to Bidders, sample forms, the Contractor's bid or portions of Addenda relating to bidding requirements).

1.1.2 THE CONTRACT

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Engineer and Contractor, (2) between the Owner and a Subcontractor or Sub-Subcontractor, (3) between the Owner and Engineer or (4) between any persons or entities other than the Owner and Contractor. The Engineer shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Engineer's duties.

1.1.3 THE WORK

The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

1.1.4 THE PROJECT

The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner or by separate Contractors.

1.1.5 THE DRAWINGS

The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules and diagrams.

1.1.6 THE SPECIFICATIONS

The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.

1.1.7 THE PROJECT MANUAL

The Project Manual is a volume assembled for the Work which may include the bidding

requirements, sample forms, Conditions of the Contract and Specifications.

1.2 CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS

1.2.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

1.2.2 Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

1.2.3 Unless otherwise stated in the Contract Documents, words which have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

1.3 CAPITALIZATION

1.3.1 Terms capitalized in these General Conditions include those which are (1) specifically defined, (2) the titles of numbered articles and identified references to Paragraphs, Subparagraphs and Clauses in the document.

1.4 INTERPRETATION

1.4.1 In the interest of brevity the Contract Documents frequently omit modifying words such as “all” and “any” and articles such as “the” and “an”, but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

1.5 EXECUTION OF CONTRACT DOCUMENTS

1.5.1 The Contract Documents shall be signed by the Owner and Contractor. If either the Owner or Contractor or both do not sign all the Contract Documents, the Engineer shall identify such unsigned Documents upon request.

1.5.2 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed and correlated personal observations with requirements of the Contract Documents.

1.6 OWNERSHIP AND USE OF DRAWINGS/MAPS/SKETCHES, SPECIFICATIONS AND OTHER INSTRUMENTS OF SERVICE

1.6.1 The Drawings/maps/sketches, Specifications and other documents, including those in electronic form, prepared by the Engineer and the Engineer's consultants are Instruments of Service through which the Work to be executed by the Contractor is described. The Contractor may retain one record set. Neither the Contractor nor any Subcontractor, Sub-Subcontractor or material or equipment supplier shall own or claim a copyright in the Drawings, Specifications and other documents prepared by the Engineer or the Engineer's consultants, and unless otherwise indicated the Engineer and the Engineer's consultants shall be deemed the authors of them and will retain all common law, statutory and other reserved rights, in addition to the copyrights. All copies of Instruments of Service, except the Contractor's record set, shall be returned or suitably accounted for to the Engineer, on request, upon completion of the Work. The Drawings, Specifications and other documents prepared by the Engineer and the Engineer's consultants, and copies thereof furnished to the Contractor, are for use solely with respect to this Project. They are not to be used by the Contractor or any Subcontractor, Sub-Subcontractor or material or equipment supplier on other projects or for additions to this Project outside the scope of the Work without the

specific written consent of the Owner, Engineer and the Engineer's consultants. The Contractor, Subcontractors, Sub-Subcontractors and material or equipment suppliers are authorized to use and reproduce applicable portions of the Drawings, Specifications and other documents prepared by the Engineer and the Engineer's consultants appropriate to and for use in the execution of their Work under the Contract Documents. All copies made under this authorization shall bear the statutory copyright notice, if any, shown on the Drawings, Specifications and other documents prepared by the Engineer and the Engineer's consultants. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with this Project is not to be construed as publication in derogation of the Engineer's or Engineer's consultants' copyrights or other reserved rights.

ARTICLE 2: OWNER

2.1 GENERAL

2.1.1 The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Owner shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization. Except as otherwise provided in Subparagraph **4.2.1**, the Engineer does not have such authority. The term "Owner" means the Owner or the Owner's authorized representative.

2.1.2 The Owner shall furnish to the Contractor within fifteen days after receipt of a written request, information necessary and relevant for the Contractor to evaluate, give notice of or enforce mechanic's lien rights. Such information shall include a correct statement of the record legal title to the property on which the Project is located, usually referred to as the site, and the Owner's interest therein.

2.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER

2.2.1 The Owner shall, at the written request of the Contractor, prior to commencement of the Work and thereafter, furnish to the Contractor reasonable evidence that financial arrangements have been made to fulfill the Owner's obligations under the Contract. Furnishing of such evidence shall be a condition precedent to commencement or continuation of the Work. After such evidence has been furnished, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

2.2.2 Except for permits and fees, including those required under Subparagraph **3.7.1**, which are the responsibility of the Contractor under the Contract Documents, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

2.2.3 The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

2.2.4 Information or services required of the Owner by the Contract Documents shall be furnished by the Owner with reasonable promptness. Any other information or services relevant to the Contractor's performance of the Work under the Owner's control shall be furnished by the Owner after receipt from the Contractor of a written request for such information or services.

2.2.5 Unless otherwise provided in the Contract Documents, the Contractor will be furnished, free of charge, such copies of Drawings and Project Manuals as are reasonably necessary for execution of the Work.

2.3 OWNER'S RIGHT TO STOP THE WORK

2.3.1 If the Contractor fails to correct Work which is not in accordance with the requirements of the Contract Documents as required by Paragraph **12.2** or persistently fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Subparagraph **6.1.3**.

2.4 OWNER'S RIGHT TO CARRY OUT THE WORK

2.4.1 If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a seven-day period after receipt of written notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may after such seven-day period give the Contractor a second written notice to correct such deficiencies within a three-day period. If the Contractor within such three-day period after receipt of such second notice fails to commence and continue to correct any deficiencies, the Owner may, without prejudice to other remedies the Owner may have, correct such deficiencies. In such case an appropriate Change Order shall be issued deducting from payments then or thereafter due the Contractor the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Engineer's additional services made necessary by such default, neglect or failure. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Engineer. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner.

ARTICLE 3: CONTRACTOR

3.1 GENERAL

3.1.1 The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The term "Contractor" means the Contractor or the Contractor's authorized representative.

3.1.2 The Contractor shall perform the Work in accordance with the Contract Documents.

3.1.3 The Contractor shall not be relieved of obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Engineer in the Engineer's administration of the Contract, or by tests, inspections or approvals required or performed by persons other than the Contractor.

3.2 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR

3.2.1 Since the Contract Documents are complementary, before starting each portion of the Work, the Contractor shall carefully study and compare the various Drawings and other Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Subparagraph **2.2.3**, shall take field measurements of any existing conditions related to that portion of the Work and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, any errors, inconsistencies or omissions discovered by the Contractor shall be reported promptly to the Engineer as a request for information in such form as the Engineer may require.

3.2.2 Any design errors or omissions noted by the Contractor during this review shall be reported promptly to the Engineer, but it is recognized that the Contractor's review is made in the Contractor's capacity as a Contractor and not as a licensed design professional unless

otherwise specifically provided in the Contract Documents. The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, building codes, and rules and regulations, but any nonconformity discovered by or made known to the Contractor shall be reported promptly to the Engineer.

3.2.3 If the Contractor believes that additional cost or time is involved because of clarifications or instructions issued by the Engineer in response to the Contractor's notices or requests for information pursuant to Subparagraphs **3.2.1** and **3.2.2**, the Contractor shall make Claims as provided in Subparagraphs **4.3.6** and **4.3.7**. If the Contractor fails to perform the obligations of Subparagraphs **3.2.1** and **3.2.2**, the Contractor shall pay such costs and damages to the Owner as would have been avoided if the Contractor had performed such obligations. The Contractor shall not be liable to the Owner or Engineer for damages resulting from errors, inconsistencies or omissions in the Contract Documents or for differences between field measurements or conditions and the Contract Documents unless the Contractor recognized such error, inconsistency, omission or difference and knowingly failed to report it to the Engineer.

3.3 SUPERVISION AND CONSTRUCTION PROCEDURES

3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract, unless the Contract Documents give other specific instructions concerning these matters. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences or procedures, the Contractor shall evaluate the jobsite safety thereof and, except as stated below, shall be fully and solely responsible for the jobsite safety of such means, methods, techniques, sequences or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely written notice to the Owner and Engineer and shall not proceed with that portion of the Work without further written instructions from the Engineer. If the Contractor is then instructed to proceed with the required means, methods, techniques, sequences or procedures without acceptance of changes proposed by the Contractor, the Owner shall be solely responsible for any resulting loss or damage.

3.3.2 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for or on behalf of the Contractor or any of its Subcontractors.

3.3.3 The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work.

3.4 LABOR AND MATERIALS

3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

3.4.2 The Contractor may make substitutions only with the consent of the Owner, after evaluation by the Engineer and in accordance with a Change Order.

3.4.3 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Contract. The Contractor shall not permit employment of unfit persons or persons not skilled in tasks assigned to them.

3.5 WARRANTY

3.5.1 The Contractor warrants to the Owner and Engineer that materials and equipment furnished under the Contract will be of good quality and new unless otherwise required or permitted by the Contract Documents, that the Work will be free from defects not inherent in the quality required or permitted, and that the Work will conform to the requirements of the Contract Documents. Work not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, modifications not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Engineer, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

3.6 TAX

3.6.1 The Contractor shall pay sales, consumer, use and similar taxes for the Work provided by the Contractor which are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

3.7 PERMITS, FEES AND NOTICES

3.7.1 Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit and other permits and governmental fees, licenses and inspections necessary for proper execution and completion of the Work which are customarily secured after execution of the Contract and which are legally required when bids are received or negotiations concluded.

3.7.2 The Contractor shall comply with and give notices required by laws, ordinances, rules, regulations and lawful orders of public authorities applicable to performance of the Work.

3.7.3 It is not the Contractor's responsibility to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, building codes, and rules and regulations. However, if the Contractor observes that portions of the Contract Documents are at variance therewith, the Contractor shall promptly notify the Engineer and Owner in writing, and necessary changes shall be accomplished by appropriate Modification.

3.7.4 If the Contractor performs Work knowing it to be contrary to laws, statutes, ordinances, building codes, and rules and regulations without such notice to the Engineer and Owner, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

3.8 ALLOWANCES

3.8.1 The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities to whom the Contractor has reasonable objection.

3.8.2 Unless otherwise provided in the Contract Documents:

- 1** allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
- 2** Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances;
- 3** whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Clause **3.8.2.1** and (2)

changes in Contractor's costs under Clause **3.8.2.2**.

3.8.3 Materials and equipment under an allowance shall be selected by the Owner in sufficient time to avoid delay in the Work.

3.9 SUPERINTENDENT

3.9.1 The Contractor shall employ competent superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor. Important communications shall be confirmed in writing. Other communications shall be similarly confirmed on written request in each case.

3.10 CONTRACTOR'S CONSTRUCTION SCHEDULES

3.10.1 The Contractor, promptly after being awarded the Contract, shall prepare and submit for prior approval by Owner and Engineer Contractor's construction schedule for the Work. The schedule shall not exceed time limits current under the Contract Documents, shall be revised at appropriate intervals as required by the conditions of the Work and Project, shall be related to the entire Project to the extent required by the Contract Documents, and shall provide for expeditious and practicable execution of the Work.

3.10.2 The Contractor shall prepare and keep current, for the Engineer's approval, a schedule of submittals which is coordinated with the Contractor's construction schedule and allows the Engineer reasonable time to review submittals.

3.10.3 The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner and Engineer.

3.11 DOCUMENTS AND SAMPLES AT THE SITE

3.11.1 The Contractor shall maintain at the site for the Owner one record copy of the Drawings, Specifications, Addenda, Change Orders and other Modifications, in good order and marked currently to record field changes and selections made during construction, and one record copy of approved Shop Drawings, Product Data, Samples and similar required submittals. These shall be available to the Engineer and shall be delivered to the Engineer for submittal to the Owner upon completion of the Work.

3.12 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

3.12.1 Shop Drawings are drawings, diagrams, schedules and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-Subcontractor, manufacturer, supplier or distributor to illustrate some portion of the Work.

3.12.2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

3.12.3 Samples are physical examples which illustrate materials, equipment or workmanship and establish standards by which the Work will be judged.

3.12.4 Shop Drawings, Product Data, Samples, and similar submittals are not Contract Documents. The purpose of their submittal is to demonstrate for those portions of the Work for which submittals are required by the Contract Documents the way by which the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents. Review by the Engineer is subject to the limitations of Subparagraph **4.2.7**. Informational submittals upon which the Engineer is not expected to take responsive action may be so identified in the Contract Documents. Submittals which are not required by the Contract Documents may be returned by the Engineer without action.

- 3.12.5** The Contractor shall review for compliance with the Contract Documents, approve and submit to the Engineer Shop Drawings, Product Data, Samples, and similar submittals required by the Contract Documents with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of separate Contractors. Submittals which are not marked as reviewed for compliance with the Contract Documents and approved by the Contractor may be returned by the Engineer without action.
- 3.12.6** By approving and submitting Shop Drawings, Product Data, Samples, and similar submittals, the Contractor represents that the Contractor has determined and verified materials, field measurements and field construction criteria related thereto, or will do so, and has checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.
- 3.12.7** The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples, or similar submittals until the respective submittal has been approved by the Engineer.
- 3.12.8** The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from requirements of the Contract Documents by the Engineer's approval of Shop Drawings, Product Data, Samples, or similar submittals unless the Contractor has specifically informed the Engineer in writing of such deviation at the time of submittal and (1) the Engineer has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples, or similar submittals by the Engineer's approval thereof.
- 3.12.9** The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples, or similar submittals, to revisions other than those requested by the Engineer on previous submittals. In the absence of such written notice the Engineer's approval of a resubmission shall not apply to such revisions.
- 3.12.10** The Contractor shall not be required to provide professional services which constitute the practice of Engineering or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. The Contractor shall not be required to provide professional services in violation of applicable law. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Engineer will specify all performance and design criteria that such services must satisfy. The Contractor shall cause such services or certifications to be provided by a properly licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Engineer. The Owner and the Engineer shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications or approvals performed by such design professionals, provided the Owner and Engineer have specified to the Contractor all performance and design criteria that such services must satisfy. Pursuant to this Subparagraph **3.12.10**, the Engineer will review, approve or take

other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Contractor shall not be responsible for the adequacy of the performance or design criteria required by the Contract Documents.

3.13 USE OF SITE

3.13.1 The Contractor shall confine operations at the site to areas permitted by law, ordinances, permits and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

3.14 CUTTING AND PATCHING

3.14.1 The Contractor shall be responsible for cutting, fitting or patching required to complete the Work or to make its parts fit together properly.

3.14.2 The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or separate Contractors by cutting, patching or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter such construction by the Owner or a separate Contractor except with written consent of the Owner and of such separate Contractor; such consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold from the Owner or a separate Contractor the Contractor's consent to cutting or otherwise altering the Work.

3.15 CLEANING UP

3.15.1 The Contractor shall keep the premises and surrounding area free from accumulation of waste materials or rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove from and about the Project waste materials, rubbish, the Contractor's tools, construction equipment, machinery and surplus materials.

3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and the cost thereof shall be charged to the Contractor.

3.16 ACCESS TO WORK

3.16.1 The Contractor shall provide the Owner and Engineer access to the Work in preparation and progress wherever located.

3.17 ROYALTIES, PATENTS AND COPYRIGHTS

3.17.1 The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and Engineer harmless from loss on account thereof, but shall not be responsible for such defense or loss when a particular design, process or product of a particular manufacturer or manufacturers is required by the Contract documents or where the copyright violations are contained in Drawings, Specifications or other documents prepared by the Owner or Engineer. However, if the Contractor has reason to believe that the required design, process or product is an infringement of a copyright or a patent, the Contractor shall be responsible for such loss unless such information is promptly furnished to the Engineer.

3.18 INDEMNIFICATION

3.18.1 To the fullest extent permitted by law and to the extent claims, damages, losses or expenses are not covered by Project Management Protective Liability insurance purchased by the Contractor in accordance with Article 11, the Contractor shall indemnify and hold harmless the Owner, Engineer, Engineer's consultants, and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent acts or omissions of the Contractor, a Subcontractor,

anyone directly or indirectly employed by them or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity which would otherwise exist as to a party or person described in this Paragraph **3.18**.

3.18.2 In claims against any person or entity indemnified under this Paragraph **3.18** by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under Subparagraph **3.18.1** shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts or other employee benefit acts.

ARTICLE 4: ADMINISTRATION OF THE CONTRACT

4.1 ENGINEER

4.1.1 The Engineer is the person lawfully licensed to practice Engineerure or an entity lawfully practicing Engineerure identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The term "Engineer" means the Engineer or the Engineer's authorized representative.

4.1.2 Duties, responsibilities and limitations of authority of the Engineer as set forth in the Contract Documents shall not be restricted, modified or extended without written consent of the Owner, Contractor and Engineer. Consent shall not be unreasonably withheld.

4.1.3 If the employment of the Engineer is terminated, the Owner shall employ a new Engineer against whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the former Engineer.

4.2 ENGINEER'S ADMINISTRATION OF THE CONTRACT

4.2.1 The Engineer will provide administration of the Contract as described in the Contract Documents, and will be an Owner's representative (1) during construction, (2) until final payment is due and (3) with the Owner's concurrence, from time to time during the one-year period for correction of Work described in Paragraph **12.2**. The Engineer will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents, unless otherwise modified in writing in accordance with other provisions of the Contract.

4.2.2 The Engineer, as a representative of the Owner, will visit the site at intervals appropriate to the stage of the Contractor's operations (1) to become generally familiar with and to keep the Owner informed about the progress and quality of the portion of the Work completed, (2) to endeavor to guard the Owner against defects and deficiencies in the Work, and (3) to determine in general if the Work is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Engineer will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Engineer will neither have control over or charge of, nor be responsible for, the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents, except as provided in Subparagraph **3.3.1**.

4.2.3 The Engineer will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Engineer will not have control over or charge of and will not be responsible for acts or omissions of the Contractor,

Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

- 4.2.4** Communications Facilitating Contract Administration. Except as otherwise provided in the Contract Documents or when direct communications have been specially authorized, the Owner and Contractor shall endeavor to communicate with each other through the Engineer about matters arising out of or relating to the Contract. Communications by and with the Engineer's consultants shall be through the Engineer. Communications by and with Subcontractors and material suppliers shall be through the Contractor. Communications by and with separate Contractors shall be through the Owner.
- 4.2.5** Based on the Engineer's evaluations of the Contractor's Applications for Payment, the Engineer will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.
- 4.2.6** The Engineer will have authority to reject Work that does not conform to the Contract Documents. Whenever the Engineer considers it necessary or advisable, the Engineer will have authority to require inspection or testing of the Work in accordance with Subparagraphs **13.5.2** and **13.5.3**, whether or not such Work is fabricated, installed or completed. However, neither this authority of the Engineer nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Engineer to the Contractor, Subcontractors, material and equipment suppliers, their agents or employees, or other persons or entities performing portions of the Work.
- 4.2.7** The Engineer will review and approve or take other appropriate action upon the Contractor's submittals such as Shop Drawings, Product Data and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Engineer's action will be taken with such reasonable promptness as to cause no delay in the Work or in the activities of the Owner, Contractor or separate Contractors, while allowing sufficient time in the Engineer's professional judgment to permit adequate review. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Engineer's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Paragraphs **3.3**, **3.5** and **3.12**. The Engineer's review shall not constitute approval of safety precautions or, unless otherwise specifically stated by the Engineer, of any construction means, methods, techniques, sequences or procedures. The Engineer's approval of a specific item shall not indicate approval of an assembly of which the item is a component.
- 4.2.8** The Engineer will prepare Change Orders and Construction Change Directives, and may authorize minor changes in the Work as provided in Paragraph **7.4**.
- 4.2.9** The Engineer will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion, will receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract and assembled by the Contractor, and will issue a final Certificate for Payment upon compliance with the requirements of the Contract Documents.
- 4.2.10** If the Owner and Engineer agree, the Engineer will provide one or more project representatives to assist in carrying out the Engineer's responsibilities at the site. The duties,

responsibilities and limitations of authority of such project representatives shall be as set forth in an exhibit to be incorporated in the Contract Documents.

4.2.11 The Engineer will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Engineer's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If no agreement is made concerning the time within which interpretations required of the Engineer shall be furnished in compliance with this Paragraph **4.2**, then delay shall not be recognized on account of failure by the Engineer to furnish such interpretations until **15** days after written request is made for them.

4.2.12 Interpretations and decisions of the Engineer will be consistent with the intent of and reasonably inferable from the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and initial decisions, the Engineer will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either and will not be liable for results of interpretations or decisions so rendered in good faith.

4.2.13 The Engineer's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

4.3 CLAIMS AND DISPUTES

4.3.1 Definition. A Claim is a demand or assertion by one of the parties seeking, as a matter of right, adjustment or interpretation of Contract terms, payment of money, extension of time or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. Claims must be initiated by written notice. The responsibility to substantiate claims shall rest with the party making the Claim.

4.3.2 Time Limits on Claims. Claims by either party must be initiated within **21** days after occurrence of the event giving rise to such Claim or within **21** days after the claimant first recognizes the condition giving rise to the Claim, whichever is later. Claims must be initiated by written notice to the Engineer and the other party.

4.3.3 Continuing Contract Performance. Pending final resolution of a Claim except as otherwise agreed in writing or as provided in Subparagraph **9.7.1** and Article **14**, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents.

4.3.4 Claims for Concealed or Unknown Conditions. If conditions are encountered at the site which are (1) subsurface or otherwise concealed physical conditions which differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature, which differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, then notice by the observing party shall be given to the other party promptly before Conditions are disturbed and in no event later than **21** days after first observance of the conditions. The Engineer will promptly investigate such conditions and, if they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend an equitable adjustment in the Contract Sum or Contract Time, or both. If the Engineer determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Engineer shall

so notify the Owner and Contractor in writing, stating the reasons. Claims by either party in opposition to such determination must be made within **21** days after the Engineer has given notice of the decision. If the conditions encountered are materially different, the Contract Sum and Contract Time shall be equitably adjusted, but if the Owner and Contractor cannot agree on an adjustment in the Contract Sum or Contract Time, the adjustment shall be referred to the Engineer for initial determination, subject to further proceedings pursuant to Paragraph **4.4**.

4.3.5 Claims for Additional Cost. If the Contractor wishes to make Claim for an increase in the Contract Sum, written notice as provided herein shall be given before proceeding to execute the Work. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Paragraph **10.6**.

4.3.6 If the Contractor believes additional cost is involved for reasons including but not limited to (1) a written interpretation from the Engineer, (2) an order by the Owner to stop the Work where the Contractor was not at fault, (3) a written order for a minor change in the Work issued by the Engineer, (4) failure of payment by the Owner, (5) termination of the Contract by the Owner, (6) Owner's suspension or (7) other reasonable grounds, Claim shall be filed in accordance with this Paragraph **4.3**.

4.3.7 CLAIMS FOR ADDITIONAL TIME

4.3.7.1 If the Contractor wishes to make Claim for an increase in the Contract Time, written notice as provided herein shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay only one Claim is necessary.

4.3.7.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated and had an adverse effect on the scheduled construction.

4.3.8 Injury or Damage to Person or Property. If either party to the Contract suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, written notice of such injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding **21** days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

4.3.9 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed in a proposed Change Order or Construction Change Directive so that application of such unit prices to quantities of Work proposed will cause substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

4.3.10 Claims for Consequential Damages. The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes:

1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and

2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit except anticipated profit arising directly from the

Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Subparagraph 4.3.10 shall be deemed to preclude an award of liquidated direct damages, when applicable, in accordance with the requirements of the Contract Documents.

4.4 RESOLUTION OF CLAIMS AND DISPUTES

4.4.1 The Engineer will review Claims and take one or more of the following preliminary actions within ten days of receipt of a Claim: (1) request additional supporting data from the claimant; (2) submit a schedule to the parties indicating when the Engineer expects to take action; (3) reject the Claim in whole or in part stating reasons for rejection; (4) recommend approval of the Claim by the other party; or (5) suggest a compromise. The Engineer may also, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim.

4.4.2 If a Claim has been resolved, the Engineer will prepare or obtain appropriate documentation.

4.4.3 If a Claim has not been resolved, the party making the Claim shall, within ten days after the Engineer's preliminary response take one or more of the following actions: (1) submit additional supporting data requested by the Engineer; (2) modify the initial Claim; or (3) notify the Engineer that the initial Claim stands.

4.4.4 If a Claim has not been resolved after consideration of the foregoing and of further evidence presented by the parties or requested by the Engineer, the Engineer will notify the parties in writing that the Engineer's decision will be made within seven days, which decision shall be final and binding on the parties. Upon expiration of such time period, the Engineer will render to the parties the Engineer's written decision relative to the Claim, including any change in the Contract Sum or Contract Time or both. If there is a surety and there appears to be a possibility of a Contractor's default, the Engineer may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

ARTICLE 5: SUBCONTRACTORS

5.1 DEFINITIONS

5.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include a separate Contractor or Subcontractors of a separate Contractor.

5.1.2 A Sub-Subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term "Sub-Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-Subcontractor or an authorized representative of the Sub-Subcontractor.

5.2 AWARD OF SUBCONTRACTS AND OTHER CONTRACTS FOR PORTIONS OF THE WORK

5.2.1 Unless otherwise stated in the Contract Documents or the bidding requirements, the Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner through the Engineer the names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for each principal portion of the Work. The Engineer will promptly reply to the Contractor in writing stating

whether or not the Owner or the Engineer, after due investigation, has reasonable objection to any such proposed person or entity. Failure of the Owner or Engineer to reply promptly shall constitute notice of no reasonable objection.

5.2.2 The Contractor shall not contract with a proposed person or entity to whom the Owner or Engineer has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

5.2.3 If the Owner or Engineer has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Engineer has no reasonable objection. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.

5.2.4 The Contractor shall not change a Subcontractor, person or entity previously selected if the Owner or Engineer makes reasonable objection to such substitute.

5.3 SUBCONTRACTUAL RELATIONS

5.3.1 By appropriate agreement, written where legally required for validity, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work, which the Contractor, by these Documents, assumes toward the Owner and Engineer. Each subcontract agreement shall preserve and protect the rights of the Owner and Engineer under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-Subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement which may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-Subcontractors.

5.4 CONTINGENT ASSIGNMENT OF SUBCONTRACTS

5.4.1 Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner provided that:

- 1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Paragraph **14.2** and only for those subcontract agreements which the Owner accepts by notifying the Subcontractor and Contractor in writing; and
- 2 assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

5.4.2 Upon such assignment, if the Work has been suspended for more than **30** days, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension.

ARTICLE 6: CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

6.1 OWNER'S RIGHT TO PERFORM CONSTRUCTION AND TO AWARD SEPARATE CONTRACTS

- 6.1.1** The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and to award separate contracts in connection with other portions of the Project or other construction or operations on the site under Conditions of the Contract identical or substantially similar to these including those portions related to insurance and waiver of subrogation. If the Contractor claims that delay or additional cost is involved because of such action by the Owner, the Contractor shall make such Claim as provided in Paragraph 4.3.
- 6.1.2** When separate contracts are awarded for different portions of the Project or other construction or operations on the site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.
- 6.1.3** The Owner shall provide for coordination of the activities of the Owner's own forces and of each separate Contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with other separate Contractors and the Owner in reviewing their construction schedules when directed to do so. The Contractor shall make any revisions to the construction schedule deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the Contractor, separate Contractors and the Owner until subsequently revised.
- 6.1.4** Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces, the Owner shall be deemed to be subject to the same obligations and to have the same rights which apply to the Contractor under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6 and Articles 10, 11 and 12.

6.2 MUTUAL RESPONSIBILITY

- 6.2.1** The Contractor shall afford the Owner and separate Contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.
- 6.2.2** If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a separate Contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly report to the Engineer apparent discrepancies or defects in such other construction that would render it unsuitable for such proper execution and results. Failure of the Contractor so to report shall constitute an acknowledgment that the Owner's or separate Contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work, except as to defects not then reasonably discoverable.
- 6.2.3** The Owner shall be reimbursed by the Contractor for costs incurred by the Owner which are payable to a separate Contractor because of delays, improperly timed activities or defective construction of the Contractor. The Owner shall be responsible to the Contractor for costs incurred by the Contractor because of delays, improperly timed activities, damage to the Work, or defective construction of a separate Contractor.
- 6.2.4** The Contractor shall promptly remedy damage wrongfully caused by the Contractor to completed or partially completed construction or to property of the Owner or separate

Contractors as provided in Subparagraph **10.2.5**.

6.2.5 The Owner and each separate Contractor shall have the same responsibilities for cutting and patching as are described for the Contractor in Subparagraph **3.14**.

6.3 OWNER'S RIGHT TO CLEAN UP

6.3.1 If a dispute arises among the Contractor, separate Contractors and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Engineer will allocate the cost among those responsible.

ARTICLE 7: CHANGES IN THE WORK

7.1 GENERAL

7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.

7.1.2 A Change Order shall be based upon agreement among the Owner, Contractor and Engineer; a Construction Change Directive requires agreement by the Owner and Engineer and may or may not be agreed to by the Contractor; an order for a minor change in the Work may be issued by the Engineer alone.

7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents, and the Contractor shall proceed promptly, unless otherwise provided in the Change Order, Construction Change Directive or order for a minor change in the Work.

7.2 CHANGE ORDERS

7.2.1 A Change Order is a written instrument prepared by the Engineer and signed by the Owner, Contractor and Engineer, stating their agreement upon all of the following:

- 1 change in the Work;
- 2 the amount of the adjustment, if any, in the Contract Sum; and
- 3 the extent of the adjustment, if any, in the Contract Time.

7.2.2 Methods used in determining adjustments to the Contract Sum may include those listed in Subparagraph **7.3.3**.

7.3 CONSTRUCTION CHANGE DIRECTIVES

7.3.1 A Construction Change Directive is a written order prepared by the Engineer and signed by the Owner and Engineer, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

7.3.2 A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

7.3.3 If the Construction Change directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

- 1 mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
- 2 unit prices stated in the Contract Documents or subsequently agreed upon;
- 3 cost to be determined in a manner agreed upon by the parties and a mutually acceptable

fixed or percentage fee; or

4 as provided in Subparagraph 7.3.6.

7.3.4 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Engineer of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.

7.3.5 A Construction Change Directive signed by the Contractor indicates the agreement of the Contractor therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

7.3.6 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the method and the adjustment shall be determined by the Engineer on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, a reasonable allowance for overhead and profit. In such case, and also under Clause 7.3.3.3, the Contractor shall keep and present, in such form as the Engineer may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Subparagraph 7.3.6 shall be limited to the following:

- 1 costs of labor, including social security, old age and unemployment insurance, fringe benefits required by agreement or custom, and workers' compensation insurance;
- 2 costs of materials, supplies and equipment, including cost of transportation, whether incorporated or consumed;
- 3 rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;
- 4 costs of premiums for all bonds and insurance, permit fees, and sales, use or similar taxes related to the Work; and
- 5 additional costs of supervision and field office personnel directly attributable to the change.

7.3.7. The amount of credit to be allowed by the Contractor to the Owner for a deletion or change which results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Engineer. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

7.3.8 Pending final determination of the total cost of a Construction Change Directive to the Owner, amounts not in dispute for such changes in the Work shall be included in Applications for Payment accompanied by a Change Order indicating the parties' agreement with part or all of such costs. For any portion of such cost that remains in dispute, the Engineer will make an interim determination for purposes of monthly certification for payment for those costs. That determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a claim in accordance with Article 4.

7.3.9 When the Owner and Contractor agree with the determination made by the Engineer concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach

agreement upon the adjustments, such agreement shall be effective immediately and shall be recorded by preparation and execution of an appropriate Change Order.

7.4 MINOR CHANGES IN THE WORK

7.4.1 The Engineer will have authority to order minor changes in the Work not involving adjustment in the Contract Sum or extension of the Contract Time and not inconsistent with the intent of the Contract Documents. Such changes shall be effected by written order and shall be binding on the Owner and Contractor. The Contractor shall carry out such written orders promptly.

ARTICLE 8: TIME

8.1 DEFINITIONS

8.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

8.1.2 The date of commencement of the Work is the date established in the Agreement. The date shall not be postponed by the failure to act of the Contractor or of persons or entities for whom the Contractor is responsible.

8.1.3 The date of Substantial Completion is the date certified by the Engineer in accordance with Paragraph **9.8**.

8.1.4 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

8.2 PROGRESS AND COMPLETION

8.2.1 Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement the Contractor confirms that the Contract Time is a reasonable period for performing the work.

8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, prematurely commence operations on the site or elsewhere prior to the effective date of insurance required by Article **11** to be furnished by the Contractor and Owner. The date of commencement of the Work shall not be changed by the effective date of such insurance. Unless the date of commencement is established by the Contract Documents or a notice to proceed given by the Owner, the Contractor shall notify the Owner in writing not less than five days or other agreed period before commencing the Work to permit the timely filing of mortgages, mechanic's liens and other security interests.

8.2.3 The Contractor shall proceed with the project expeditiously and continuously with adequate forces and shall achieve Substantial Completion within the Contract Time. Contractor shall progress with and maintain continuous construction even if construction is ahead of the approved construction schedule.

If the percentage dollar value of the completed work is 15% or more below the dollar value of work that should have been completed in accordance with the approved construction schedule, further payment under this contract to Contractor shall be suspended until the percentage dollar value of completed work is within 5% of the dollar value of work that should have been completed in accordance with the approved construction schedule.

8.3 DELAYS AND EXTENSIONS OF TIME

8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by an act or neglect of the Owner or Engineer, or of an employee of either, or of a separate Contractor employed by the Owner, or by changes ordered in the Work, or by labor

disputes, fire, unusual delay in deliveries; unavoidable casualties or other causes beyond the Contractor's control, then the Contract Time shall be extended by Change Order for such reasonable time as the Engineer may determine.

8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Paragraph 4.3.

ARTICLE 9: PAYMENTS AND COMPLETION

9.1 CONTRACT SUM

9.1.1 The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

9.2 SCHEDULE OF VALUES

9.2.1 Before the first Application for Payment, the Contractor shall submit to the Engineer a schedule of values allocated to various portions of the Work, prepared in such form and supported by such data to substantiate its accuracy as the Engineer may require. This schedule, unless objected to by the Engineer, shall be used as a basis for reviewing the Contractor's Applications for Payment.

9.3 APPLICATIONS FOR PAYMENT

9.3.1 At least ten days before the date established for each progress payment, the Contractor shall submit to the Engineer an itemized Application for Payment for operations completed in accordance with the schedule of values. Such application shall be notarized, if required, and supported by such data substantiating the Contractor's right to payment as the Owner or Engineer may require, such as copies of requisitions from Subcontractors and material suppliers, and reflecting retainage if provided for in the Contract Documents.

9.3.1.1 As provided in Subparagraph 7.3.8, such applications may include requests for payment on account of changes in the Work which have been properly authorized by Construction Change Directives, or by interim determination of the Engineer, but not yet included in Change Orders.

9.3.1.2 Such applications may not include requests for payment for portions of the Work for which the Contractor does not intend to pay to a Subcontractor or material supplier, unless such Work has been performed by others whom the Contractor intends to pay.

9.3.2 Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage and transportation to the site for such materials and equipment stored off the site.

9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information and belief, be free and clear of liens, claims, security interests or encumbrances in favor of the Contractor, Subcontractors, material suppliers, or other persons or entities making a claim by reason of having provided

labor, materials and equipment relating to the Work.

9.4 CERTIFICATES FOR PAYMENT

9.4.1 The Engineer will, within seven days after receipt of the Contractor's Application for Payment, either issue to the Owner a Certificate for Payment, with a copy to the Contractor, for such amount as the Engineer determines is properly due, or notify the Contractor and Owner in writing of the Engineer's reasons for withholding certification in whole or in part as provided in Subparagraph **9.5.1**.

9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Engineer to the Owner, based on the Engineer's evaluation of the Work and the data comprising the Application for Payment, that the Work has progressed to the point indicated and that, to the best of the Engineer's knowledge, information and belief, the quality of the Work is in accordance with the Contract Documents. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion and to specific qualifications expressed by the Engineer. The issuance of a Certificate for Payment will further constitute a representation that the Contractor is entitled to payment in the amount certified. However, the issuance of a Certificate for Payment will not be a representation that the Engineer has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work, (2) reviewed construction means, methods, techniques, sequences or procedures, (3) reviewed copies of requisitions received from Subcontractors and material suppliers and other data requested by the Owner to substantiate the Contractor's right to payment, or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

9.5 DECISIONS TO WITHHOLD CERTIFICATION

9.5.1 The Engineer may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Engineer's opinion the representations to the Owner required by Subparagraph **9.4.2** cannot be made. If the Engineer is unable to certify payment in the amount of the Application, the Engineer will notify the Contractor and Owner as provided in Subparagraph **9.4.1**. If the Contractor and Engineer cannot agree on a revised amount, the Engineer will promptly issue a Certificate for Payment for the amount for which the Engineer is able to make such representations to the Owner. The Engineer may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Engineer's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Subparagraph **3.3.2**, because of:

- 1** defective Work not remedied;
- 2** third party claims filed or reasonable evidence indicating probable filing of such claims unless security acceptable to the Owner is provided by the Contractor;
- 3** failure of the Contractor to make payments properly to Subcontractors or for labor, materials or equipment;
- 4** reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- 5** damage to the Owner or another Contractor;
- 6** reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages

for the anticipated delay; or

7 persistent failure to carry out the Work in accordance with the Contract Documents.

9.5.2 When the above reasons for withholding certification are removed, certification will be made for amounts previously withheld.

9.6 PROGRESS PAYMENTS

9.6.1 After the Engineer has issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents, and shall so notify the Engineer.

9.6.2 The Contractor shall promptly pay each Subcontractor, upon receipt of payment from the Owner, out of the amount paid to the Contractor on account of such Subcontractor's portion of the Work, the amount to which said Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of such Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-Subcontractors in a similar manner.

9.6.3 The Engineer will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Engineer and Owner on account of portions of the Work done by such Subcontractor.

9.6.4 Neither the Owner nor Engineer shall have an obligation to pay or to see to the payment of money to a Subcontractor except as may otherwise be required by law.

9.6.5 Payment to material suppliers shall be treated in a manner similar to that provided in Subparagraphs 9.6.2, 9.6.3 and 9.6.4.

9.6.6 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

9.6.7 Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor for Work properly performed by Subcontractors and suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, shall create any fiduciary liability or tort liability on the part of the Contractor for breach of trust or shall entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

9.7 FAILURE OF PAYMENT

9.7.1 If the Engineer does not issue a Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven days after the date established in the Contract Documents the amount certified by the Engineer or awarded by arbitration, then the Contractor may, upon seven additional days' written notice to the Owner and Engineer, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shut-down, delay and start-up, plus interest as provided for in the Contract Documents.

9.8 SUBSTANTIAL COMPLETION

- 9.8.1** Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use.
- 9.8.2** When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Engineer a comprehensive list of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.
- 9.8.3** Upon receipt of the Contractor's list, the Engineer will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Engineer's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Engineer. In such case, the Contractor shall then submit a request for another inspection by the Engineer to determine Substantial Completion.
- 9.8.4** When the Work or designated portion thereof is substantially complete, the Engineer will prepare a Certificate of Substantial Completion which shall establish the date of Substantial Completion, shall establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance, and shall fix the time within which the Contractor shall finish all items on the list accompanying the Certificate, Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.
- 9.8.5** The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in such Certificate. Upon such acceptance and consent of surety, if any, the Owner shall make payment of retainage applying to such Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

9.9 PARTIAL OCCUPANCY OR USE

- 9.9.1** The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer as required under Article 11 and authorized by public authorities having jurisdiction over the Work. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Engineer as provided under Subparagraph **9.8.2**. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Engineer.
- 9.9.2** Immediately prior to such partial occupancy or use, the Owner, Contractor and Engineer

shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

9.9.3 Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

9.10 FINAL COMPLETION AND FINAL PAYMENT

9.10.1 Upon receipt of written notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Engineer will promptly make such inspection and, when the Engineer finds the Work acceptable under the Contract Documents and the Contract fully performed, the Engineer will promptly issue a final Certificate for Payment stating that to the best of the Engineer's knowledge, information and belief, and on the basis of the Engineer's on-site visits and inspections, the Work has been completed in accordance with terms and conditions of the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Engineer's final Certificate for Payment will constitute a further representation that conditions listed in Subparagraph **9.10.2** as precedent to the Contractor's being entitled to final payment have been fulfilled.

9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Engineer (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect and will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner, (3) a written statement that the Contractor knows of no substantial reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment and (5), if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts, releases and waivers of liens, claims, security interests or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien. If such lien remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging such lien, including all costs and reasonable attorneys' fees.

9.10.3 If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Engineer so confirms, the Owner shall, upon application by the Contractor and certification by the Engineer, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Engineer prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

9.10.4 The making of final payment shall constitute a waiver of Claims by the Owner except

those arising from:

- 1 liens, claims, security interests or encumbrances arising out of the Contract and unsettled;
- 2 failure of the Work to comply with the requirements of the Contract Documents; or
- 3 terms of special warranties required by the Contract Documents.

9.10.5 Acceptance of final payment by the Contractor, a Subcontractor or material supplier shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

ARTICLE 10: PROTECTION OF PERSONS AND PROPERTY

10.1 SAFETY PRECAUTIONS AND PROGRAMS

10.1.1 The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the performance of the Contract.

10.2 SAFETY OF PERSONS AND PROPERTY

10.2.1 The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury or loss to:

- 1 employees on the Work and other persons who may be affected thereby;
- 2 the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody or control of the Contractor or the Contractor's Subcontractors or Sub-Subcontractors; and
- 3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

10.2.2 The Contractor shall give notices and comply with applicable laws, ordinances, rules, regulations and lawful orders of public authorities bearing on safety of persons or property or their protection from damage, injury or loss.

10.2.3 The Contractor shall erect and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations and notifying owners and users of adjacent sites and utilities.

10.2.4 When use or storage of explosives or other hazardous materials or equipment or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel.

10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Clauses 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, a Subcontractor, a Sub-Subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Clauses 10.2.1.2 and 10.2.1.3, except damage or loss attributable to acts or omissions of the Owner or Engineer or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Paragraph 3.18.

10.2.6 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the

Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner and Engineer.

10.2.7 The Contractor shall not load or permit any part of the construction or site to be loaded so as to endanger its safety.

10.3 EMERGENCIES

10.3.1 In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Paragraph **4.3** and Article **7**.

ARTICLE 11: INSURANCE AND BONDS

11.1 CONTRACTOR'S LIABILITY INSURANCE

11.1.1 The Contractor shall purchase from and maintain in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located such insurance as will protect the Contractor from claims set forth below which may arise out of or result from the Contractor's operations under the Contract and for which the Contractor may be legally liable, whether such operations be by the Contractor or by a Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable.

- 1** claims under workers' compensation, disability benefit and other similar employee benefit acts which are applicable to the Work to be performed;
- 2** claims for damages because of bodily injury, occupational sickness or disease, or death of the Contractor's employees;
- 3** claims for damages because of bodily injury, sickness or disease, or death of any person other than the Contractor's employees;
- 4** claims for damages insured by usual personal injury liability coverage;
- 5** claims for damages, other than to the Work itself, because of injury to or destruction of tangible property, including loss of use resulting therefrom;
- 6** claims for damages because of bodily injury, death of a person or property damage arising out of ownership, maintenance or use of a motor vehicle;
- 7** claims for bodily injury or property damage arising out of completed operations; and
- 8** claims involving contractual liability insurance applicable to the Contractor's obligations under Paragraph **3.18**.

11.1.2 The insurance required by Subparagraph **11.1.1** shall be written for not less than limits of liability specified in the Contract Documents or required by law, whichever coverage is greater. Coverages, whether written on an occurrence or claims-made basis, shall be maintained without interruption from date of commencement of the Work until date of final payment and termination of any coverage required to be maintained after final payment.

11.1.3 Certificates of insurance acceptable to the Owner shall be filed with the Owner prior to commencement of the Work. These certificates and the insurance policies required by this Paragraph **11.1** shall contain a provision that coverages afforded under the policies will not be canceled or allowed to expire until at least **30** days prior written notice has been given to the Owner. If any of the foregoing insurance coverages are required to remain in force after final payment and are reasonably available, an additional certificate evidencing continuation of such coverage shall be submitted with the final Application for Payment as required by Subparagraph **9.10.2**. Information concerning reduction of coverage on account

of revised limits or claims paid under the General Aggregate, or both, shall be furnished by the Contractor with reasonable promptness in accordance with the Contractor's information and belief.

11.2 INDEMNIFICATION AND INSURANCE

11.2.1. Contractor agrees to save harmless, indemnify, and defend Owner and its, agents, officers and employees from any and all claims, losses, penalties, interest, demands, judgments, and costs of suit, including attorneys fees and paralegals' fees, for any expense, damage or liability incurred by any of them, whether for personal injury, death, property damage, direct or consequential damages, or economic loss, including environmental impairment, arising directly or indirectly on account of or in connection with the work done by Contractor under this agreement or by any person, firm or corporation (including but not limited to the Engineer/engineer) to whom any portion of the work is subcontracted by Contractor or resulting from the use by Contractor, or by any one for whom Contractor is legally liable, of any materials, tools, machinery or other property of Owner. Owner and Contractor agree the first \$100.00 of the contract amount paid by Owner to Contractor shall be given as separate consideration for this indemnification, and any other indemnification of Owner by Contractor provided for within the Contract Documents, the sufficiency of such separate consideration being acknowledged by Contractor by Contractor's acceptance and execution of the agreement. The Contractor's obligation shall not be limited by, or in any way to, any insurance coverage or by any provision in or exclusion or omission from any policy of insurance. The Contractor agrees to pay on behalf of Santa Rosa County, as well as provide a legal defense for the Owner, both of which will be done only if and when requested by the Owner, for all claims made. Such payment on the behalf of the Owner shall be in addition to any and all other legal remedies available to the Owner and shall not be considered to be the Owner's exclusive remedy.

11.2.2. Contractor shall obtain and carry, at all times during its performance under the Contract Documents, insurance of the types and in the amounts set forth in Article 11. All insurance policies shall be from responsible companies duly authorized to do business in the State of Florida and/or responsible risk retention group insurance companies or trusts which are registered with the State of Florida. Foreign or offshore insurance carriers are not acceptable for work under this contract unless admitted to the State of Florida. All commercial insurance carriers providing the Contractor with required insurance shall be "A" (excellent) rated with a minimum financial size category of "IX", according to the A. M. Best Key Rating Guide, latest edition. Within ten (10) calendar days after notice of award is received by Contractor and prior to the commencement of work, Contractor shall provide Owner with properly executed certificates of insurance to evidence Contractor's compliance with the insurance requirements of the Contract Documents. Said certificates of insurance shall be on forms approved by Owner, such as "Acord Form 25". The certificates of insurance shall be personally, manually signed by the authorized representatives of the insurance company/companies shown on the certificates of insurance, with proof that they are authorized representatives thereof. Certificates of insurance shall be mailed to Santa Rosa County Board of County Commissioners in care of: Daniel J. Schebler, County Administrator, 6495 Caroline Street, Suite D, Milton, Florida 32570. In addition, true and exact copies of all insurance policies required hereunder shall be provided to Owner, on a timely basis, when requested by Owner.

11.2.3. The certificates of insurance and required insurance policies shall contain provisions that thirty (30) days prior written notice by registered or certified mail shall be given Owner of any cancellation, intent not to renew, or reduction in the policies or coverages, except in the application of the aggregate limits provisions. In the event of a reduction in the

aggregate limit of any policy, Contractor shall immediately take steps to have the aggregate limit reinstated to the full extent permitted under such policy.

- 11.2.4.** All insurance coverages of the Contractor shall be primary to any insurance or self insurance program carried by the Owner applicable to this project. The acceptance by Owner of any certificate of insurance does not constitute approval or agreement by the Owner that the insurance requirements have been satisfied or that the insurance policy shown on the certificate of insurance is in compliance with the requirements of the Contract Documents. No work shall commence at the project site unless and until the required certificates of insurance are received by the Owner
- 11.2.5.** Contractor shall require each of its Subcontractors to procure and maintain, until the completion of the Subcontractor's work, insurance of the types and to the limits specified in Article 11, unless such insurance requirements for the Subcontractor is expressly waived in writing by the Owner. All liability insurance policies, other than professional liability, worker's compensation and employer's liability policies, obtained by Contractor to meet the requirements of the Contract Documents shall name the Santa Rosa County Board of County Commissioners as an additional insured and shall contain severability of interest provisions. The Board of County Commissioners shall also be designated as certificate holder with the address of 6495 Caroline Street, Suite M, Milton, Florida 32570. If any insurance provided pursuant to the Contract Documents expires prior to the completion of the work, renewal certificates of insurance and, if requested by Owner, certified, true copies of the renewal policies, shall be furnished by Contractor within thirty (30) days prior to the date of expiration. Upon expiration of an insurance policy term during the course of work under the contract, succeeding insurance policies shall be consecutive to the expiring policy.
- 11.2.6** All liability policies shall be underwritten on the "occurrence" basis, unless otherwise approved in writing by the county division of risk management. "Claims made" policies, if approved by the risk manager, and subsequent insurance certificates shall provide a "retro-date" which shall include the effective date of the contract. "Claims-made" renewals or carrier and policy replacements shall reflect the original "retro-date."
- 11.2.7** Should at any time the Contractor not maintain the insurance coverages required herein, the Owner may terminate the agreement or at its sole discretion shall be authorized to purchase such coverages and charge the Contractor for such coverages purchased. The Owner shall be under no obligation to purchase such insurance, nor shall it be responsible for the coverages purchased or the insurance company or companies used. The decision of the Owner to purchase such insurance coverages shall in no way be construed to be a waiver of any of its rights under the Contract Documents.
- 11.2.8** Contractor shall submit to Owner a copy of all accident reports arising out of any personal injuries or property damages arising or alleged to have arisen on account of any work by Contractor or Subcontractor under the Contract Documents.
- 11.2.9** Duty to Provide Legal Defense. The Contractor agrees to pay, to Santa Rosa County, as well as provide a legal defense for the Owner, which shall include attorneys' fees and costs, both of which will be done only if and when requested by the Owner, for all claims as described in paragraph 13.1. Such payment on the behalf of the Owner shall be in addition to any and all other legal remedies available to the Owner and shall not be considered to be the Owner's exclusive remedy.

11.3 PERFORMANCE BOND AND PAYMENT BOND

11.3.1 BONDS

11.3.1.1 Contractor shall provide performance and payment bonds, in the form prescribed in Exhibit B, in the amount of 100% of the contract amount, the costs of which to be paid by Contractor. The performance and payment bonds shall be underwritten by a surety authorized to do business in the State of Florida and otherwise acceptable to Owner; provided; however, the surety shall be rated as "A" or better and Class XII or higher rating as to financial size category and the amount required shall not exceed 2% of the reported policy holders surplus, all as reported in the most current best key rating guide, published by A.M. Best Company, Inc. of 75 Fulton Street, New York, New York 10038.

11.3.1.2 If the surety for any bond furnished by Contractor is declared bankrupt, becomes insolvent, its right to do business is terminated in the State of Florida, or it ceases to meet the requirements imposed by the Contract Document, the Contractor shall, within five (5) calendar days thereafter, substitute another bond and surety, both of which shall be subject to the Owner's approval.

11.3.1.3 As per Florida Statutes, Section 255.05, the Contractor shall be required to execute and record the performance and payment bonds. The bonds must state the name and principal business address of both the principal and the surety and a description of the project sufficient to identify it.

ARTICLE 12: UNCOVERING AND CORRECTION OF WORK

12.1 UNCOVERING OF WORK

12.1.1 If a portion of the Work is covered contrary to the Engineer's request or to requirements specifically expressed in the Contract Documents, it must, if required in writing by the Engineer, be uncovered for the Engineer's examination and be replaced at the Contractor's expense without change in the Contract Time.

12.1.2 If a portion of the Work has been covered which the Engineer has not specifically requested to examine prior to its being covered, the Engineer may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, costs of uncovering and replacement shall, by appropriate Change Order, be at the Owner's expense. If such Work is not in accordance with the Contract Documents, correction shall be at the Contractor's expense unless the condition was caused by the Owner or a separate Contractor in which event the Owner shall be responsible for payment of such costs.

12.2 CORRECTION OF WORK

12.2.1 BEFORE OR AFTER SUBSTANTIAL COMPLETION

12.2.1.1 The Contractor shall promptly correct Work rejected by the Engineer or failing to conform to the requirements of the Contract Documents, whether discovered before or after Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections and compensation for the Engineer's services and expenses made necessary thereby, shall be at the Contractor's expense.

12.2.2 AFTER SUBSTANTIAL COMPLETION

12.2.2.1 In addition to the Contractor's obligations under Paragraph 3.5, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Subparagraph 9.9.1, or by terms of an applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract

Documents, the Contractor shall correct it promptly after receipt of written notice from the Owner to do so unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one- year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Engineer, the Owner may correct it in accordance with Paragraph 2.4.

12.2.2.2 The one-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual performance of the Work.

12.2.2.3 The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Paragraph 12.2.

12.2.3 The Contractor shall remove from the site portions of the Work which are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

12.2.4 The Contractor shall bear the cost of correcting destroyed or damaged construction, whether completed or partially completed, of the Owner or separate Contractors caused by the Contractor's correction or removal of Work which is not in accordance with the requirements of the Contract Documents.

12.2.5 Nothing contained in this Paragraph 12.2 shall be construed to establish a period of limitation with respect to other obligations which the Contractor might have under the Contract Documents. Establishment of the one-year period for correction of Work as described in Subparagraph 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

12.3 ACCEPTANCE OF NONCONFORMING WORK

12.3.1 If the Owner prefers to accept Work which is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

ARTICLE 13: MISCELLANEOUS PROVISIONS

13.1 GOVERNING LAW

13.1.1 The Contract shall be governed by the law of the place where the Project is located.

13.2 SUCCESSORS AND ASSIGNS

13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns and legal representatives to the other party hereto and to partners, successors, assigns and legal representatives of such other party in respect to covenants, agreements and obligations contained in the Contract Documents. Except as provided in Subparagraph 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make such an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

13.2.2 The Owner may, without consent of the Contractor, assign the Contract to an institutional lender providing construction financing for the Project. In such event, the lender shall assume the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate such assignment.

13.3 WRITTEN NOTICE

13.3.1 Written notice shall be deemed to have been duly served if delivered in person to the individual or a member of the firm or entity or to an officer of the corporation for which it was intended, or if delivered at or sent by registered or certified mail to the last business address known to the party giving notice.

13.4 RIGHTS AND REMEDIES

13.4.1 Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights and remedies otherwise imposed or available by law.

13.4.2 No action or failure to act by the Owner, Engineer or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach thereunder, except as may be specifically agreed in writing.

13.5 TESTS AND INSPECTIONS

13.5.1 Tests, inspections and approvals of portions of the Work required by the Contract Documents or by laws, ordinances, rules, regulations or orders of public authorities having jurisdiction shall be made at an appropriate time. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections and approvals. The Contractor shall give the Engineer timely notice of when and where tests and inspections are to be made so that the Engineer may be present for such procedures. The Owner shall bear costs of tests, inspections or approvals which do not become requirements until after bids are received or negotiations concluded.

13.5.2 If the Engineer, Owner or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection or approval not included under Subparagraph **13.5.1**, the Engineer will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection or approval by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Engineer of when and where tests and inspections are to be made so that the Engineer may be present for such procedures. Such costs, except as provided in Subparagraph **13.5.3**, shall be at the Owner's expense.

13.5.3 If such procedures for testing, inspection or approval under Subparagraphs **13.5.1** and **13.5.2** reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure including those of repeated procedures and compensation for the Engineer's services and expenses shall be at the Contractor's expense.

13.5.4 Required certificates of testing, inspection or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Engineer.

13.5.5 If the Engineer is to observe tests, inspections or approvals required by the Contract Documents, the Engineer will do so promptly and, where practicable, at the normal place of testing.

13.5.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

13.6 **INTEREST**

13.6.1 Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at such rate as the parties may agree upon in writing or, in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

13.7 **COMMENCEMENT OF STATUTORY LIMITATION PERIOD**

13.7.1 As between the Owner and Contractor:

- 1** Before Substantial Completion. As to acts or failures to act occurring prior to the relevant date of Substantial Completion, any applicable statute of limitations shall commence to run and any alleged cause of action shall be deemed to have accrued in any and all events not later than such date of Substantial Completion;
- 2** Between Substantial Completion and Final Certificate for Payment. As to acts or failures to act occurring subsequent to the relevant date of Substantial Completion and prior to issuance of the final Certificate for Payment, any applicable statute of limitations shall commence to run and any alleged cause of action shall be deemed to have accrued in any and all events not later than the date of issuance of the final Certificate for Payment; and
- 3** After Final Certificate for Payment. As to acts or failures to act occurring after the relevant date of issuance of the final Certificate for Payment, any applicable statute of limitations shall commence to run and any alleged cause of action shall be deemed to have accrued in any and all events not later than the date of any act or failure to act by the Contractor pursuant to any Warranty provided under Paragraph **3.5**, the date of any correction of the Work or failure to correct the Work by the Contractor under Paragraph **12.2**, or the date of actual commission of any other act or failure to perform any duty or obligation by the Contractor or Owner, whichever occurs last.

ARTICLE 14: TERMINATION OR SUSPENSION OF THE CONTRACT

14.1 **TERMINATION BY THE CONTRACTOR**

14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of **30** consecutive days through no act or fault of the Contractor or a Subcontractor, Sub-Subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, for any of the following reasons.

- 1** issuance of an order of a court or other public authority having jurisdiction which requires all Work to be stopped;
- 2** an act of government, such as a declaration of national emergency which requires all Work to be stopped;
- 3** because the Engineer has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Subparagraph **9.4.1**, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents; or
- 4** the Owner has failed to furnish to the Contractor promptly, upon the Contractor's request, reasonable evidence as required by Subparagraph **2.2.1**.

14.1.2 The Contractor may terminate the Contract if, through no act or fault of the Contractor or a Subcontractor, Sub-Subcontractor or their agents or employees or any other persons

or entities performing portions of the Work under direct or indirect contract with the Contractor, repeated suspensions, delays or interruptions of the entire Work by the Owner as described in Paragraph 14.3 constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, or 365 days in any 365-day period, whichever is less.

14.1.3 If one of the reasons described in Subparagraph 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' written notice to the Owner and Engineer, terminate the Contract and recover from the Owner only as provided in Subparagraph 14.3.1.

14.1.4 *If the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor or a Subcontractor or their agents or employees or any other persons performing portions of the Work under contract with the Contractor because the Owner has persistently failed to fulfill the Owner's obligations under the Contract Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven additional days' written notice to the Owner and the Engineer, terminate the Contract and recover from the Owner only as provided in Subparagraph 14.3.1.*

14.2 TERMINATION FOR DEFAULT

14.2.1 Contractor shall be considered in material default of the agreement and such default shall be considered cause for Owner to terminate the agreement, in whole or in part, as further set forth in this section, if Contractor: (1) fails to begin the work under the Contract Documents within the time specified herein; or (2) fails to properly and timely perform the work as directed by the Owner or as provided for in the approved progress schedule; or (3) performs the work unsuitably or neglects or refuses to remove materials or to correct or replace such work as may be rejected as unacceptable or unsuitable; or (4) discontinues the prosecution of the work; or (5) fails to resume work which has been suspended within a reasonable time after being notified to do so; or (6) becomes insolvent or is declared bankrupt, or commits any act of bankruptcy; or (7) allows any final judgment to stand against it unsatisfied for more than ten (10) days; or (8) makes an assignment for the benefit of creditors; or (9) fails to obey any applicable codes, laws, ordinances, rules or regulations with respect to the work; or (10) materially breaches any other provision of the Contract Documents.

14.2.2 Owner shall notify Contractor in writing of Contractor's default(s). If Owner determines that Contractor has not remedied and cured the default(s) within seven (7) calendar days following receipt by Contractor of said written notice, then Owner, at its option, without releasing or waiving its rights and remedies against the Contractor's sureties and without prejudice to any other right or remedy it may be entitled to hereunder or by law, may terminate Contractor's right to proceed under the agreement, in whole or in part, and take possession of all or any portion of the work and any materials, tools, equipment, and appliances of Contractor, take assignments of any of Contractor's subcontracts and purchase orders, and complete all or any portion of Contractor's work by whatever means, method or agency which Owner, in its sole discretion, may choose.

14.2.3 If Owner deems any of the foregoing remedies necessary, Contractor agrees that is shall not be entitled to receive any further payments hereunder until after the project is completed. All monies expended and all of the costs, losses, damages and extra expenses, including all management, administrative and other overhead and other direct and indirect expenses (including attorneys' fees) or damages incurred by Owner incident to such completion, shall be deducted from the contract amount, and if such expenditures exceed the unpaid balance of the contract amount, Contractor agrees to pay promptly to Owner

on demand the full amount of such excess, including costs of collection, attorney's fees (including appeals) and interest thereon at the maximum legal rate of interest until paid. If the unpaid balance of the contract amount exceeds all such costs, expenditures and damages incurred by the Owner to complete the work, such excess shall be paid to the Contractor. The amount to be paid to the Contractor or Owner, as the case may be, and this obligation for payment shall survive termination of the agreement.

14.2.4. The liability of Contractor hereunder shall extend to and include the full amount of any and all sums paid, expenses and losses incurred, damages sustained, and obligations assumed by Owner in good faith under the belief that such payments or assumptions were necessary or required, in completing the work and providing labor, materials, equipment, supplies, and other items therefor or re-letting the work, in settlement, discharge or compromise of any claims, demands, suits, and judgments pertaining to or arising out of the work hereunder.

14.2.5 If, after notice of termination of Contractor's right to proceed pursuant to this section, it is determined for any reason that Contractor was not in default, or that its default was excusable, or that Owner is not entitled to the remedies against Contractor provided herein, then Contractor's remedies against Owner shall be the same as and limited to those afforded Contractor below under subsection **14.3.1**, termination for convenience.

14.3 TERMINATION FOR CONVENIENCE AND RIGHT OF SUSPENSION

14.3.1. Owner shall have the right to terminate this agreement without cause upon seven (7) calendar days written notice to Contractor. In the event of such termination for convenience, Contractor's recovery against Owner shall be limited to that portion of the contract amount earned through the date of termination, together with any retainage withheld and reasonable termination expenses incurred, but Contractor shall not be entitled to any other or further recovery against Owner, including, but not limited to, damages or any anticipated profit on portions of the work not performed.

14.3.2. Owner shall have the right to suspend all or any portions of the work upon giving Contractor two (2) calendar days' prior written notice of such suspension. If all or any portion of the work is so suspended, Contractor's sole and exclusive remedy shall be to seek an extension of time to its schedule in accordance with the procedures set forth in the Contract Documents. In no event shall the Contractor be entitled to any additional compensation or damages. Provided, however, if the ordered suspension exceeds three (3) months, the Contractor shall have the right to terminate the agreement with respect to that portion of the work which is subject to the ordered suspension.

SANTA ROSA COUNTY
BOARD OF COUNTY COMMISSIONERS
SUPPLEMENTAL PROVISIONS
SRC Procurement Form SP 020_00_082719

ARTICLE 1: SUPPLEMENTAL PROVISIONS

1.0 GENERAL CONDITIONS:

The following conditions supplement, modify, change, delete from or add to the General Provisions of the Contract, Articles 1 through 14. Where an Article of the General Provisions is modified or a Paragraph, Subparagraph, or Clause thereof is modified or deleted by these supplements, the unaltered provisions of that Article, Paragraph, Subparagraph, or Clause shall remain in effect.

2.0 FORM OF CONTRACT AND BONDS:

The contract form as furnished by Santa Rosa County shall be utilized. Performance and Payment Bond forms as approved by Santa Rosa County shall be utilized.

3.0 MATERIALS:

Whenever “or approved equal” is indicated, items proposed for use shall be submitted for Engineer’s approval. Wherever an item or class of material is specified exclusively by trade name or by name of the maker or by catalog reference, only such items shall be used unless previously approved through addenda by the Engineer. Should the Contractor desire to substitute another material for one or more specified by name they shall state the credit or extra involved by the use of such material, in their bid. No such materials shall be used unless approved in writing by the Engineer.

4.0 PROGRESS CHART:

Within ten (10) days after receipt of signed Contract the Contractor shall file with the Engineer a progress chart showing the order in which the Contractor proposes to accomplish the work, the dates on which he proposes to begin the various parts of the work and the dates he contemplates completing them.

5.0 TIME FOR COMPLETION:

Time for completion of all work included in this contract shall not exceed **365 days** from date of written Notice to proceed. The number of days allowed does not include an allowance for calendar days missed due to weather. Extension of time will be allowed for delays due to weather if properly documented and reported to the Engineer.

6.0 PRECONSTRUCTION CONFERENCE:

Within ten (10) days after the effective date of the agreement, but before Contractor starts the work at the Project site, a conference will be held for review and acceptance of the schedules referred to in paragraph 4.0, to establish procedures for processing applications for payment, and to establish a working understanding among the parties as to the work.

7.0 RECORD KEEPING

The Contractor shall maintain all relevant project records for three years after the Owner has made final payment to the Contractor.

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SITE CONSTRUCTION DOCUMENTS FOR EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

PREPARED FOR
SANTA ROSA COUNTY



6495 CAROLINE STREET SUITE M
MILTON, FLORIDA 32570
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COUNTY COMMISSIONERS

- DISTRICT 1** SAM PARKER
- DISTRICT 2** ROBERT A. COLE (VICE CHAIRMAN)
- DISTRICT 3** JAMES CALKINS
- DISTRICT 4** DAVE PIECH (CHAIRMAN)
- DISTRICT 5** COLTEN WRIGHT

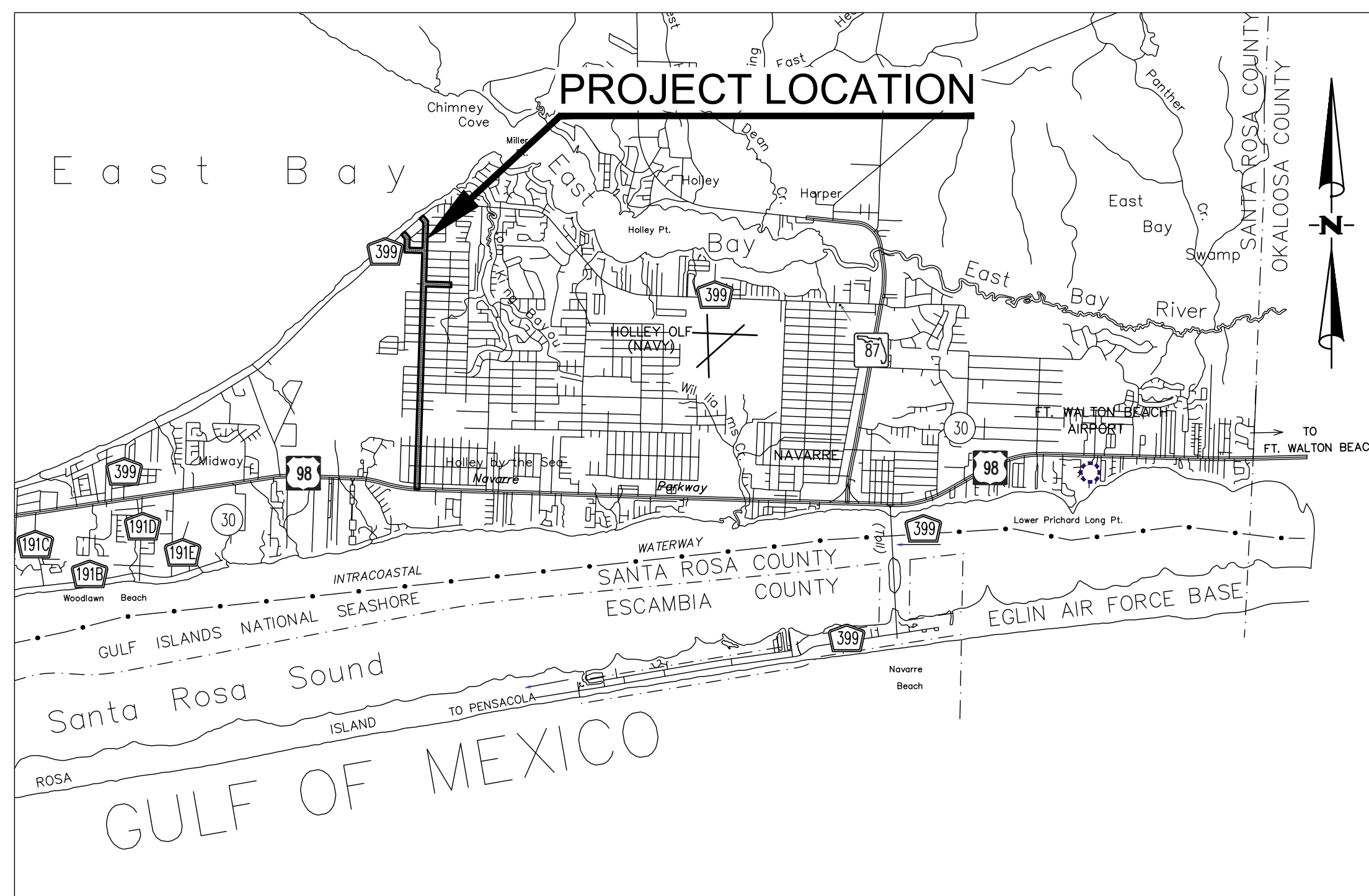
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CIVIL ENGINEERS

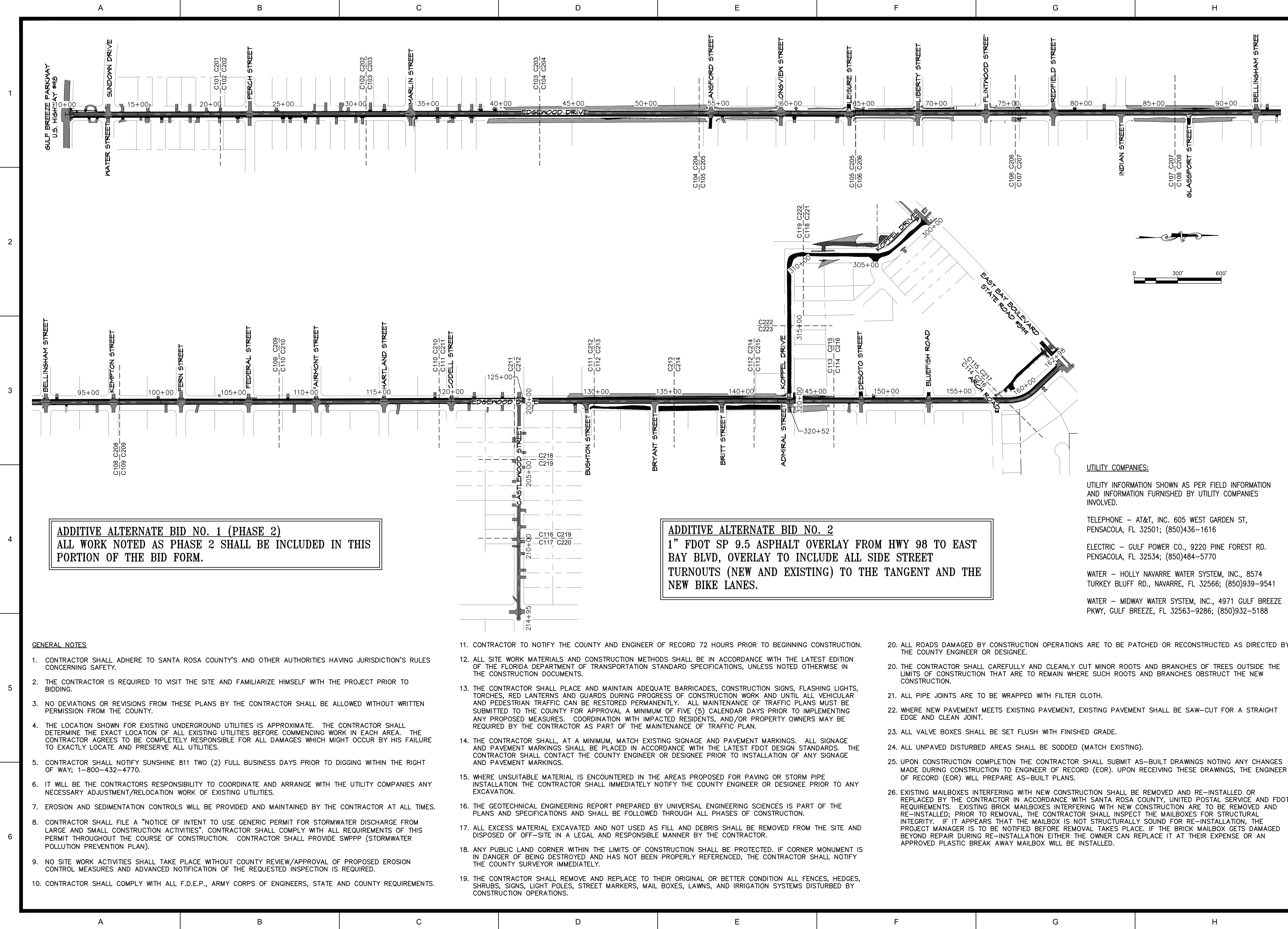
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FL. CERTIFICATE OF AUTHORIZATION NO. 8268

MARCH 2021



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26	C208 EDGEWOOD DR (STA. 86+45 - 97+15) PLAN
27	C209 EDGEWOOD DR (STA. 97+15 - 108+15) PLAN
28	C210 EDGEWOOD DR (STA. 108+15 - 119+15) PLAN
29	C211 EDGEWOOD DR (STA. 119+15 - 124+35) PLAN
30	C212 EDGEWOOD DR (STA. 124+35 - 129+85) PLAN AND PROFILE
31	C213 EDGEWOOD DR (STA. 129+85 - 135+35) PLAN AND PROFILE
32	C214 EDGEWOOD DR (STA. 135+35 - 140+85) PLAN AND PROFILE
33	C215 EDGEWOOD DR (STA. 140+85 - 146+50) PLAN AND PROFILE
34	C216 EDGEWOOD DR (STA. 146+50 - 157+85) PLAN
35	C217 EDGEWOOD DR (STA. 157+85 - 162+98) PLAN
36	C218 CASTLEWOOD ST (STA. 200+00 - 204+65) PLAN AND PROFILE
37	C219 CASTLEWOOD ST (STA. 204+65 - 209+85) PLAN AND PROFILE
38	C220 CASTLEWOOD ST (STA. 209+85 - 214+95) PLAN AND PROFILE
39	C221 KOPPEL DR (STA. 300+00 - 309+35) PLAN
40	C222 KOPPEL DR (STA. 309+35 - 314+85) PLAN AND PROFILE
41	C223 KOPPEL DR (STA. 314+85 - 302+50) PLAN AND PROFILE
42	C301 STA. 10+36.05 - 15+76 CRITICAL CROSS SECTIONS
43	C302 STA. 16+64 - 19+71 CRITICAL CROSS SECTIONS
44	C303 STA. 20+64 - 25+00 CRITICAL CROSS SECTIONS
45	C304 STA. 25+48 - 28+66 CRITICAL CROSS SECTIONS
46	C305 STA. 29+00 - 32+00 CRITICAL CROSS SECTIONS
47	C306 STA. 34+21 - 38+60.50 CRITICAL CROSS SECTIONS
48	C307 STA. 39+59 - 60+36 CRITICAL CROSS SECTIONS
49	C308 STA. 63+20 - 79+55 CRITICAL CROSS SECTIONS
50	C309 STA. 81+60 - 95+58 CRITICAL CROSS SECTIONS
51	C310 STA. 99+80 - 111+44 CRITICAL CROSS SECTIONS
52	C311 STA. 116+36 - 125+54 CRITICAL CROSS SECTIONS
53	C312 STA. 126+00 - 130+00 CRITICAL CROSS SECTIONS
54	C313 STA. 131+00 - 136+00 CRITICAL CROSS SECTIONS
55	C314 STA. 137+00 - 142+00 CRITICAL CROSS SECTIONS
56	C315 STA. 143+00 - 157+35.08 CRITICAL CROSS SECTIONS
57	C316 STA. 157+39.89 - 162+70.33 CRITICAL CROSS SECTIONS
58	C501 DETAILS
59	C600 STORMWATER POLLUTION PREVENTION PLAN (SWPPP)
60	C601 EROSION CONTROL DETAILS
61	C701 FDOT INDEXES
62	C702 FDOT INDEXES

**BID SET
NOT RELEASED FOR CONSTRUCTION**



ADDITIVE ALTERNATE BID NO. 1 (PHASE 2)
 ALL WORK NOTED AS PHASE 2 SHALL BE INCLUDED IN THIS PORTION OF THE BID FORM.

ADDITIVE ALTERNATE BID NO. 2
 1" FDOT SP 9.5 ASPHALT OVERLAY FROM HWY 98 TO EAST BAY BLVD, OVERLAY TO INCLUDE ALL SIDE STREET TURNOUTS (NEW AND EXISTING) TO THE TANGENT AND THE NEW BIKE LANES.

GENERAL NOTES

- CONTRACTOR SHALL ADHERE TO SANTA ROSA COUNTY'S AND OTHER AUTHORITIES HAVING JURISDICTION'S RULES CONCERNING SAFETY.
- THE CONTRACTOR IS REQUIRED TO VISIT THE SITE AND FAMILIARIZE HIMSELF WITH THE PROJECT PRIOR TO BIDDING.
- NO DEVIATIONS OR REVISIONS FROM THESE PLANS BY THE CONTRACTOR SHALL BE ALLOWED WITHOUT WRITTEN PERMISSION FROM THE COUNTY.
- THE LOCATION SHOWN FOR EXISTING UNDERGROUND UTILITIES IS APPROXIMATE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK IN EACH AREA. THE CONTRACTOR AGREES TO BE COMPLETELY RESPONSIBLE FOR ALL DAMAGES WHICH MIGHT OCCUR BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ALL UTILITIES.
- CONTRACTOR SHALL NOTIFY SUNSHINE 811 TWO (2) FULL BUSINESS DAYS PRIOR TO DIGGING WITHIN THE RIGHT OF WAY; 1-800-432-4770.
- IT WILL BE THE CONTRACTORS RESPONSIBILITY TO COORDINATE AND ARRANGE WITH THE UTILITY COMPANIES ANY NECESSARY ADJUSTMENT/RELOCATION WORK OF EXISTING UTILITIES.
- EROSION AND SEDIMENTATION CONTROLS WILL BE PROVIDED AND MAINTAINED BY THE CONTRACTOR AT ALL TIMES.
- CONTRACTOR SHALL FILE A "NOTICE OF INTENT TO USE GENERIC PERMIT FOR STORMWATER DISCHARGE FROM LARGE AND SMALL CONSTRUCTION ACTIVITIES". CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS OF THIS PERMIT THROUGHOUT THE COURSE OF CONSTRUCTION. CONTRACTOR SHALL PROVIDE SWPPP (STORMWATER POLLUTION PREVENTION PLAN).
- NO SITE WORK ACTIVITIES SHALL TAKE PLACE WITHOUT COUNTY REVIEW/APPROVAL OF PROPOSED EROSION CONTROL MEASURES AND ADVANCED NOTIFICATION OF THE REQUESTED INSPECTION IS REQUIRED.
- CONTRACTOR SHALL COMPLY WITH ALL F.D.E.P., ARMY CORPS OF ENGINEERS, STATE AND COUNTY REQUIREMENTS.

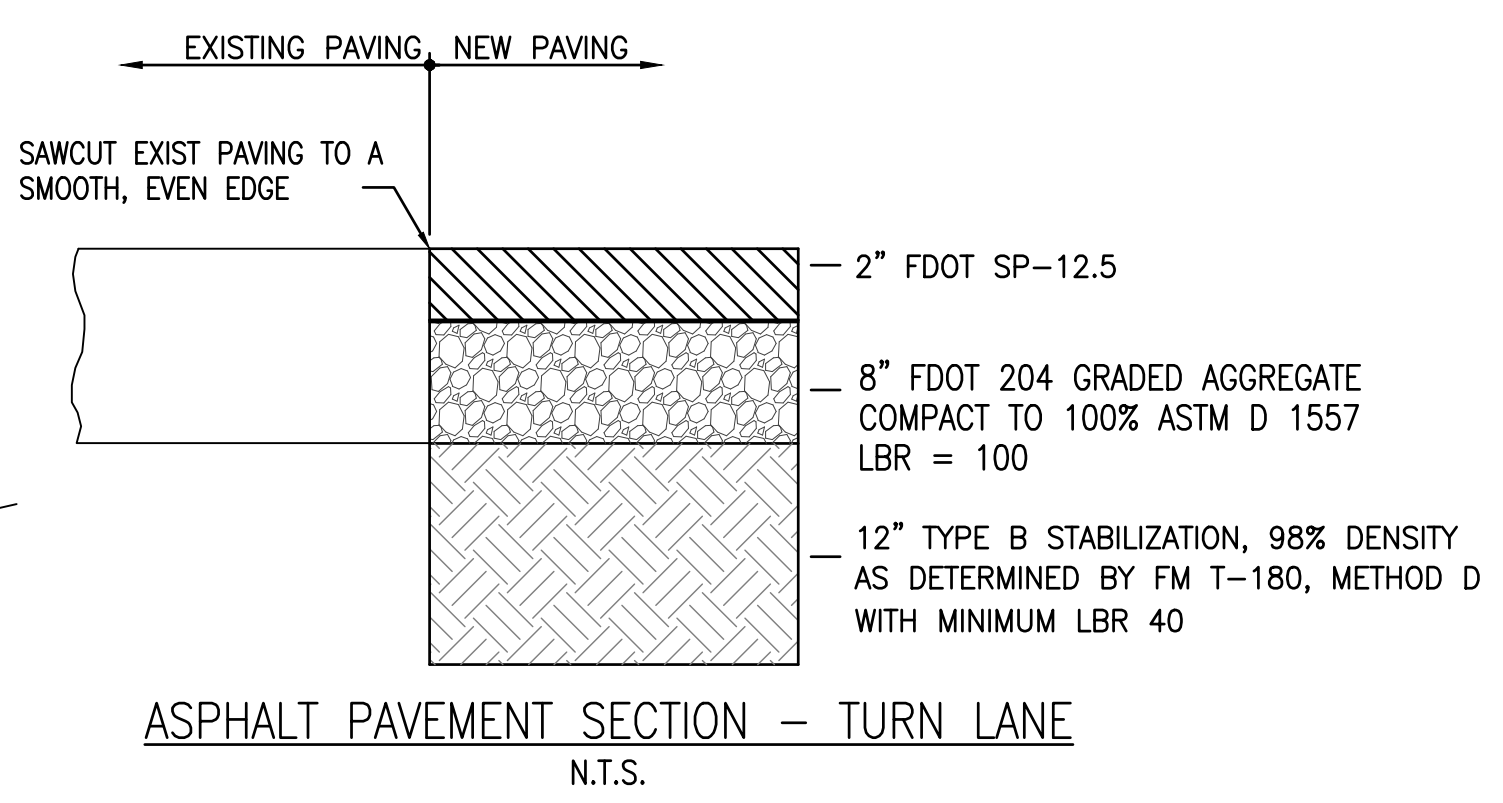
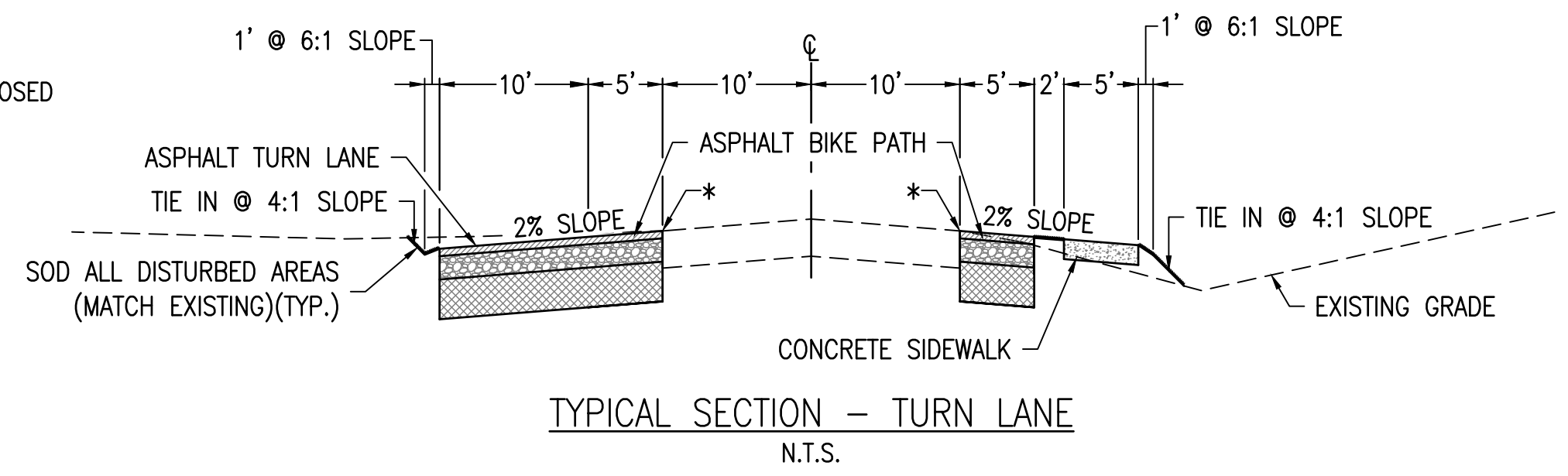
- CONTRACTOR TO NOTIFY THE COUNTY AND ENGINEER OF RECORD 72 HOURS PRIOR TO BEGINNING CONSTRUCTION.
- ALL SITE WORK MATERIALS AND CONSTRUCTION METHODS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS, UNLESS NOTED OTHERWISE IN THE CONSTRUCTION DOCUMENTS.
- THE CONTRACTOR SHALL PLACE AND MAINTAIN ADEQUATE BARRICADES, CONSTRUCTION SIGNS, FLASHING LIGHTS, TORCHES, RED LANTERNS AND GUARDS DURING PROGRESS OF CONSTRUCTION WORK AND UNTIL ALL VEHICULAR AND PEDESTRIAN TRAFFIC CAN BE RESTORED PERMANENTLY. ALL MAINTENANCE OF TRAFFIC PLANS MUST BE SUBMITTED TO THE COUNTY FOR APPROVAL A MINIMUM OF FIVE (5) CALENDAR DAYS PRIOR TO IMPLEMENTING ANY PROPOSED MEASURES. COORDINATION WITH IMPACTED RESIDENTS, AND/OR PROPERTY OWNERS MAY BE REQUIRED BY THE CONTRACTOR AS PART OF THE MAINTENANCE OF TRAFFIC PLAN.
- THE CONTRACTOR SHALL, AT A MINIMUM, MATCH EXISTING SIGNAGE AND PAVEMENT MARKINGS. ALL SIGNAGE AND PAVEMENT MARKINGS SHALL BE PLACED IN ACCORDANCE WITH THE LATEST FDOT DESIGN STANDARDS. THE CONTRACTOR SHALL CONTACT THE COUNTY ENGINEER OR DESIGNEE PRIOR TO INSTALLATION OF ANY SIGNAGE AND PAVEMENT MARKINGS.
- WHERE UNSUITABLE MATERIAL IS ENCOUNTERED IN THE AREAS PROPOSED FOR PAVING OR STORM PIPE INSTALLATION THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE COUNTY ENGINEER OR DESIGNEE PRIOR TO ANY EXCAVATION.
- THE GEOTECHNICAL ENGINEERING REPORT PREPARED BY UNIVERSAL ENGINEERING SCIENCES IS PART OF THE PLANS AND SPECIFICATIONS AND SHALL BE FOLLOWED THROUGH ALL PHASES OF CONSTRUCTION.
- ALL EXCESS MATERIAL EXCAVATED AND NOT USED AS FILL AND DEBRIS SHALL BE REMOVED FROM THE SITE AND DISPOSED OF OFF-SITE IN A LEGAL AND RESPONSIBLE MANNER BY THE CONTRACTOR.
- ANY PUBLIC LAND CORNER WITHIN THE LIMITS OF CONSTRUCTION SHALL BE PROTECTED. IF CORNER MONUMENT IS IN DANGER OF BEING DESTROYED AND HAS NOT BEEN PROPERLY REFERENCED, THE CONTRACTOR SHALL NOTIFY THE COUNTY SURVEYOR IMMEDIATELY.
- THE CONTRACTOR SHALL REMOVE AND REPLACE TO THEIR ORIGINAL OR BETTER CONDITION ALL FENCES, HEDGES, SHRUBS, SIGNS, LIGHT POLES, STREET MARKERS, MAIL BOXES, LAWNS, AND IRRIGATION SYSTEMS DISTURBED BY CONSTRUCTION OPERATIONS.
- ALL ROADS DAMAGED BY CONSTRUCTION OPERATIONS ARE TO BE PATCHED OR RECONSTRUCTED AS DIRECTED BY THE COUNTY ENGINEER OR DESIGNEE.
- THE CONTRACTOR SHALL CAREFULLY AND CLEANLY CUT MINOR ROOTS AND BRANCHES OF TREES OUTSIDE THE LIMITS OF CONSTRUCTION THAT ARE TO REMAIN WHERE SUCH ROOTS AND BRANCHES OBSTRUCT THE NEW CONSTRUCTION.
- ALL PIPE JOINTS ARE TO BE WRAPPED WITH FILTER CLOTH.
- WHERE NEW PAVEMENT MEETS EXISTING PAVEMENT, EXISTING PAVEMENT SHALL BE SAW-CUT FOR A STRAIGHT EDGE AND CLEAN JOINT.
- ALL VALVE BOXES SHALL BE SET FLUSH WITH FINISHED GRADE.
- ALL UNPAVED DISTURBED AREAS SHALL BE SODDED (MATCH EXISTING).
- UPON CONSTRUCTION COMPLETION THE CONTRACTOR SHALL SUBMIT AS-BUILT DRAWINGS NOTING ANY CHANGES MADE DURING CONSTRUCTION TO ENGINEER OF RECORD (EOR). PRIOR TO RECEIVING THESE DRAWINGS, THE ENGINEER OF RECORD (EOR) WILL PREPARE AS-BUILT PLANS.
- EXISTING MAILBOXES INTERFERING WITH NEW CONSTRUCTION SHALL BE REMOVED AND RE-INSTALLED OR REPLACED BY THE CONTRACTOR IN ACCORDANCE WITH SANTA ROSA COUNTY, UNITED POSTAL SERVICE AND FDOT REQUIREMENTS. EXISTING BRICK MAILBOXES INTERFERING WITH NEW CONSTRUCTION ARE TO BE REMOVED AND RE-INSTALLED. PRIOR TO REMOVAL, THE CONTRACTOR SHALL INSPECT THE MAILBOXES FOR STRUCTURAL INTEGRITY. IF IT APPEARS THAT THE MAILBOX IS NOT STRUCTURALLY SOUND FOR RE-INSTALLATION, THE PROJECT MANAGER IS TO BE NOTIFIED BEFORE REMOVAL TAKES PLACE. IF THE BRICK MAILBOX GETS DAMAGED BEYOND REPAIR DURING RE-INSTALLATION EITHER THE OWNER CAN REPLACE IT AT THEIR EXPENSE OR AN APPROVED PLASTIC BREAK AWAY MAILBOX WILL BE INSTALLED.

UTILITY COMPANIES:
 UTILITY INFORMATION SHOWN AS PER FIELD INFORMATION AND INFORMATION FURNISHED BY UTILITY COMPANIES INVOLVED.
 TELEPHONE - AT&T, INC. 605 WEST GARDEN ST, PENSACOLA, FL 32501; (850)436-1616
 ELECTRIC - GULF POWER CO., 9220 PINE FOREST RD. PENSACOLA, FL 32534; (850)484-5770
 WATER - HOLLY NAVARRE WATER SYSTEM, INC., 8574 TURKEY BLUFF RD., NAVARRE, FL 32566; (850)939-9541
 WATER - MIDWAY WATER SYSTEM, INC., 4971 GULF BREEZE PKWY, GULF BREEZE, FL 32563-9286; (850)932-5188

NO.		DATE		REVISIONS	
Kenneth Horne & Associates, Inc. CIVIL ENGINEERS PO BOX 10689, PENSACOLA, FLORIDA 32524 7201 N. 9TH AVENUE, SUITE 6, PENSACOLA, FLORIDA 32504 (850) 471-9005 info@kh-a.com FAX (850) 471-0093 FL. CERTIFICATE OF AUTHORIZATION NO. 8288 ROBERT C. KRASNOSKY FL. PE 49949					
SRCO EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS			PROJECT KEY AND GENERAL NOTES		
SANTA ROSA			FLORIDA		
DRAWN BY: PLC DESIGNED BY: RCK CHECKED BY: RCK DATE: 03/10/2021 SCALE: 1" = 300' NOT FOR CONSTRUCTION BY: DATE:	PROJECT NO: 2018-41 C002 SHEET: 2 OF 62				

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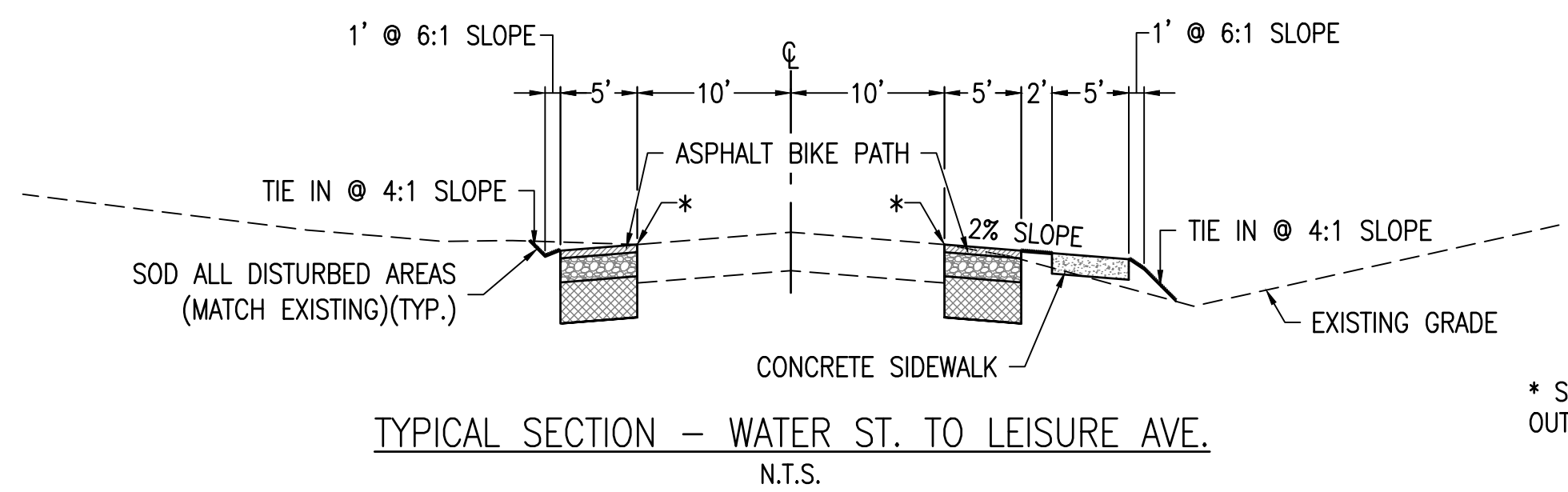
- 1 SEE DETAIL FOR PROPOSED ASPHALT PAVEMENT, INCLUDING; BIKE PATH AND INTERSECTION TURNOUTS
- 2 SEE DETAIL FOR PROPOSED CONCRETE SIDEWALK
- 3 SEE DETAIL FOR PROPOSED CONCRETE DRIVEWAYS



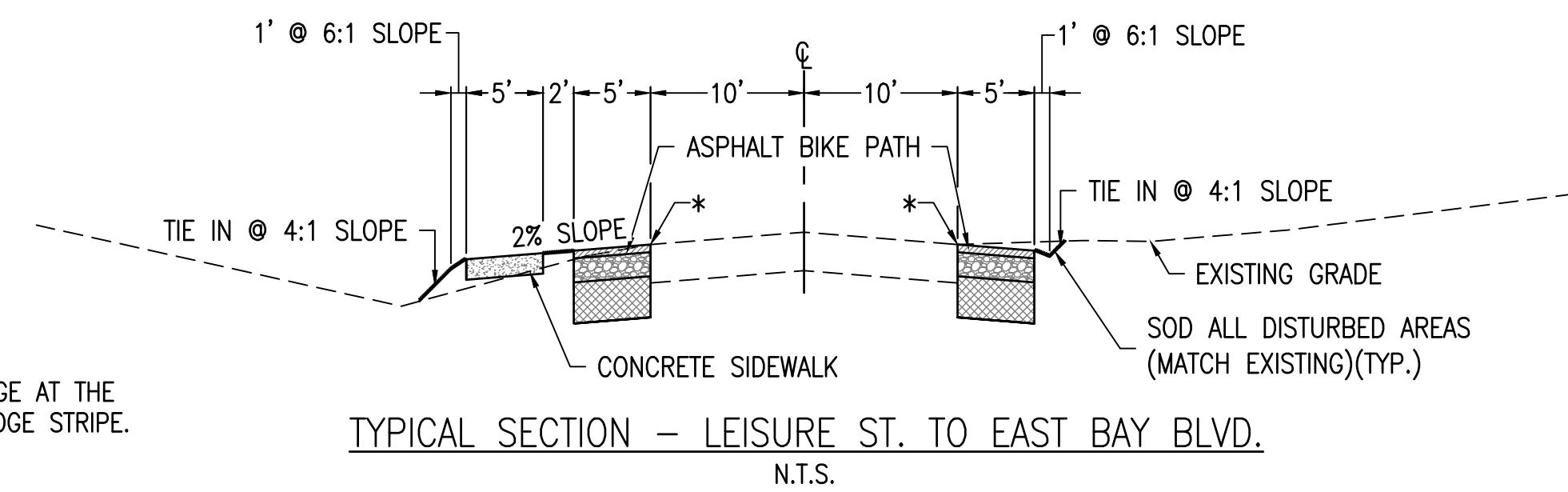
ADDITIVE ALTERNATE BID NO. 1
1" FDOT SP 9.5 ASPHALT OVERLAY FROM HWY 98 TO EAST BAY BLVD, OVERLAY TO INCLUDE ALL SIDE STREET TURNOUTS (NEW AND EXISTING) TO THE TANGENT AND THE NEW BIKE LANES.

4 SEE DETAIL FOR PROPOSED ADDITIVE ALTERNATE ASPHALT OVERLAY

SEE CRITICAL CROSS SECTION SHEETS FOR ALL CULVERT CROSSINGS AND DRIVEWAYS



* SAW-CUT A CLEAN STRAIGHT EDGE AT THE OUTSIDE EDGE OF THE EXISTING EDGE STRIPE.



BENCHMARKS:

- 58-09-D03V - A Florida Department of Transportation concrete monument located on the south right of way of U.S. Highway #98 and 600 +/- east of the centerline of Lighthouse Drive. Elevation = 39.74'
- 753/72A - An "X" in the north bonnet bolt of a fire hydrant located at the northwest corner of the intersection of U.S. Highway #98 and Edgewood Drive. Elevation = 39.36'
- 753/72B - An "X" in the north bonnet bolt of a fire hydrant located at the south right of way of Sundown Drive and 55 +/- west of centerline of Edgewood Drive. Elevation = 40.24'
- 753/73A - An "X" in the north bonnet bolt of a fire hydrant located at the southeast corner of the intersection of Edgewood Drive and Perch Street. Elevation = 41.06'
- 753/73B - An "X" in the north bonnet bolt of a fire hydrant located at the southeast corner of the intersection of Edgewood Drive and Marlin Street. Elevation = 40.30'
- 753/73C - An "X" in the north bonnet bolt of a fire hydrant located at the southeast corner of the intersection of Edgewood Drive and Lansford Street. Elevation = 35.78'
- 753/74A - An "X" in the northwest bonnet bolt of a fire hydrant located at the southeast corner of the intersection of Edgewood Drive and Longview Street. Elevation = 34.72'
- 753/74B - An "X" in the northwest bonnet bolt of a fire hydrant located at the northeast corner of the intersection of Edgewood Drive and Leisure Street. Elevation = 34.74'
- 753/74C - A 60d nail in the west side of a power pole located at the northeast corner of the intersection of Edgewood Drive and Liberty Street. Elevation = 31.03'
- 753/74D - A 60d nail in the west side of a power pole located at the northeast corner of the intersection of Edgewood Drive and Flintwood Street. Elevation = 31.52'
- 753/74E - A 60d nail in the west side of a power pole located at the southeast corner of the intersection of Edgewood Drive and Redfield Street. Elevation = 32.37'
- 753/75A - A 60d nail in the west side of a power pole located at the northeast corner of the intersection of Edgewood Drive and Indian Street. Elevation = 30.77'
- 753/75B - A 60d nail in the west side of a power pole located at the southeast corner of the intersection of Edgewood Drive and Glassport Street. Elevation = 28.94'
- 753/75C - An "X" in the north bonnet bolt of a fire hydrant located at the southwest corner of the intersection of Edgewood Drive and Bellingham Street. (Fire hydrant leans to the east) Elevation = 33.21'
- 753/75D - A cotton gin spike in the west side of a power pole located at the northeast corner of the intersection of Edgewood Drive and Kempton Street. Elevation = 33.30'
- 753/75E - A cotton gin spike in the west side of a power pole located at the northeast corner of the intersection of Edgewood Drive and Fern Street. Elevation = 32.34'
- 753/75F - An "X" in the northwest bonnet bolt of a fire hydrant located at the northeast corner of the intersection of Edgewood Drive and Federal Street. Elevation = 35.85'
- 753/76A - A cotton gin spike in the west side of a power pole located at the northeast corner of the intersection of Edgewood Drive and Fairmont Street. Elevation = 30.33'
- 753/76B - A cotton gin spike in the west side of a power pole located at the southeast corner of the intersection of Edgewood Drive and Hartland Street. Elevation = 30.35'
- 753/76C - A 60d nail in the east side of a power pole located at the southwest corner of the intersection of Edgewood Drive and Codell Street. Elevation = 29.34'
- 753/76D - An "X" in the northwest bonnet bolt of a fire hydrant located at the southeast corner of the intersection of Edgewood Drive and Castlewood Street. Elevation = 23.79'

ELEVATIONS:

- 753/76E - A 60d nail in the east side of a power pole located at the west right of way of Edgewood Drive across from Bushton Street. Elevation = 17.03'
- 753/76F - A 60d nail in the east side of a power pole located at the west right of way of Edgewood Drive across from Bryant Street. Elevation = 15.35'
- 753/76G - An "X" in the north bonnet bolt of a fire hydrant located at the southeast corner of the intersection of Edgewood Drive and Britt Street. Elevation = 17.30'
- 753/77A - A 60d nail in the east side of a power pole located at the northwest corner of the intersection of Edgewood Drive and Admiral Street - Koppel Drive. Elevation = 13.01'
- 753/77B - An "X" in the northwest bonnet bolt of a fire hydrant located at the southeast corner of the intersection of Edgewood Drive and DeSoto Street. Elevation = 14.31'
- 753/77C - A 60d nail in the east side of a power pole located at the northwest corner of the intersection of Edgewood Drive and Bluefish Road. Elevation = 10.91'
- 753/77D - An "X" in the north bonnet bolt of a fire hydrant located at the northeast corner of the intersection of Edgewood Drive and Angle Road. Elevation = 11.21'
- 753/77E - A 60d nail in the north side of a power pole located at the southwest corner of the intersection of Edgewood Drive and East Bay Boulevard. Elevation = 6.99'
- 753/78A - An "X" in the south bonnet bolt of a fire hydrant located at the northeast corner of the intersection of Koppel Drive (Elkhart Drive) and Arch Road. Elevation = 9.16'
- 753/78B - A railroad spike in the east side of a 14" pine tree located at the northwest corner of the intersection of Castlewood Street and Camden Drive. Elevation = 31.33'
- 753/78C - An "X" in the west end of a concrete headwall located at the southwest corner of the intersection of East Bay Boulevard and Koppel Drive. Elevation = 6.70'

SURVEYOR'S NOTES:

1. The underground utilities shown have been located from field survey information and existing drawings. The surveyor has not physically located the underground utilities. The surveyor does not certify that the underground utilities shown comprise all such utilities or that they are the exact size, material, or location as indicated.
2. This survey does not reflect or determine ownership.
3. This survey is subject to any facts that may be disclosed by a full and accurate title search.
4. This survey is subject to setbacks, easements, and restrictions of record.
5. To assure the contractor is on the same vertical and horizontal datum as this survey, it is strongly recommended that vertical checks be made between two benchmarks and that horizontal checks be made between three control points or property corners.
6. Sub-surface improvements, if any, not located.
7. Due to current safety regulations, we are unable to access any sewer manholes and/or structures in order to verify pipe size or material. Pipe size and material has been shown as per plans or by approximate measurements. It is strongly recommended that size and material are verified before any design work begins.
8. Coordinates shown are State Plane Coordinates referenced to N.A.D. 83 datum, 2011 adjustment, Florida North Zone and expressed in U.S. survey feet.
9. Coordinates are derived by using the Trimble and Florida Department of Transportation continuously operating reference station (CORS) network.

SURVEY LEGEND:

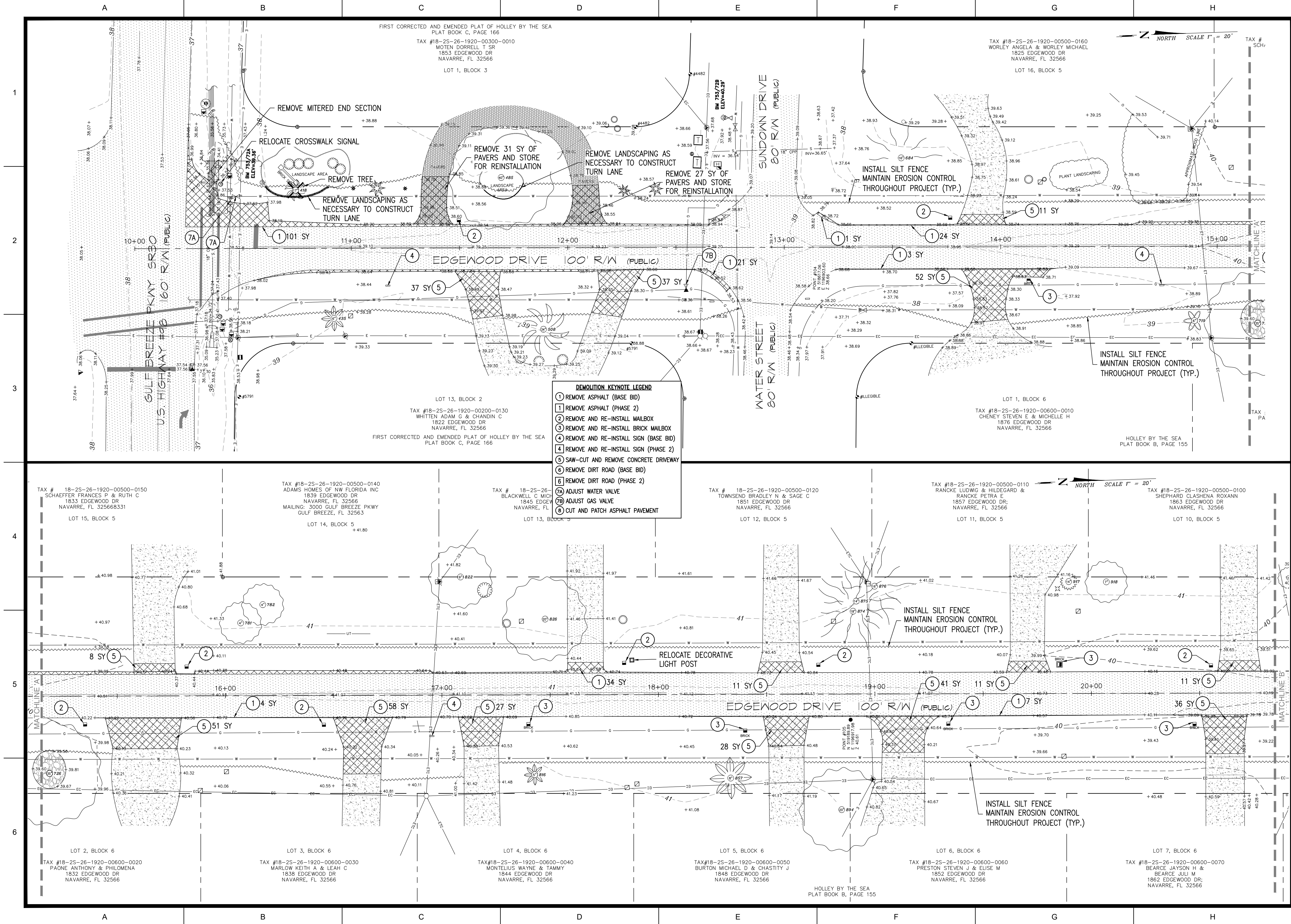
- N Northing
- E Easting
- Z Elevation
- R/W Right of way
- P.C. Point of curvature
- P.T. Point of tangency
- P.I. Point of intersection
- P.C.C. Point of compound curvature
- P.R.C. Point of reverse curvature
- BM Benchmark
- ELEV Elevation
- FFE Finished floor elevation
- INV Invert
- FL Flow line
- CP Concrete pipe
- CPP Corrugated plastic pipe
- CMP Corrugated metal pipe
- PVC Polyvinyl chloride pipe
- MP Metal pipe
- 1" Iron pipe found
- 1/2" Iron rod found
- 1/2" Capped iron rod set #T07B
- 1/2" Capped iron rod found #noted
- Crimped iron pipe found
- 4"x4" Concrete monument found #noted
- 4"x4" D.O.T. Concrete monument found
- Nail and disk found #noted
- Permanent control point found #noted
- Nail and flag set
- Fire hydrant
- Gas valve
- Gas meter
- Water valve
- Water meter
- Telephone equipment
- Electric equipment
- Cable equipment
- Sprinkler control valve
- Light pole
- Light pole with base
- Traffic light pole
- Guy wire
- Power pole
- Power pole with underground cable
- Power pole with underground electric
- Power pole with underground telephone
- Mailbox
- Reflector
- Storm grate
- Road sign
- Guard post
- Underground gas marker
- Underground telephone marker
- Pedestrian crossing pole
- Meter pole
- Water stub-out

- Wood/metal post
- Traffic signal control box
- Spot elevation
- Contour line
- Chain link fence
- Wood fence
- Wire fence
- Steel cable fence
- Approximate limits of wood line
- Anchor line
- Cable line
- Electric line
- Gas line
- Storm sewer line
- Telephone line
- Water line

- Asphalt
- Brick
- Concrete
- Dirt road
- Gravel/rip rap
- Ornamental tree
- Fine tree
- Oak tree
- Holly tree
- Dogwood tree
- Crepe myrtle tree
- Palm tree
- Maple tree
- Magnolia tree
- Cedar tree
- Popcorn tree
- Century plant
- Mimosa tree
- Mulberry tree
- Sago palm
- Miscellaneous tree

REVISIONS						
NO.	DATE	BY	REASON	NO.	DATE	BY
<p>Kenneth Horne & Associates, Inc. CIVIL ENGINEERS</p> <p>PO BOX 10689 PENSACOLA, FLORIDA 32524 7201 N. 9TH AVENUE, SUITE 6, PENSACOLA, FLORIDA 32504 (850) 471-9005 info@kh-a.com FAX (850) 471-0093 FL. CERTIFICATE OF AUTHORIZATION NO. 8288</p>						
<p>SRCO EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS</p>			<p>TYPICAL SECTIONS, SURVEY NOTES AND LEGEND</p>			
DRAWN BY: PLC	DESIGNED BY: RCK	CHECKED BY: RCK	DATE: 03/10/2021	SCALE: 1" = 20'	NOT FOR CONSTRUCTION	BY: DATE:
PROJECT NO: 2018-41						
C003						
SHEET: 3 OF 62						

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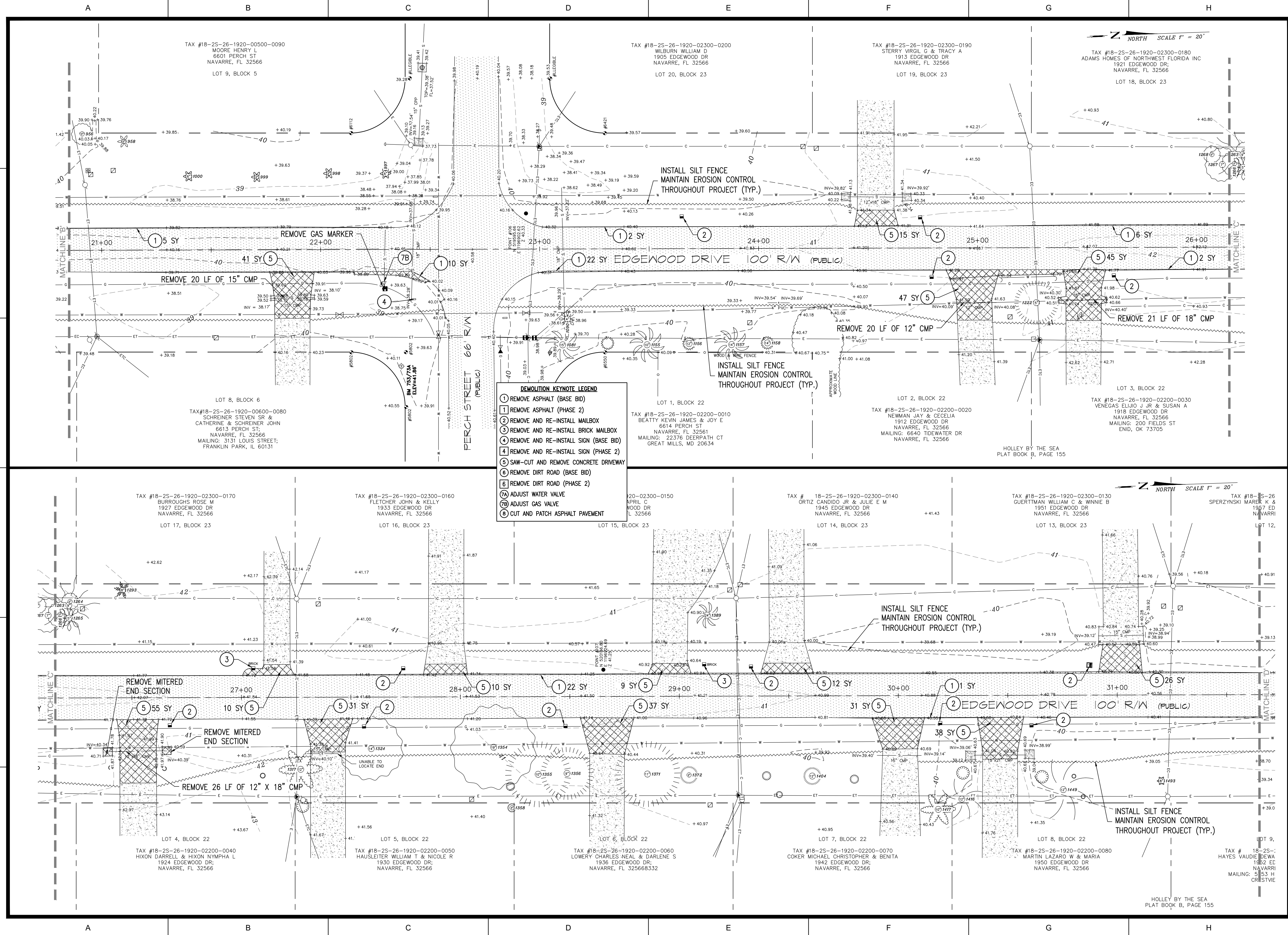


DEMOLITION KEYNOTE LEGEND

- ① REMOVE ASPHALT (BASE BID)
- ① REMOVE ASPHALT (PHASE 2)
- ② REMOVE AND RE-INSTALL MAILBOX
- ③ REMOVE AND RE-INSTALL BRICK MAILBOX
- ④ REMOVE AND RE-INSTALL SIGN (BASE BID)
- ④ REMOVE AND RE-INSTALL SIGN (PHASE 2)
- ⑤ SAW-CUT AND REMOVE CONCRETE DRIVEWAY
- ⑥ REMOVE DIRT ROAD (BASE BID)
- ⑥ REMOVE DIRT ROAD (PHASE 2)
- ⑦A ADJUST WATER VALVE
- ⑦B ADJUST GAS VALVE
- ⑧ CUT AND PATCH ASPHALT PAVEMENT

REVISIONS	
NO.	DATE
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<p>Kenneth Horne & Associates, Inc. CIVIL ENGINEERS</p> <p>PO BOX 10669, PENSACOLA, FLORIDA 32524 7201 N. 9TH AVENUE, SUITE 6, PENSACOLA, FLORIDA 32504 (850) 471-9005 info@kh-a.com FAX (850) 471-0093</p>	
<p>SRCO EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS</p> <p>EDGEWOOD DR. (STA. 10+00 - 20+85) DEMOLITION PLAN</p> <p>SANTA ROSA FLORIDA</p>	
<p>DRAWN BY: PLC DESIGNED BY: RCK CHECKED BY: RCK DATE: 03/10/2021</p>	<p>SCALE: 1" = 20' NOT FOR CONSTRUCTION DATE: </p>
<p>PROJECT NO: 2018-41 C101</p>	
<p>SHEET: 4 OF 62</p>	

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DEMOLITION KEYNOTE LEGEND

- 1 REMOVE ASPHALT (BASE BID)
- 1 REMOVE ASPHALT (PHASE 2)
- 2 REMOVE AND RE-INSTALL MAILBOX
- 3 REMOVE AND RE-INSTALL BRICK MAILBOX
- 4 REMOVE AND RE-INSTALL SIGN (BASE BID)
- 4 REMOVE AND RE-INSTALL SIGN (PHASE 2)
- 5 SAW-CUT AND REMOVE CONCRETE DRIVEWAY
- 6 REMOVE DIRT ROAD (BASE BID)
- 6 REMOVE DIRT ROAD (PHASE 2)
- 7A ADJUST WATER VALVE
- 7B ADJUST GAS VALVE
- 8 CUT AND PATCH ASPHALT PAVEMENT

NO.	DATE	REVISIONS

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ROBERT C. KRASNOSKY
FL. PE. 49949

Kenneth Horne & Associates, Inc.
CIVIL ENGINEERS

PO BOX 10669, PENSACOLA, FLORIDA 32524
7201 N. 9TH AVENUE, SUITE 6, PENSACOLA, FLORIDA 32504
(850) 471-9005 info@kh-a.com FAX (850) 471-0093
FL. CERTIFICATE OF AUTHORIZATION NO. 92828

SRCO EDGEWOOD DRIVE
DRAINAGE AND ROADWAY IMPROVEMENTS

EDGEWOOD DR. (STA. 20+85 - 31+65) DEMOLITION PLAN

SANTA ROSA FLORIDA

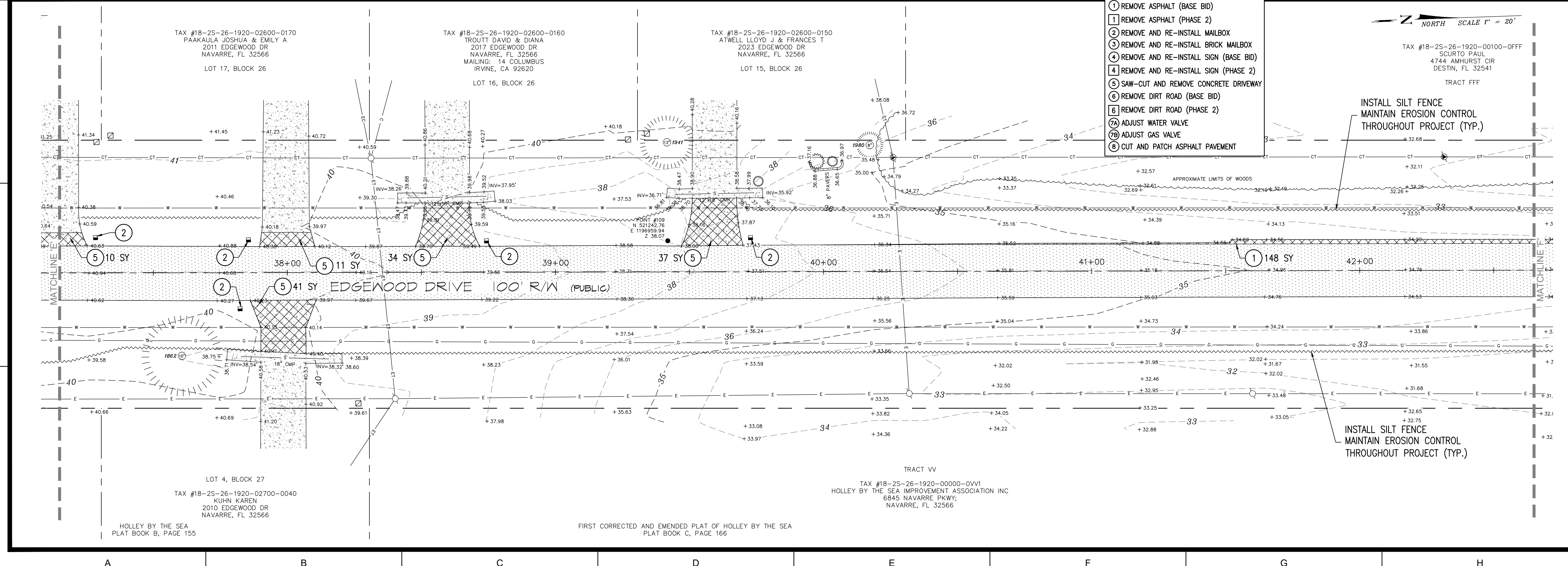
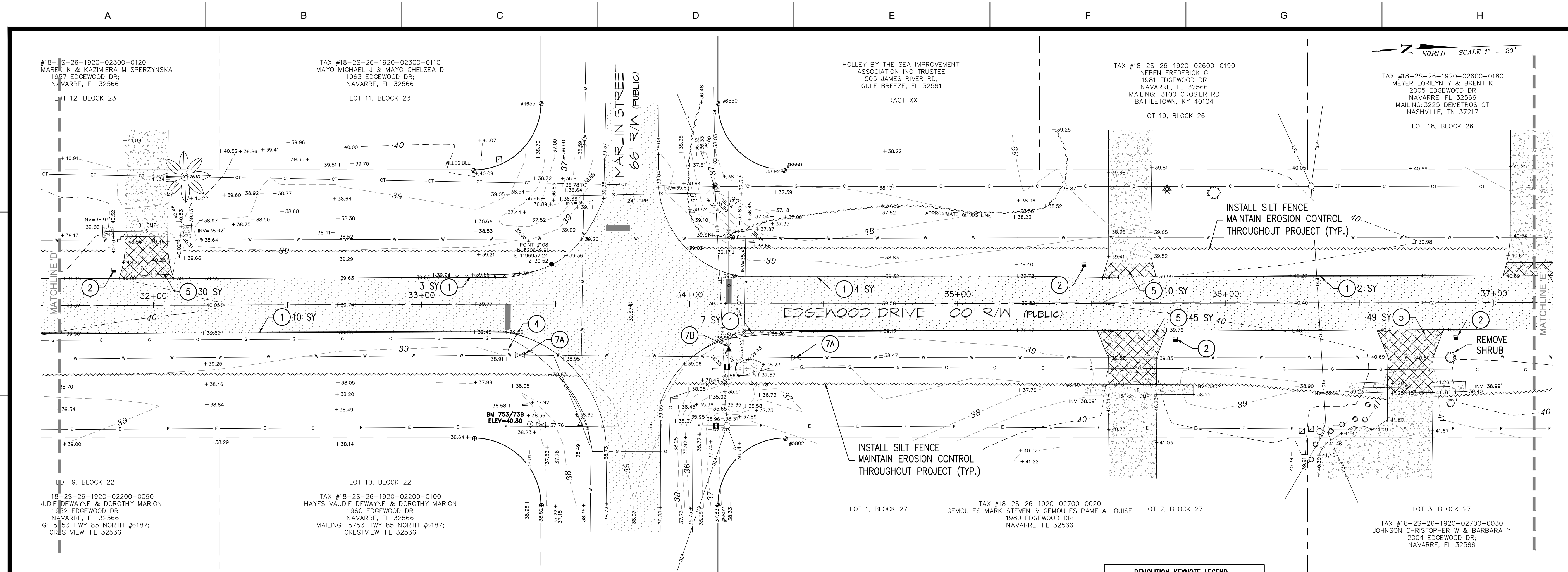
DRAWN BY: PLC
DESIGNED BY: RCK
CHECKED BY: RCK
DATE: 03/10/2021

SCALE: 1" = 20'

NOT FOR CONSTRUCTION

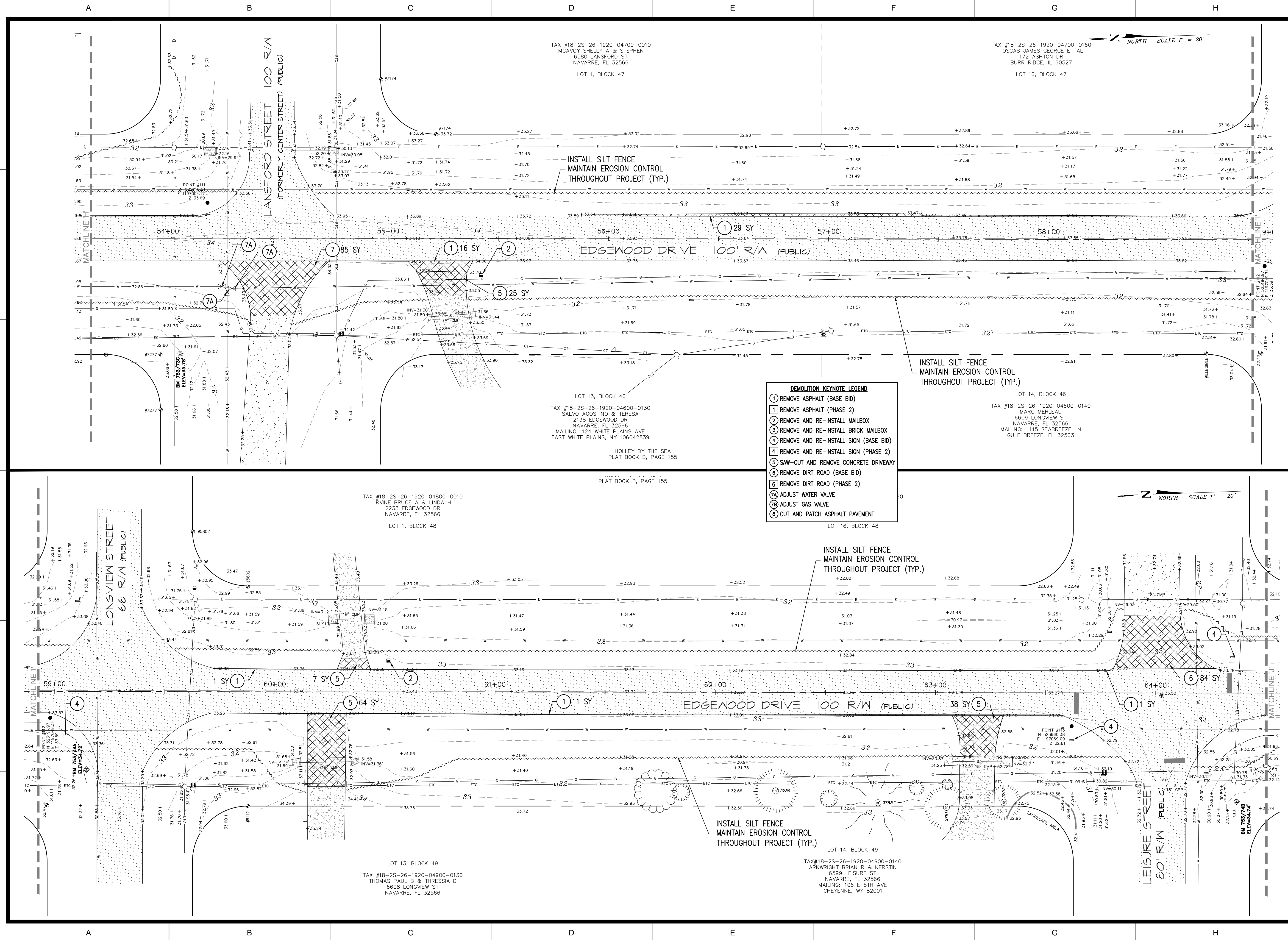
PROJECT NO: 2018-41
SHEET: 5 OF 62

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KH&A	
SRCO EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS EDGEWOOD DR (STA. 31+65 - 42+65) DEMOLITION PLAN SANTA ROSA FLORIDA	
DRAWN BY:	PLC
DESIGNED BY:	RGK
CHECKED BY:	RCK
DATE:	03/10/2021
SCALE:	1" = 20'
NOT FOR CONSTRUCTION	BY:
PROJECT NO:	2018-41
C103	
SHEET:	6 OF 62

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NORTH SCALE 1" = 20'

NORTH SCALE 1" = 20'

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FL. PE. 49949

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(850) 471-9005 info@kh-a.com FAX (850) 471-0093

FL. CERTIFICATE OF AUTHORIZATION NO. 9228

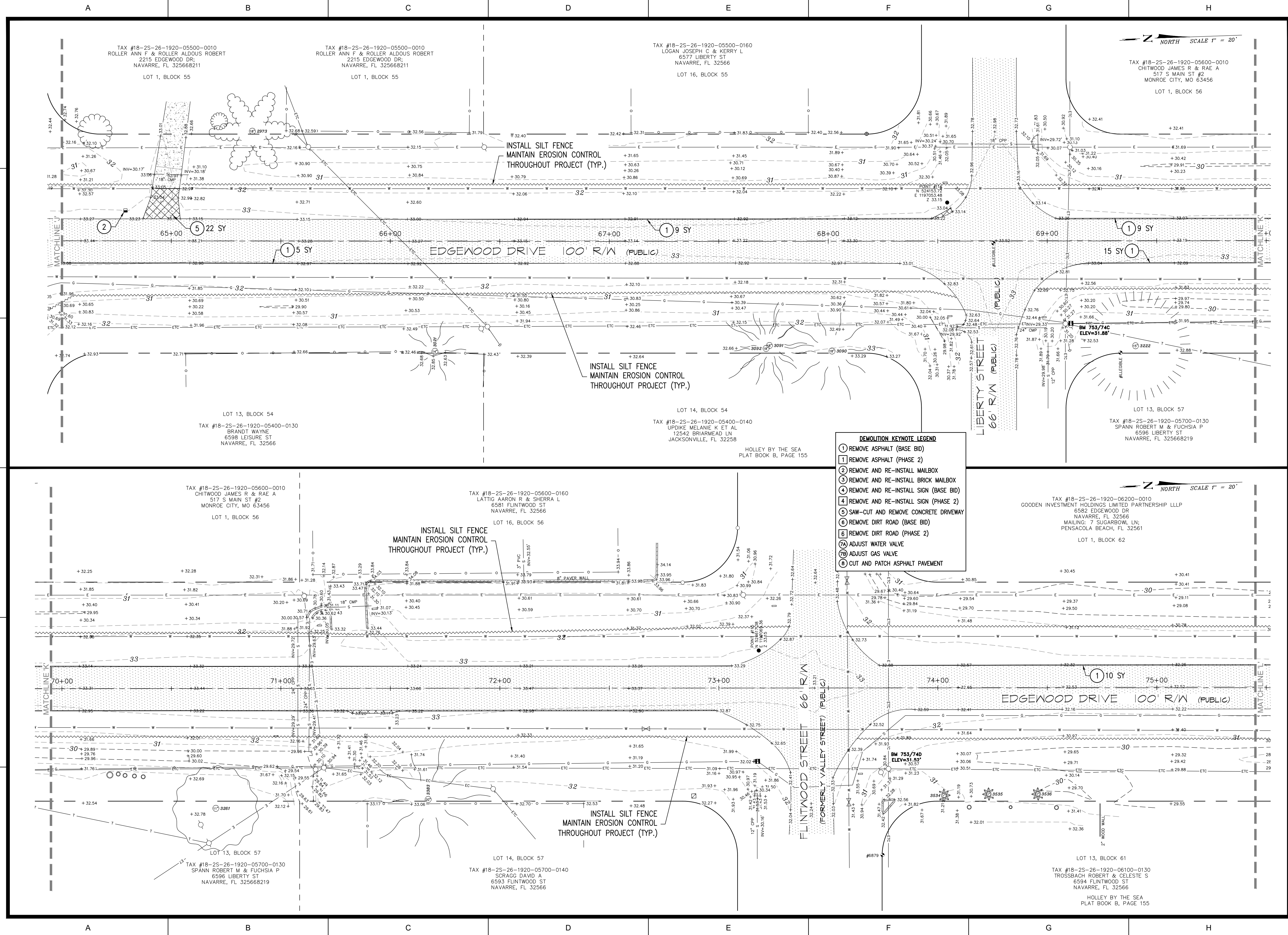
SRCO EDGEWOOD DRIVE
DRAINAGE AND ROADWAY IMPROVEMENTS

EDGEWOOD DR (STA. 53+65 - 64+50) DEMOLITION PLAN

SANTA ROSA
FLORIDA

DRAWN BY: PLC	PROJECT NO: 2018-41
DESIGNED BY: RCK	C105
CHECKED BY: RCK	SHEET: 8 OF 62
DATE: 03/10/2021	SCALE: 1" = 20'
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INSTALL SILT FENCE
MAINTAIN EROSION CONTROL
THROUGHOUT PROJECT (TYP.)

INSTALL SILT FENCE
MAINTAIN EROSION CONTROL
THROUGHOUT PROJECT (TYP.)

INSTALL SILT FENCE
MAINTAIN EROSION CONTROL
THROUGHOUT PROJECT (TYP.)

INSTALL SILT FENCE
MAINTAIN EROSION CONTROL
THROUGHOUT PROJECT (TYP.)

- DEMOLITION KEYNOTE LEGEND**
- ① REMOVE ASPHALT (BASE BID)
 - ② REMOVE ASPHALT (PHASE 2)
 - ③ REMOVE AND RE-INSTALL MAILBOX
 - ④ REMOVE AND RE-INSTALL BRICK MAILBOX
 - ⑤ REMOVE AND RE-INSTALL SIGN (BASE BID)
 - ⑥ REMOVE AND RE-INSTALL SIGN (PHASE 2)
 - ⑦ SAW-CUT AND REMOVE CONCRETE DRIVEWAY
 - ⑧ REMOVE DIRT ROAD (BASE BID)
 - ⑨ REMOVE DIRT ROAD (PHASE 2)
 - Ⓐ ADJUST WATER VALVE
 - Ⓑ ADJUST GAS VALVE
 - Ⓒ CUT AND PATCH ASPHALT PAVEMENT

NO.	DATE	REVISIONS

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FL. CERTIFICATE OF AUTHORIZATION NO. 9228

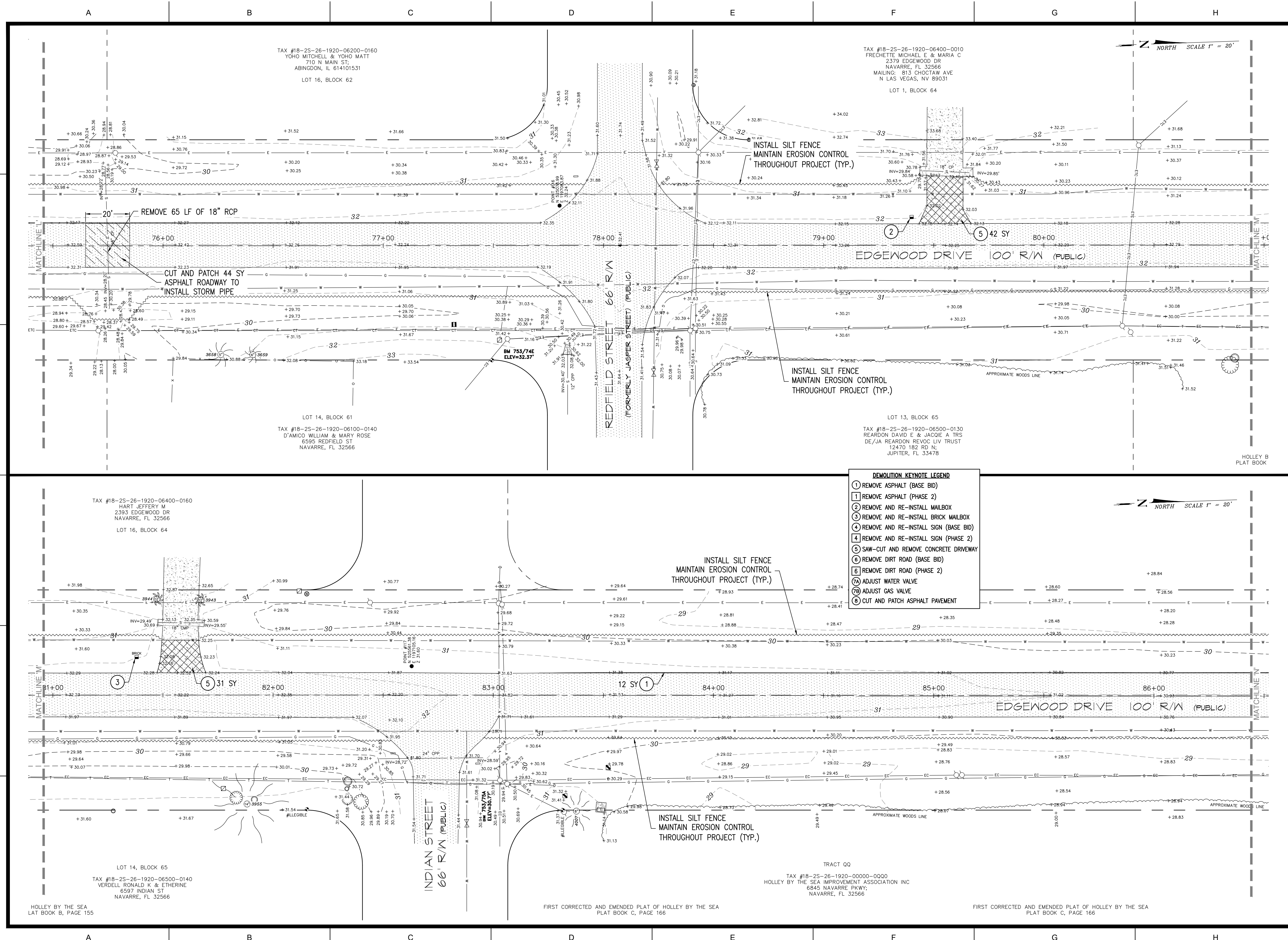
SRCO EDGEWOOD DRIVE
DRAINAGE AND ROADWAY IMPROVEMENTS

EDGEWOOD DR (STA. 64+50 - 75+45) DEMOLITION PLAN

SANTA ROSA FLORIDA

DRAWN BY: PLC	PROJECT NO: 2018-41
DESIGNED BY: RCK	C106
CHECKED BY: RCK	SHEET: 9 OF 62
DATE: 03/10/2021	SCALE: 1" = 20'
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FL. CERTIFICATE OF AUTHORIZATION NO. 92828

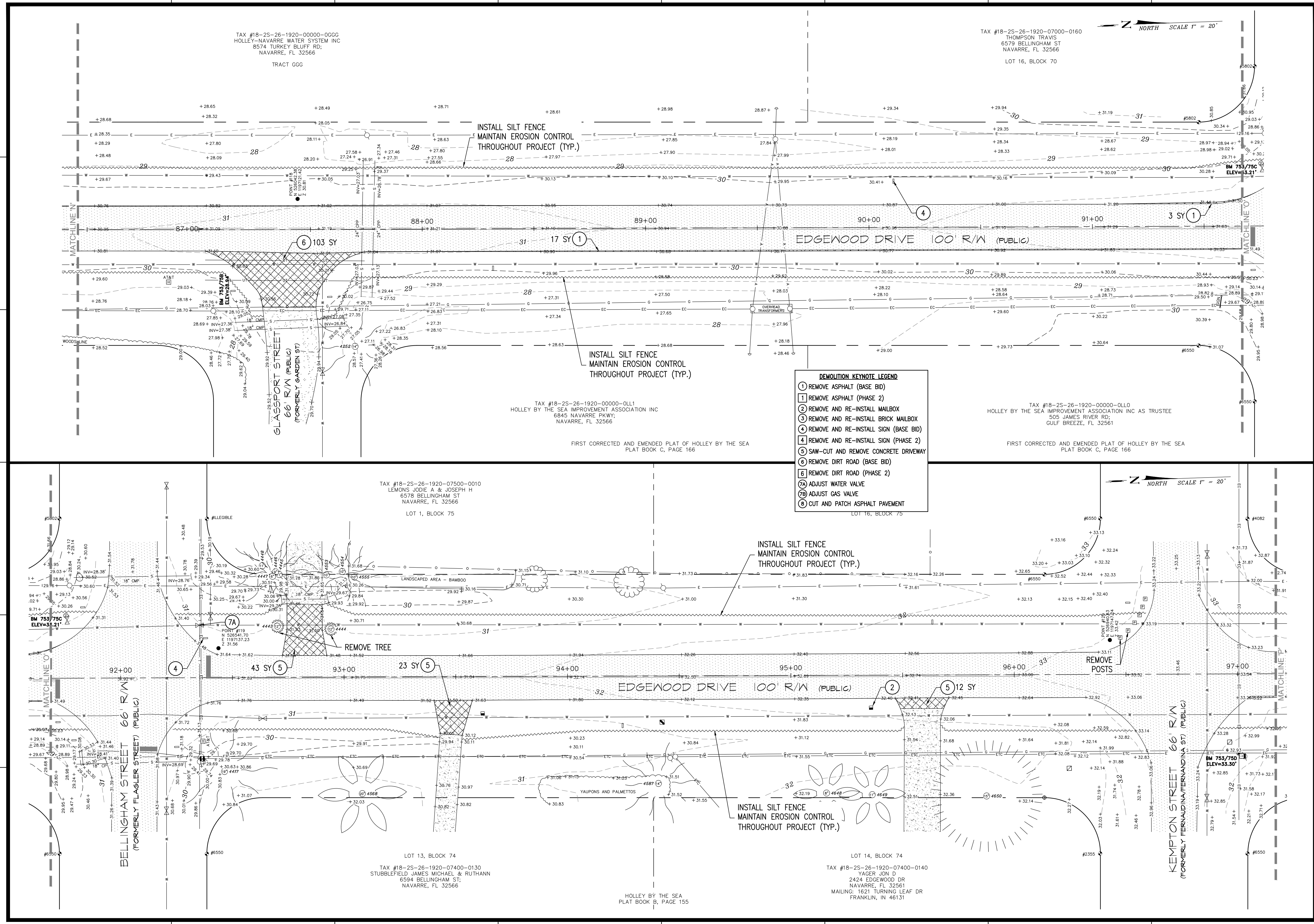
SRCO EDGEWOOD DRIVE
DRAINAGE AND ROADWAY IMPROVEMENTS

EDGEWOOD DR (STA. 75+45 - 86+45) DEMOLITION PLAN

SANTA ROSA FLORIDA

DRAWN BY: PLC	PROJECT NO: 2018-41
DESIGNED BY: RCK	C107
CHECKED BY: RCK	SHEET: 10 OF 62
DATE: 03/10/2021	SCALE: 1" = 20'
NOT FOR CONSTRUCTION	DATE:

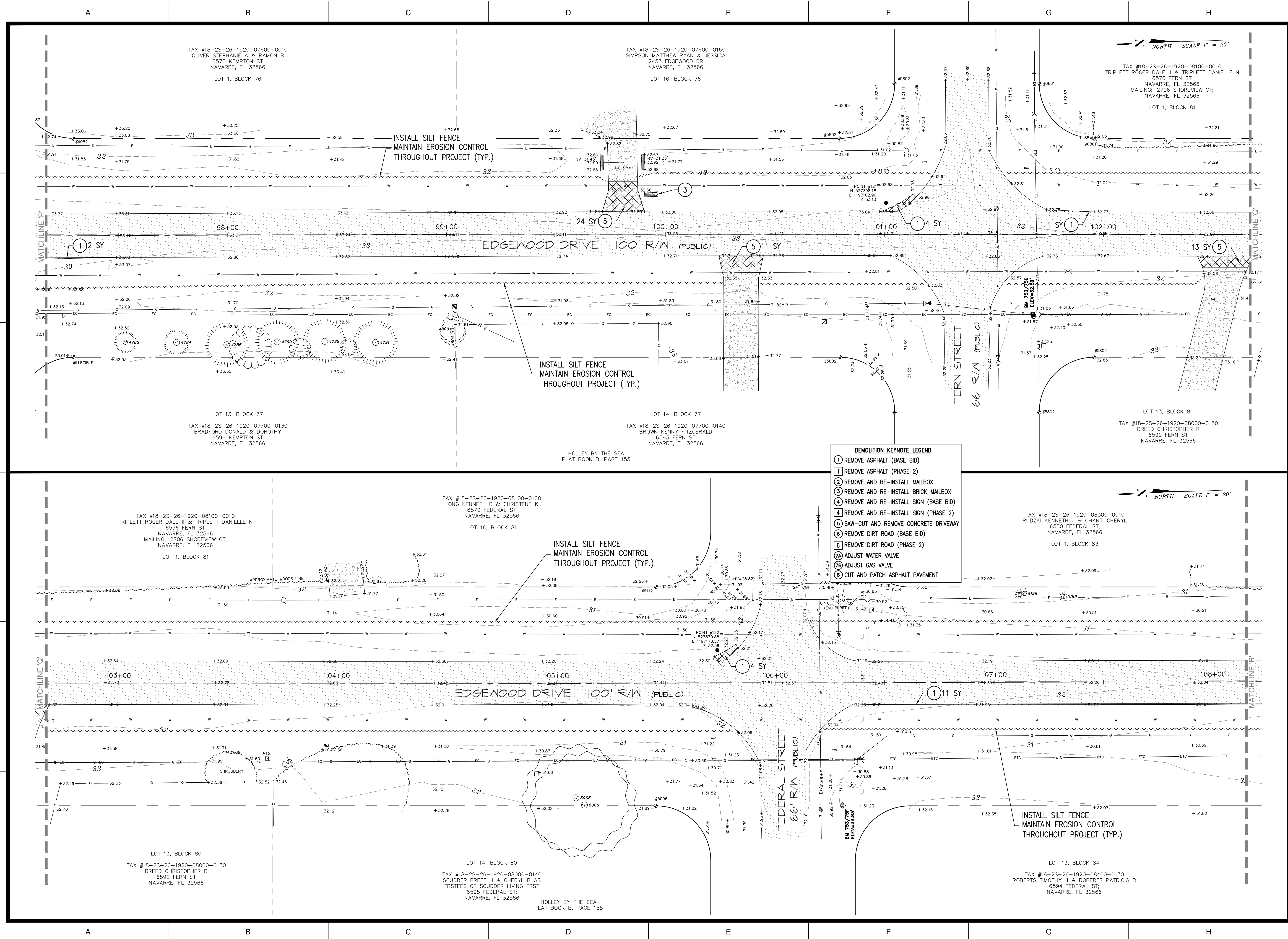
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- DEMOLITION KEYNOTE LEGEND**
- ① REMOVE ASPHALT (BASE BID)
 - ① REMOVE ASPHALT (PHASE 2)
 - ② REMOVE AND RE-INSTALL MAILBOX
 - ③ REMOVE AND RE-INSTALL BRICK MAILBOX
 - ④ REMOVE AND RE-INSTALL SIGN (BASE BID)
 - ④ REMOVE AND RE-INSTALL SIGN (PHASE 2)
 - ⑤ SAW-CUT AND REMOVE CONCRETE DRIVEWAY
 - ⑥ REMOVE DIRT ROAD (BASE BID)
 - ⑥ REMOVE DIRT ROAD (PHASE 2)
 - Ⓐ ADJUST WATER VALVE
 - Ⓑ ADJUST GAS VALVE
 - Ⓒ CUT AND PATCH ASPHALT PAVEMENT

DRAWN BY: PLC		PROJECT NO: 2018-41	
DESIGNED BY: RCK		C108	
CHECKED BY: RCK		SHEET: 11 OF 62	
DATE: 03/10/2021		SCALE: 1" = 02'	
BY: NOT FOR CONSTRUCTION		SANTA ROSA	
FLORIDA		EDGWOOD DR (STA. 86+45 - 97+15) DEMOLITION PLAN	
SRCO EDGWOOD DRIVE		DRAINAGE AND ROADWAY IMPROVEMENTS	
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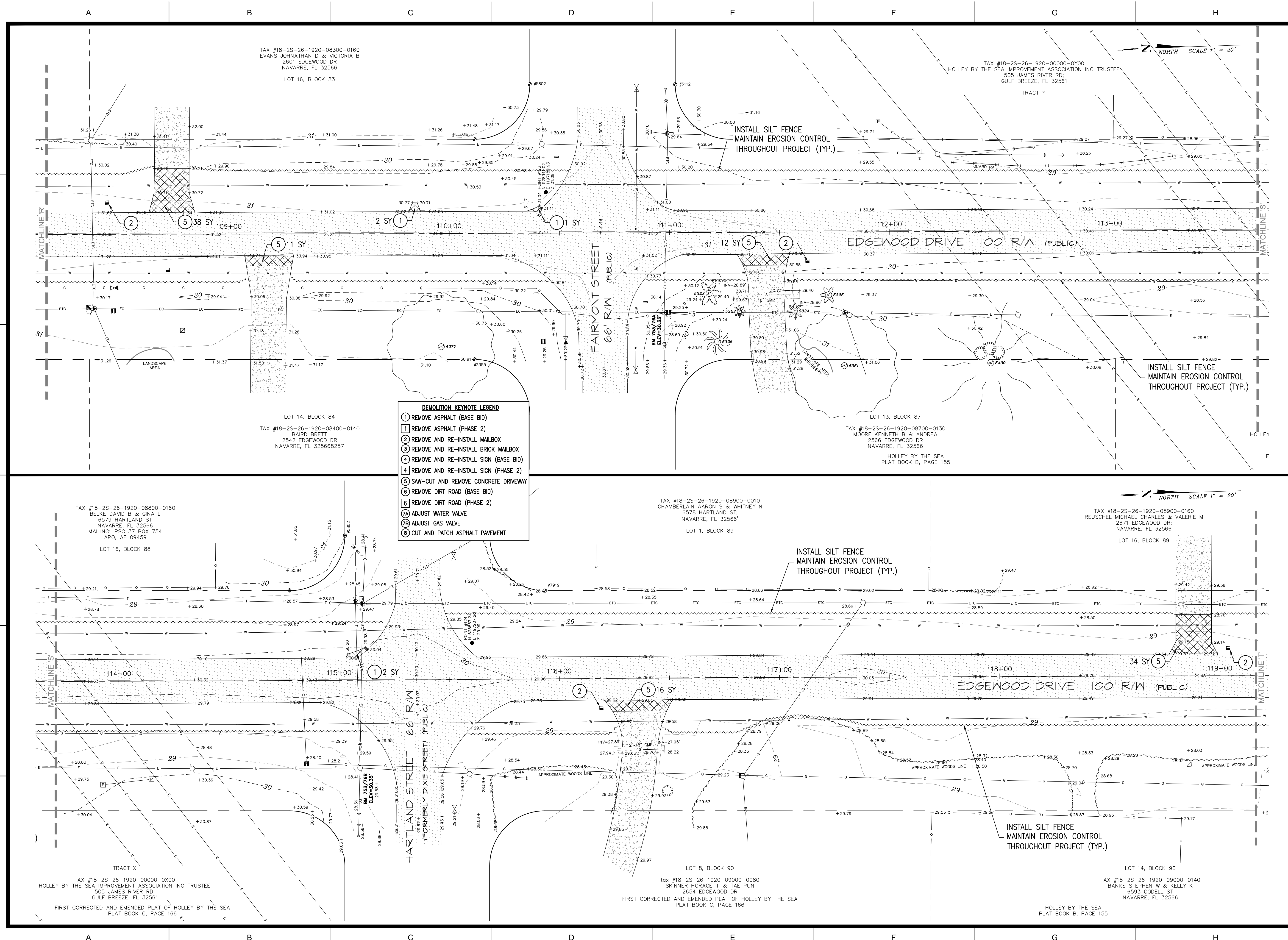
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- DEMOLITION KEYNOTE LEGEND**
- ① REMOVE ASPHALT (BASE BID)
 - ② REMOVE ASPHALT (PHASE 2)
 - ③ REMOVE AND RE-INSTALL MAILBOX
 - ④ REMOVE AND RE-INSTALL SIGN (BASE BID)
 - ⑤ REMOVE AND RE-INSTALL SIGN (PHASE 2)
 - ⑥ SAW-CUT AND REMOVE CONCRETE DRIVEWAY
 - ⑦ REMOVE DIRT ROAD (BASE BID)
 - ⑧ REMOVE DIRT ROAD (PHASE 2)
 - ⑨ ADJUST WATER VALVE
 - ⑩ ADJUST GAS VALVE
 - ⑪ CUT AND PATCH ASPHALT PAVEMENT

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SRCO EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS EDGEWOOD DR (STA. 97+15 - 108+15) DEMOLITION PLAN SANTA ROSA FLORIDA	
DRAWN BY: PLC DESIGNED BY: RCK CHECKED BY: RCK DATE: 03/10/2021	SCALE: 1" = 20' NOT FOR CONSTRUCTION BY: DATE:
PROJECT NO: 2018-41	
C109	
SHEET: 12 OF 62	

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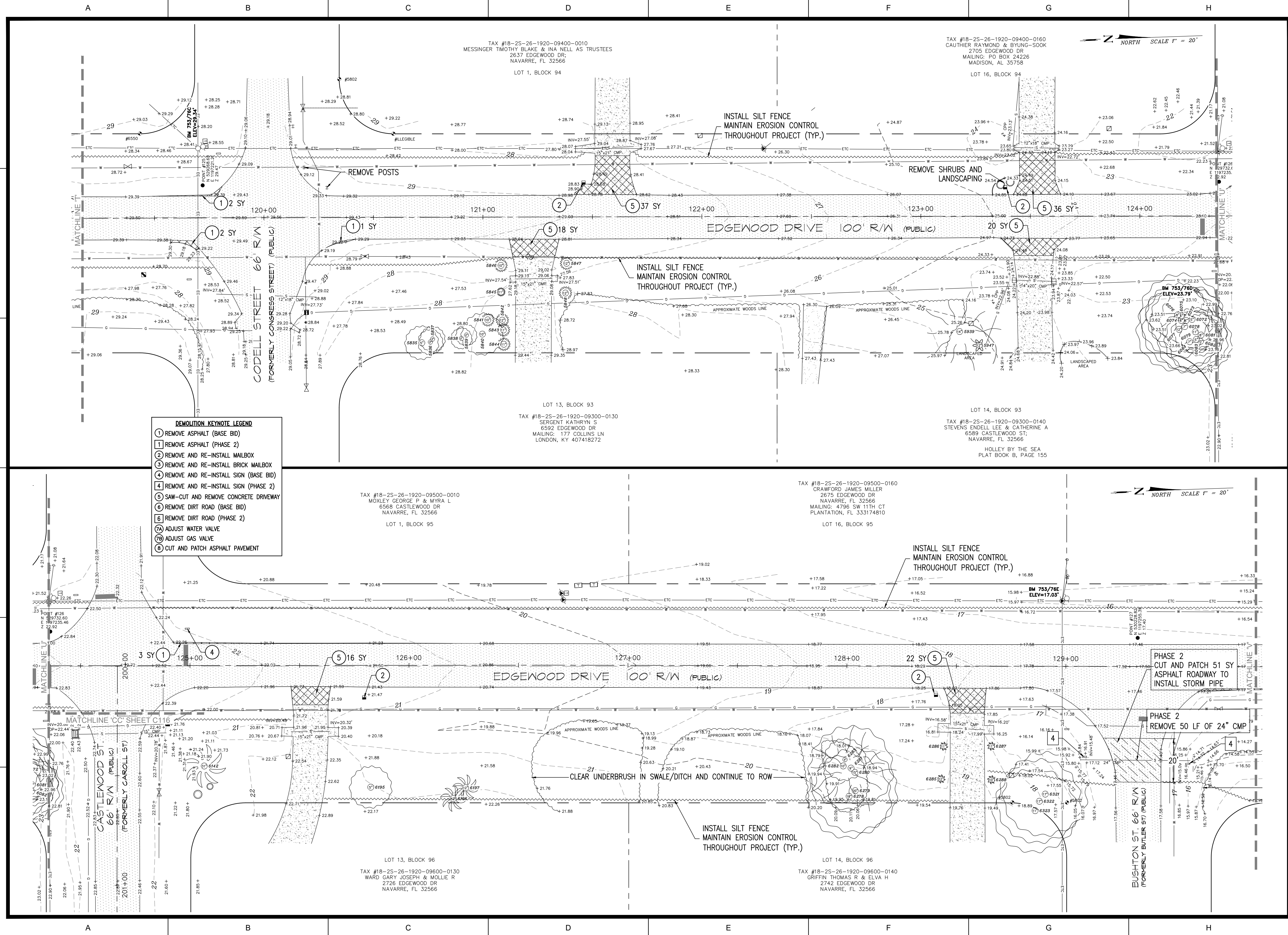


- DEMOLITION KEYNOTE LEGEND**
- ① REMOVE ASPHALT (BASE BID)
 - ① REMOVE ASPHALT (PHASE 2)
 - ② REMOVE AND RE-INSTALL MAILBOX
 - ③ REMOVE AND RE-INSTALL BRICK MAILBOX
 - ④ REMOVE AND RE-INSTALL SIGN (BASE BID)
 - ④ REMOVE AND RE-INSTALL SIGN (PHASE 2)
 - ⑤ SAW-CUT AND REMOVE CONCRETE DRIVEWAY
 - ⑥ REMOVE DIRT ROAD (BASE BID)
 - ⑥ REMOVE DIRT ROAD (PHASE 2)
 - ⑦ ADJUST WATER VALVE
 - ⑦ ADJUST GAS VALVE
 - ⑧ CUT AND PATCH ASPHALT PAVEMENT

NO.		DATE		REVISIONS	
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<p>SRCO EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS</p>					
<p>EDGEWOOD DR (STA. 108+45 - 119+15) DEMOLITION PLAN</p>					
<p>SANTA ROSA FLORIDA</p>					
DRAWN BY: PLC		DESIGNED BY: RCK		CHECKED BY: RCK	
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PROJECT NO: 2018-41		C110		SHEET: 13 OF 62	

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FL PE 49949

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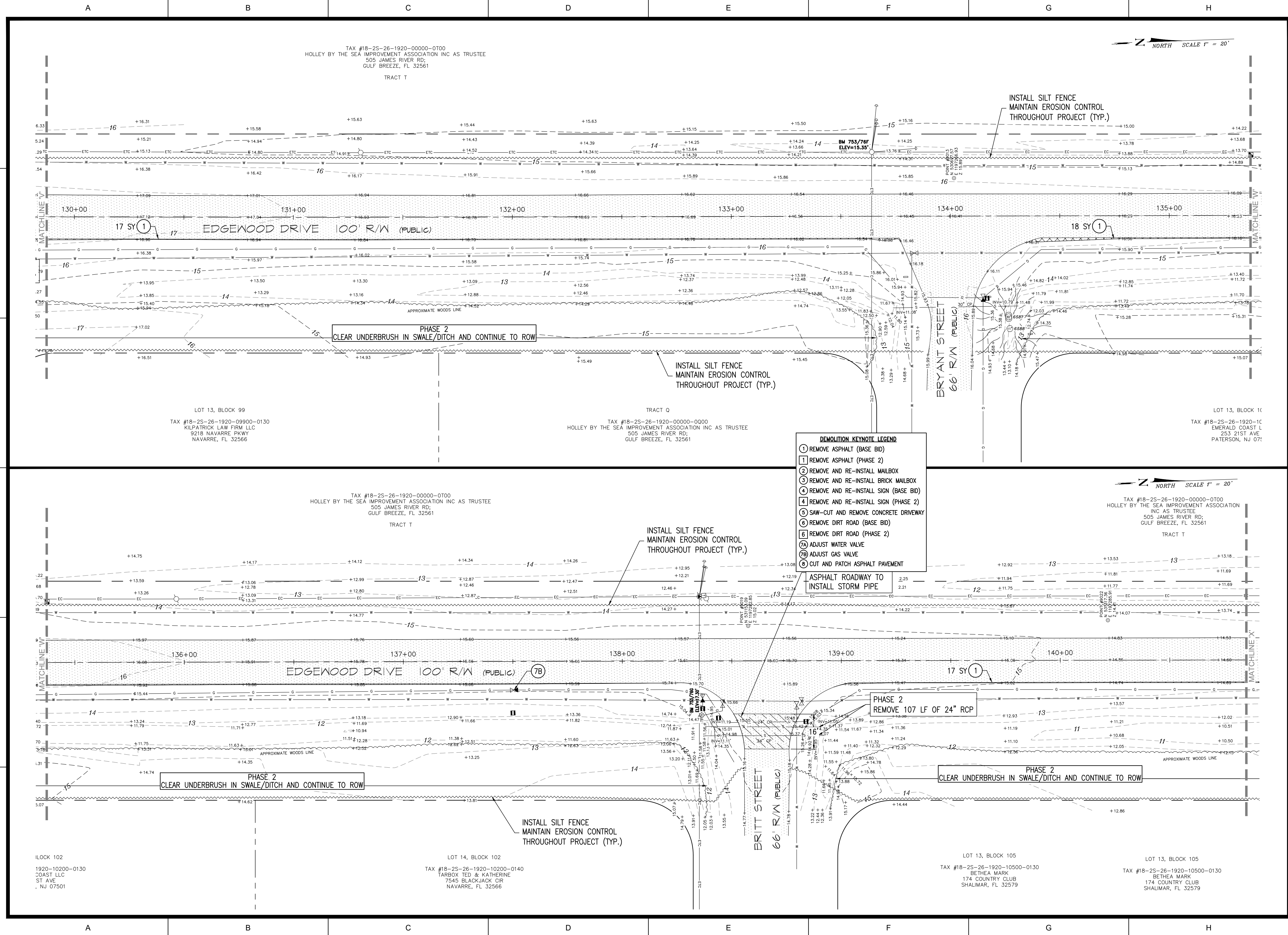
- DEMOLITION KEYNOTE LEGEND**
- 1 REMOVE ASPHALT (BASE BID)
 - 1 REMOVE ASPHALT (PHASE 2)
 - 2 REMOVE AND RE-INSTALL MAILBOX
 - 3 REMOVE AND RE-INSTALL BRICK MAILBOX
 - 4 REMOVE AND RE-INSTALL SIGN (BASE BID)
 - 4 REMOVE AND RE-INSTALL SIGN (PHASE 2)
 - 5 SAW-CUT AND REMOVE CONCRETE DRIVEWAY
 - 6 REMOVE DIRT ROAD (BASE BID)
 - 6 REMOVE DIRT ROAD (PHASE 2)
 - 7A ADJUST WATER VALVE
 - 7B ADJUST GAS VALVE
 - 8 CUT AND PATCH ASPHALT PAVEMENT

DRAWN BY: PLC		PROJECT NO: 2018-41	
DESIGNED BY: RCK		C111	
CHECKED BY: RCK		SHEET: 14 OF 62	
DATE: 03/10/2021		SCALE: 1" = 20'	
PROJECT NO: 2018-41		SHEET: 14 OF 62	
DRAWING TITLE: SRCO EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS		LOCATION: SANTA ROSA, FLORIDA	
PROJECT ADDRESS: EDGEWOOD DR (STA. 119+45 - 124+35) DEMOLITION PLAN		STATE: FLORIDA	
PROJECT NO: 2018-41		DATE: _____	
DRAWN BY: PLC		PROJECT NO: 2018-41	
DESIGNED BY: RCK		C111	
CHECKED BY: RCK		SHEET: 14 OF 62	
DATE: 03/10/2021		SCALE: 1" = 20'	
PROJECT NO: 2018-41		SHEET: 14 OF 62	
DRAWING TITLE: SRCO EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS		LOCATION: SANTA ROSA, FLORIDA	
PROJECT ADDRESS: EDGEWOOD DR (STA. 119+45 - 124+35) DEMOLITION PLAN		STATE: FLORIDA	
PROJECT NO: 2018-41		DATE: _____	

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NORTH SCALE 1" = 20'

NORTH SCALE 1" = 20'

TAX #18-25-26-1920-00000-0T00
HOLLEY BY THE SEA IMPROVEMENT ASSOCIATION INC AS TRUSTEE
505 JAMES RIVER RD;
GULF BREEZE, FL 32561
TRACT T

TAX #18-25-26-1920-00000-0T00
HOLLEY BY THE SEA IMPROVEMENT ASSOCIATION INC AS TRUSTEE
505 JAMES RIVER RD;
GULF BREEZE, FL 32561
TRACT T

LOT 13, BLOCK 99
TAX #18-25-26-1920-09900-0130
KILPATRICK LAW FIRM LLC
9218 NAVARRE PKWY
NAVARRE, FL 32566

TRACT Q
TAX #18-25-26-1920-00000-0000
HOLLEY BY THE SEA IMPROVEMENT ASSOCIATION INC AS TRUSTEE
505 JAMES RIVER RD;
GULF BREEZE, FL 32561

LOT 13, BLOCK 10
TAX #18-25-26-1920-10000-0100
EMERALD COAST L
253 21ST AVE
PATERSON, NJ 07624

- DEMOLITION KEYNOTE LEGEND**
- 1 REMOVE ASPHALT (BASE BID)
 - 1 REMOVE ASPHALT (PHASE 2)
 - 2 REMOVE AND RE-INSTALL MAILBOX
 - 3 REMOVE AND RE-INSTALL BRICK MAILBOX
 - 4 REMOVE AND RE-INSTALL SIGN (BASE BID)
 - 4 REMOVE AND RE-INSTALL SIGN (PHASE 2)
 - 5 SAW-CUT AND REMOVE CONCRETE DRIVEWAY
 - 6 REMOVE DIRT ROAD (BASE BID)
 - 6 REMOVE DIRT ROAD (PHASE 2)
 - 7A ADJUST WATER VALVE
 - 7B ADJUST GAS VALVE
 - 8 CUT AND PATCH ASPHALT PAVEMENT

NO.	DATE	REVISIONS

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FL. CERTIFICATE OF AUTHORIZATION NO. 92828

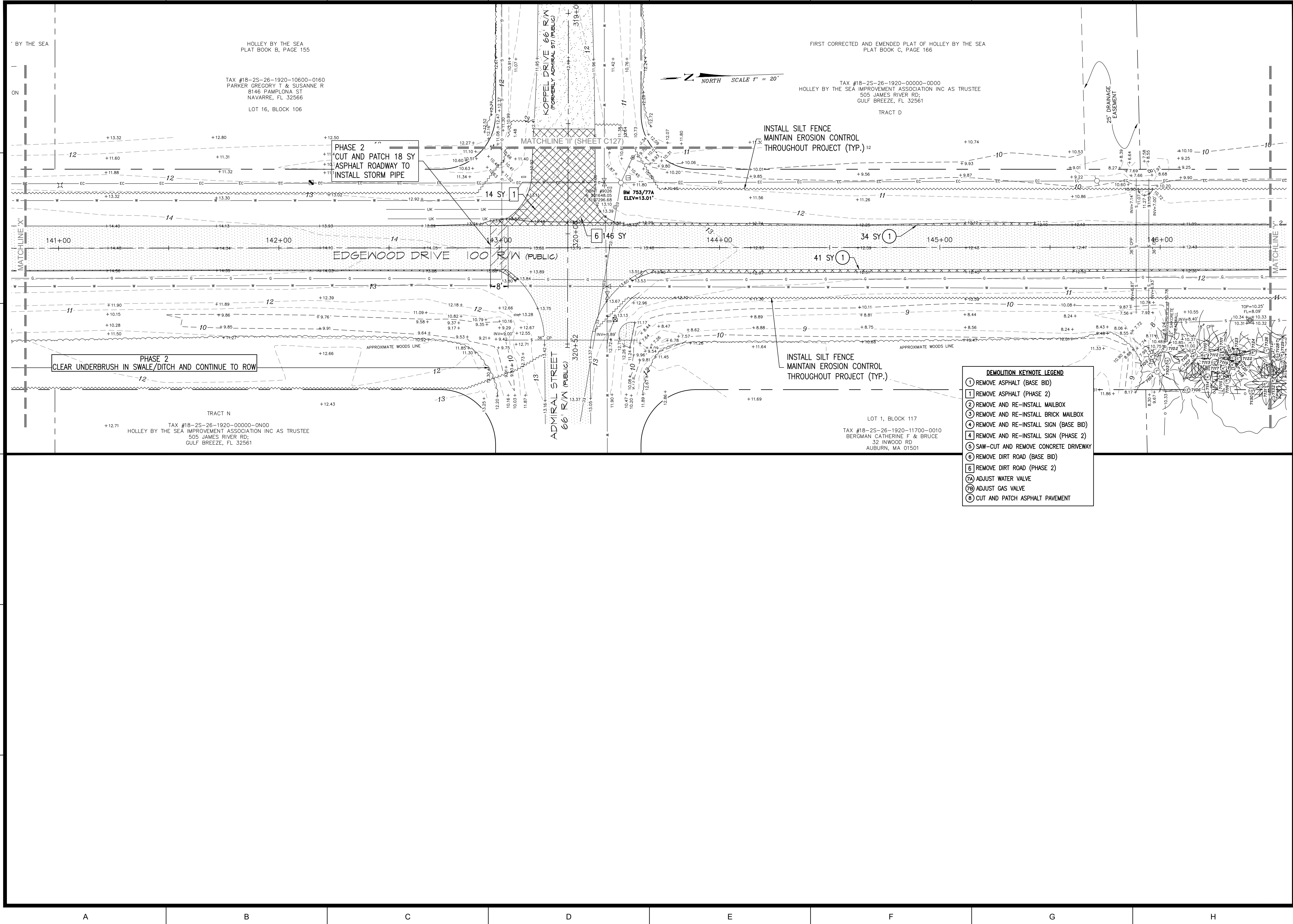
SRCO EDGEWOOD DRIVE
DRAINAGE AND ROADWAY IMPROVEMENTS

EDGEWOOD DR (STA. 129+85 - 140+85) DEMOLITION PLAN
SANTA ROSA
FLORIDA

DRAWN BY: PLC	DESIGNED BY: RCK	CHECKED BY: RCK	DATE: 03/10/2021
SCALE: 1" = 20'	NOT FOR CONSTRUCTION	BY: DATE:	
PROJECT NO: 2018-41			
C112			
SHEET: 15 OF 62			

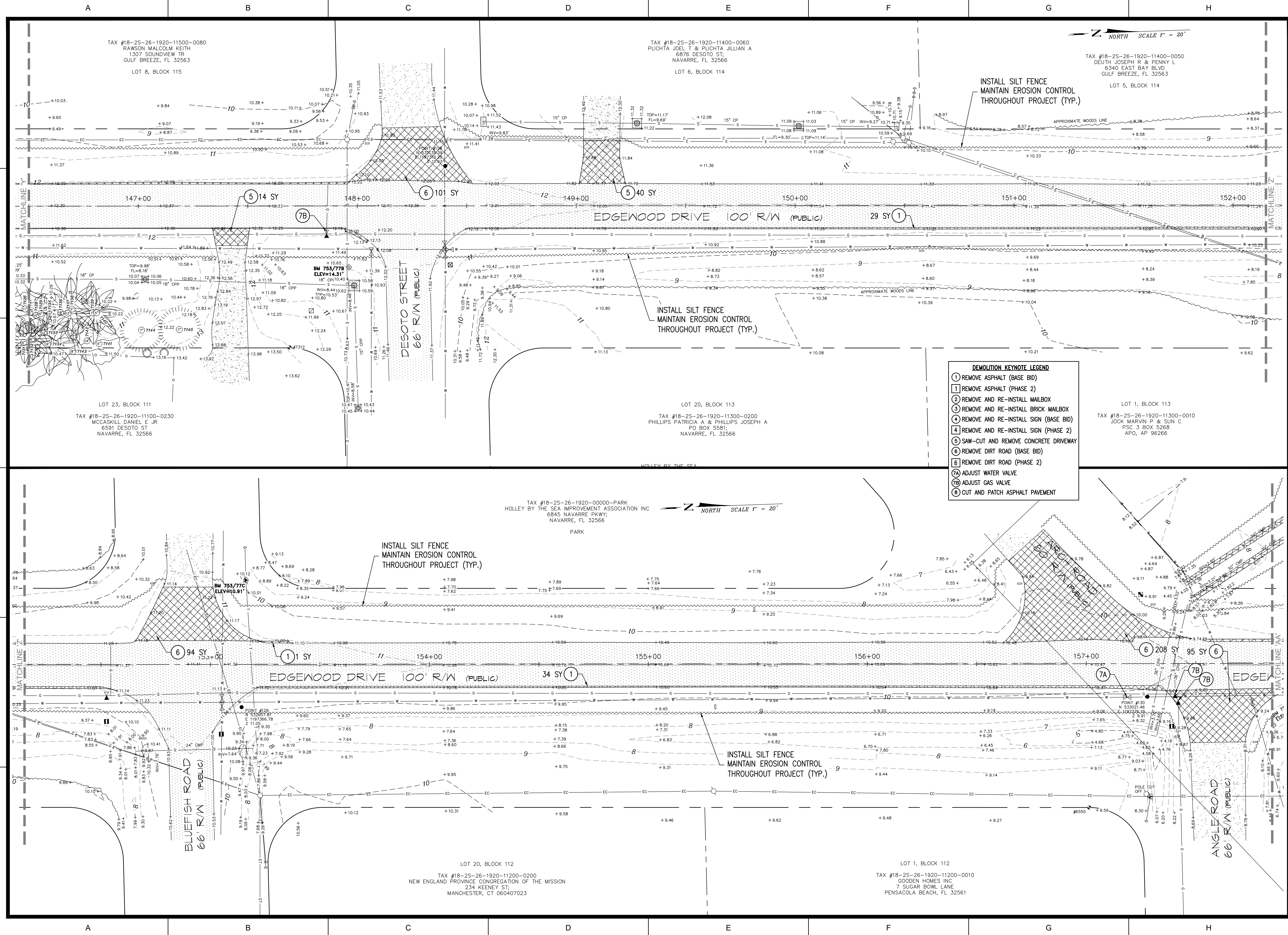
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PROJECT NO: 2018-41					
C113					
SHEET: 16 OF 62					
SRCO EDGEWOOD DRIVE			FLORIDA		
DRAINAGE AND ROADWAY IMPROVEMENTS					
EDGEWOOD DR (STA. 140+85 - 146+50) DEMOLITION PLAN					
SANTA ROSA					
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- DEMOLITION KEYNOTE LEGEND**
- ① REMOVE ASPHALT (BASE BID)
 - ① REMOVE ASPHALT (PHASE 2)
 - ② REMOVE AND RE-INSTALL MAILBOX
 - ③ REMOVE AND RE-INSTALL BRICK MAILBOX
 - ④ REMOVE AND RE-INSTALL SIGN (BASE BID)
 - ④ REMOVE AND RE-INSTALL SIGN (PHASE 2)
 - ⑤ SAW-CUT AND REMOVE CONCRETE DRIVEWAY
 - ⑥ REMOVE DIRT ROAD (BASE BID)
 - ⑥ REMOVE DIRT ROAD (PHASE 2)
 - ⑦A ADJUST WATER VALVE
 - ⑦B ADJUST GAS VALVE
 - ⑧ CUT AND PATCH ASPHALT PAVEMENT

NO.	DATE	REVISIONS

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FL. PE. 49949

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CIVIL ENGINEERS

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(850) 471-9005 info@kh-a.com FAX (850) 471-0093

FL. CERTIFICATE OF AUTHORIZATION NO. 9288

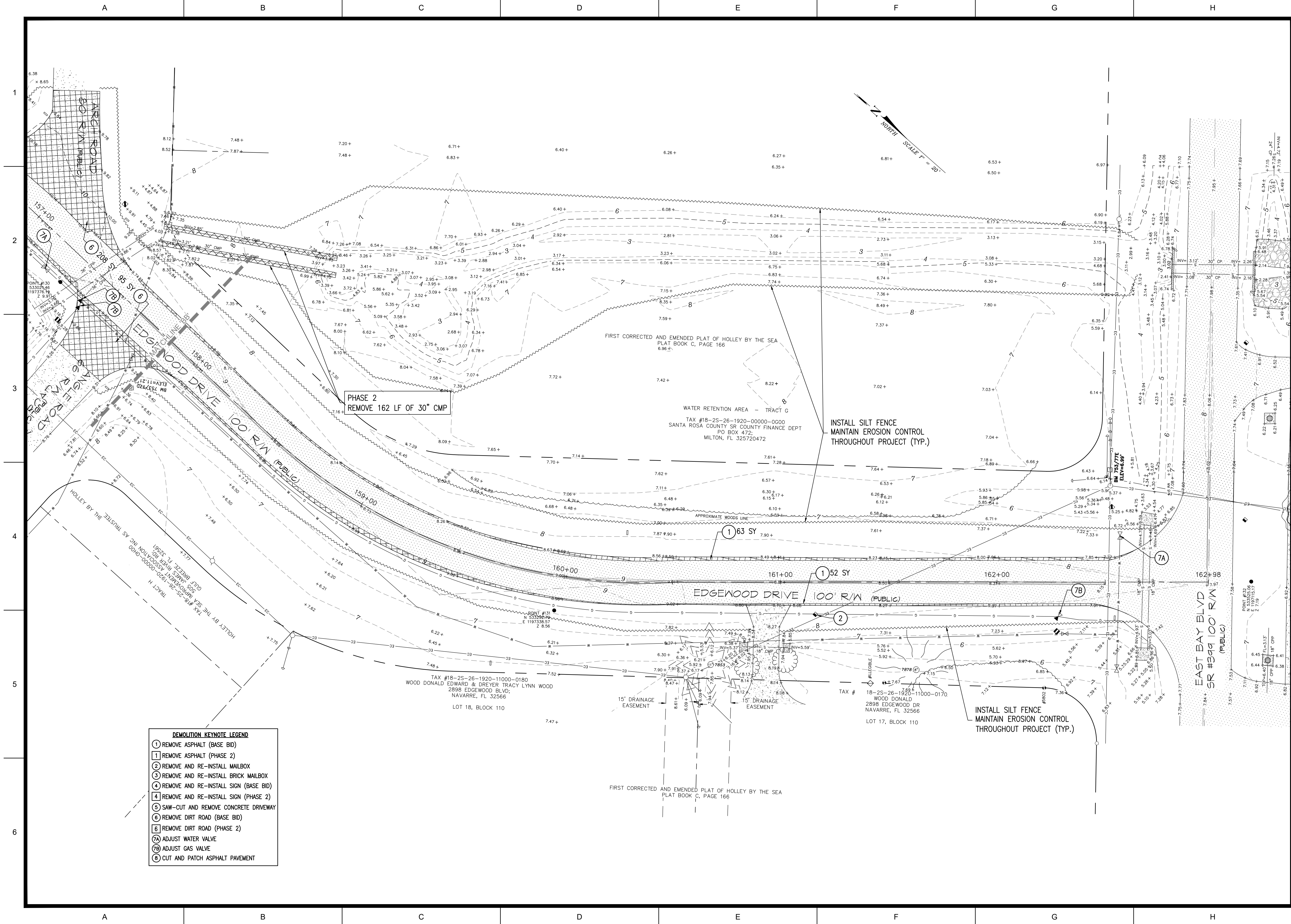
SRCO EDGEWOOD DRIVE
DRAINAGE AND ROADWAY IMPROVEMENTS

EDGEWOOD DR (STA. 146+35 - 157+85) DEMOLITION PLAN

SANTA ROSA FLORIDA

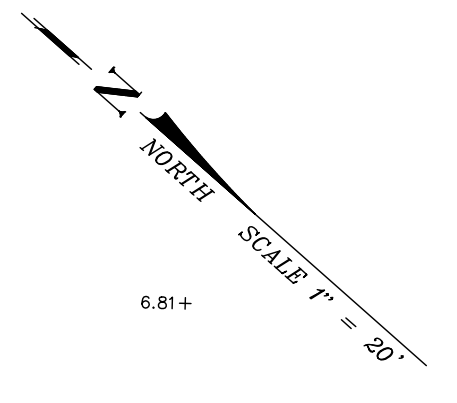
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SCALE: 1" = 20'	NOT FOR CONSTRUCTION	BY: DATE:	
PROJECT NO: 2018-41	C114		
SHEET: 17	OF 62		

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DEMOLITION KEYNOTE LEGEND

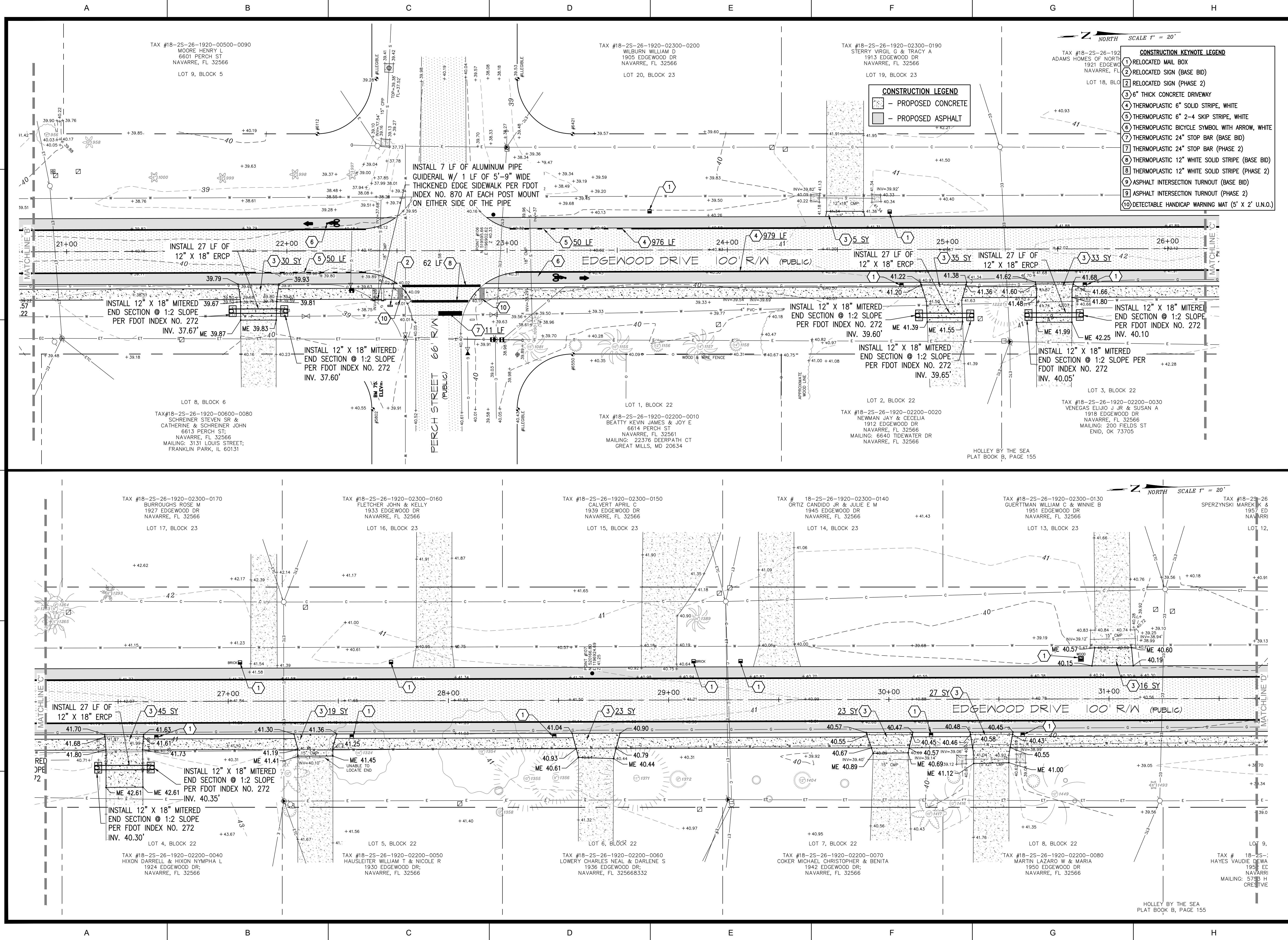
- ① REMOVE ASPHALT (BASE BID)
- ① REMOVE ASPHALT (PHASE 2)
- ② REMOVE AND RE-INSTALL MAILBOX
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- ④ REMOVE AND RE-INSTALL SIGN (BASE BID)
- ④ REMOVE AND RE-INSTALL SIGN (PHASE 2)
- ⑤ SAW-CUT AND REMOVE CONCRETE DRIVEWAY
- ⑥ REMOVE DIRT ROAD (BASE BID)
- ⑥ REMOVE DIRT ROAD (PHASE 2)
- ⑦A ADJUST WATER VALVE
- ⑦B ADJUST GAS VALVE
- ⑧ CUT AND PATCH ASPHALT PAVEMENT



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SRCO EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS EDGEWOOD DR (STA. 157+85 - 162+98) DEMOLITION PLAN SANTA ROSA FLORIDA			PROJECT NO: 2018-41 C115 SHEET: 18 OF 62

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NORTH SCALE 1" = 20'

CONSTRUCTION LEGEND

- PROPOSED CONCRETE
- PROPOSED ASPHALT

CONSTRUCTION KEYNOTE LEGEND

- RELOCATED MAIL BOX
- RELOCATED SIGN (BASE BID)
- RELOCATED SIGN (PHASE 2)
- 6" THICK CONCRETE DRIVEWAY
- THERMOPLASTIC 6" SOLID STRIPE, WHITE
- THERMOPLASTIC 6" 2-4 SKIP STRIPE, WHITE
- THERMOPLASTIC BICYCLE SYMBOL WITH ARROW, WHITE
- THERMOPLASTIC 24" STOP BAR (BASE BID)
- THERMOPLASTIC 24" STOP BAR (PHASE 2)
- THERMOPLASTIC 12" WHITE SOLID STRIPE (BASE BID)
- THERMOPLASTIC 12" WHITE SOLID STRIPE (PHASE 2)
- ASPHALT INTERSECTION TURNOUT (BASE BID)
- ASPHALT INTERSECTION TURNOUT (PHASE 2)
- DETECTABLE HANDICAP WARNING MAT (5' X 2' U.N.O.)

NO.	DATE	REVISIONS

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ROBERT C. KRASNOSKY
FL PE 49949

Kenneth Horne & Associates, Inc.
CIVIL ENGINEERS

PO BOX 10689, PENSACOLA, FLORIDA 32524
7201 N. 9TH AVENUE, SUITE 6, PENSACOLA, FLORIDA 32504
(850) 471-9005 info@kh-a.com FAX (850) 471-0093
FL. CERTIFICATE OF AUTHORIZATION NO. 8268

SRCO EDGEWOOD DRIVE
DRAINAGE AND ROADWAY IMPROVEMENTS

EDGEWOOD DR. (STA. 20+85 - 31+65) PLAN

SANTA ROSA FLORIDA

DRAWN BY:	PLC
DESIGNED BY:	ROK
CHECKED BY:	ROK
DATE:	03/10/2021
SCALE:	1" = 20'
NOT FOR CONSTRUCTION	
BY:	

PROJECT NO: 2018-41
C202
SHEET: 20 OF 62

TAX #18-25-26-1920-00500-0090
MOORE HENRY L
6601 PERCH ST
NAVARRE, FL 32566
LOT 9, BLOCK 5

TAX #18-25-26-1920-02300-0200
WILBURN WILLIAM D
1905 EDGEWOOD DR
NAVARRE, FL 32566
LOT 20, BLOCK 23

TAX #18-25-26-1920-02300-0190
STERRY VIRGIL G & TRACY A
1913 EDGEWOOD DR
NAVARRE, FL 32566
LOT 19, BLOCK 23

TAX #18-25-26-1920-02300-0170
BURROUGHS ROSE M
1927 EDGEWOOD DR
NAVARRE, FL 32566
LOT 17, BLOCK 23

TAX #18-25-26-1920-02300-0160
FLETCHER JOHN & KELLY
1933 EDGEWOOD DR
NAVARRE, FL 32566
LOT 16, BLOCK 23

TAX #18-25-26-1920-02300-0150
CALVERT APRIL C
1939 EDGEWOOD DR
NAVARRE, FL 32566
LOT 15, BLOCK 23

TAX #18-25-26-1920-02300-0140
ORTIZ CANDIDO JR & JULIE E M
1945 EDGEWOOD DR
NAVARRE, FL 32566
LOT 14, BLOCK 23

TAX #18-25-26-1920-02300-0130
GUERTMAN WILLIAM C & WINNIE B
1951 EDGEWOOD DR
NAVARRE, FL 32566
LOT 13, BLOCK 23

TAX #18-25-26-1920-02200-0030
VENEGAS ELLIOT J JR & SUSAN A
1918 EDGEWOOD DR
NAVARRE, FL 32566
MAILING: 200 FIELDS ST
ENID, OK 73705
LOT 3, BLOCK 22

TAX #18-25-26-1920-02200-0020
NEWMAN JAY & CECELIA
1912 EDGEWOOD DR
NAVARRE, FL 32566
MAILING: 6640 TIDEWATER DR
NAVARRE, FL 32566
LOT 2, BLOCK 22

TAX #18-25-26-1920-02200-0010
BEATTY KEVIN JAMES & JOY E
6614 PERCH ST
NAVARRE, FL 32561
MAILING: 22376 DERPATH CT
GREAT MILLS, MD 20634
LOT 1, BLOCK 22

TAX #18-25-26-1920-00600-0080
SCHREINER STEVEN SR & CATHERINE & SCHREINER JOHN
6613 PERCH ST.
NAVARRE, FL 32566
MAILING: 3131 LOUIS STREET,
FRANKLIN PARK, IL 60131
LOT 8, BLOCK 6

TAX #18-25-26-1920-02200-0040
HIXON DARRELL & HIXON NYMPHA L
1924 EDGEWOOD DR;
NAVARRE, FL 32566
LOT 4, BLOCK 22

TAX #18-25-26-1920-02200-0050
HAUSLEITER WILLIAM T & NICOLE R
1930 EDGEWOOD DR;
NAVARRE, FL 32566
LOT 5, BLOCK 22

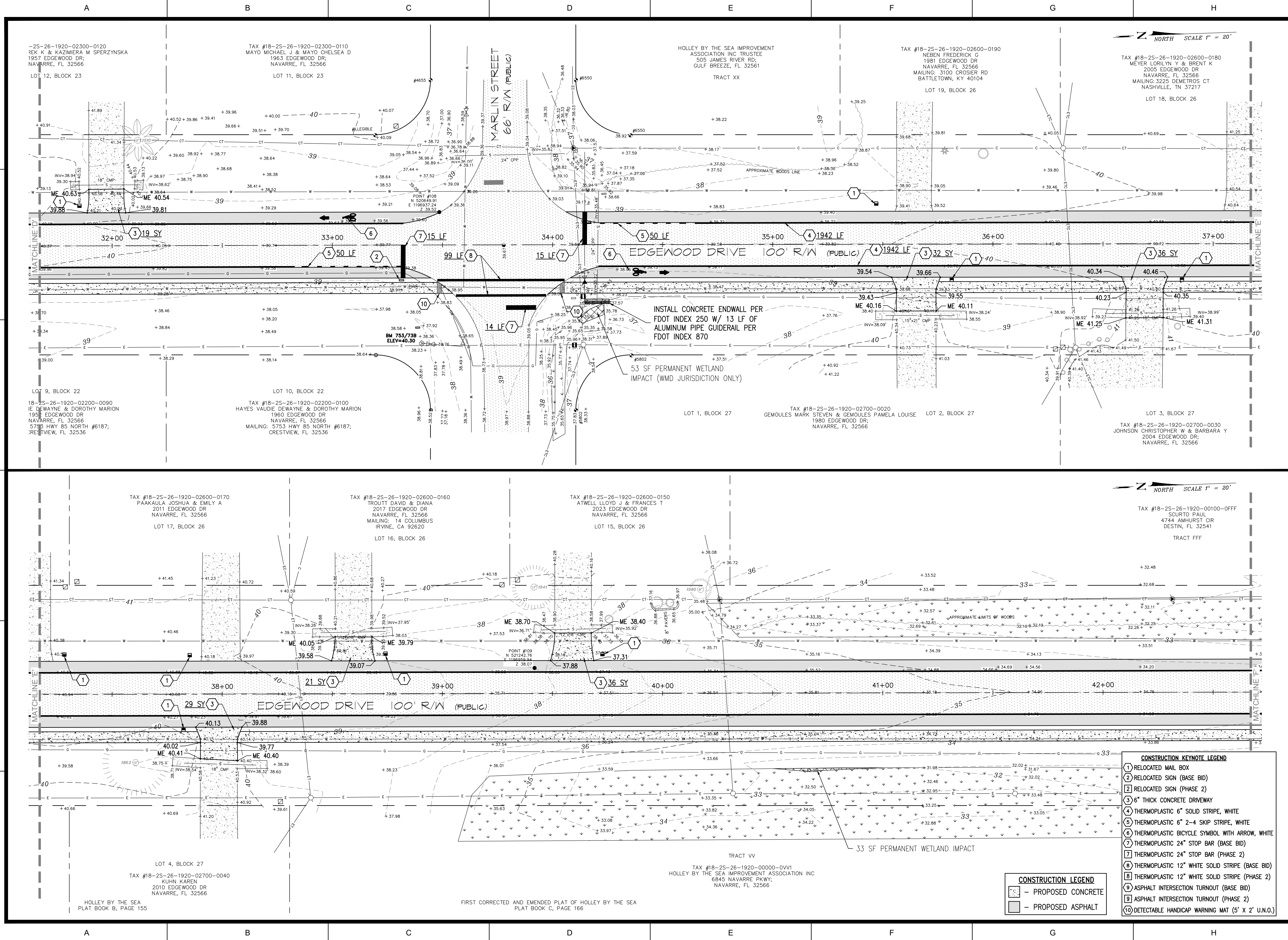
TAX #18-25-26-1920-02200-0060
LOWERY CHARLES NEAL & DARLENE S
1936 EDGEWOOD DR;
NAVARRE, FL 325668332
LOT 6, BLOCK 22

TAX #18-25-26-1920-02200-0070
COKER MICHAEL CHRISTOPHER & BENITA
1942 EDGEWOOD DR;
NAVARRE, FL 32566
LOT 7, BLOCK 22

TAX #18-25-26-1920-02200-0080
MARTIN LAZARO W & MARIA
1950 EDGEWOOD DR
NAVARRE, FL 32566
MAILING: 5730 H
CRESTVIEW
LOT 8, BLOCK 22

TAX #18-25-26-1920-02200-0090
HAYES VAUDIE DEWA
1957 ED
NAVARRE
MAILING: 5730 H
CRESTVIEW
LOT 9, BLOCK 22

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CONSTRUCTION KEYNOTE LEGEND

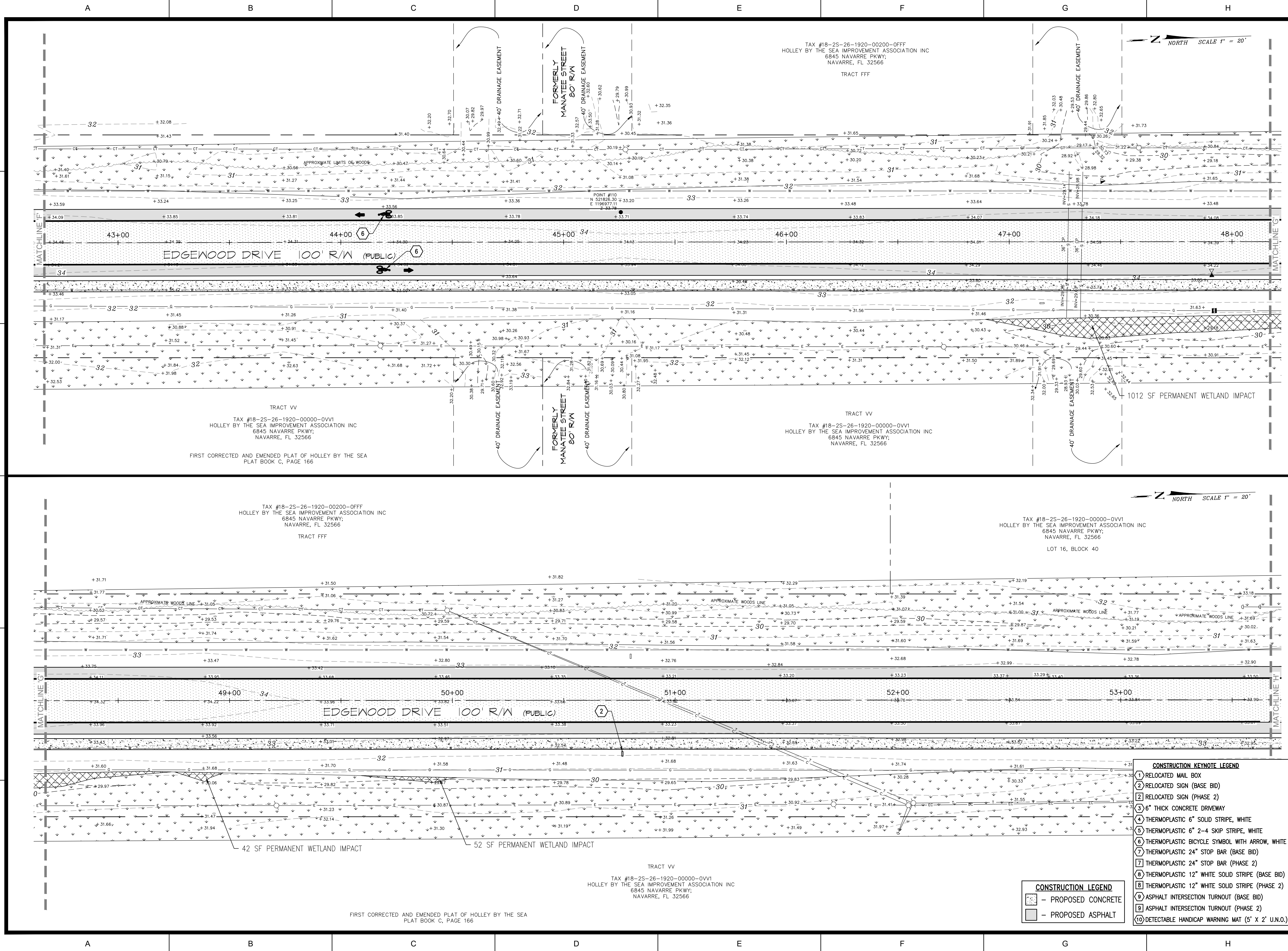
- 1 RELOCATED MAIL BOX
- 2 RELOCATED SIGN (BASE BID)
- 2 RELOCATED SIGN (PHASE 2)
- 3 6" THICK CONCRETE DRIVEWAY
- 4 THERMOPLASTIC 6" SOLID STRIPE, WHITE
- 5 THERMOPLASTIC 6" 2-4 SKIP STRIPE, WHITE
- 6 THERMOPLASTIC BICYCLE SYMBOL WITH ARROW, WHITE
- 7 THERMOPLASTIC 24" STOP BAR (BASE BID)
- 7 THERMOPLASTIC 24" STOP BAR (PHASE 2)
- 8 THERMOPLASTIC 12" WHITE SOLID STRIPE (BASE BID)
- 8 THERMOPLASTIC 12" WHITE SOLID STRIPE (PHASE 2)
- 9 ASPHALT INTERSECTION TURNOUT (BASE BID)
- 9 ASPHALT INTERSECTION TURNOUT (PHASE 2)
- 10 DETECTABLE HANDICAP WARNING MAT (5' X 2' U.N.O.)

CONSTRUCTION LEGEND

- [Pattern] - PROPOSED CONCRETE
- [Pattern] - PROPOSED ASPHALT

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Kenneth Horne & Associates, Inc. CIVIL ENGINEERS 			PO BOX 10689, PENSACOLA, FLORIDA 32524 7201 N. 9TH AVENUE, SUITE 6, PENSACOLA, FLORIDA 32504 (850) 471-9005 info@kh-a.com FAX (850) 471-0093 FL CERTIFICATE OF AUTHORIZATION NO. 8268
SRCO EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS EDGEWOOD DR (STA. 31+65 - 42+65) PLAN			
DRAWN BY:	PLC		
DESIGNED BY:	ROK		
CHECKED BY:	ROK		
DATE:	03/10/2021		
SCALE:	1" = 20'		
NOT FOR CONSTRUCTION			
BY:			
PROJECT NO.:	2018-41		
	C203		
SHEET:	21	OF 62	

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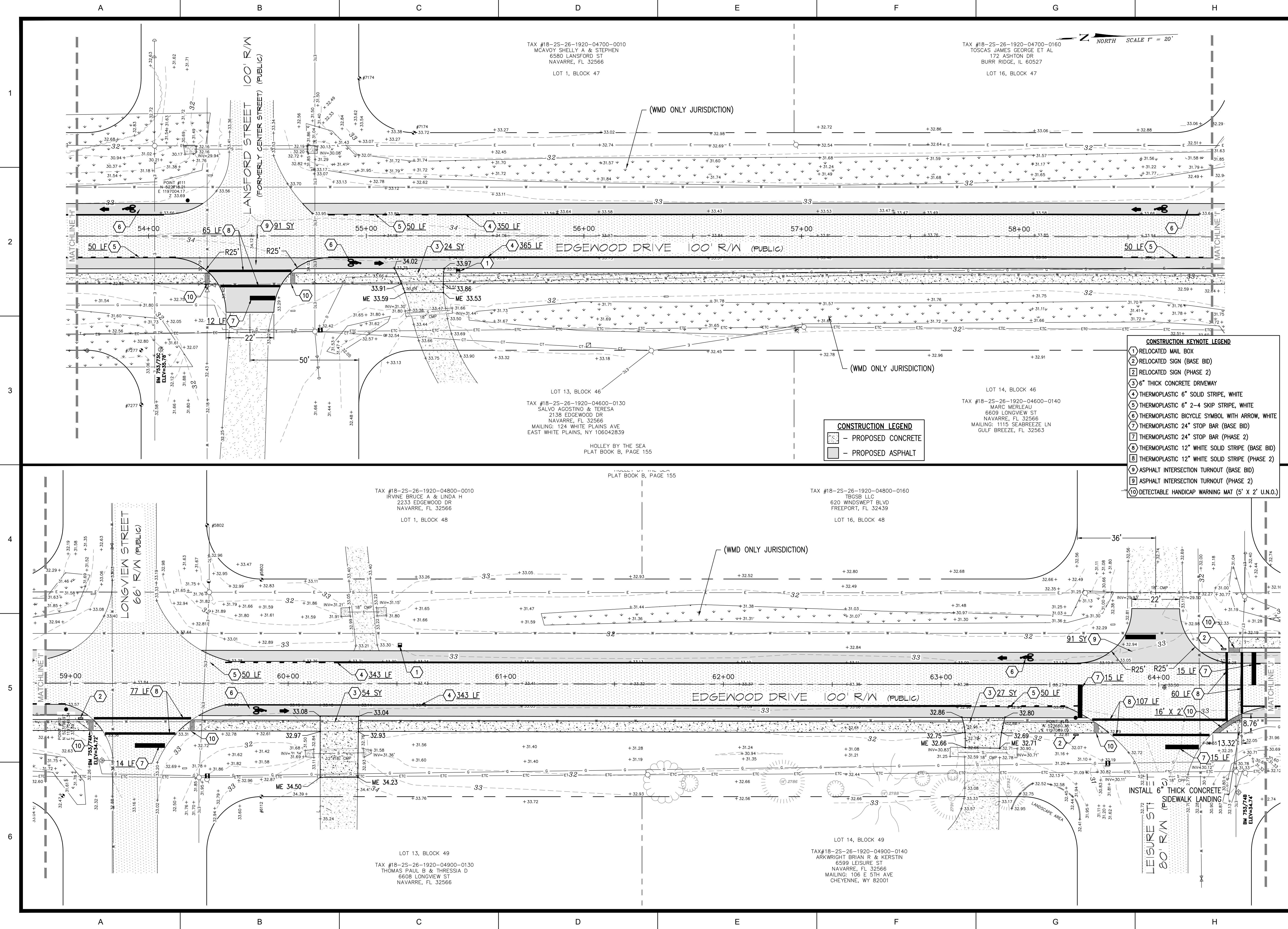


CONSTRUCTION LEGEND	
[Symbol]	PROPOSED CONCRETE
[Symbol]	PROPOSED ASPHALT

CONSTRUCTION KEYNOTE LEGEND	
1	RELOCATED MAIL BOX
2	RELOCATED SIGN (BASE BID)
3	RELOCATED SIGN (PHASE 2)
4	6" THICK CONCRETE DRIVEWAY
5	THERMOPLASTIC 6" SOLID STRIPE, WHITE
6	THERMOPLASTIC 6" 2-4 SKIP STRIPE, WHITE
7	THERMOPLASTIC 24" STOP BAR (BASE BID)
8	THERMOPLASTIC 24" STOP BAR (PHASE 2)
9	THERMOPLASTIC 12" WHITE SOLID STRIPE (BASE BID)
10	THERMOPLASTIC 12" WHITE SOLID STRIPE (PHASE 2)
11	ASPHALT INTERSECTION TURNOUT (BASE BID)
12	ASPHALT INTERSECTION TURNOUT (PHASE 2)
13	DETECTABLE HANDICAP WARNING MAT (5' X 2' U.N.O.)

DRAWN BY: PLC DESIGNED BY: RCK CHECKED BY: RCK DATE: 03/10/2021 SCALE: 1" = 20' NOT FOR CONSTRUCTION BY: DATE:	PROJECT NO: 2018-41 SHEET: 22 OF 62 C204	SRCO EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS EDGEWOOD DR (STA. 42+65 - 53+65) PLAN	FLORIDA SANTA ROSA	KH&A Kenneth Horne & Associates, Inc. CIVIL ENGINEERS PO BOX 10689, PENSACOLA, FLORIDA 32524 7201 N. 9TH AVENUE, SUITE 6, PENSACOLA, FLORIDA 32504 (850) 471-9005 info@kh-a.com FAX (850) 471-0093 FL. CERTIFICATE OF AUTHORIZATION NO. 9288	REVISIONS NO. DATE THIS DRAWING IS THE PROPERTY OF KENNETH HORNE & ASSOCIATES, INC. AND IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, WITHOUT THE WRITTEN PERMISSION OF KENNETH HORNE & ASSOCIATES, INC. ANY OTHER PROJECT AND IS TO BE RETURNED UPON REQUEST. ROBERT C. KRASNOSKY FL. PE 49949
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NORTH SCALE 1" = 20'

TAX #18-25-26-1920-04700-0010
MCAVOY SHELLY A & STEPHEN
6580 LANSFORD ST
NAVARRE, FL 32566
LOT 1, BLOCK 47

TAX #18-25-26-1920-04700-0160
TOSCAS JAMES GEORGE ET AL
172 ASHTON DR
BURR RIDGE, IL 60527
LOT 16, BLOCK 47

(WMD ONLY JURISDICTION)

(WMD ONLY JURISDICTION)

LOT 13, BLOCK 46
TAX #18-25-26-1920-04600-0130
SALVO AGOSTINO & TERESA
2138 EDGEWOOD DR
NAVARRE, FL 32566
MAILING: 124 WHITE PLAINS AVE
EAST WHITE PLAINS, NY 106042839
HOLLEY BY THE SEA
PLAT BOOK B, PAGE 155

LOT 14, BLOCK 46
TAX #18-25-26-1920-04600-0140
MARC MERLEAU
6609 LONGVIEW ST
NAVARRE, FL 32566
MAILING: 1115 SEABREEZE LN
GULF BREEZE, FL 32563

TAX #18-25-26-1920-04800-0010
IRVINE BRUCE A & LINDA H
2233 EDGEWOOD DR
NAVARRE, FL 32566
LOT 1, BLOCK 48

TAX #18-25-26-1920-04800-0160
TROSB LLC
620 WINDSWEEP BLVD
FREEPORT, FL 32439
LOT 16, BLOCK 48

(WMD ONLY JURISDICTION)

LOT 13, BLOCK 49
TAX #18-25-26-1920-04900-0130
THOMAS PAUL B & THRESSIA D
6609 LONGVIEW ST
NAVARRE, FL 32566

LOT 14, BLOCK 49
TAX #18-25-26-1920-04900-0140
ARKWRIGHT BRIAN R & KERSTIN
6599 LEISURE ST
NAVARRE, FL 32566
MAILING: 106 E 5TH AVE
CHEYENNE, WY 82001

CONSTRUCTION LEGEND
- PROPOSED CONCRETE
- PROPOSED ASPHALT

- CONSTRUCTION KEYNOTE LEGEND**
- 1 RELOCATED MAIL BOX
 - 2 RELOCATED SIGN (BASE BID)
 - 2 RELOCATED SIGN (PHASE 2)
 - 3 6" THICK CONCRETE DRIVEWAY
 - 4 THERMOPLASTIC 6" SOLID STRIPE, WHITE
 - 5 THERMOPLASTIC 6" 2-4 SKIP STRIPE, WHITE
 - 6 THERMOPLASTIC BICYCLE SYMBOL WITH ARROW, WHITE
 - 7 THERMOPLASTIC 24" STOP BAR (BASE BID)
 - 7 THERMOPLASTIC 24" STOP BAR (PHASE 2)
 - 8 THERMOPLASTIC 12" WHITE SOLID STRIPE (BASE BID)
 - 8 THERMOPLASTIC 12" WHITE SOLID STRIPE (PHASE 2)
 - 9 ASPHALT INTERSECTION TURNOUT (BASE BID)
 - 9 ASPHALT INTERSECTION TURNOUT (PHASE 2)
 - 10 DETECTABLE HANDICAP WARNING MAT (5' X 2' U.N.O.)

NO.	DATE	REVISIONS

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ROBERT C. KRASNOSKY
FL PE 49949

Kenneth Horne & Associates, Inc.
CIVIL ENGINEERS

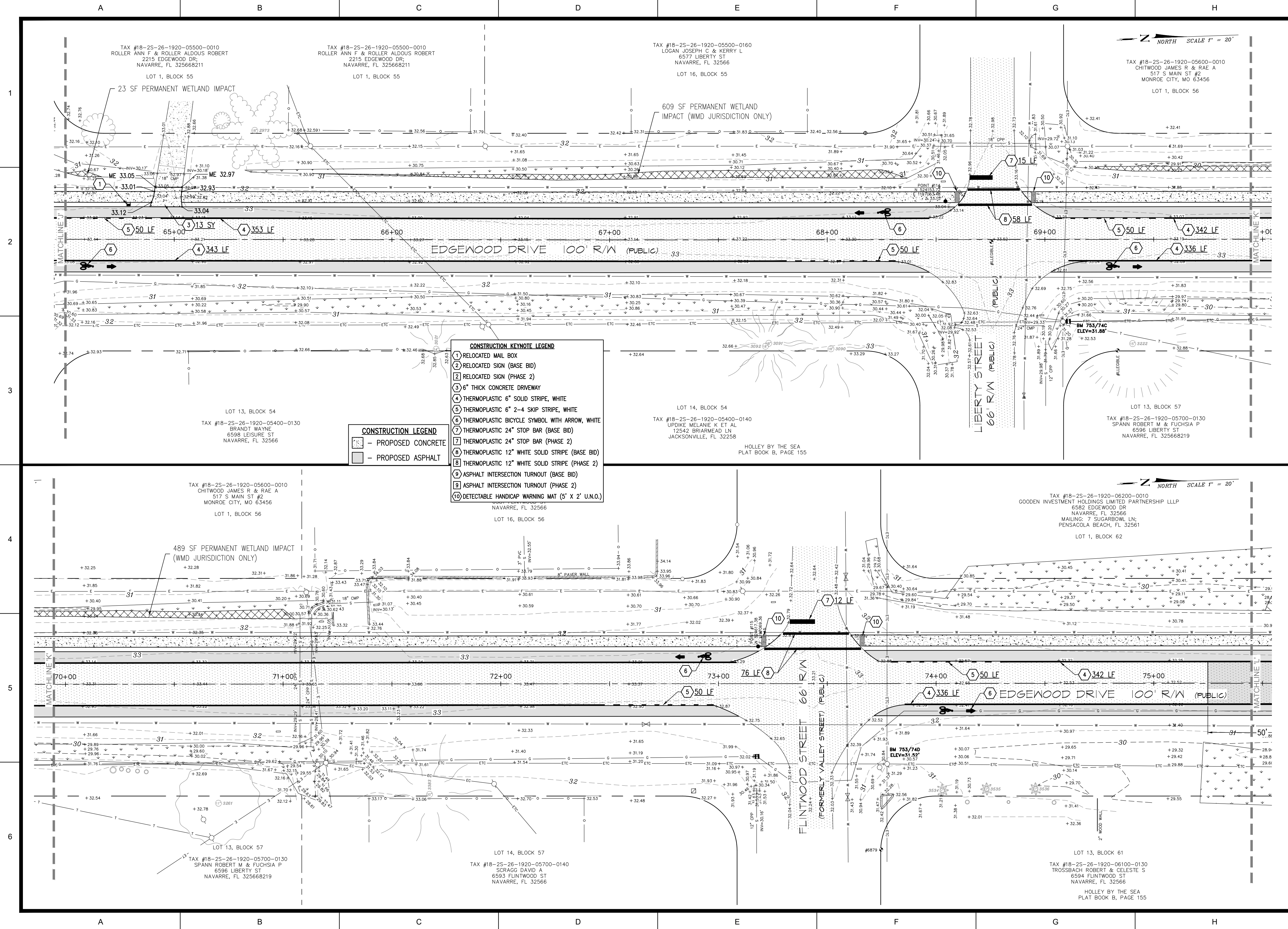
PO BOX 10689, PENSACOLA, FLORIDA 32524
7201 N. 9TH AVENUE, SUITE 6, PENSACOLA, FLORIDA 32504
(850) 471-9005 info@kh-a.com FAX (850) 471-0093
FL CERTIFICATE OF AUTHORIZATION NO. 9288

SRCO EDGEWOOD DRIVE
DRAINAGE AND ROADWAY IMPROVEMENTS
EDGEWOOD DR (STA. 53+65 - 64+50) PLAN
FLORIDA
SANTA ROSA

DRAWN BY: PLC
DESIGNED BY: RCK
CHECKED BY: RCK
DATE: 03/10/2021
SCALE: 1" = 20'
NOT FOR CONSTRUCTION
BY: DATE:

PROJECT NO: 2018-41
C205
SHEET: 23 OF 62

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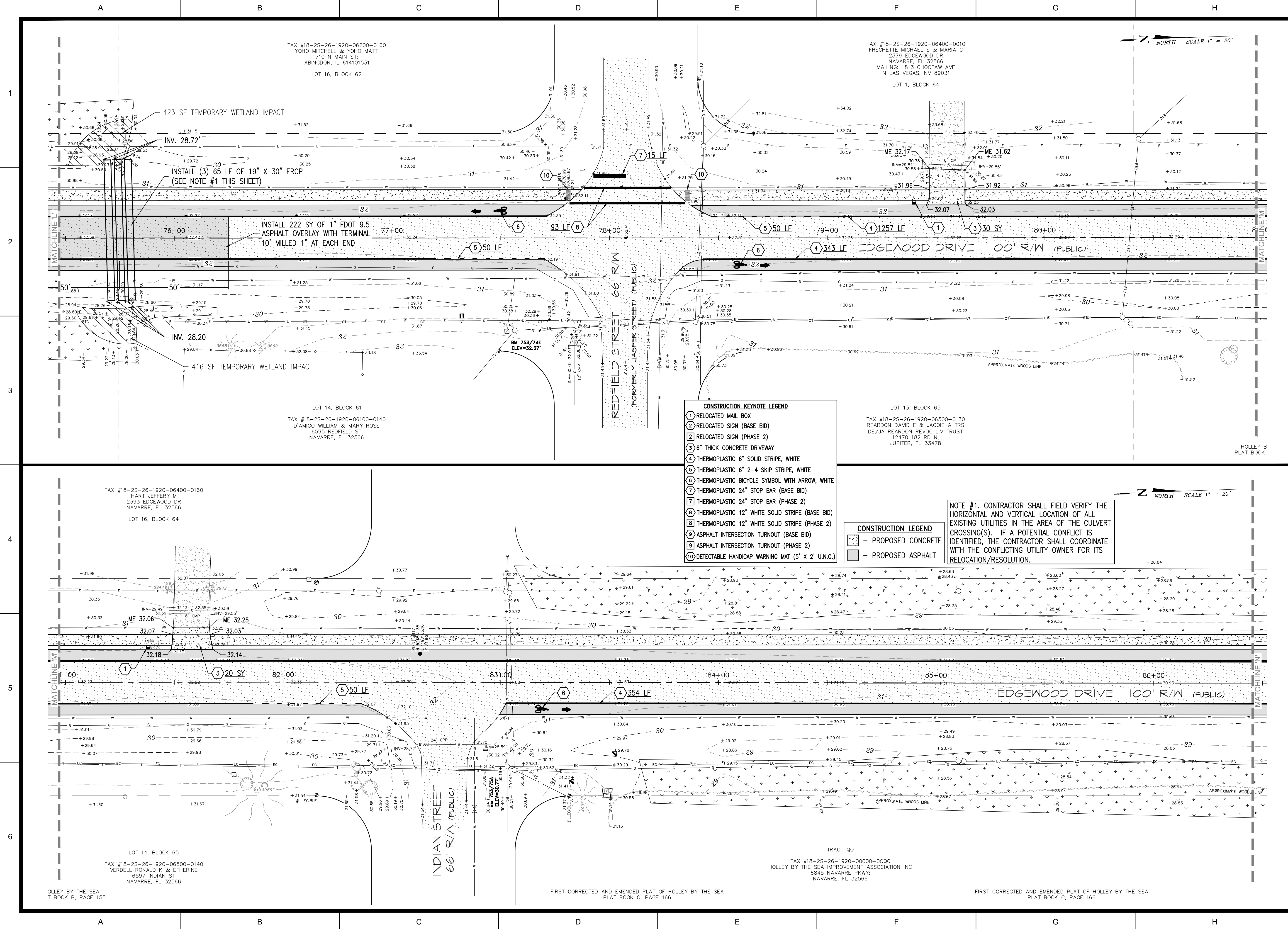


- CONSTRUCTION KEYNOTE LEGEND**
- 1 RELOCATED MAIL BOX
 - 2 RELOCATED SIGN (BASE BID)
 - 2 RELOCATED SIGN (PHASE 2)
 - 3 6" THICK CONCRETE DRIVEWAY
 - 4 THERMOPLASTIC 6" SOLID STRIPE, WHITE
 - 5 THERMOPLASTIC 6" 2-4 SKIP STRIPE, WHITE
 - 6 THERMOPLASTIC BICYCLE SYMBOL WITH ARROW, WHITE
 - 7 THERMOPLASTIC 24" STOP BAR (BASE BID)
 - 7 THERMOPLASTIC 24" STOP BAR (PHASE 2)
 - 8 THERMOPLASTIC 12" WHITE SOLID STRIPE (BASE BID)
 - 8 THERMOPLASTIC 12" WHITE SOLID STRIPE (PHASE 2)
 - 9 ASPHALT INTERSECTION TURNOUT (BASE BID)
 - 9 ASPHALT INTERSECTION TURNOUT (PHASE 2)
 - 10 DETECTABLE HANDICAP WARNING MAT (5' X 2' U.N.O.)

- CONSTRUCTION LEGEND**
- [Pattern] - PROPOSED CONCRETE
 - [Pattern] - PROPOSED ASPHALT

NO.	DATE	REVISIONS	<p>Kenneth Horne & Associates, Inc. CIVIL ENGINEERS</p> <p>PO BOX 10689, PENSACOLA, FLORIDA 32524 7201 N. 9TH AVENUE, SUITE 6, PENSACOLA, FLORIDA 32504 (850) 471-9005 info@kh-a.com FAX (850) 471-0093 FL. CERTIFICATE OF AUTHORIZATION NO. 9288</p>
<p>SRCO EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS EDGEWOOD DR (STA. 64+50 - 75+45) PLAN</p>			FLORIDA
<p>DRAWN BY: PLC DESIGNED BY: RCK CHECKED BY: RCK DATE: 03/10/2021 SCALE: 1" = 20' NOT FOR CONSTRUCTION BY: DATE:</p>	<p>PROJECT NO: 2018-41 C206 SHEET: 24 OF 62</p>	<p>HOLLEY BY THE SEA PLAT BOOK B, PAGE 155</p>	<p>TAX #18-25-26-1920-05600-0010 CHITWOOD JAMES R & RAE A 517 S MAIN ST #2 MONROE CITY, MO 63456</p> <p>TAX #18-25-26-1920-05700-0130 SPANN ROBERT M & FUCHSIA P 6596 LIBERTY ST NAVARRE, FL 32566</p> <p>TAX #18-25-26-1920-05600-0130 GOODEN INVESTMENT HOLDINGS LIMITED PARTNERSHIP LLLP 6582 EDGEWOOD DR NAVARRE, FL 32566 MAILING: 7 SUGARBOWL LN; PENSACOLA BEACH, FL 32561</p> <p>TAX #18-25-26-1920-05700-0130 SPANN ROBERT M & FUCHSIA P 6596 LIBERTY ST NAVARRE, FL 32566</p> <p>TAX #18-25-26-1920-06200-0010 LOT 1, BLOCK 62</p>

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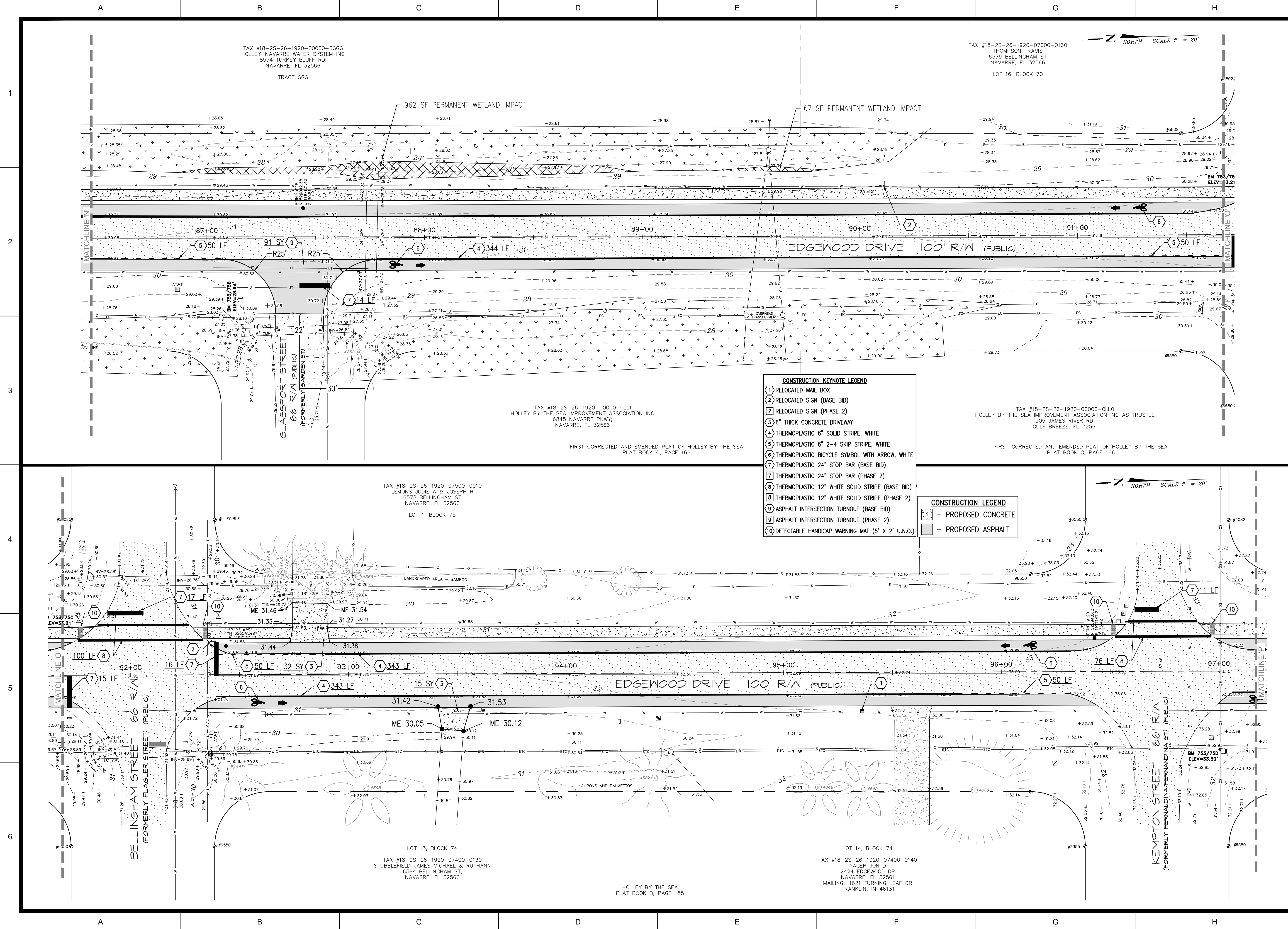
- CONSTRUCTION KEYNOTE LEGEND**
- 1 RELOCATED MAIL BOX
 - 2 RELOCATED SIGN (BASE BID)
 - 3 RELOCATED SIGN (PHASE 2)
 - 4 6" THICK CONCRETE DRIVEWAY
 - 5 THERMOPLASTIC 6" SOLID STRIPE, WHITE
 - 6 THERMOPLASTIC 6" 2-4 SKIP STRIPE, WHITE
 - 7 THERMOPLASTIC BICYCLE SYMBOL WITH ARROW, WHITE
 - 8 THERMOPLASTIC 24" STOP BAR (BASE BID)
 - 9 THERMOPLASTIC 24" STOP BAR (PHASE 2)
 - 10 THERMOPLASTIC 12" WHITE SOLID STRIPE (BASE BID)
 - 11 THERMOPLASTIC 12" WHITE SOLID STRIPE (PHASE 2)
 - 12 ASPHALT INTERSECTION TURNOUT (BASE BID)
 - 13 ASPHALT INTERSECTION TURNOUT (PHASE 2)
 - 14 DETECTABLE HANDICAP WARNING MAT (5' X 2' U.N.O.)

- CONSTRUCTION LEGEND**
- [Pattern] - PROPOSED CONCRETE
 - [Pattern] - PROPOSED ASPHALT

NOTE #1. CONTRACTOR SHALL FIELD VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING UTILITIES IN THE AREA OF THE CULVERT CROSSING(S). IF A POTENTIAL CONFLICT IS IDENTIFIED, THE CONTRACTOR SHALL COORDINATE WITH THE CONFLICTING UTILITY OWNER FOR ITS RELOCATION/RESOLUTION.

	REVISIONS						
NO.	DATE						
<p>Kenneth Horne & Associates, Inc. CIVIL ENGINEERS</p> <p>PO BOX 10689, PENSACOLA, FLORIDA 32524 7201 N. 9TH AVENUE, SUITE 6, PENSACOLA, FLORIDA 32504 (850) 471-9005 info@kh-a.com FAX (850) 471-0093 FL. CERTIFICATE OF AUTHORIZATION NO. 8268</p>							
<p>SRCO EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS</p>				<p>EDGEWOOD DR (STA. 75+45 - 86+45) PLAN</p>			
<p>FLORIDA</p>				<p>SANTA ROSA</p>			
DRAWN BY:	PLC	DESIGNED BY:	ROK	CHECKED BY:	ROK	DATE:	03/10/2021
SCALE:	1" = 20'	NOT FOR CONSTRUCTION					
PROJECT NO:	2018-41						
SHEET:	25	OF	62				

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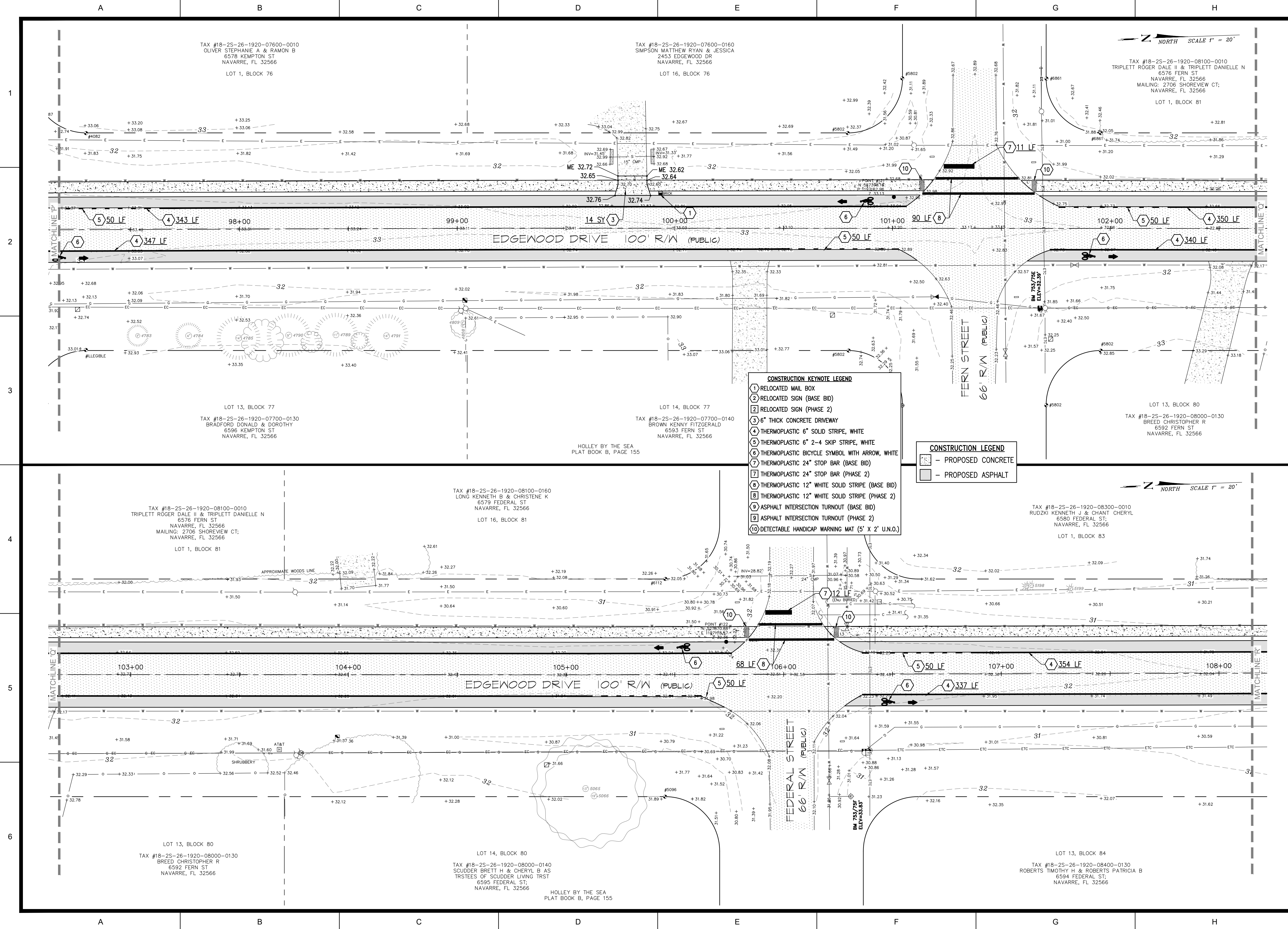
- CONSTRUCTION KEYNOTE LEGEND**
- 1 RELOCATED MAIL BOX
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 - 3 RELOCATED SIGN (PHASE 2)
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- CONSTRUCTION LEGEND**
- [Pattern] - PROPOSED CONCRETE
 - [Pattern] - PROPOSED ASPHALT

Kenneth Horne & Associates, Inc. CIVIL ENGINEERS	
PO BOX 10689, PENSACOLA, FLORIDA 32524 7201 N. 9TH AVENUE, SUITE 6, PENSACOLA, FLORIDA 32504 (850) 471-9005 info@kh-a.com FAX (850) 471-0093 FL. CERTIFICATE OF AUTHORIZATION NO. 8268	
DRAWN BY: PLC DESIGNED BY: RCK CHECKED BY: RCK DATE: 03/10/2021 SCALE: 1" = 20' NOT FOR CONSTRUCTION BY: DATE:	REVISIONS NO. DATE PROJECT NO: 2018-41 SHEET: 26 OF 62
SRCO EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS EDGEWOOD DR (STA. 86+45 - 97+15) PLAN SANTA ROSA FLORIDA	

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ROBERT C. KRASNOSKY
FL. PE 49949

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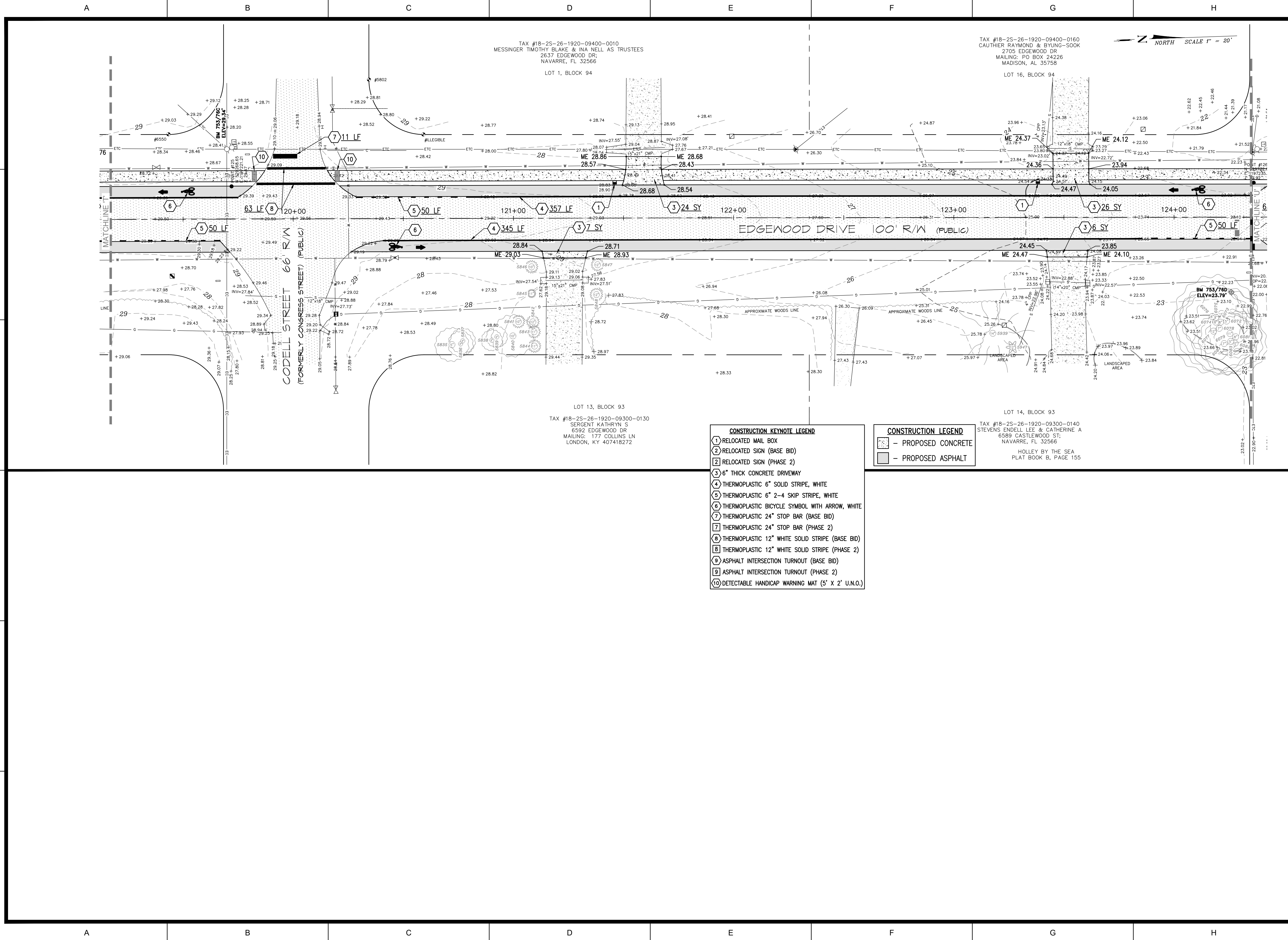


- CONSTRUCTION KEYNOTE LEGEND**
- 1 RELOCATED MAIL BOX
 - 2 RELOCATED SIGN (BASE BID)
 - 2 RELOCATED SIGN (PHASE 2)
 - 3 6" THICK CONCRETE DRIVEWAY
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 - 5 THERMOPLASTIC 6" 2-4 SKIP STRIPE, WHITE
 - 6 THERMOPLASTIC BICYCLE SYMBOL WITH ARROW, WHITE
 - 7 THERMOPLASTIC 24" STOP BAR (BASE BID)
 - 7 THERMOPLASTIC 24" STOP BAR (PHASE 2)
 - 8 THERMOPLASTIC 12" WHITE SOLID STRIPE (BASE BID)
 - 8 THERMOPLASTIC 12" WHITE SOLID STRIPE (PHASE 2)
 - 9 ASPHALT INTERSECTION TURNOUT (BASE BID)
 - 9 ASPHALT INTERSECTION TURNOUT (PHASE 2)
 - 10 DETECTABLE HANDICAP WARNING MAT (5' X 2' U.N.O.)

- CONSTRUCTION LEGEND**
- [Pattern] - PROPOSED CONCRETE
 - [Pattern] - PROPOSED ASPHALT

NO.	DATE	REVISIONS	<p>Kenneth Horne & Associates, Inc. CIVIL ENGINEERS</p> <p>PO BOX 10689, PENSACOLA, FLORIDA 32524 7201 N. 9TH AVENUE, SUITE 6, PENSACOLA, FLORIDA 32504 (850) 471-9005 info@kh-a.com FAX (850) 471-0093 FL. CERTIFICATE OF AUTHORIZATION NO. 8268</p> <p>ROBERT C. KRASNOSKY FL. PE 49949</p>
<p>SRCO EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS</p> <p>EDGEWOOD DR (STA. 97+15 - 108+15) PLAN</p> <p>SANTA ROSA FLORIDA</p>			<p>KH&A</p>
<p>DRAWN BY: PLC DESIGNED BY: RCK CHECKED BY: RCK DATE: 03/10/2021 SCALE: 1" = 20' NOT FOR CONSTRUCTION BY: DATE:</p>			
<p>PROJECT NO: 2018-41 SHEET: 27 OF 62</p>			

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TAX #18-25-26-1920-09400-0010
MESSINGER TIMOTHY BLAKE & INA NELL AS TRUSTEES
2637 EDGEWOOD DR.
NAVARRE, FL 32566
LOT 1, BLOCK 94

TAX #18-25-26-1920-09400-0160
CAUTHIER RAYMOND & BYUNG-SOOK
2705 EDGEWOOD DR
MADISON, AL 35758
LOT 16, BLOCK 94

LOT 13, BLOCK 93
TAX #18-25-26-1920-09300-0130
SERGENT KATHRYN S
6592 EDGEWOOD DR
MADISON, KY 407418272

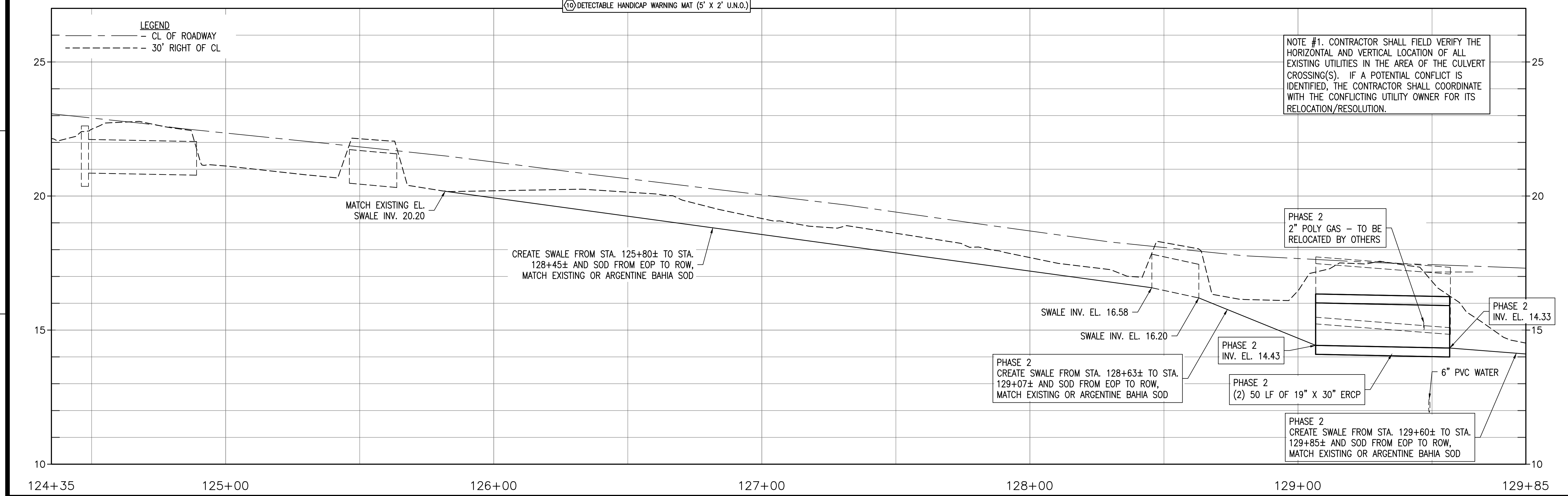
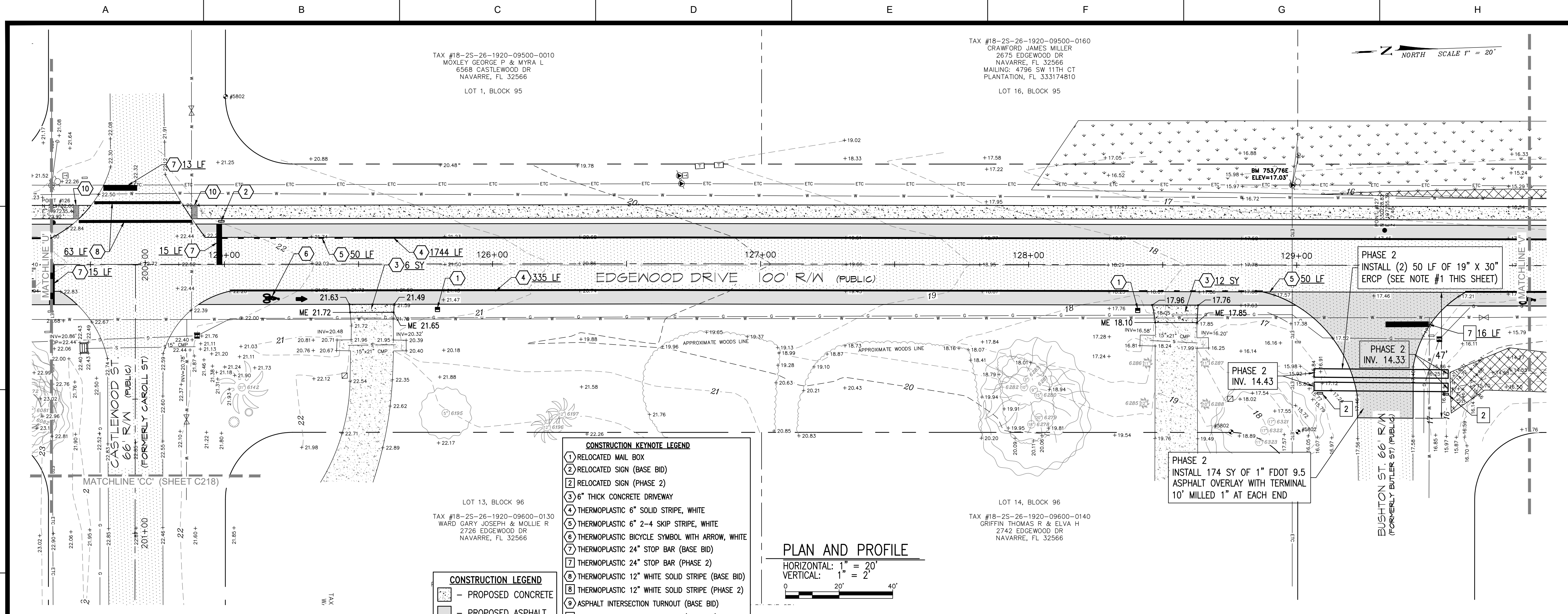
LOT 14, BLOCK 93
TAX #18-25-26-1920-09300-0140
STEVENS ENDELL LEE & CATHERINE A
6589 CASTLEWOOD ST,
NAVARRE, FL 32566
HOLLEY BY THE SEA
PLAT BOOK B, PAGE 155

- CONSTRUCTION KEYNOTE LEGEND**
- 1 RELOCATED MAIL BOX
 - 2 RELOCATED SIGN (BASE BID)
 - 2 RELOCATED SIGN (PHASE 2)
 - 3 6" THICK CONCRETE DRIVEWAY
 - 4 THERMOPLASTIC 6" SOLID STRIPE, WHITE
 - 5 THERMOPLASTIC 6" 2-4 SKIP STRIPE, WHITE
 - 6 THERMOPLASTIC BICYCLE SYMBOL WITH ARROW, WHITE
 - 7 THERMOPLASTIC 24" STOP BAR (BASE BID)
 - 7 THERMOPLASTIC 24" STOP BAR (PHASE 2)
 - 8 THERMOPLASTIC 12" WHITE SOLID STRIPE (BASE BID)
 - 8 THERMOPLASTIC 12" WHITE SOLID STRIPE (PHASE 2)
 - 9 ASPHALT INTERSECTION TURNOUT (BASE BID)
 - 9 ASPHALT INTERSECTION TURNOUT (PHASE 2)
 - 10 DETECTABLE HANDICAP WARNING MAT (5' X 2' U.N.O.)

- CONSTRUCTION LEGEND**
- PROPOSED CONCRETE
 - PROPOSED ASPHALT

DRAWN BY: PLC DESIGNED BY: RCK CHECKED BY: RCK DATE: 03/10/2021 SCALE: 1" = 20' NOT FOR CONSTRUCTION BY: DATE:	PROJECT NO: 2018-41 C211 SHEET: 29 OF 62	SRCO EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS EDGEWOOD DR (STA. 119+15 - 124+35) PLAN SANTA ROSA FLORIDA	KH&A Kenneth Horne & Associates, Inc. CIVIL ENGINEERS PO BOX 10689, PENSACOLA, FLORIDA 32524 7201 N. 9TH AVENUE, SUITE 6, PENSACOLA, FLORIDA 32504 (850) 471-9005 info@kh-a.com FAX (850) 471-0093 FL. CERTIFICATE OF AUTHORIZATION NO. 8268	REVISIONS NO. DATE THIS DRAWING IS THE PROPERTY OF KENNETH HORNE & ASSOCIATES, INC. AND IS NOT TO BE REPRODUCED OR USED FOR ANY OTHER PROJECT AND IS TO BE RETURNED UPON REQUEST. ROBERT C. KRASNOSEK FL. PE 49949
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 CIVIL ENGINEERS

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 (850) 471-9005 info@kh-a.com FAX (850) 471-0093
 FL. CERTIFICATE OF AUTHORIZATION NO. 8288

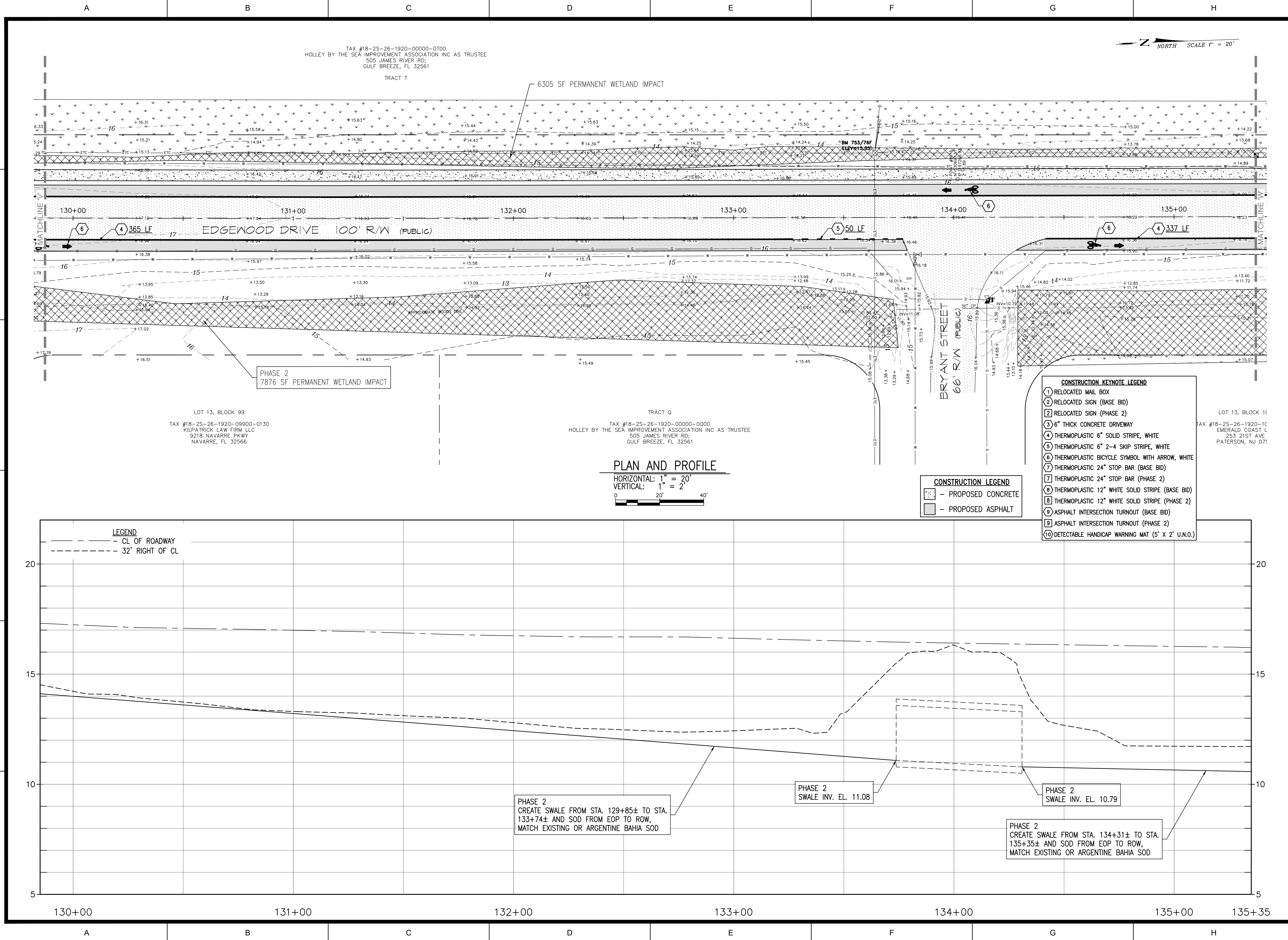
SRCO EDGEWOOD DRIVE
 DRAINAGE AND ROADWAY IMPROVEMENTS

EDGEWOOD DR (STA. 124+35 - 129+85) PLAN AND PROFILE
 SANTA ROSA FLORIDA

DRAWN BY: PLC
 DESIGNED BY: RCK
 CHECKED BY: RCK
 DATE: 03/10/2021
 SCALE: 1" = 20'
 NOT FOR CONSTRUCTION
 BY: DATE:

PROJECT NO: 2018-41
C212
 SHEET: 30 OF 62

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 FL PE 49949

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SRCO EDGEWOOD DRIVE
 DRAINAGE AND ROADWAY IMPROVEMENTS

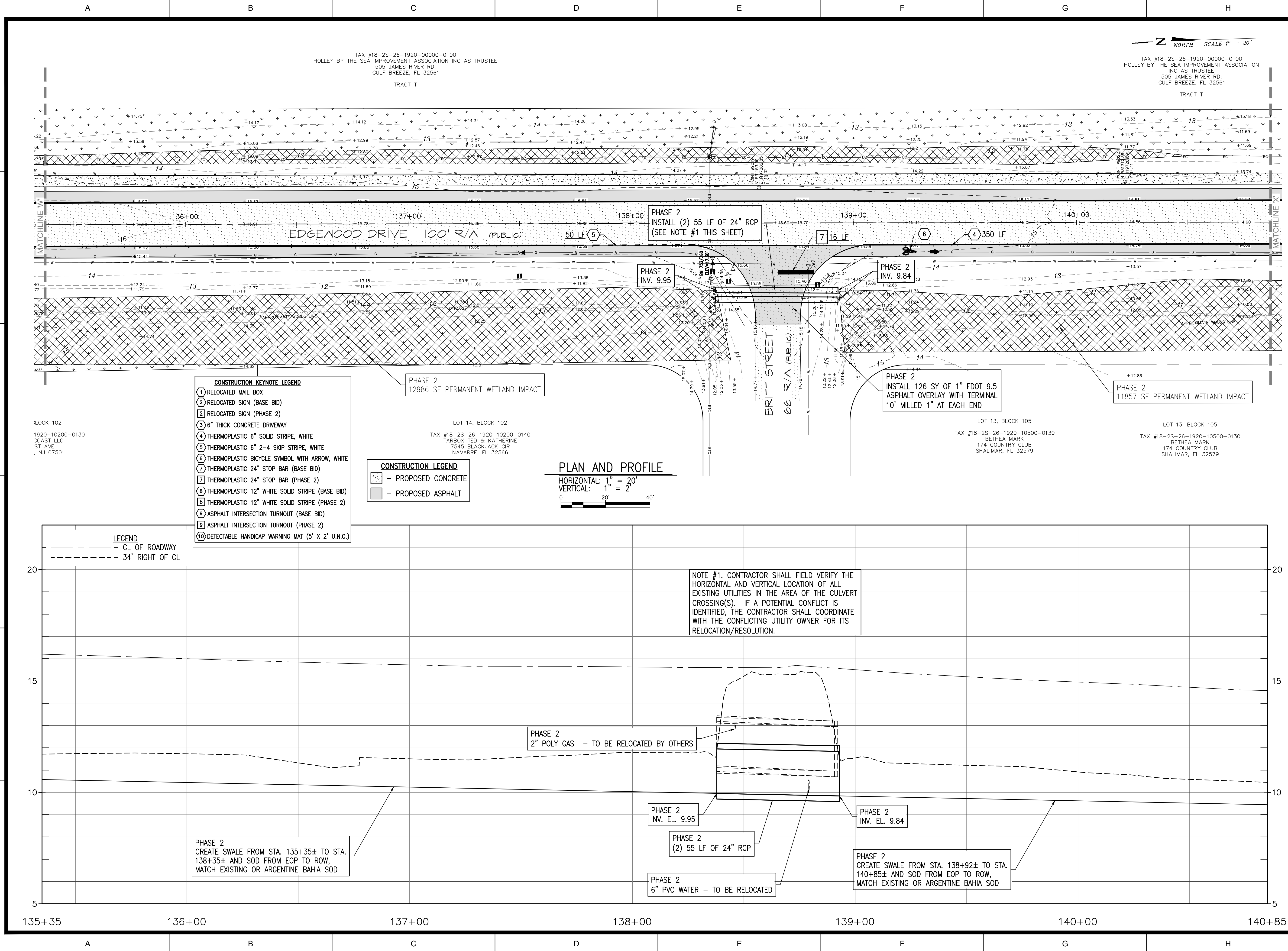
EDGEWOOD DR (STA. 129+85-135+35) PLAN AND PROFILE

SANTA ROSA FLORIDA

DRAWN BY: PLC
 DESIGNED BY: RCK
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 DATE: 03/10/2021
 SCALE: 1" = 20'
 NOT FOR CONSTRUCTION
 BY: DATE:

PROJECT NO: 2018-41
C213
 SHEET: 31 OF 62

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- CONSTRUCTION KEYNOTE LEGEND**
- 1 RELOCATED MAIL BOX
 - 2 RELOCATED SIGN (BASE BID)
 - 2 RELOCATED SIGN (PHASE 2)
 - 3 6" THICK CONCRETE DRIVEWAY
 - 4 THERMOPLASTIC 6" SOLID STRIPE, WHITE
 - 5 THERMOPLASTIC 6" 2-4 SKIP STRIPE, WHITE
 - 6 THERMOPLASTIC BICYCLE SYMBOL WITH ARROW, WHITE
 - 7 THERMOPLASTIC 24" STOP BAR (BASE BID)
 - 7 THERMOPLASTIC 24" STOP BAR (PHASE 2)
 - 8 THERMOPLASTIC 12" WHITE SOLID STRIPE (BASE BID)
 - 8 THERMOPLASTIC 12" WHITE SOLID STRIPE (PHASE 2)
 - 9 ASPHALT INTERSECTION TURNOUT (BASE BID)
 - 9 ASPHALT INTERSECTION TURNOUT (PHASE 2)
 - 10 DETECTABLE HANDICAP WARNING MAT (5' X 2' U.N.O.)

- CONSTRUCTION LEGEND**
- [Pattern] - PROPOSED CONCRETE
 - [Pattern] - PROPOSED ASPHALT

PLAN AND PROFILE
 HORIZONTAL: 1" = 20'
 VERTICAL: 1" = 2'

NOTE #1. CONTRACTOR SHALL FIELD VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING UTILITIES IN THE AREA OF THE CULVERT CROSSING(S). IF A POTENTIAL CONFLICT IS IDENTIFIED, THE CONTRACTOR SHALL COORDINATE WITH THE CONFLICTING UTILITY OWNER FOR ITS RELOCATION/RESOLUTION.

PHASE 2
 CREATE SWALE FROM STA. 135+35± TO STA. 138+35± AND SOD FROM EOP TO ROW, MATCH EXISTING OR ARGENTINE BAHIA SOD

PHASE 2
 2" POLY GAS - TO BE RELOCATED BY OTHERS

PHASE 2
 INV. EL. 9.95

PHASE 2
 (2) 55 LF OF 24" RCP

PHASE 2
 6" PVC WATER - TO BE RELOCATED

PHASE 2
 INV. EL. 9.84

PHASE 2
 CREATE SWALE FROM STA. 138+92± TO STA. 140+85± AND SOD FROM EOP TO ROW, MATCH EXISTING OR ARGENTINE BAHIA SOD

A B C D E F G H

1

2

3

4

5

6

135+35 136+00 137+00 138+00 139+00 140+00 140+85

A B C D E F G H

NORTH SCALE 1" = 20'

TAX #18-25-26-1920-00000-0T00
 HOLLEY BY THE SEA IMPROVEMENT ASSOCIATION INC AS TRUSTEE
 505 JAMES RIVER RD;
 GULF BREEZE, FL 32561
 TRACT T

TAX #18-25-26-1920-00000-0T00
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 INC AS TRUSTEE
 505 JAMES RIVER RD;
 GULF BREEZE, FL 32561
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 ROBERT C. KRASNOSKY
 FL PE 49949

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 CIVIL ENGINEERS

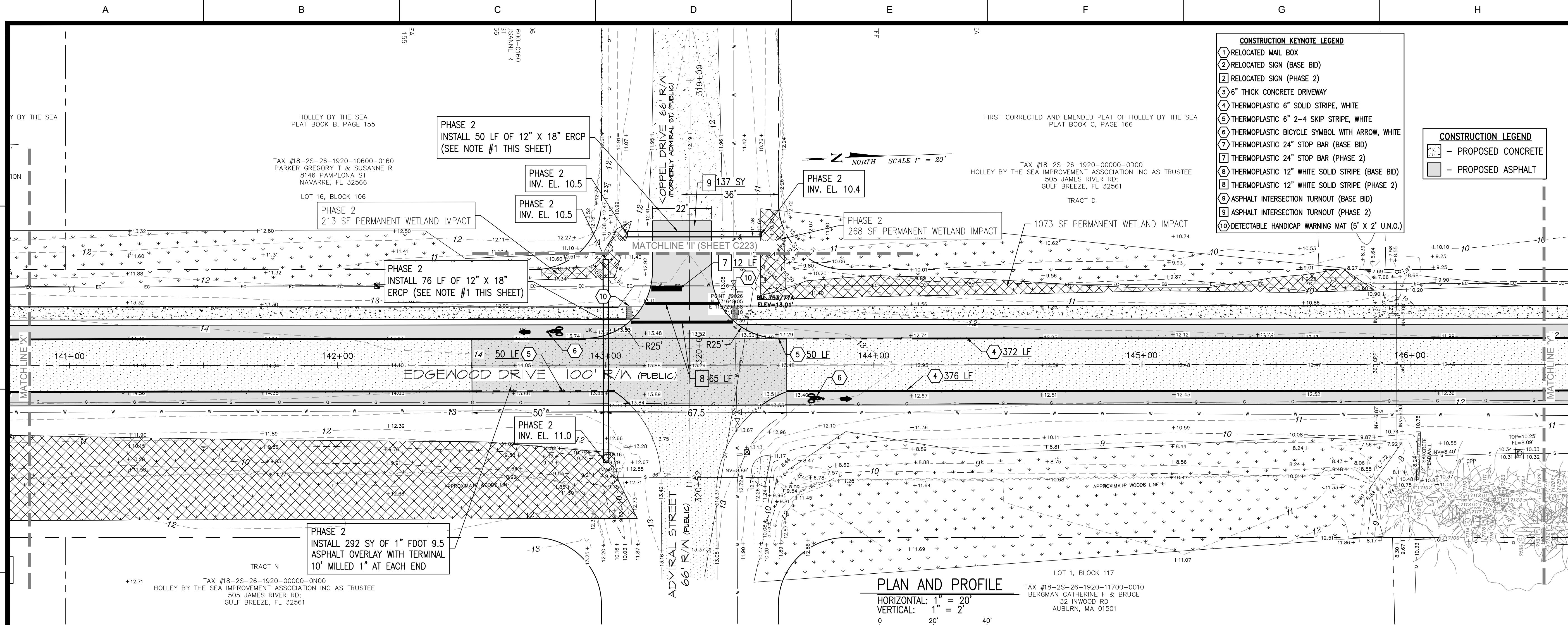
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 7201 N. 9TH AVENUE, SUITE 6, PENSACOLA, FLORIDA 32504
 (850) 471-9005 info@kh-a.com FAX (850) 471-0093
 FL CERTIFICATE OF AUTHORIZATION NO. 9288

SRCO EDGEWOOD DRIVE
 DRAINAGE AND ROADWAY IMPROVEMENTS

EDGEWOOD DR (STA. 135+35-140+85) PLAN AND PROFILE
 SANTA ROSA FLORIDA

DRAWN BY: PLC	DESIGNED BY: RCK	CHECKED BY: RCK	DATE: 03/10/2021	SCALE: 1" = 20'
PROJECT NO: 2018-41	NOT FOR CONSTRUCTION			
C214				
SHEET: 32 OF 62				

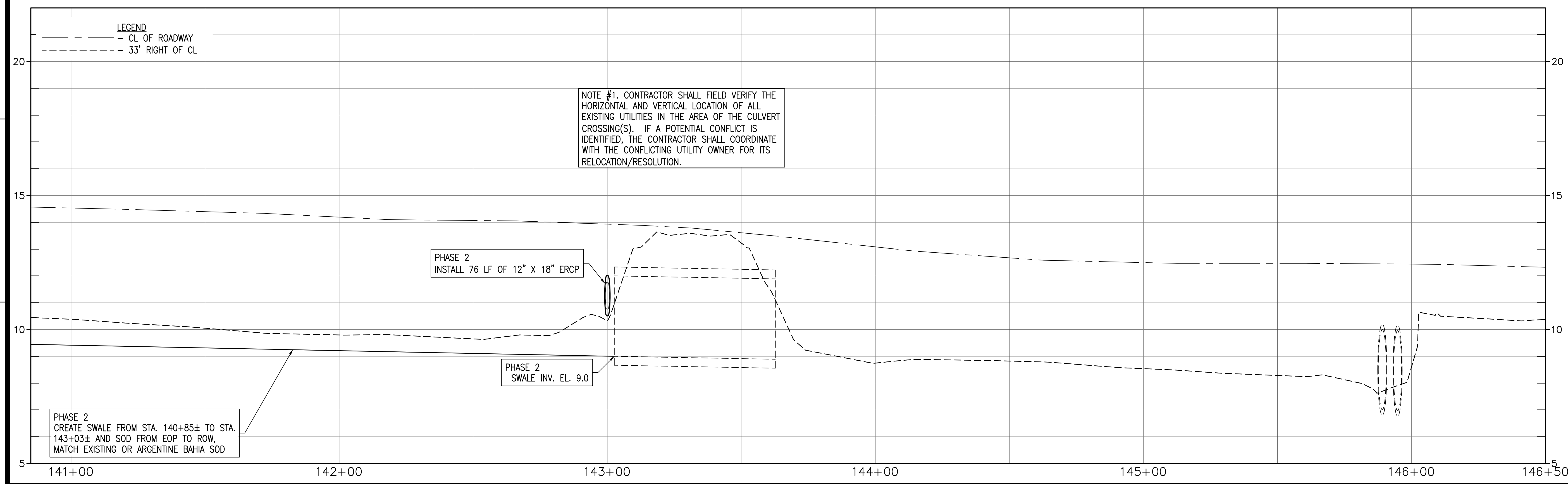
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- CONSTRUCTION KEYNOTE LEGEND**
- 1 RELOCATED MAIL BOX
 - 2 RELOCATED SIGN (BASE BID)
 - 2 RELOCATED SIGN (PHASE 2)
 - 3 6" THICK CONCRETE DRIVEWAY
 - 4 THERMOPLASTIC 6" SOLID STRIPE, WHITE
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 - 6 THERMOPLASTIC BICYCLE SYMBOL WITH ARROW, WHITE
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 - 7 THERMOPLASTIC 24" STOP BAR (PHASE 2)
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 - 8 THERMOPLASTIC 12" WHITE SOLID STRIPE (PHASE 2)
 - 9 ASPHALT INTERSECTION TURNOUT (BASE BID)
 - 9 ASPHALT INTERSECTION TURNOUT (PHASE 2)
 - 10 DETECTABLE HANDICAP WARNING MAT (5' X 2' U.N.O.)

- CONSTRUCTION LEGEND**
- [Hatched Pattern] - PROPOSED CONCRETE
 - [Cross-hatched Pattern] - PROPOSED ASPHALT

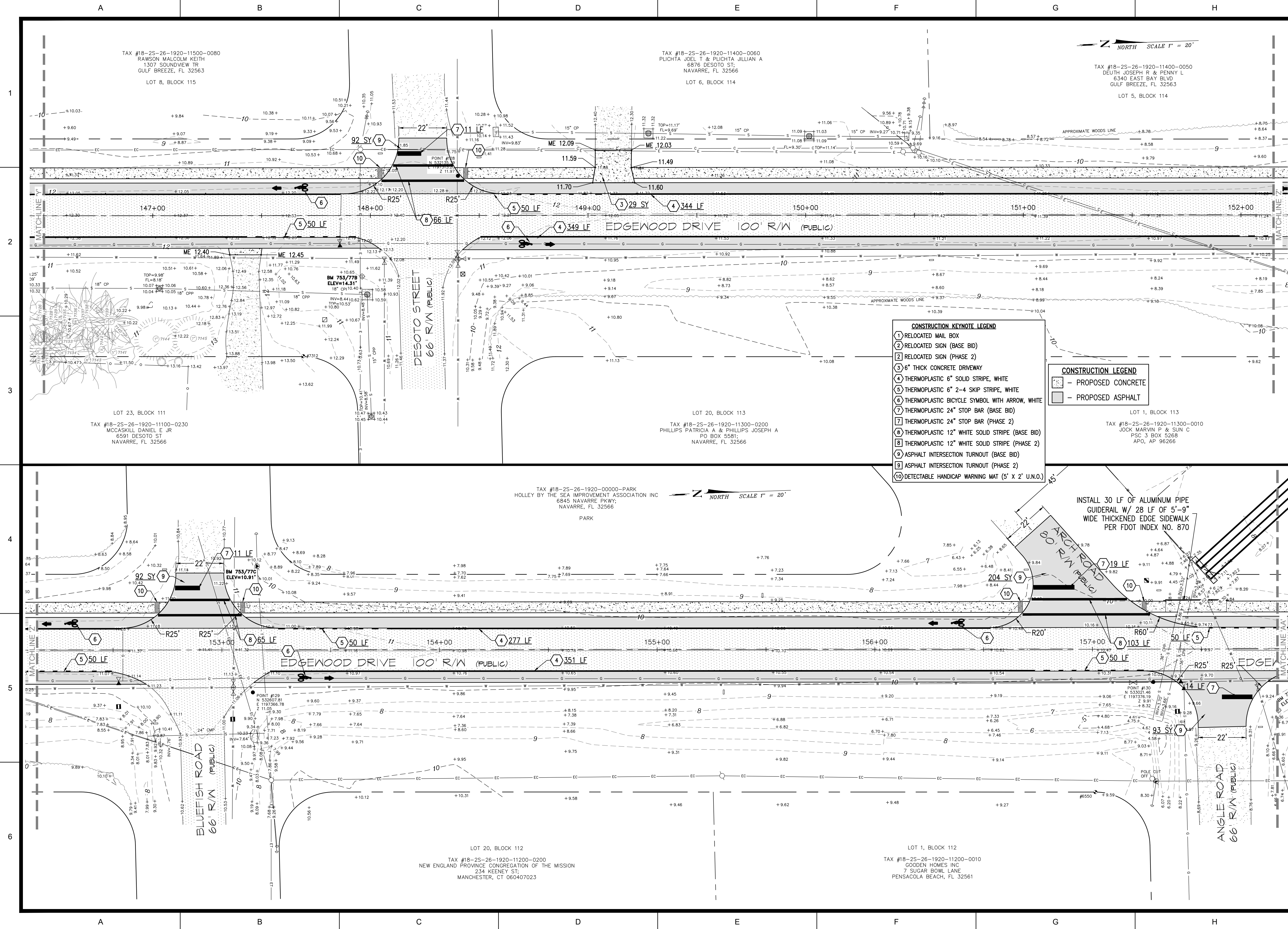
PLAN AND PROFILE
 HORIZONTAL: 1" = 20'
 VERTICAL: 1" = 2'



NOTE #1. CONTRACTOR SHALL FIELD VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING UTILITIES IN THE AREA OF THE CULVERT CROSSING(S). IF A POTENTIAL CONFLICT IS IDENTIFIED, THE CONTRACTOR SHALL COORDINATE WITH THE CONFLICTING UTILITY OWNER FOR ITS RELOCATION/RESOLUTION.

	REVISIONS					
NO.	DATE					
<p>Kenneth Horne & Associates, Inc. CIVIL ENGINEERS</p> <p>PO BOX 10689, PENSACOLA, FLORIDA 32524 7201 N. 9TH AVENUE, SUITE 6, PENSACOLA, FLORIDA 32504 (850) 471-9005 info@kh-a.com FAX (850) 471-0093 FL. CERTIFICATE OF AUTHORIZATION NO. 9298</p> <p>ROBERT C. KRASNOSKY FL. PE 49949</p>						
<p>SRCC EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS</p> <p>EDGEWOOD DR (STA. 140+85 - 146+50) PLAN AND PROFILE</p> <p>SANTA ROSA FLORIDA</p>						
DRAWN BY:	PLC	DESIGNED BY:	ROK	CHECKED BY:	ROK	DATE:
SCALE:	1" = 20'	NOT FOR CONSTRUCTION				
PROJECT NO:	2018-41					
SHEET:	33 OF 62					

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- CONSTRUCTION KEYNOTE LEGEND**
- 1 RELOCATED MAIL BOX
 - 2 RELOCATED SIGN (BASE BID)
 - 2 RELOCATED SIGN (PHASE 2)
 - 3 6" THICK CONCRETE DRIVEWAY
 - 4 THERMOPLASTIC 6" SOLID STRIPE, WHITE
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 - 9 ASPHALT INTERSECTION TURNOUT (PHASE 2)
 - 10 DETECTABLE HANDICAP WARNING MAT (5' X 2' U.N.O.)
- CONSTRUCTION LEGEND**
- [Pattern] - PROPOSED CONCRETE
 - [Pattern] - PROPOSED ASPHALT

NO.	DATE	REVISIONS
Kenneth Horne & Associates, Inc. CIVIL ENGINEERS		
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DATE: 03/10/2021	SCALE: 1" = 20'	NOT FOR CONSTRUCTION
PROJECT NO: 2018-41	SANTA ROSA	FLORIDA
SHEET: 34	OF 62	

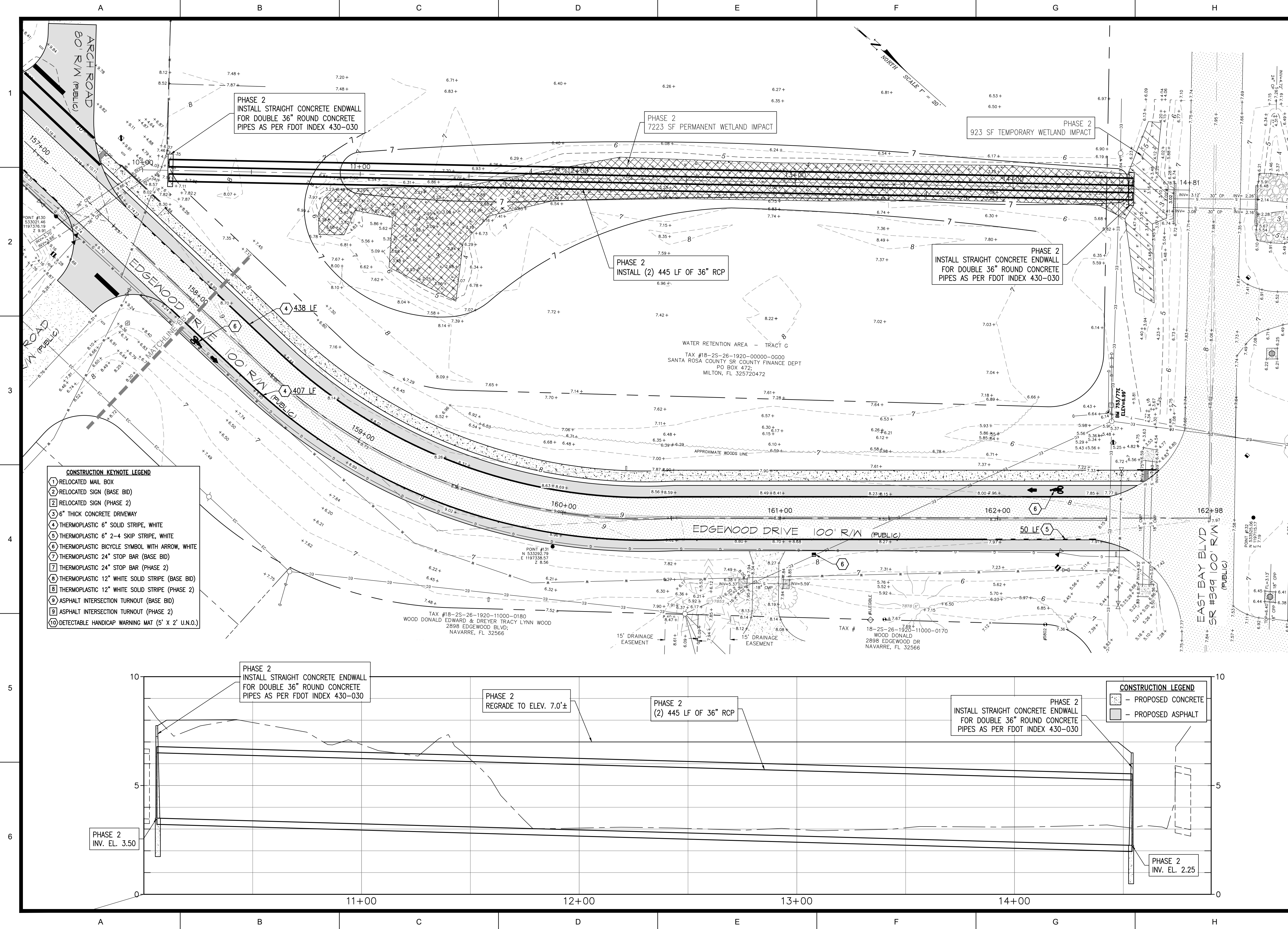
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ROBERT C. KRASNOSKY
FL. PE 49949

SRCO EDGEWOOD DRIVE
DRAINAGE AND ROADWAY IMPROVEMENTS
EDGEWOOD DR (STA. 146+50 - 157+85) PLAN

PROJECT NO: 2018-41
SANTA ROSA
FLORIDA
SHEET: 34 OF 62

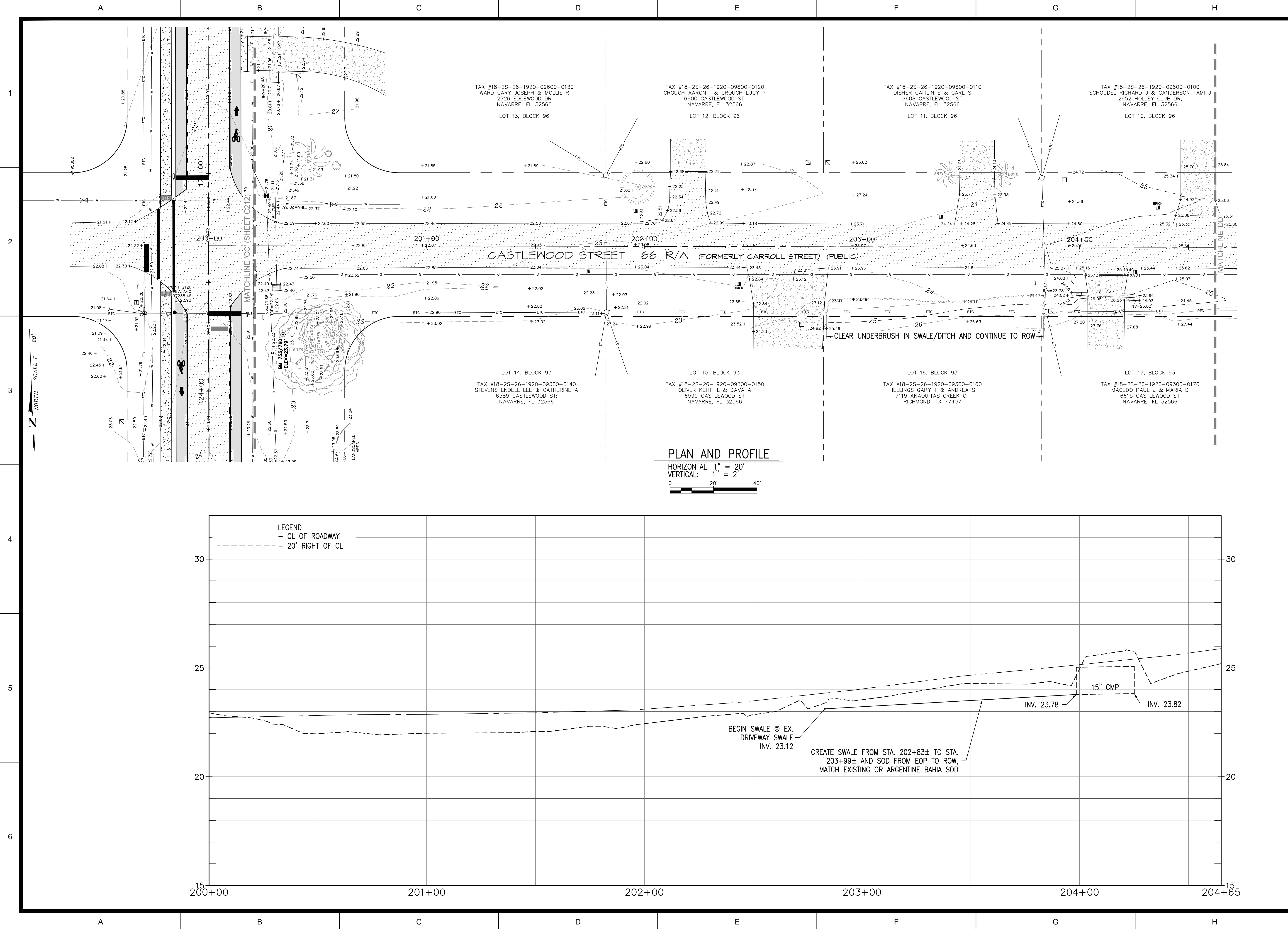
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- CONSTRUCTION KEYNOTE LEGEND**
- 1 RELOCATED MAIL BOX
 - 2 RELOCATED SIGN (BASE BID)
 - 2 RELOCATED SIGN (PHASE 2)
 - 3 6" THICK CONCRETE DRIVEWAY
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 - 9 ASPHALT INTERSECTION TURNOUT (PHASE 2)
 - 10 DETECTABLE HANDICAP WARNING MAT (5' X 2' U.N.O.)

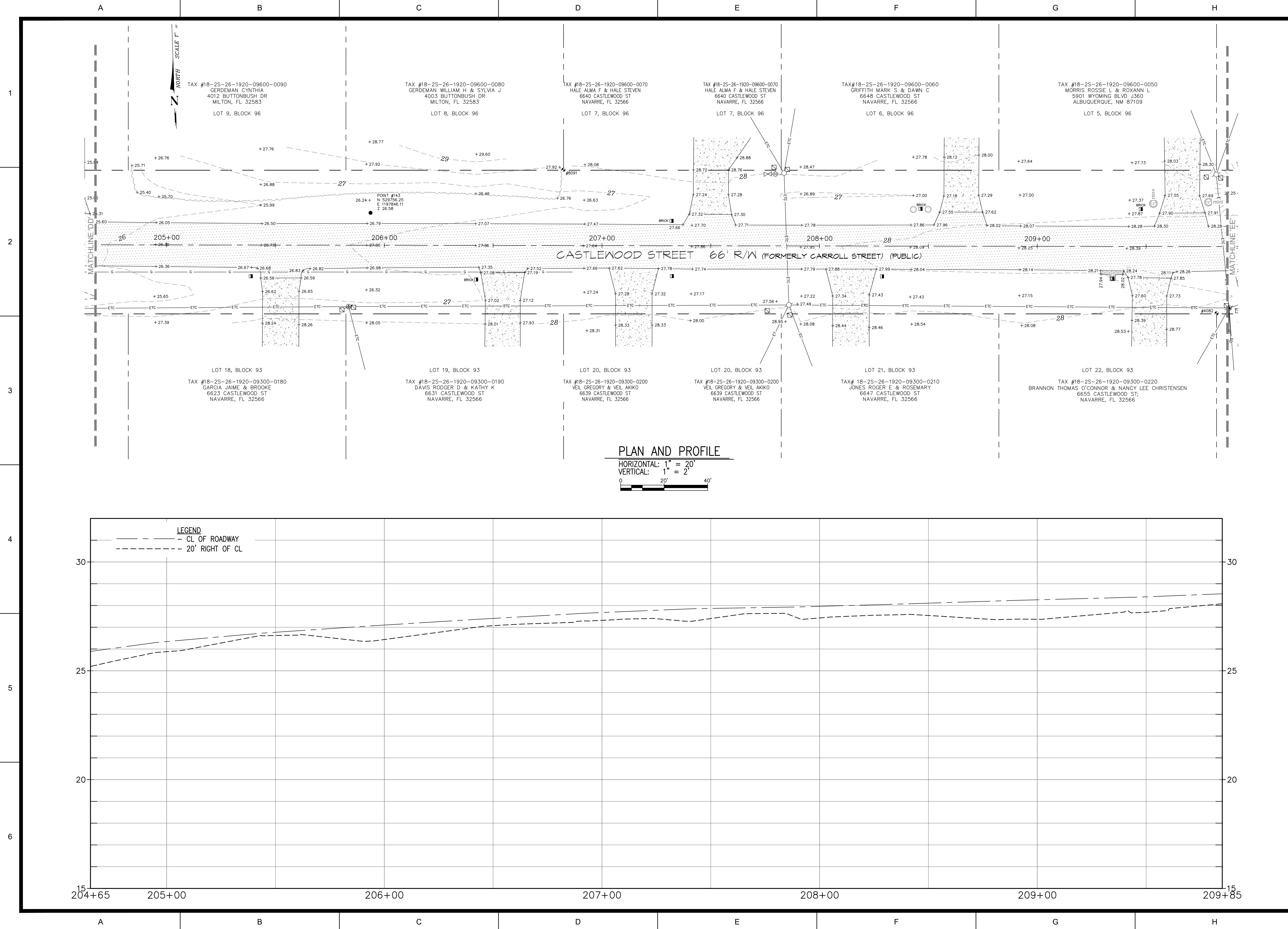
- CONSTRUCTION LEGEND**
- PROPOSED CONCRETE
 - PROPOSED ASPHALT

NO.	DATE	REVISIONS	<p>KH&A</p> <p>Kenneth Horne & Associates, Inc. CIVIL ENGINEERS</p> <p>PO BOX 10689, PENSACOLA, FLORIDA 32524 7201 N. 9TH AVENUE, SUITE 6, SANTA ROSA, FLORIDA 32504 (850) 471-9005 info@kh-a.com FAX (850) 471-0093 FL. CERTIFICATE OF AUTHORIZATION NO. 9268</p>
<p>SRCO EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS</p> <p>EDGEWOOD DR (STA. 157+85 - 162+98) PLAN</p> <p>SANTA ROSA FLORIDA</p>			<p>THIS DRAWING IS THE PROPERTY OF KENNETH HORNE & ASSOCIATES, INC. AND IS NOT TO BE REPRODUCED OR COPIED IN ANY MANNER WITHOUT THE WRITTEN CONSENT OF KENNETH HORNE & ASSOCIATES, INC. ANY OTHER PROJECT AND IS TO BE RETURNED UPON REQUEST.</p> <p>ROBERT C. KRASNOSKY FL. PE 49949</p>
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<p>PROJECT NO: 2018-41 C217 SHEET: 35 OF 62</p>			



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DESIGNED BY: RCK		C218	
CHECKED BY: RCK		SHEET: 36 OF 62	
DATE: 03/10/2021		SCALE: 1" = 20'	
NOT FOR CONSTRUCTION		BY: DATE:	
SRCO EDGEWOOD DRIVE		SANTA ROSA FLORIDA	
DRAINAGE AND ROADWAY IMPROVEMENTS		CASTLEWOOD ST (STA. 200+00 - 204+65) PLAN AND PROFILE	
KENNETH HORNE & ASSOCIATES, INC. CIVIL ENGINEERS		FL. CERTIFICATE OF AUTHORIZATION NO. 8288	
PO BOX 10689, PENSACOLA, FLORIDA 32524 7201 N. 9TH AVENUE, SUITE 6, PENSACOLA, FLORIDA 32504 (850) 471-9005 info@kh-a.com FAX (850) 471-0093		ROBERT C. KRASNOSKY FL. PE 49949	
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ROBERT C. KRASNOSKY
FL PE 49949

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CIVIL ENGINEERS

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(850) 471-9005 info@kh-a.com FAX (850) 471-0093
FL CERTIFICATE OF AUTHORIZATION NO. 8288

KH&A

SRCO EDGEWOOD DRIVE
DRAINAGE AND ROADWAY IMPROVEMENTS

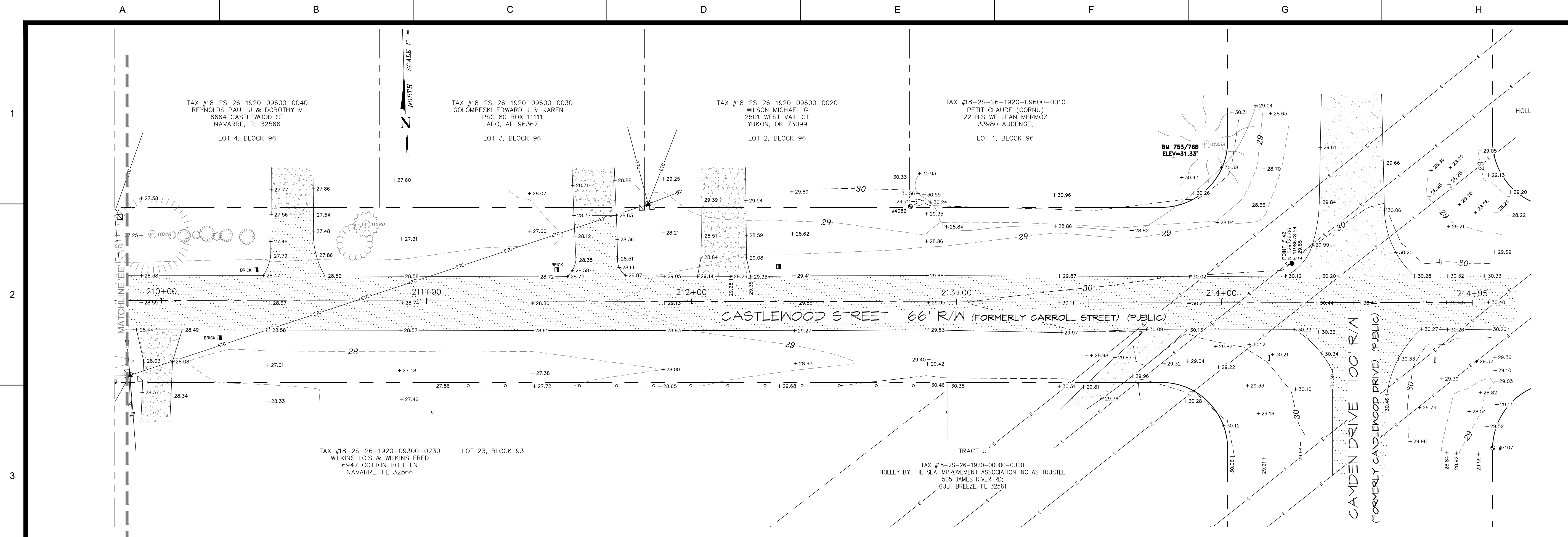
CASTLEWOOD ST (STA. 204+65-209+85) PLAN AND PROFILE

SANTA ROSA FLORIDA

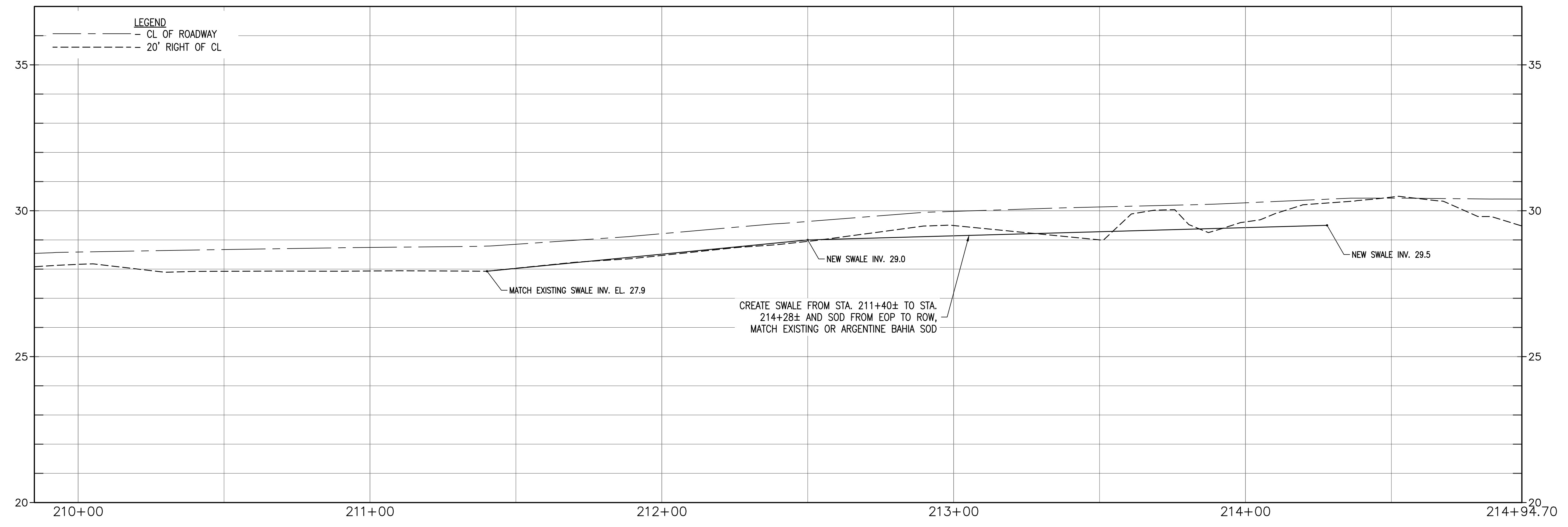
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DESIGNED BY:	RCK
CHECKED BY:	RCK
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BY:	DATE:

PROJECT NO: 2018-41
C219
SHEET: 37 OF 62

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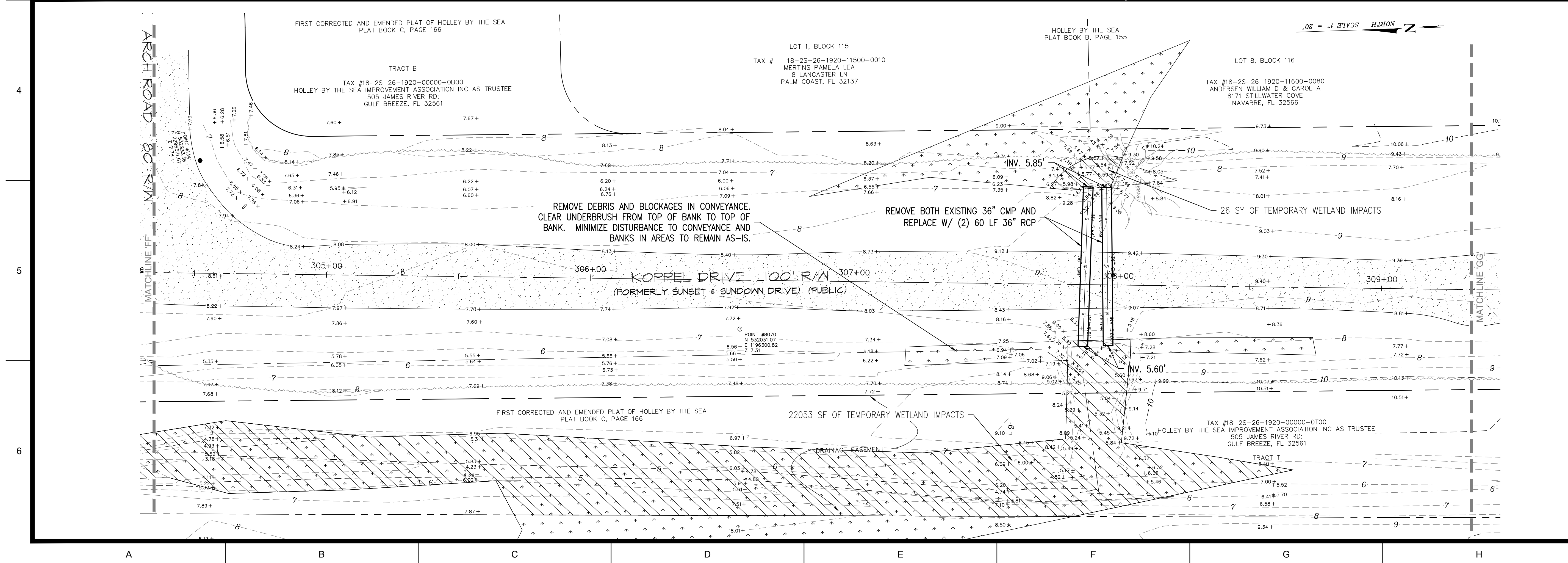
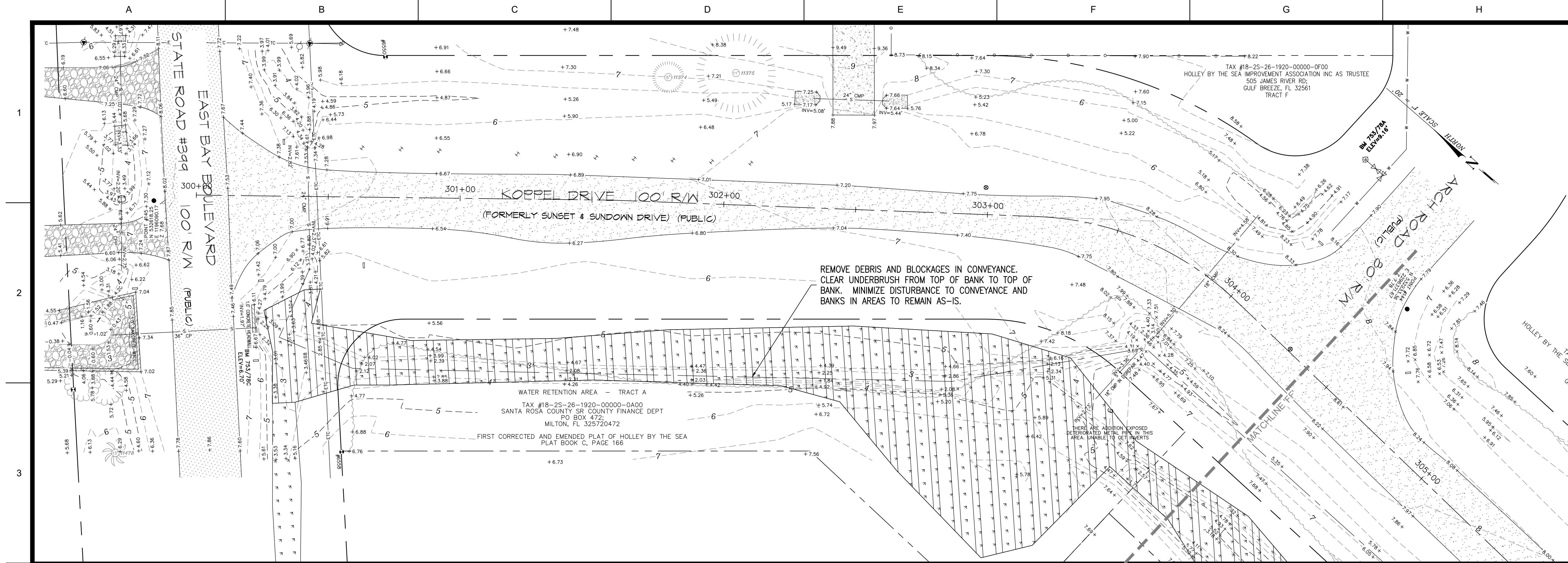


PLAN AND PROFILE
 HORIZONTAL: 1" = 20'
 VERTICAL: 1" = 2'
 0 20' 40'

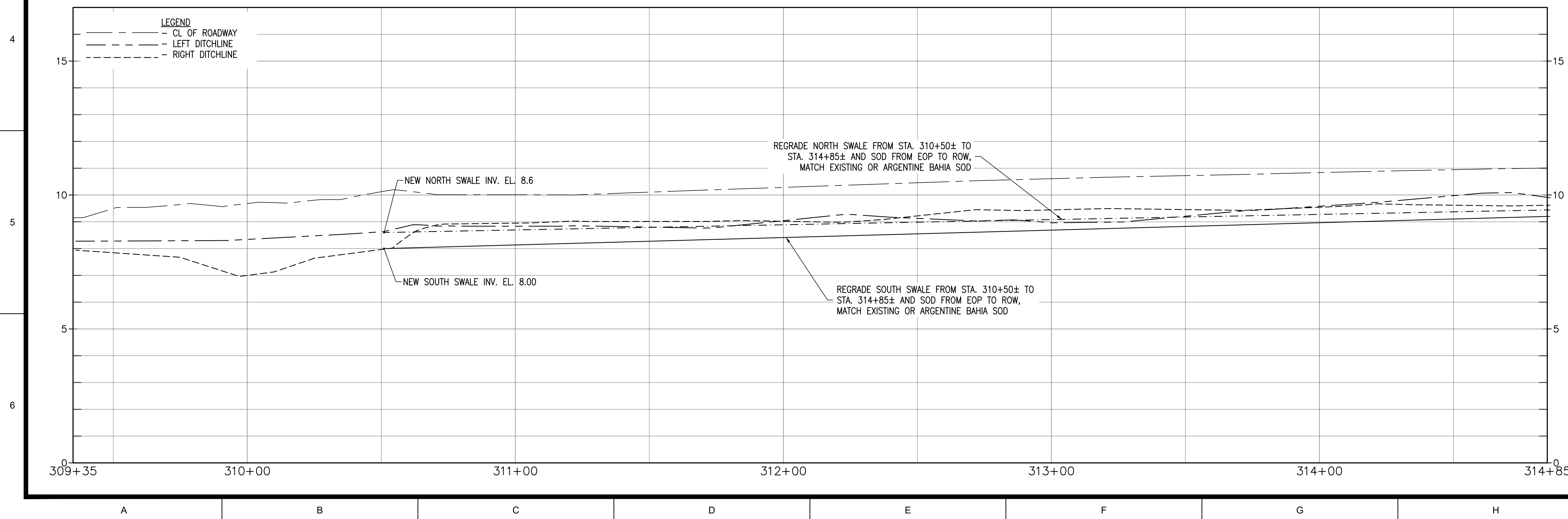
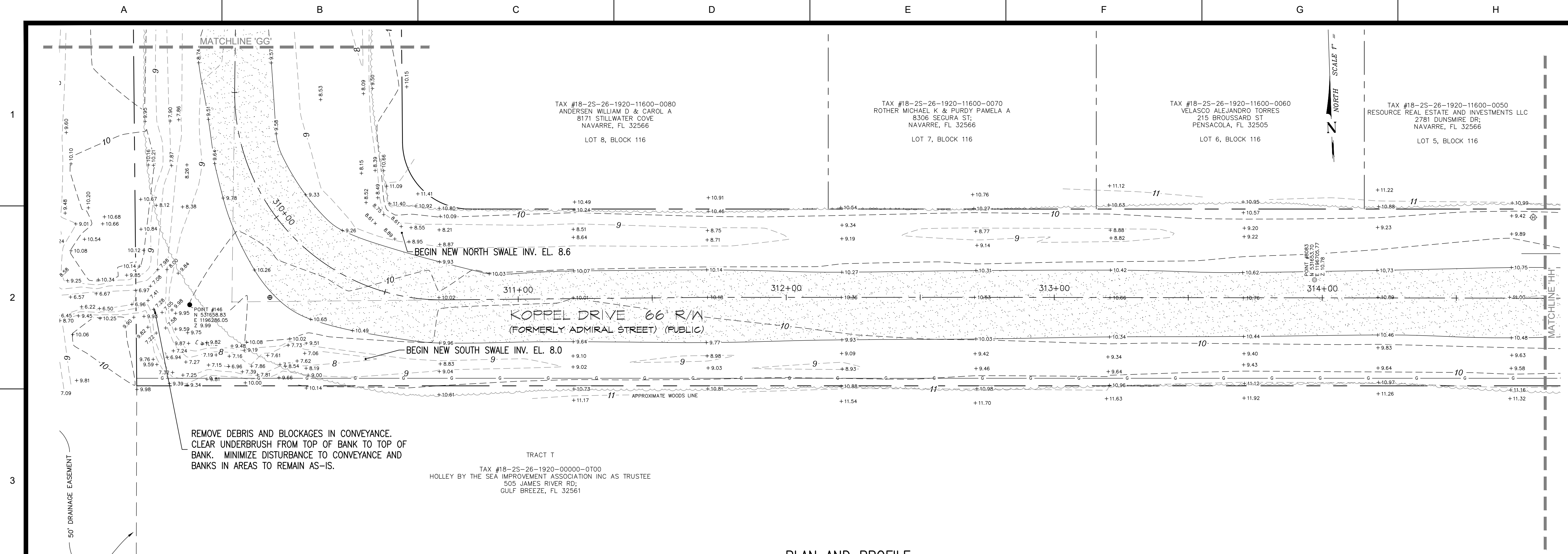


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Kenneth Horne & Associates, Inc. CIVIL ENGINEERS					
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SRCO EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS			SANTA ROSA FLORIDA		
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DRAWN BY: PLC		DESIGNED BY: RCK		CHECKED BY: RCK	
DATE: 03/10/2021		SCALE: 1" = 20'		NOT FOR CONSTRUCTION	
PROJECT NO: 2018-41		SHEET: 39		OF 62	
SRCO EDGEWOOD DRIVE		DRAINAGE AND ROADWAY IMPROVEMENTS		KOPPEL DR (STA. 300+00 - 309+35) PLAN	
SANTA ROSA		FLORIDA			



NO.	DATE	REVISIONS

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ROBERT C. KRASOSKY
 FL PE 49949

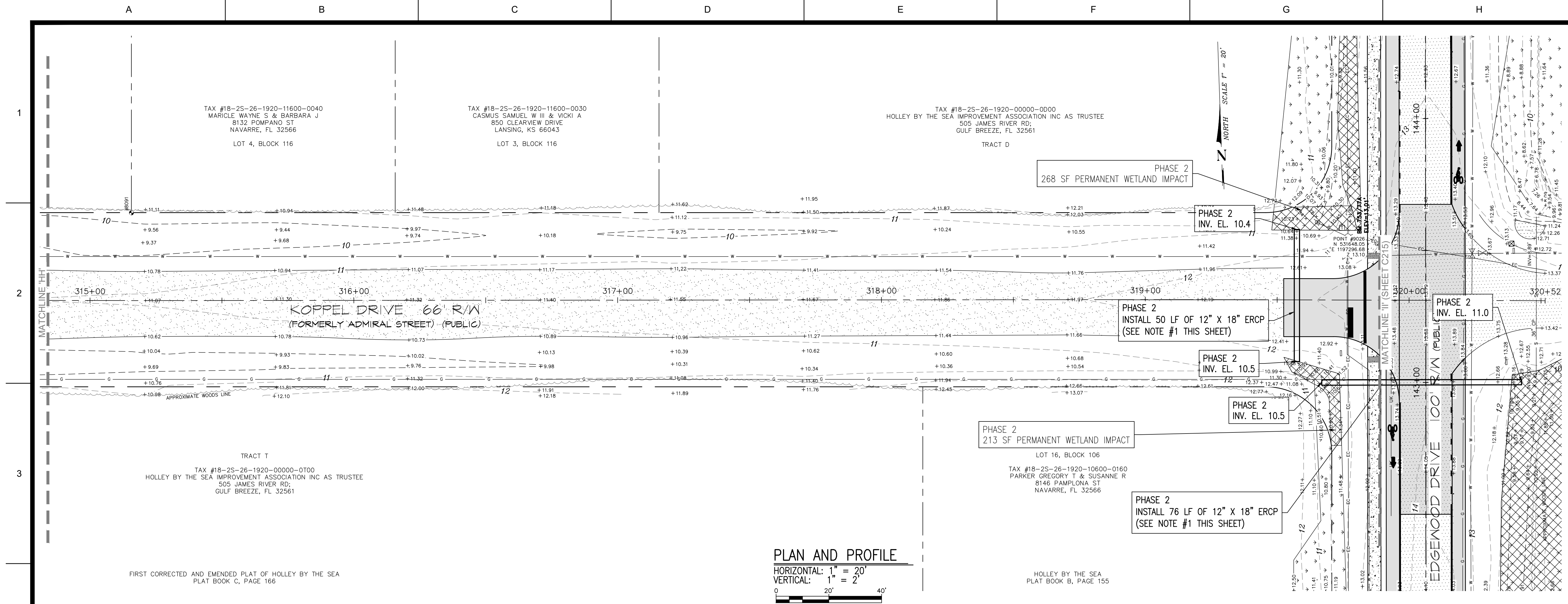
Kenneth Horne & Associates, Inc.
 CIVIL ENGINEERS
 PO BOX 10689, PENSACOLA, FLORIDA 32524
 7201 N. 9TH AVENUE, SUITE 6, PENSACOLA, FLORIDA 32504
 (850) 471-9005 info@kh-a.com FAX (850) 471-0093
 FL. CERTIFICATE OF AUTHORIZATION NO. 8268

SRCO EDGEWOOD DRIVE
 DRAINAGE AND ROADWAY IMPROVEMENTS
 KOPPEL DR (STA. 309+35 - 314+85) PLAN AND PROFILE
 SANTA ROSA FLORIDA

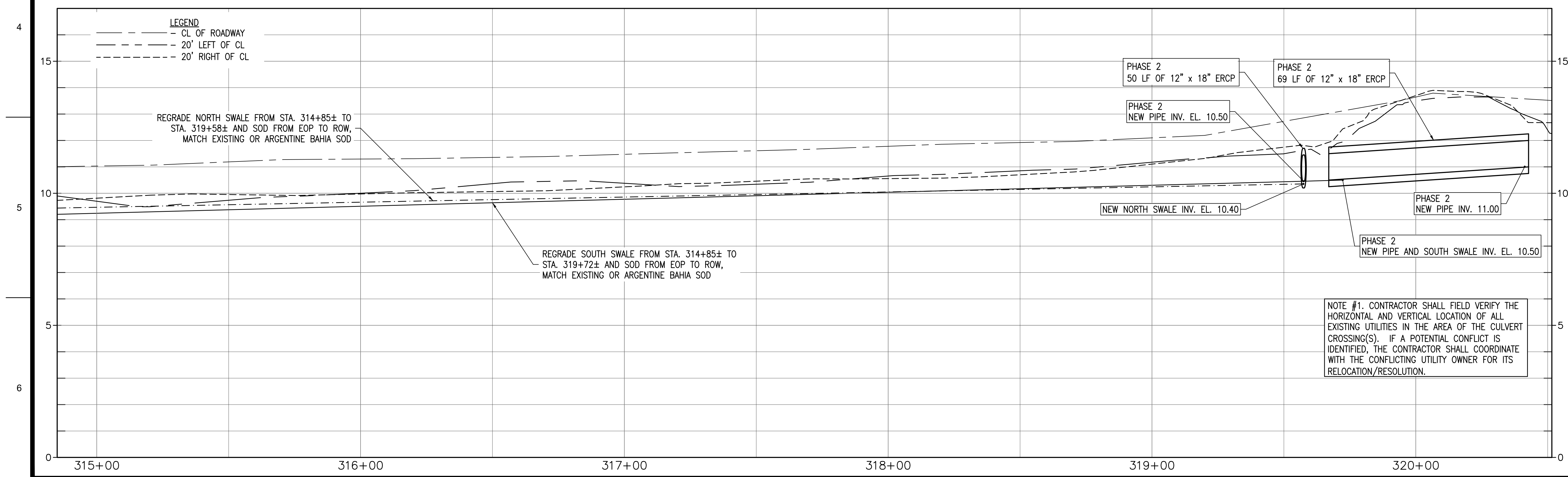
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SCALE:	1" = 20'
NOT FOR CONSTRUCTION	
BY:	DATE:

PROJECT NO: 2018-41
 C222
 SHEET: 40 OF 62

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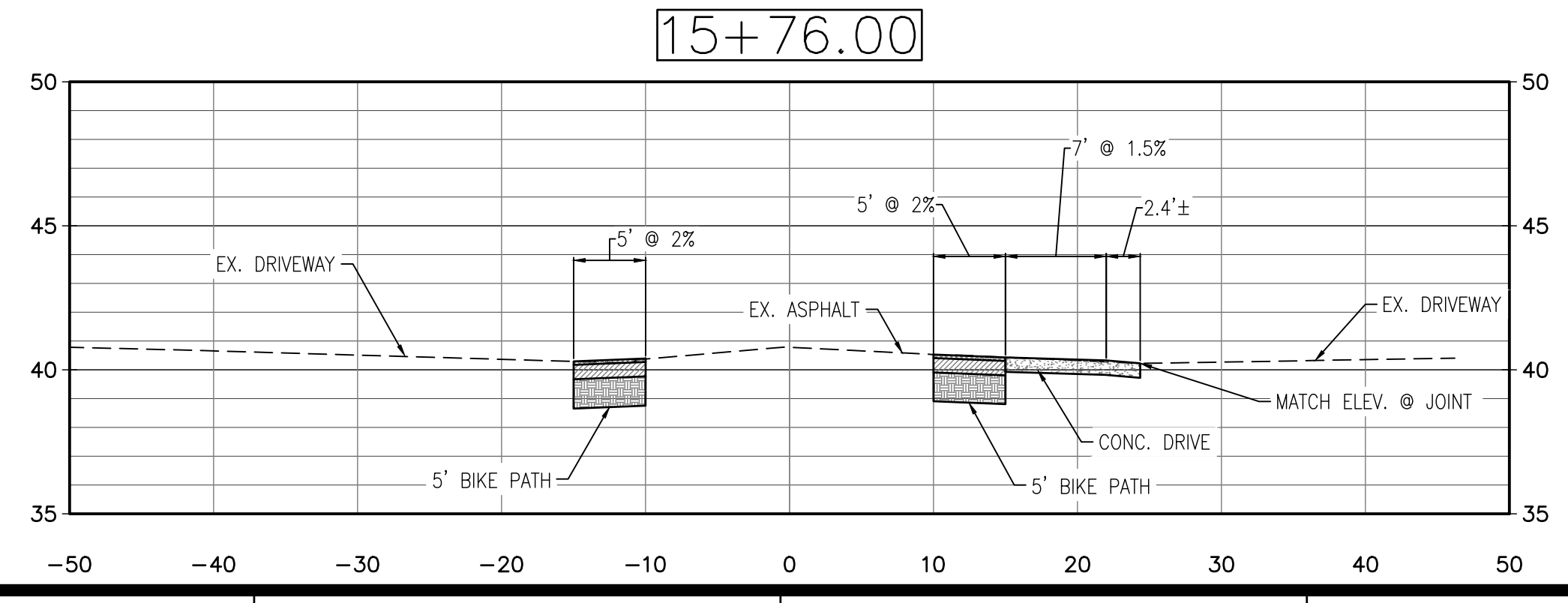
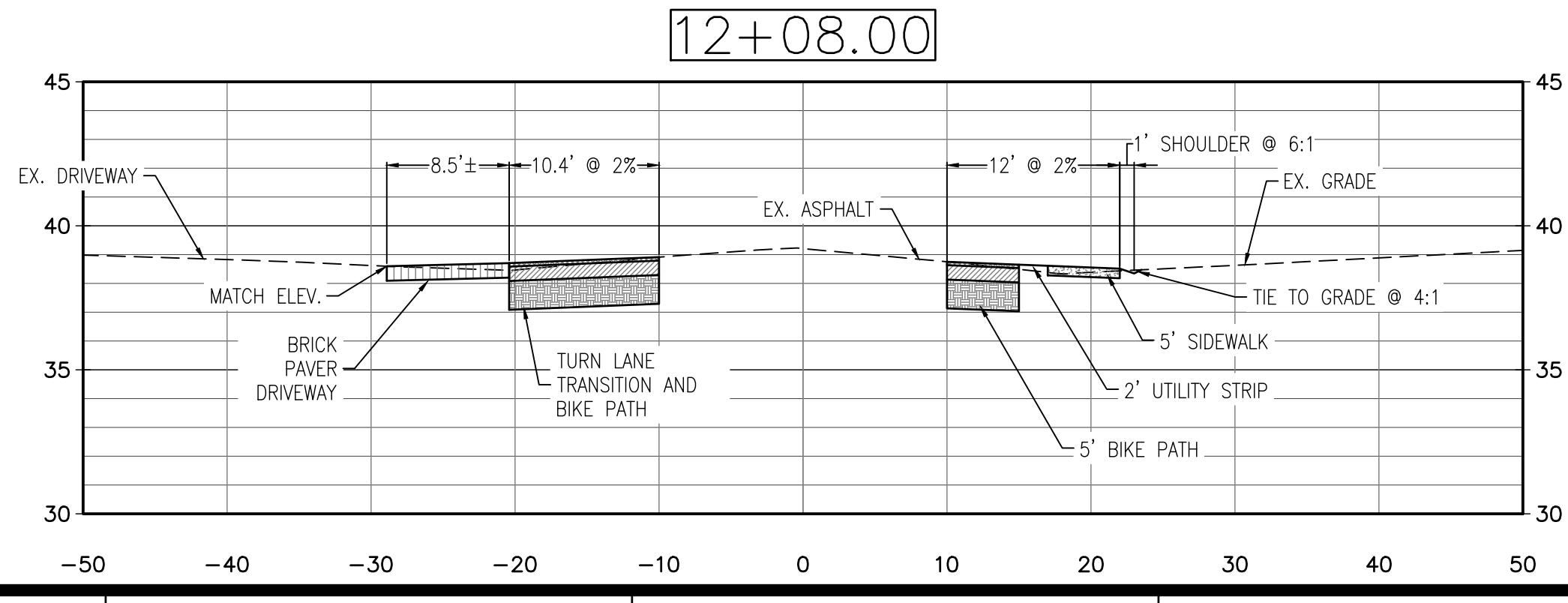
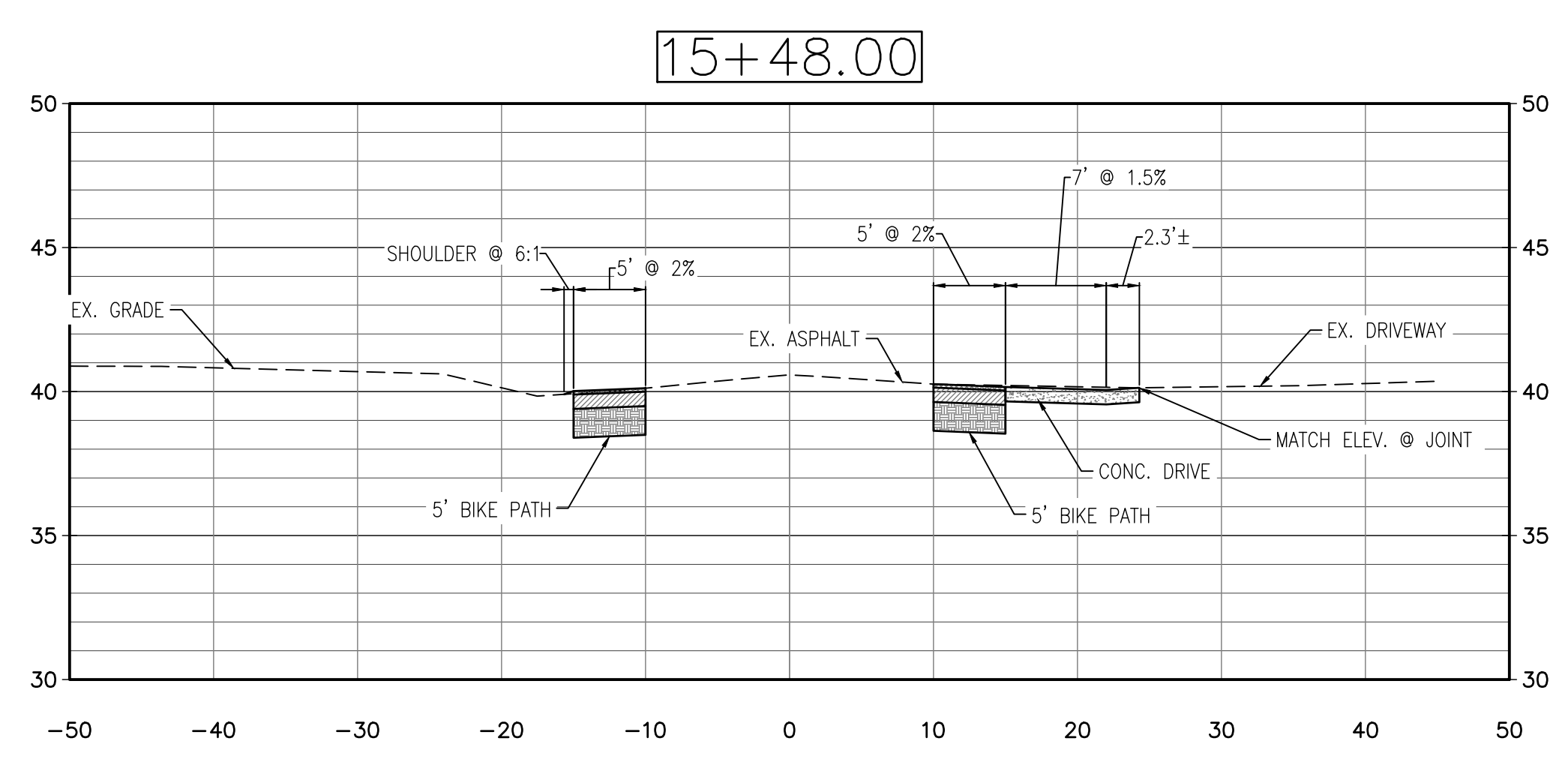
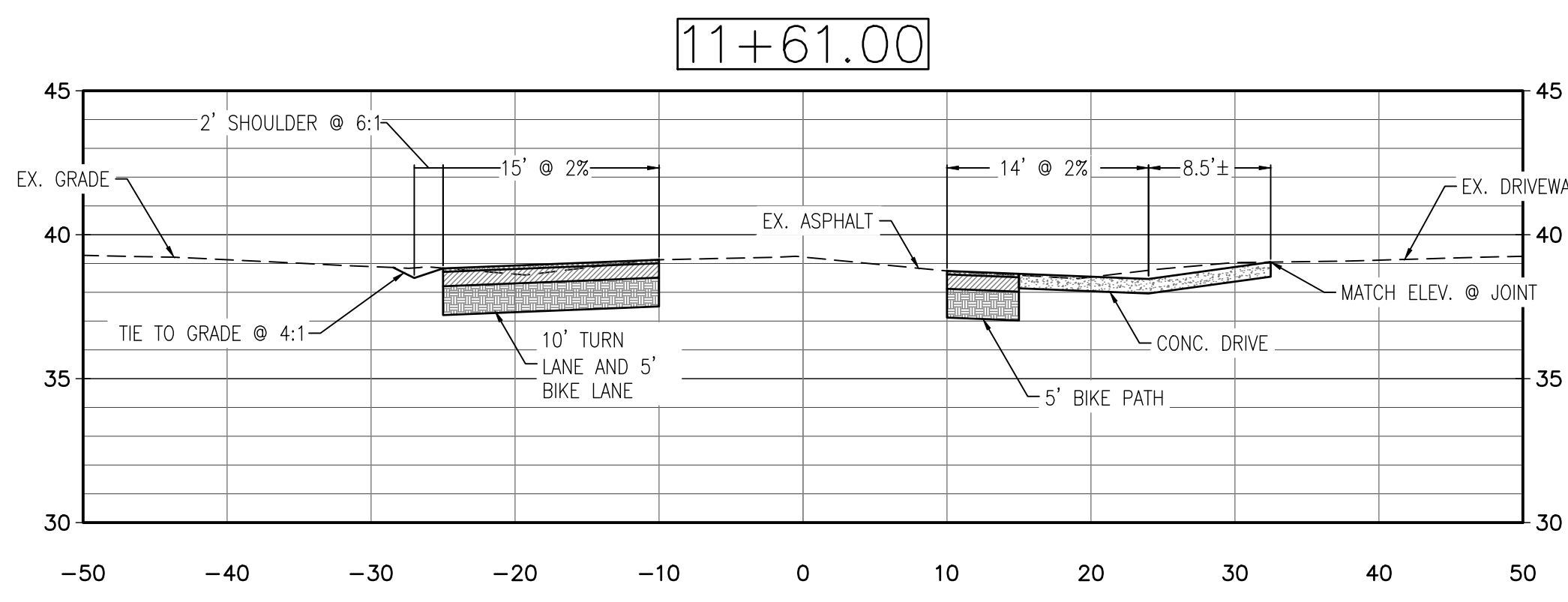
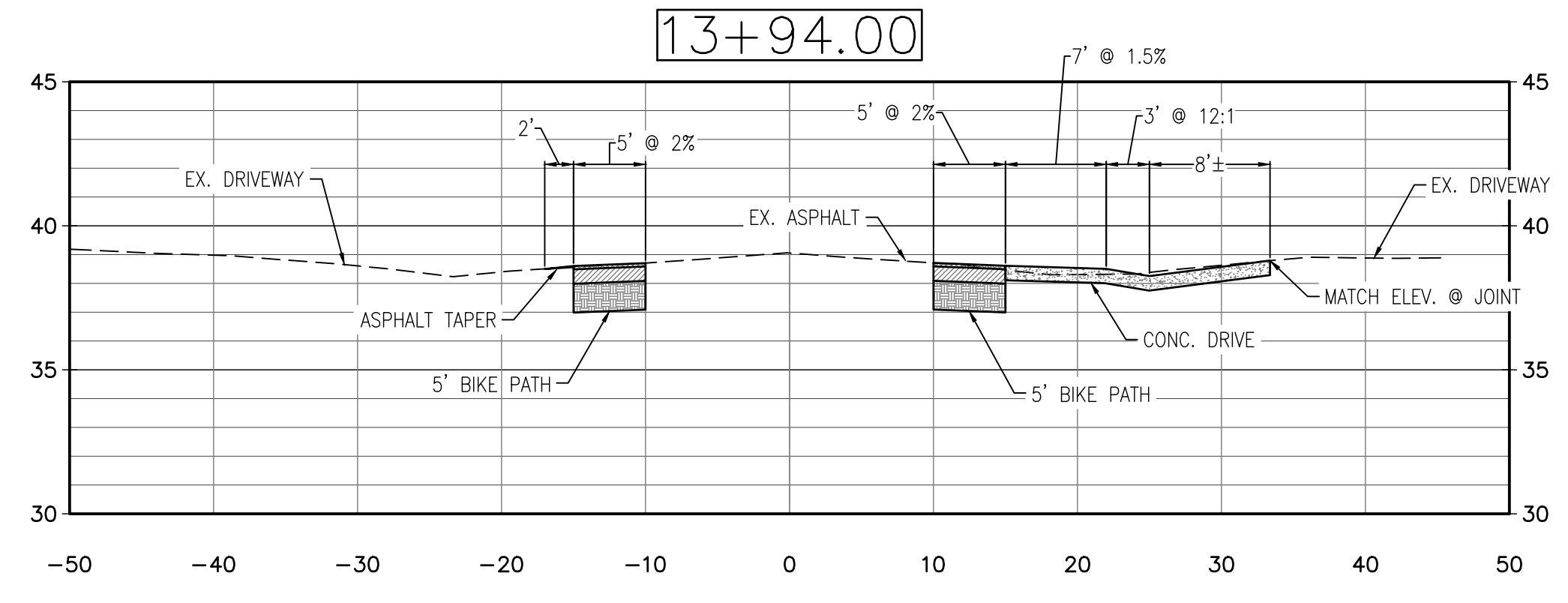
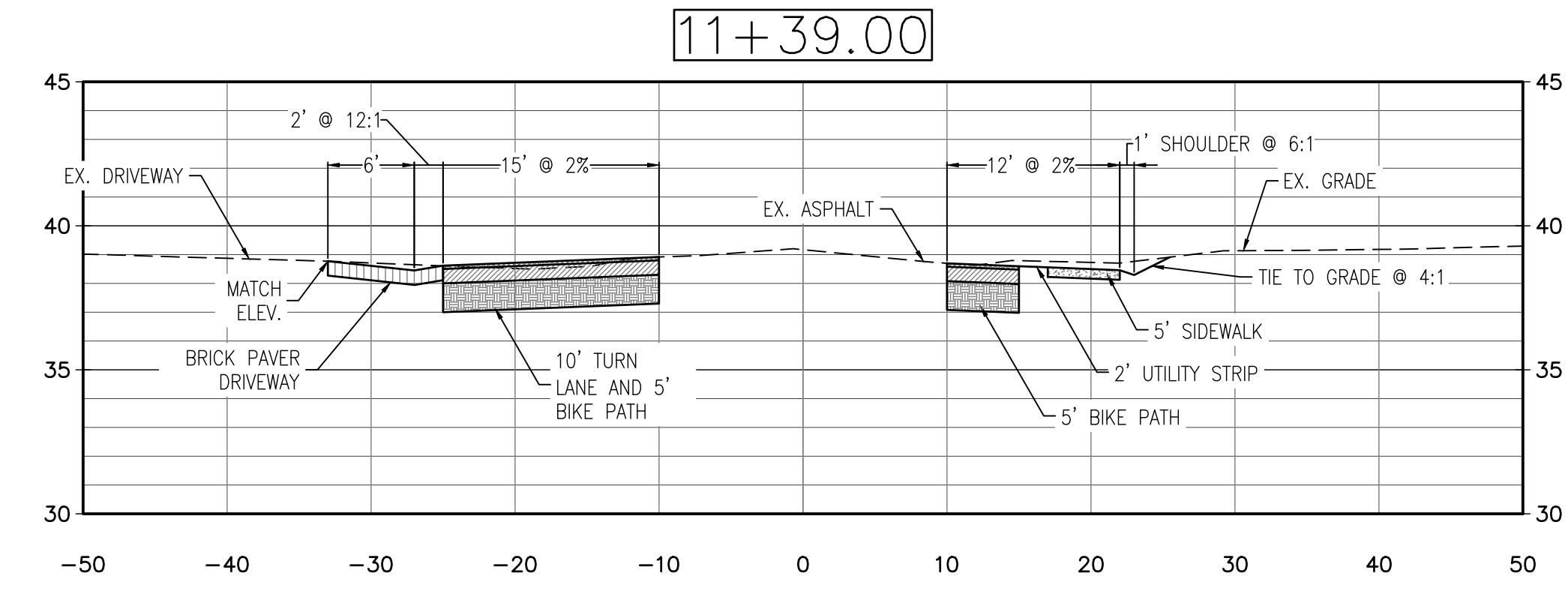
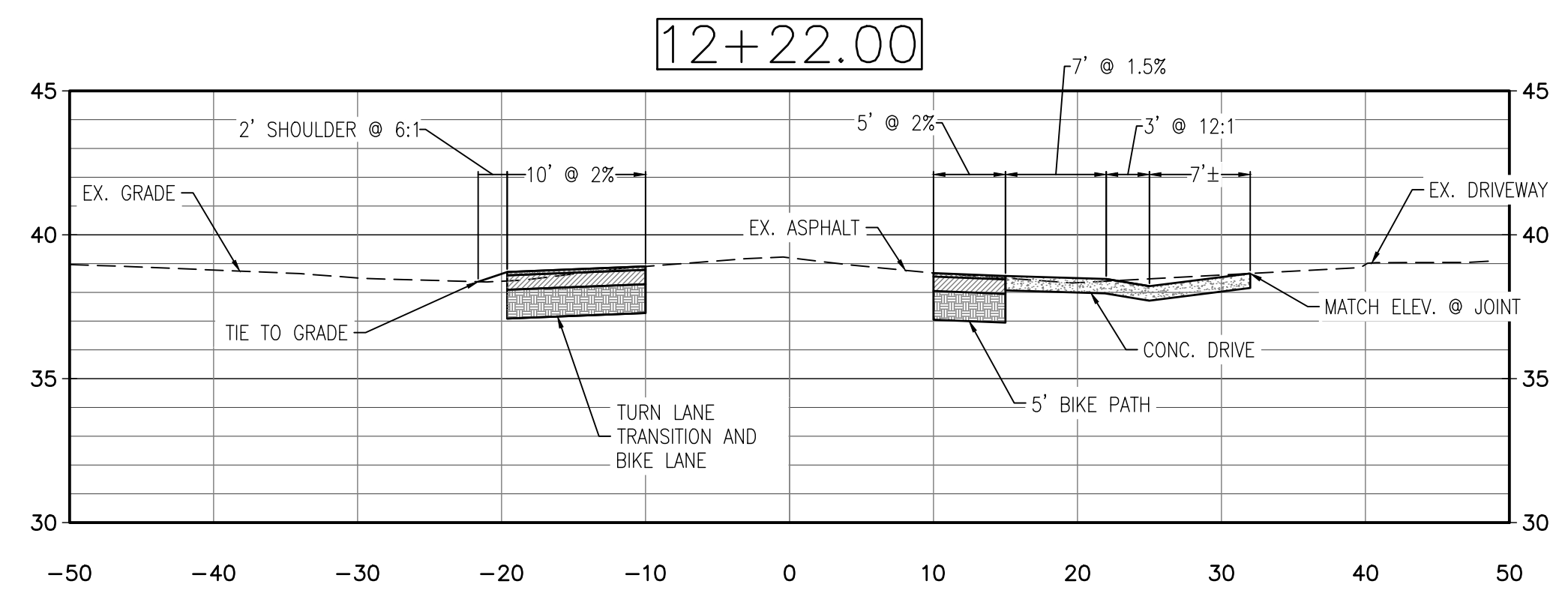
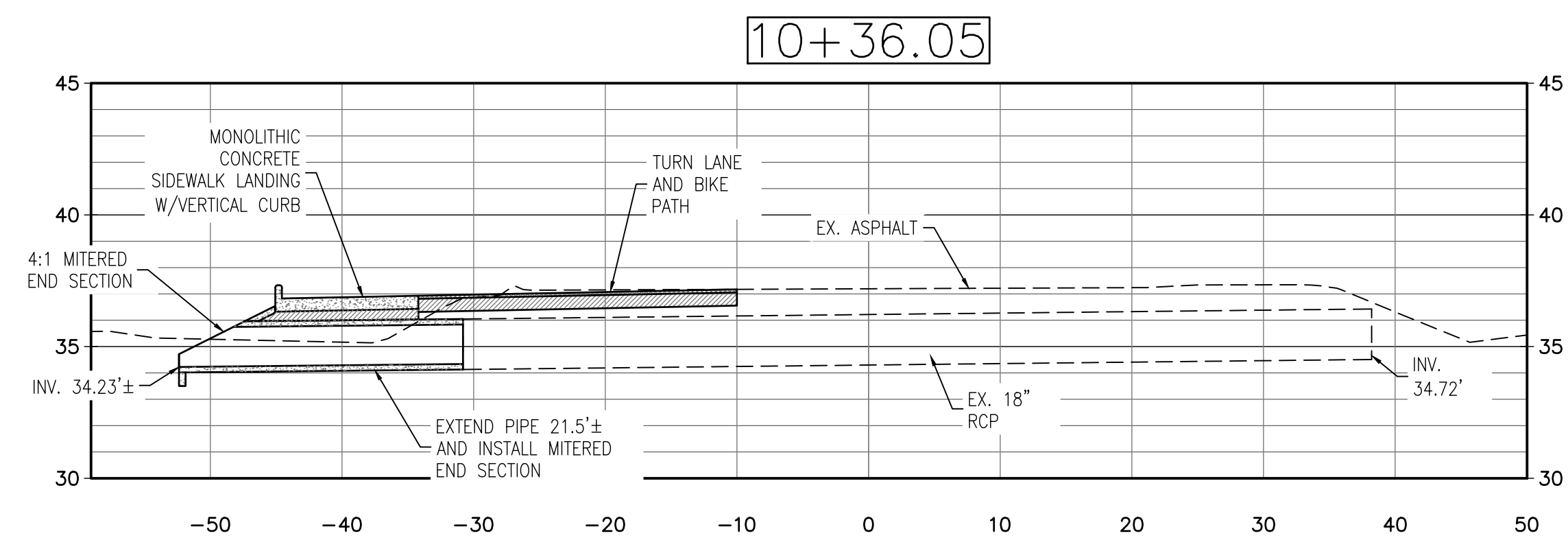
PLAN AND PROFILE
 HORIZONTAL: 1" = 20'
 VERTICAL: 1" = 2'
 0 20' 40'



NOTE #1. CONTRACTOR SHALL FIELD VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING UTILITIES IN THE AREA OF THE CULVERT CROSSING(S). IF A POTENTIAL CONFLICT IS IDENTIFIED, THE CONTRACTOR SHALL COORDINATE WITH THE CONFLICTING UTILITY OWNER FOR ITS RELOCATION/RESOLUTION.

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<p>SRCO EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS</p>	<p>KOPPEL DR (STA. 314+85 - 320+50) PLAN AND PROFILE</p>						
<p>PROJECT NO: 2018-41 C223</p>	<p>SANTA ROSA FLORIDA</p>						
<p>DRAWN BY: PLC DESIGNED BY: RCK CHECKED BY: RCK DATE: 03/10/2021 SCALE: 1" = 20' NOT FOR CONSTRUCTION BY: DATE:</p>	<p>REVISIONS</p> <table border="1"> <tr> <th>NO.</th> <th>DATE</th> <th>DESCRIPTION</th> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table>	NO.	DATE	DESCRIPTION			
NO.	DATE	DESCRIPTION					
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FL. CERTIFICATE OF AUTHORIZATION NO. 8268

KH&A

SRCO EDGEWOOD DRIVE
DRAINAGE AND ROADWAY IMPROVEMENTS

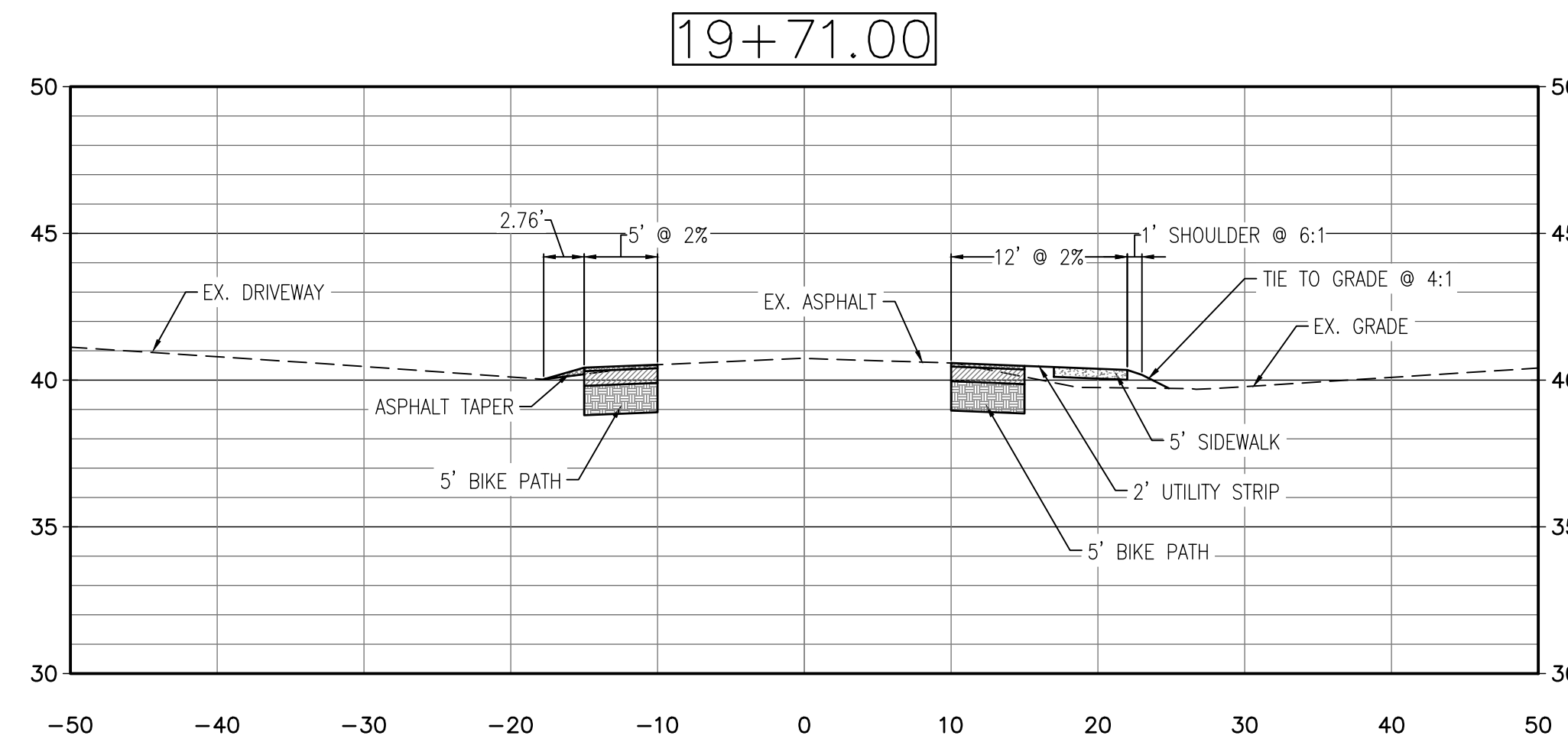
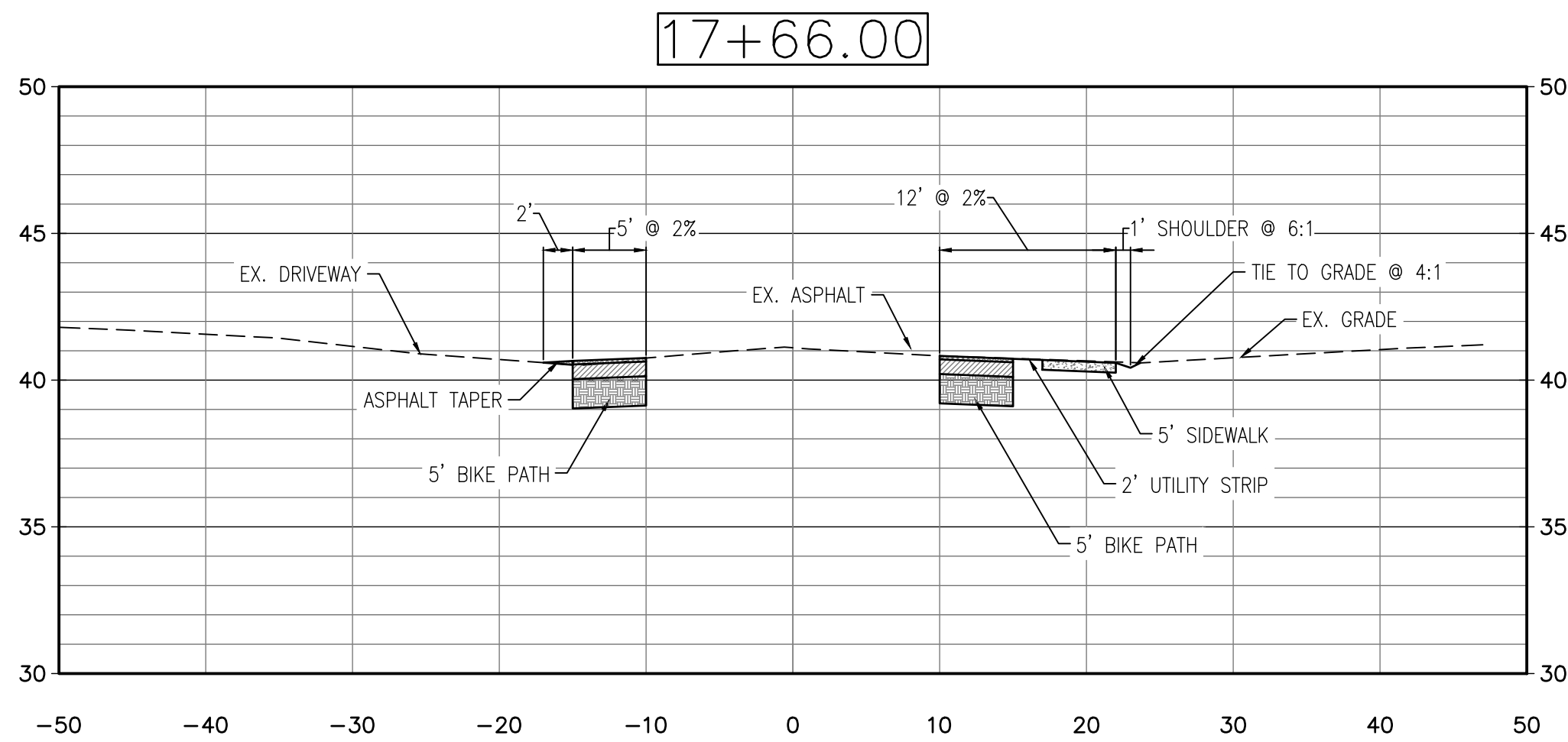
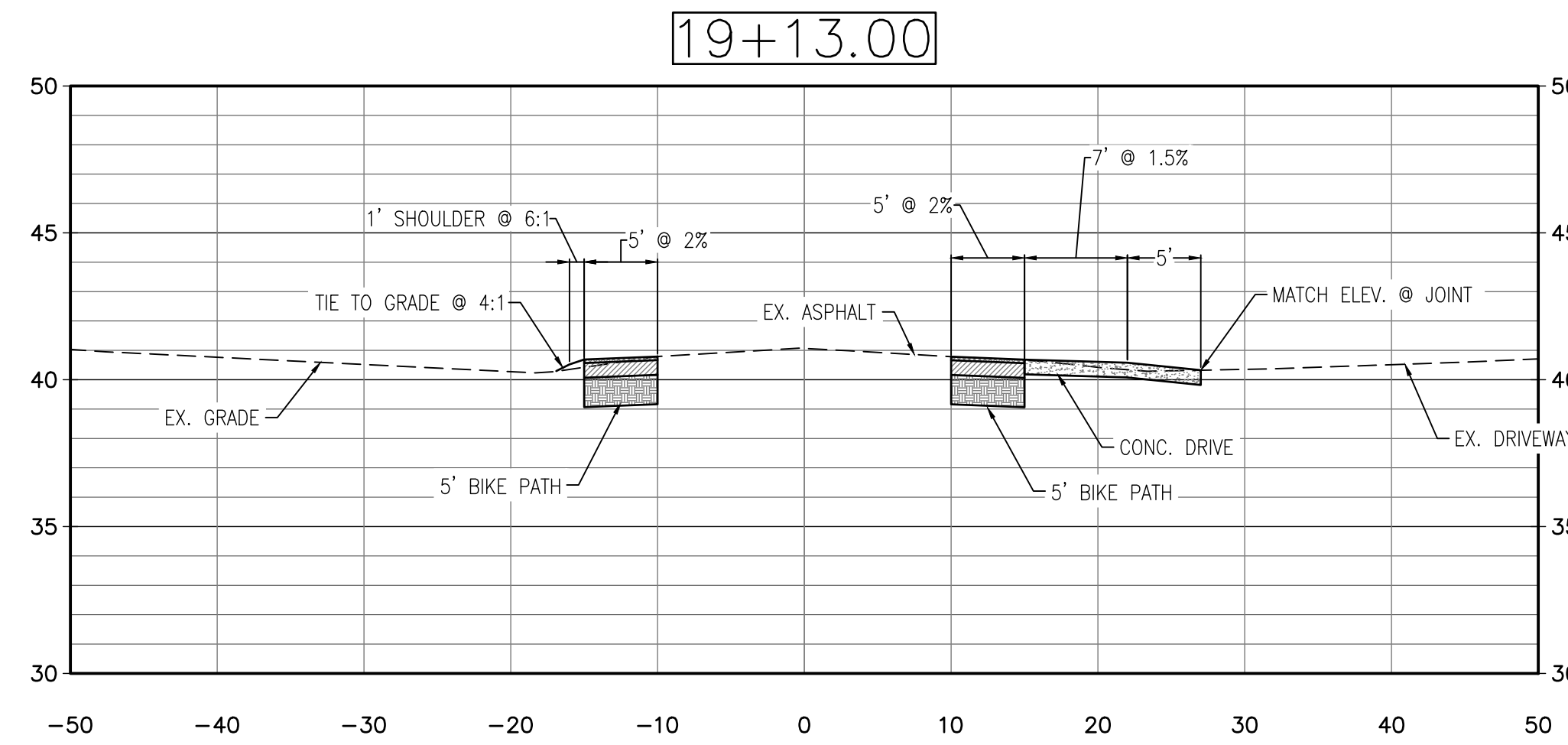
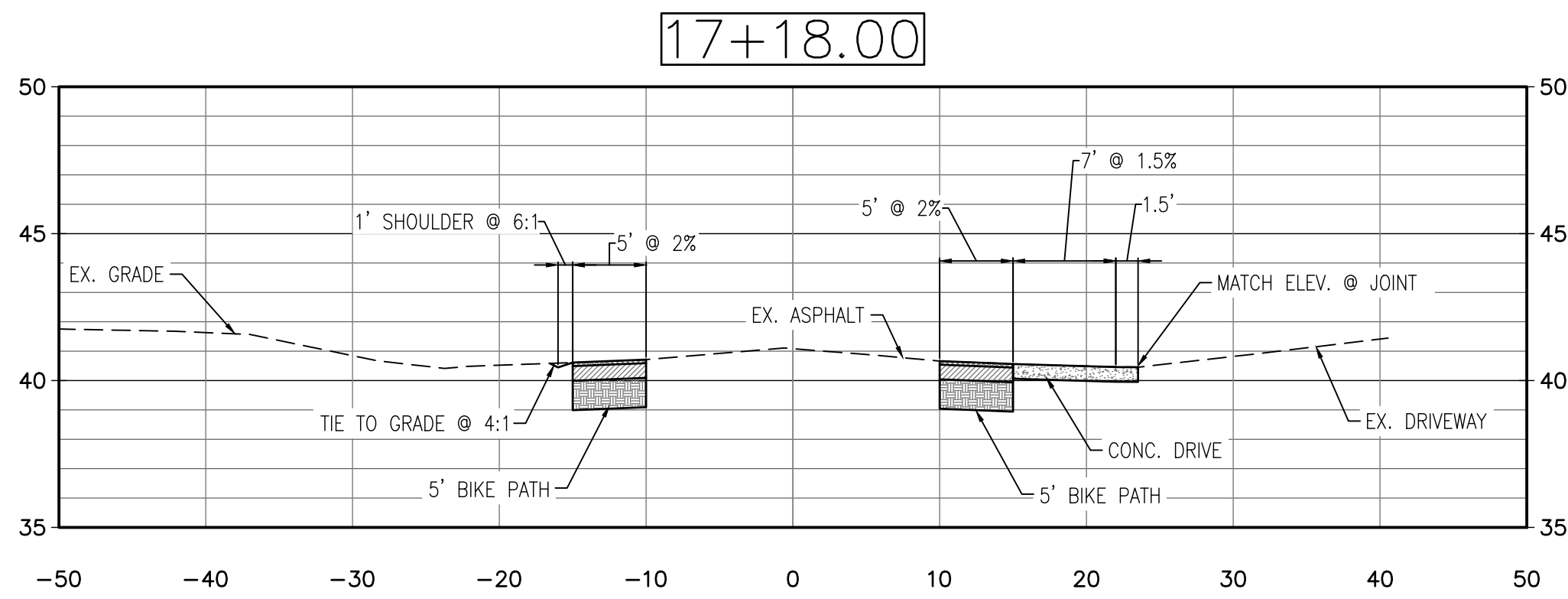
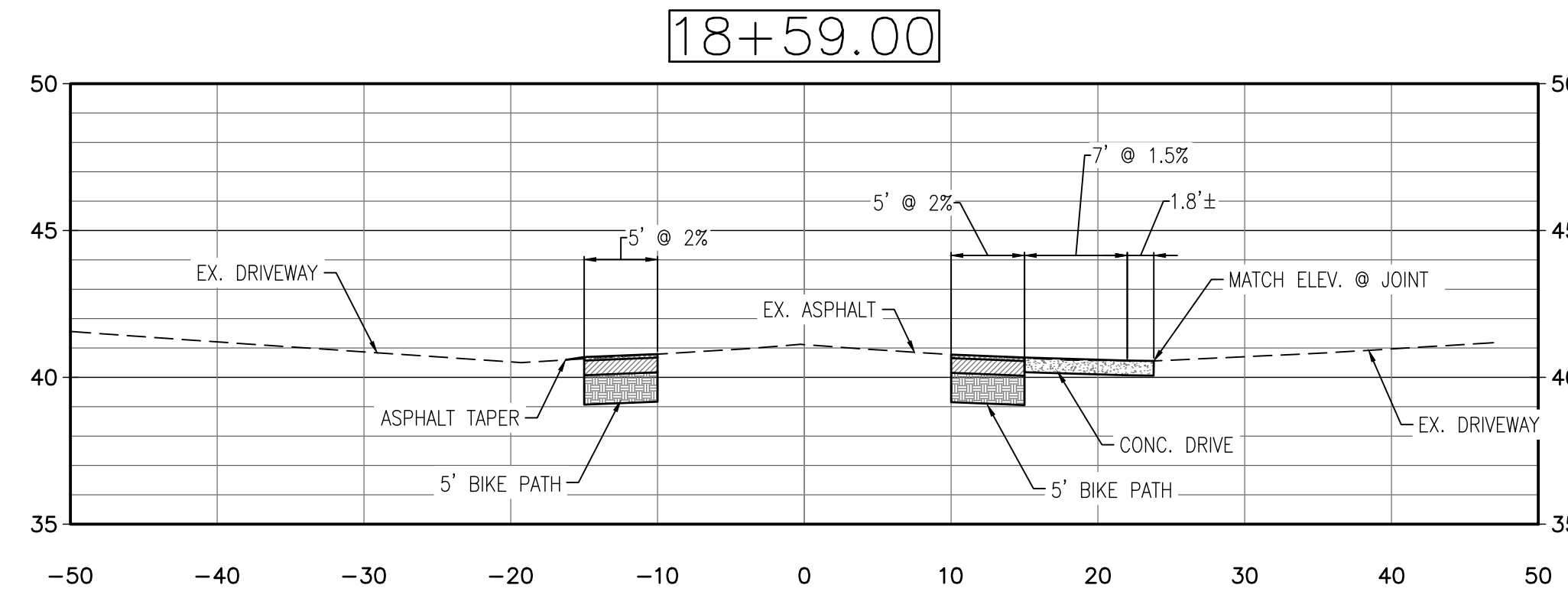
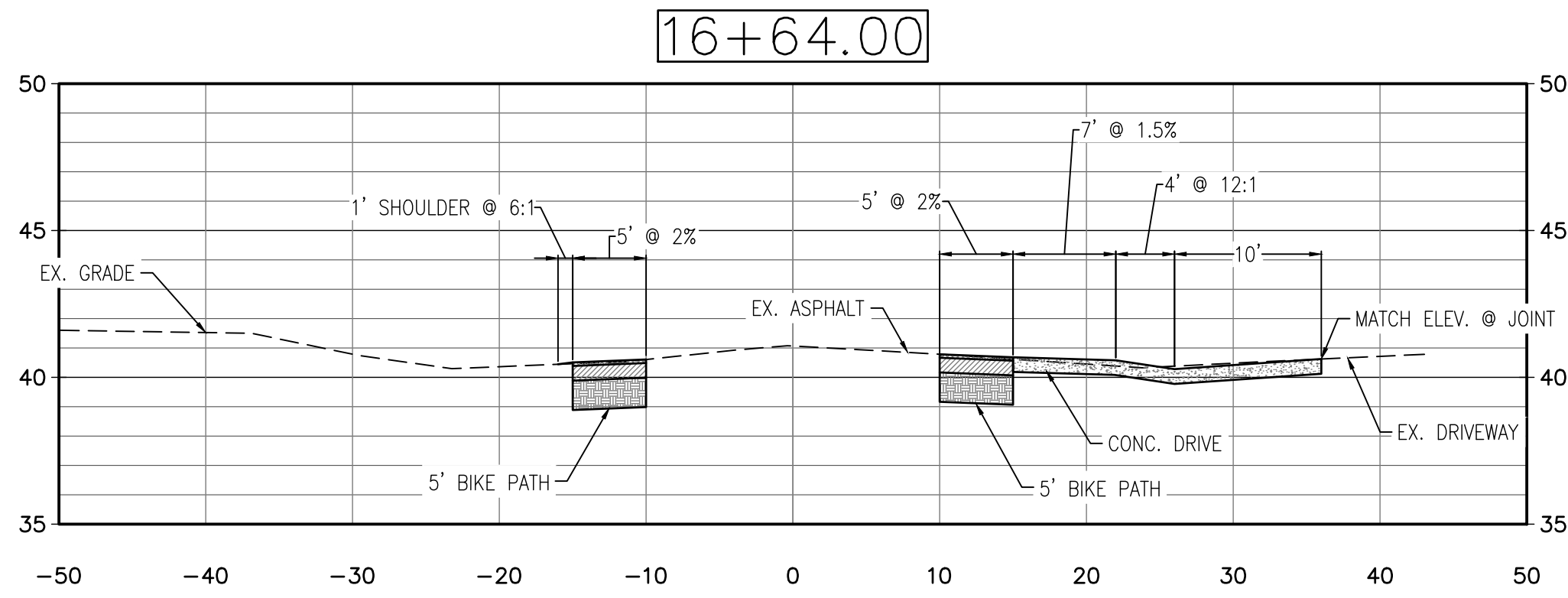
STA. 10+36.05 - 15+76.00 CRITICAL CROSS SECTIONS

SANTA ROSA FLORIDA

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BY: DATE:				

PROJECT NO: 2018-41
C301
SHEET: 42 OF 62

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FL. PE 49949

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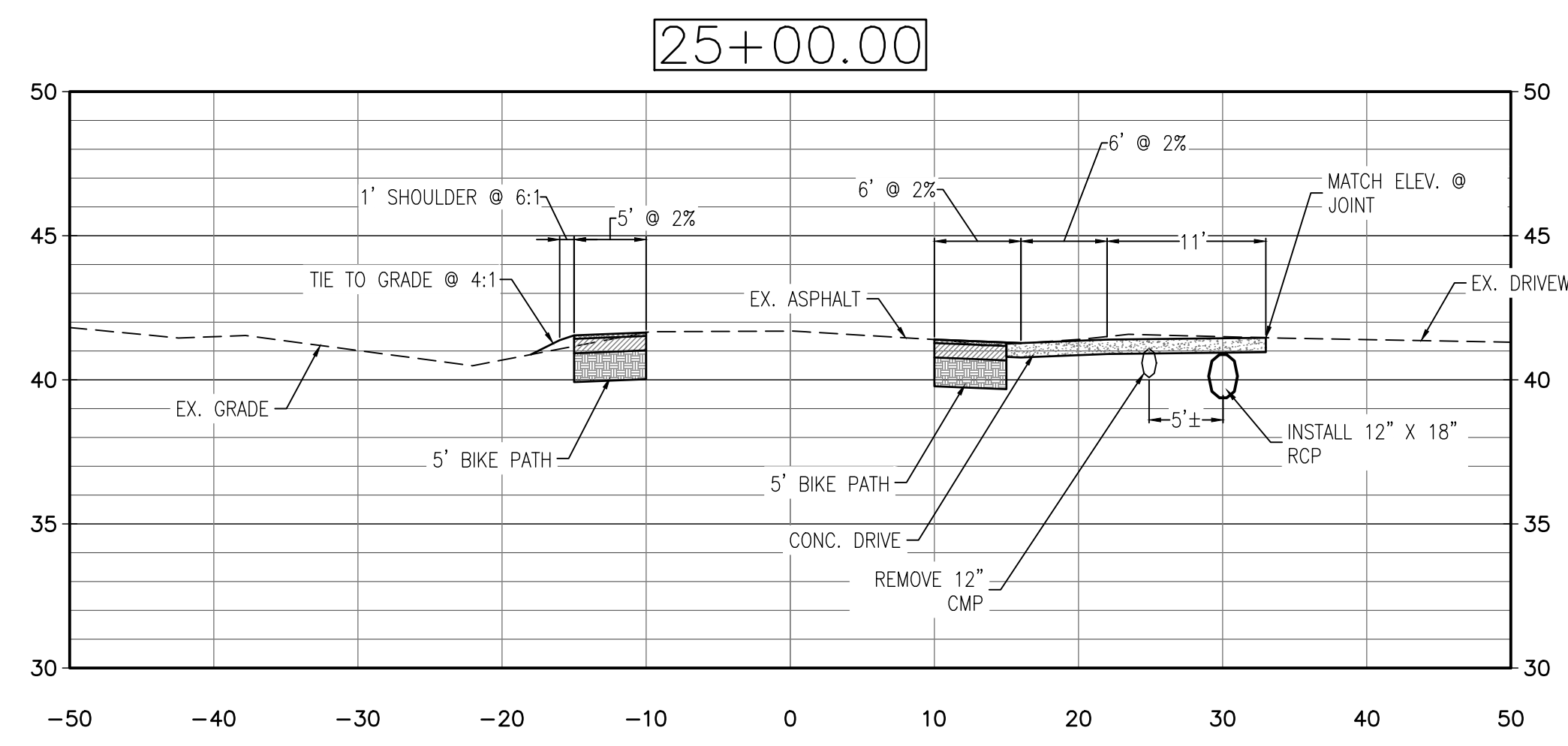
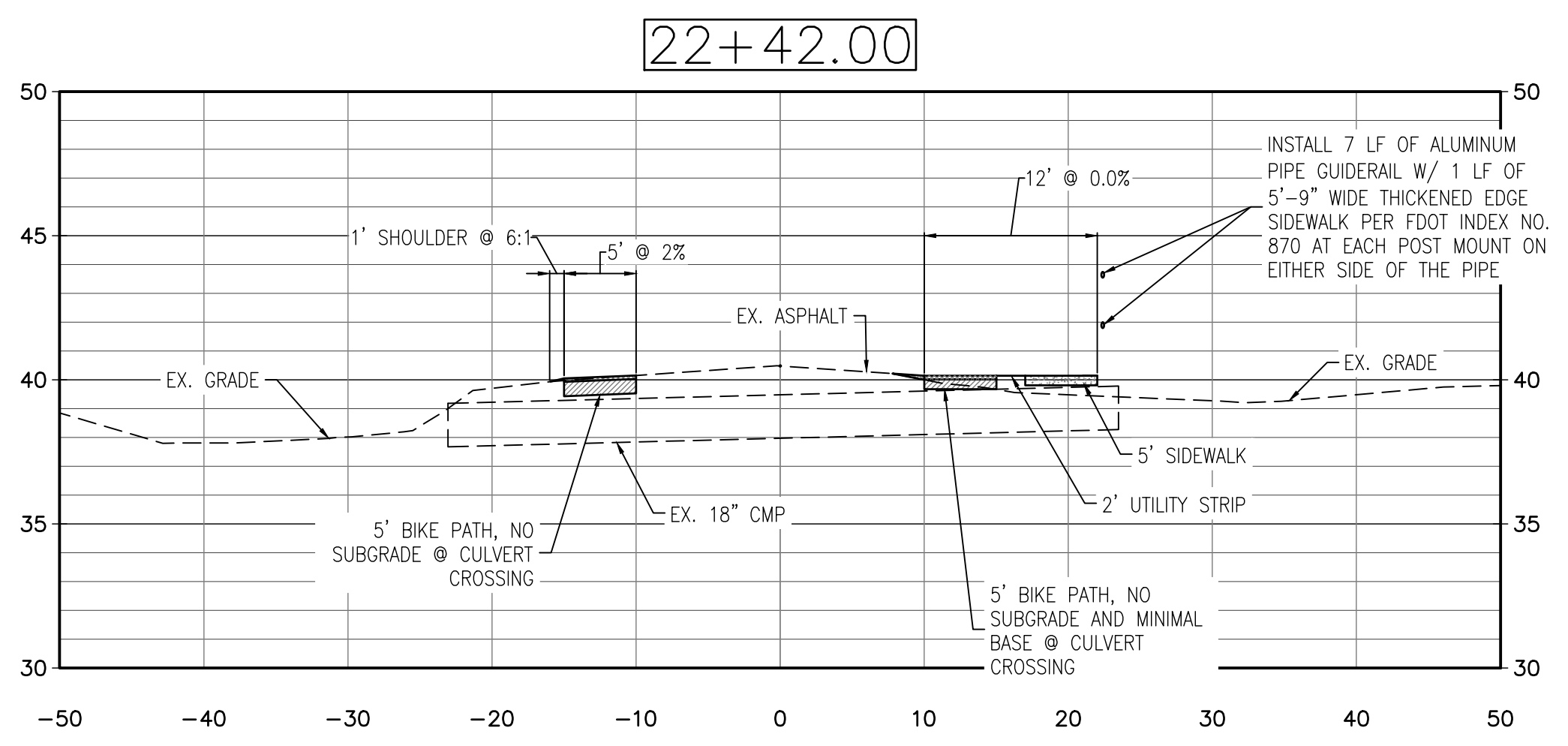
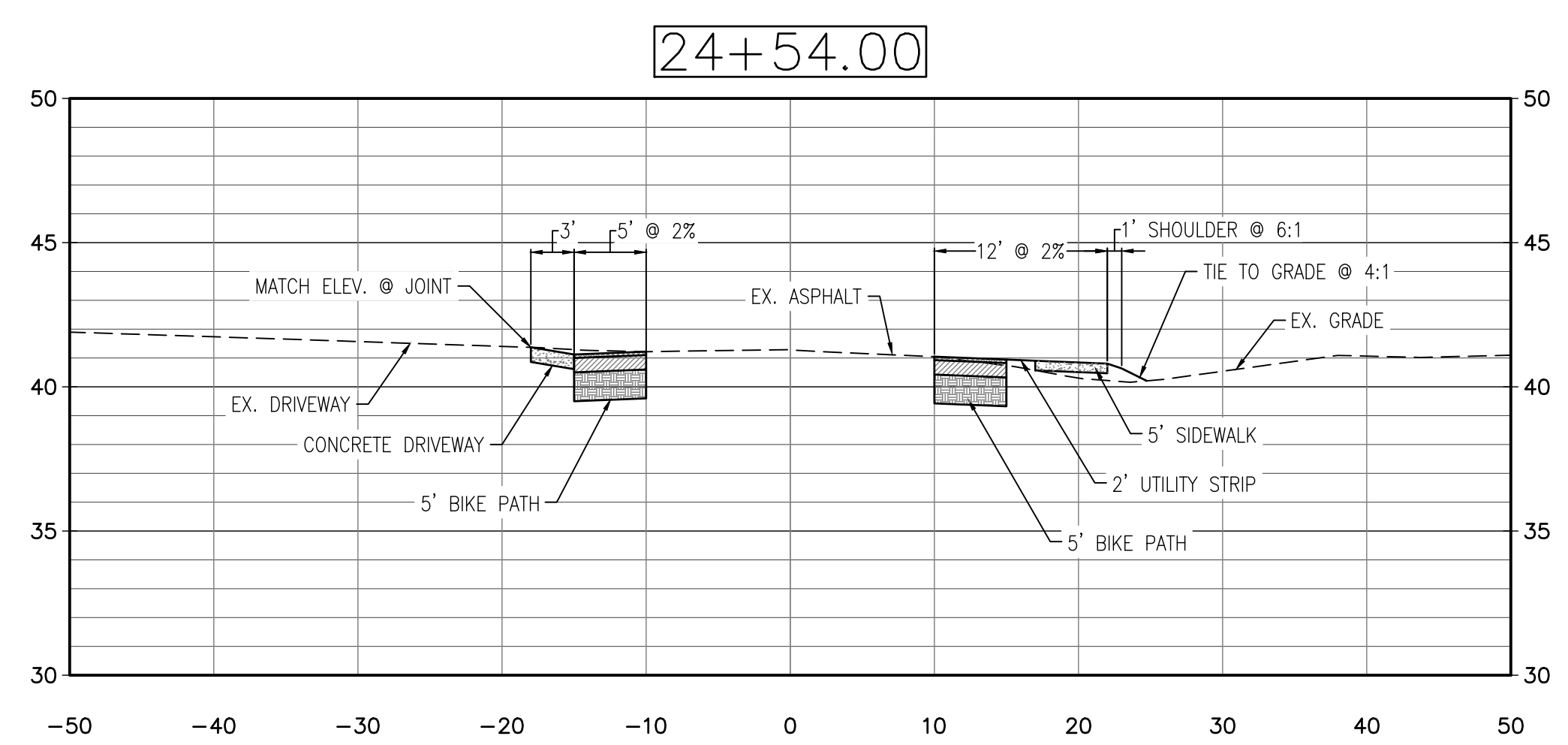
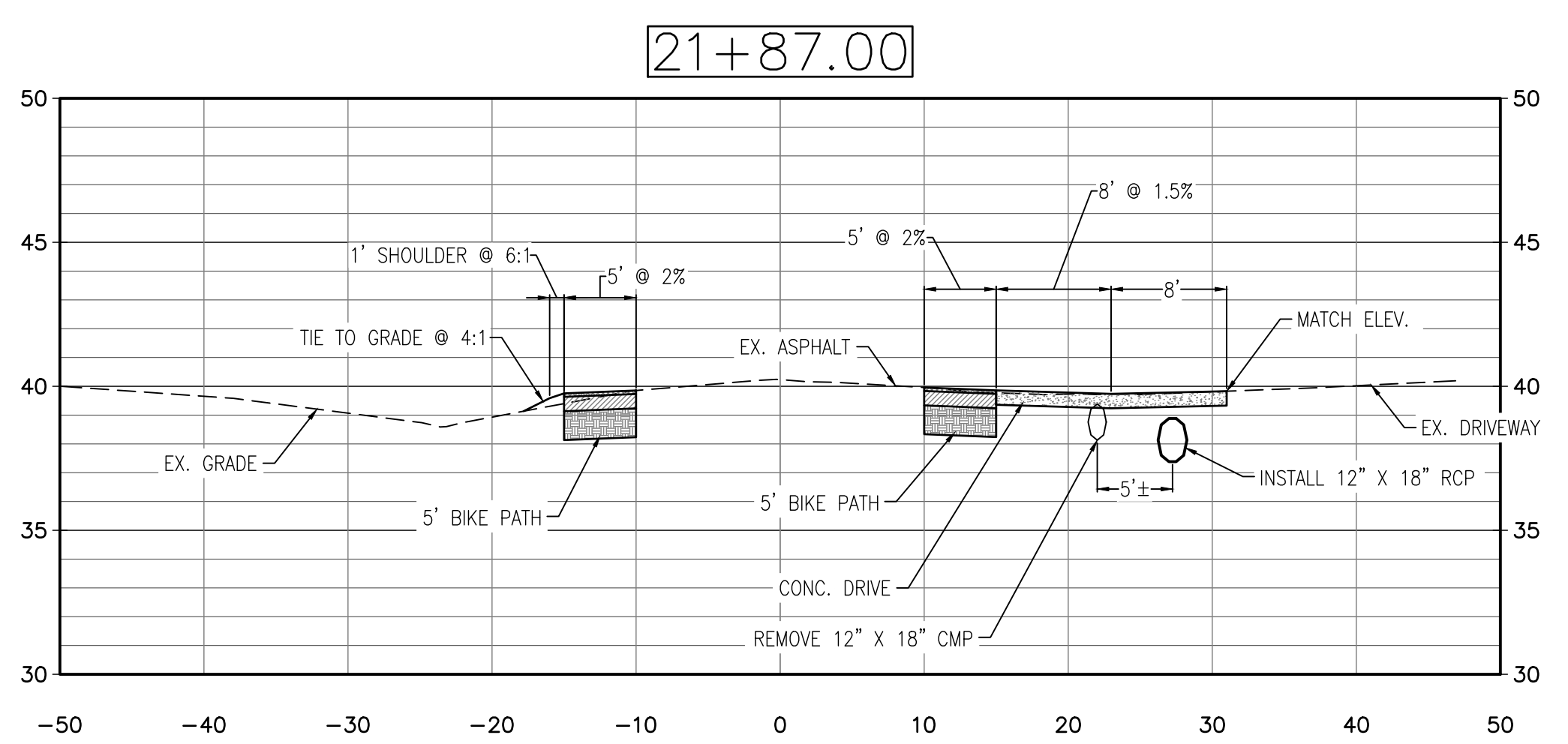
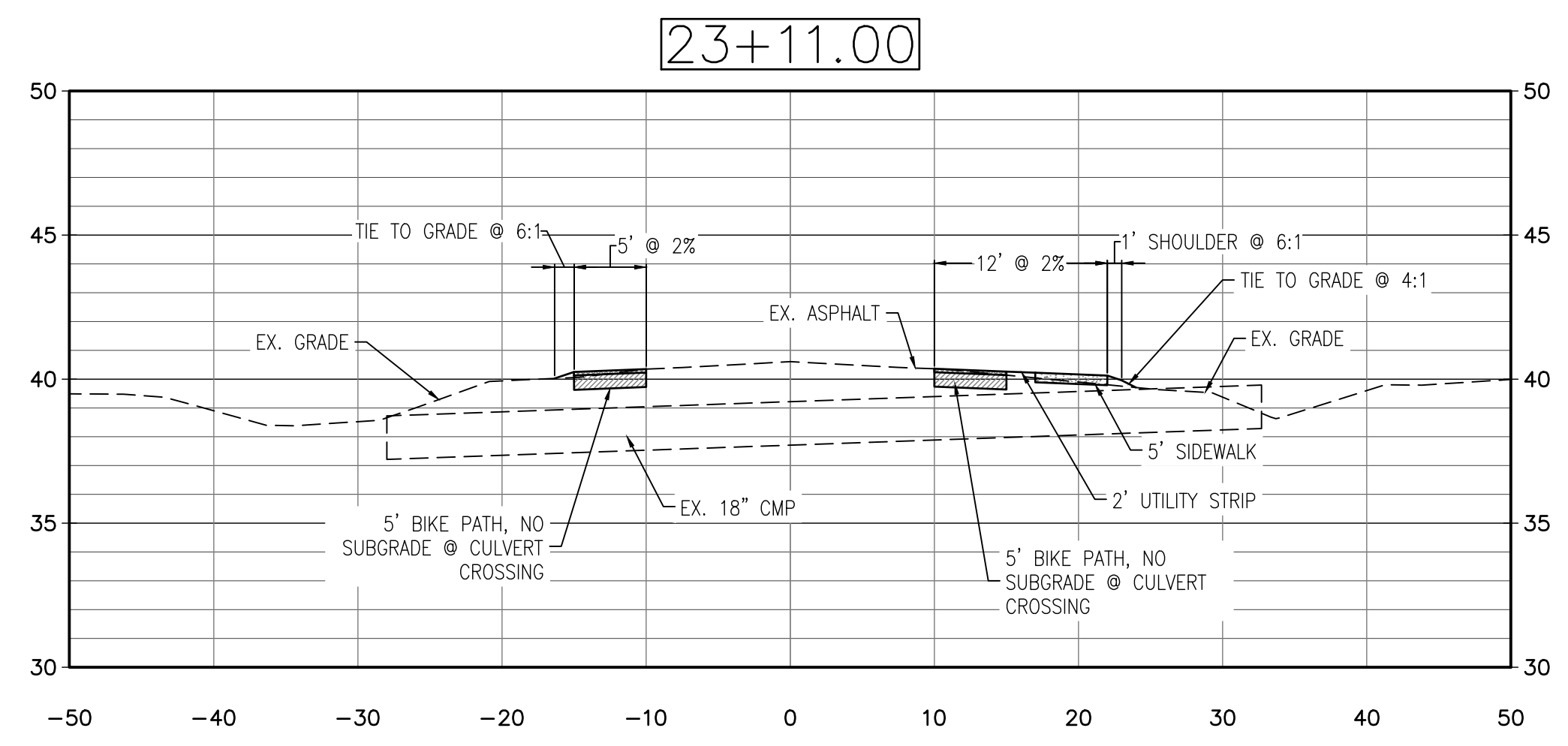
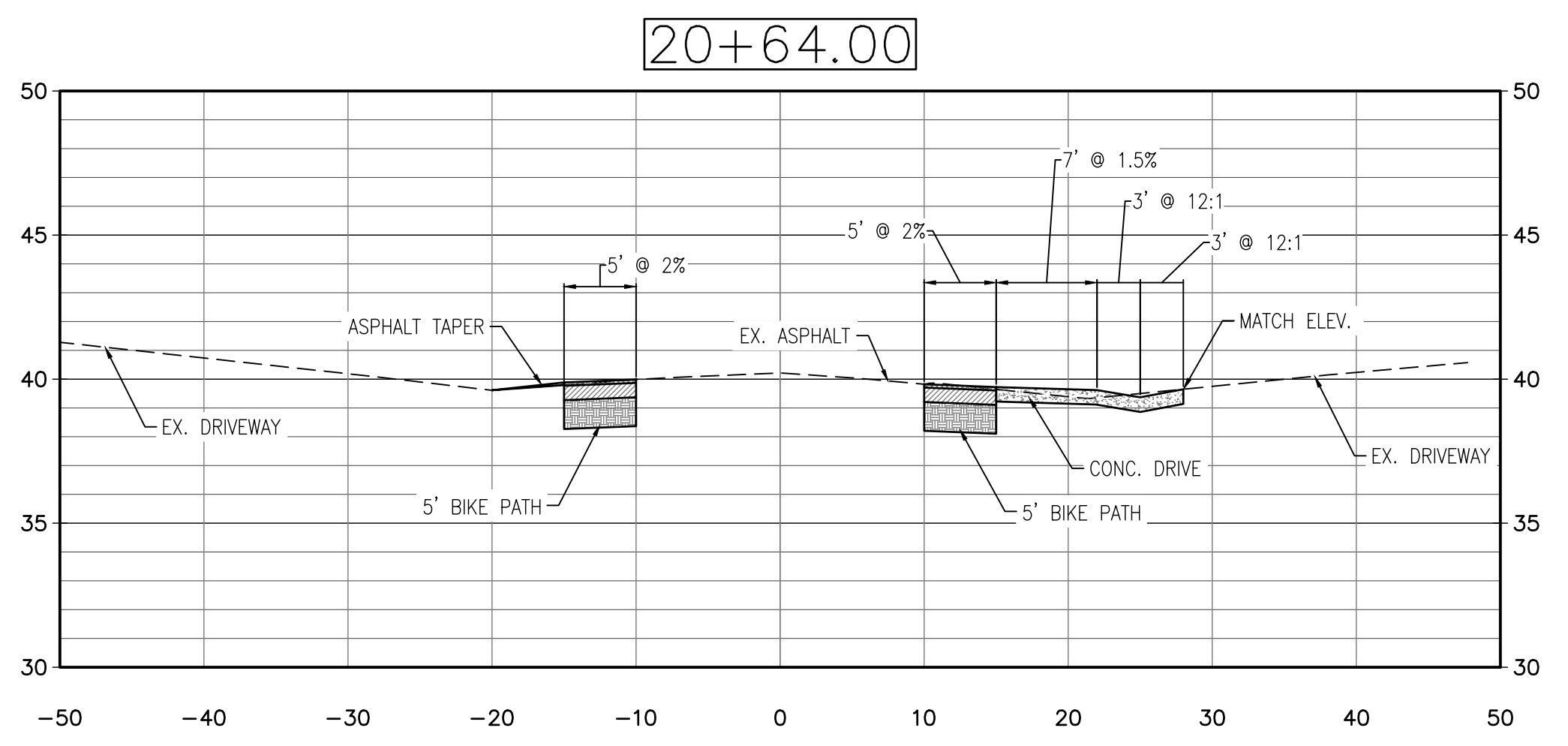
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FL. CERTIFICATE OF AUTHORIZATION NO. 8288

SRCO EDGEWOOD DRIVE
DRAINAGE AND ROADWAY IMPROVEMENTS

STA. 16+64 - 19+71 CRITICAL CROSS SECTIONS
SANTA ROSA FLORIDA

DRAWN BY: PLC	PROJECT NO: 2018-41
DESIGNED BY: RCK	C302
CHECKED BY: RCK	SHEET: 43 OF 62
DATE: 03/10/2021	
SCALE: 1" = 10'	
NOT FOR CONSTRUCTION	
BY: DATE:	

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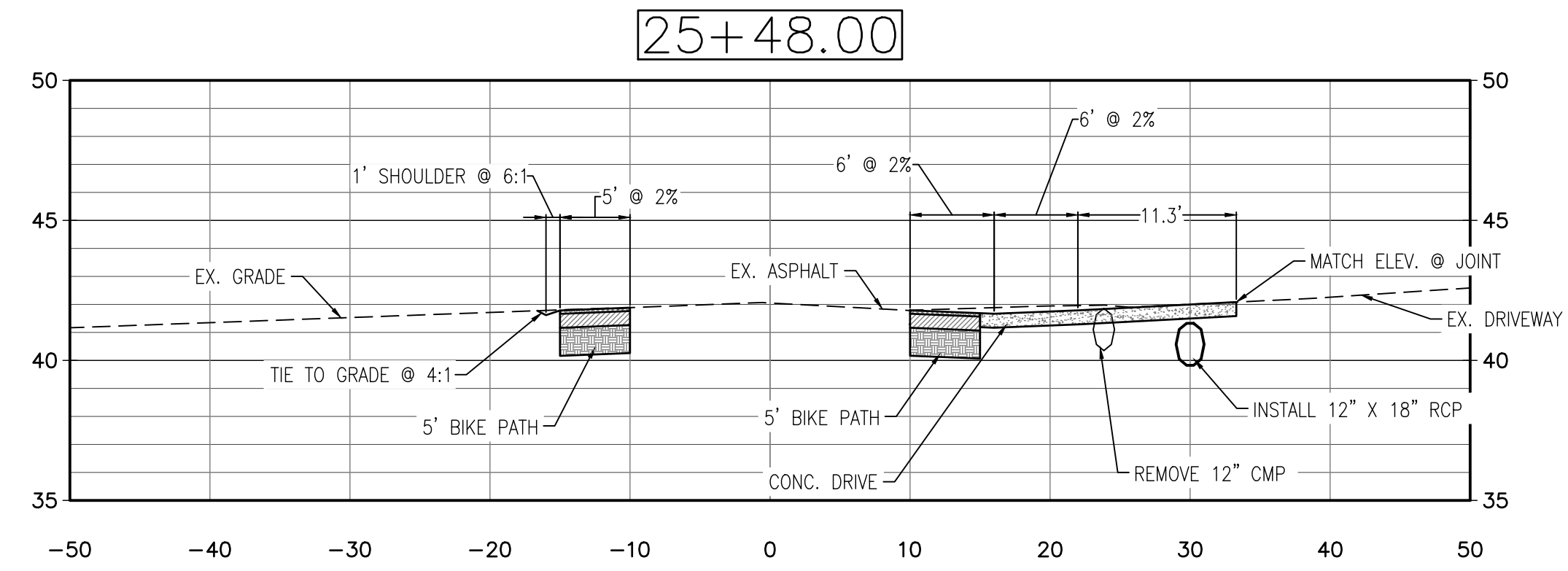


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SHEET: 44		OF		62		NOT FOR CONSTRUCTION		BY: DATE:		SANTA ROSA FLORIDA	
<p>SRCO EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS</p> <p>KH&A Kenneth Horne & Associates, Inc. CIVIL ENGINEERS</p> <p>PO BOX 10689, PENSACOLA, FLORIDA 32524 7201 N. 9TH AVENUE, SUITE 6, PENSACOLA, FLORIDA 32504 (850) 471-9005 info@kh-a.com FAX (850) 471-0093 FL. CERTIFICATE OF AUTHORIZATION NO. 8288</p>											
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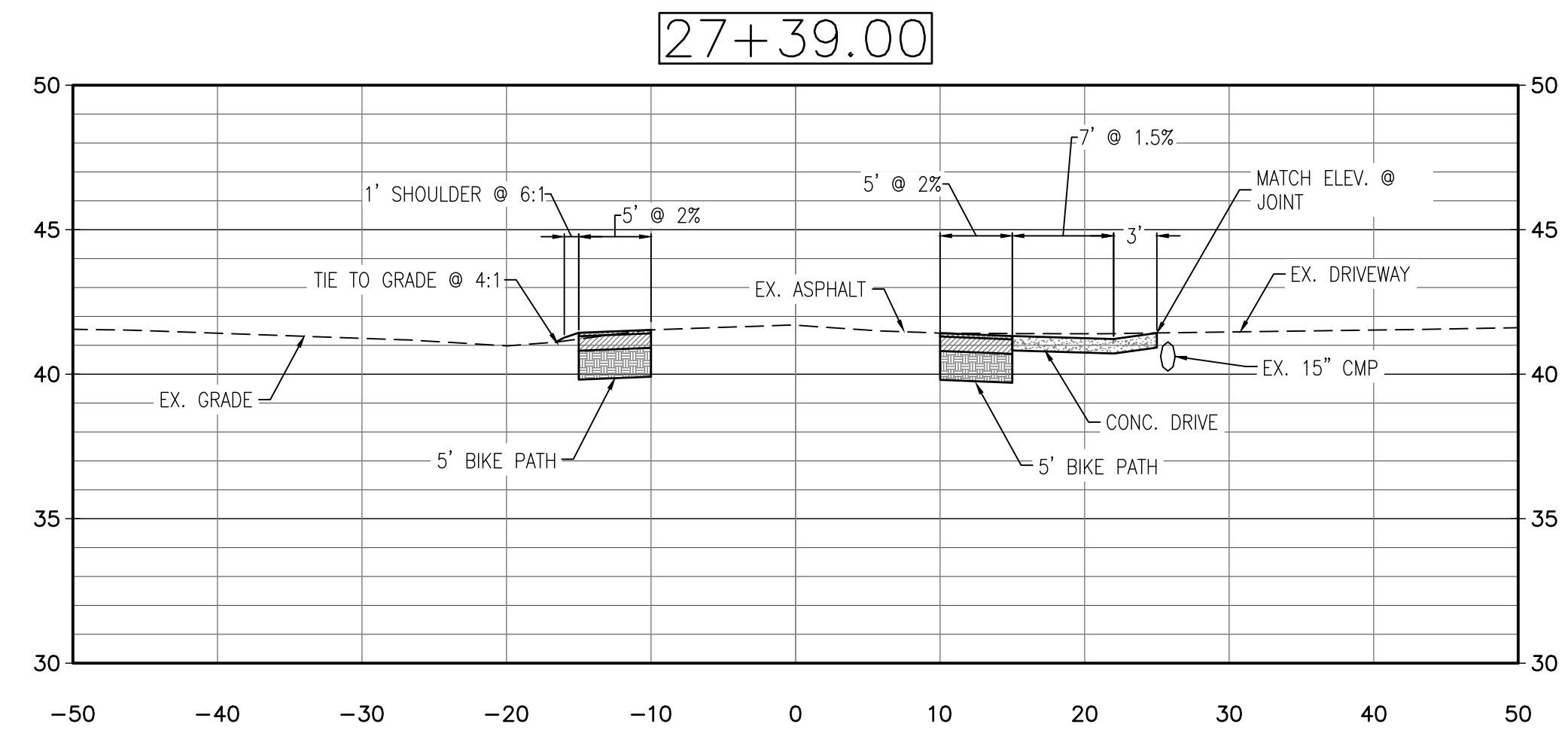
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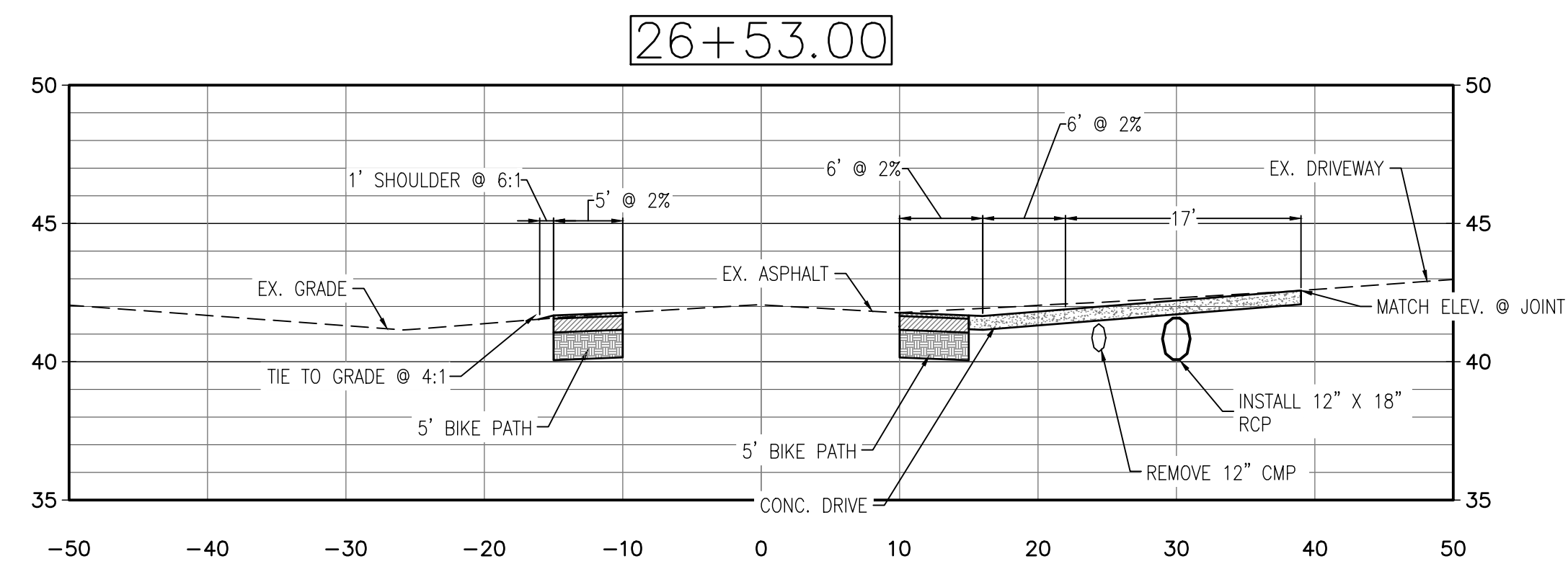
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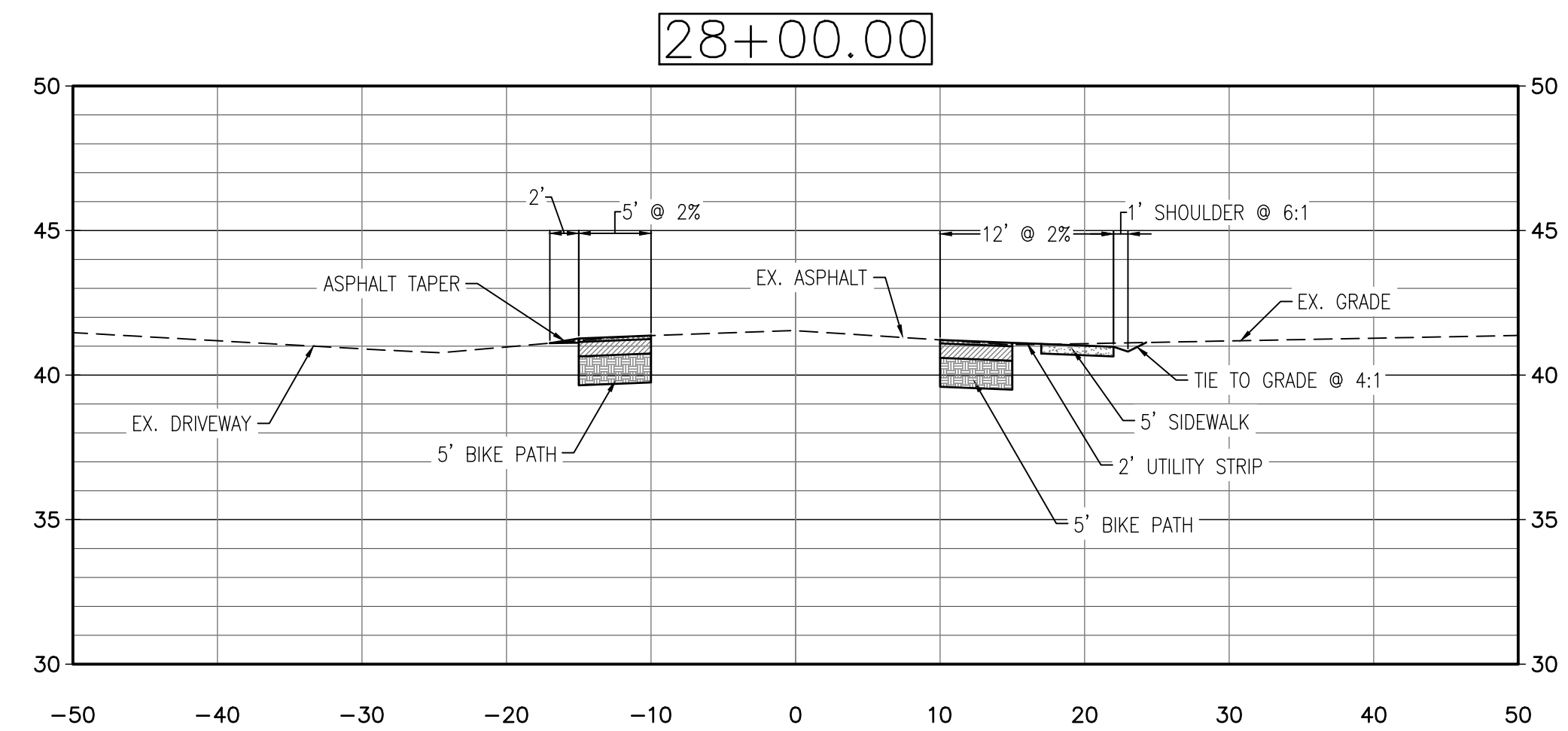
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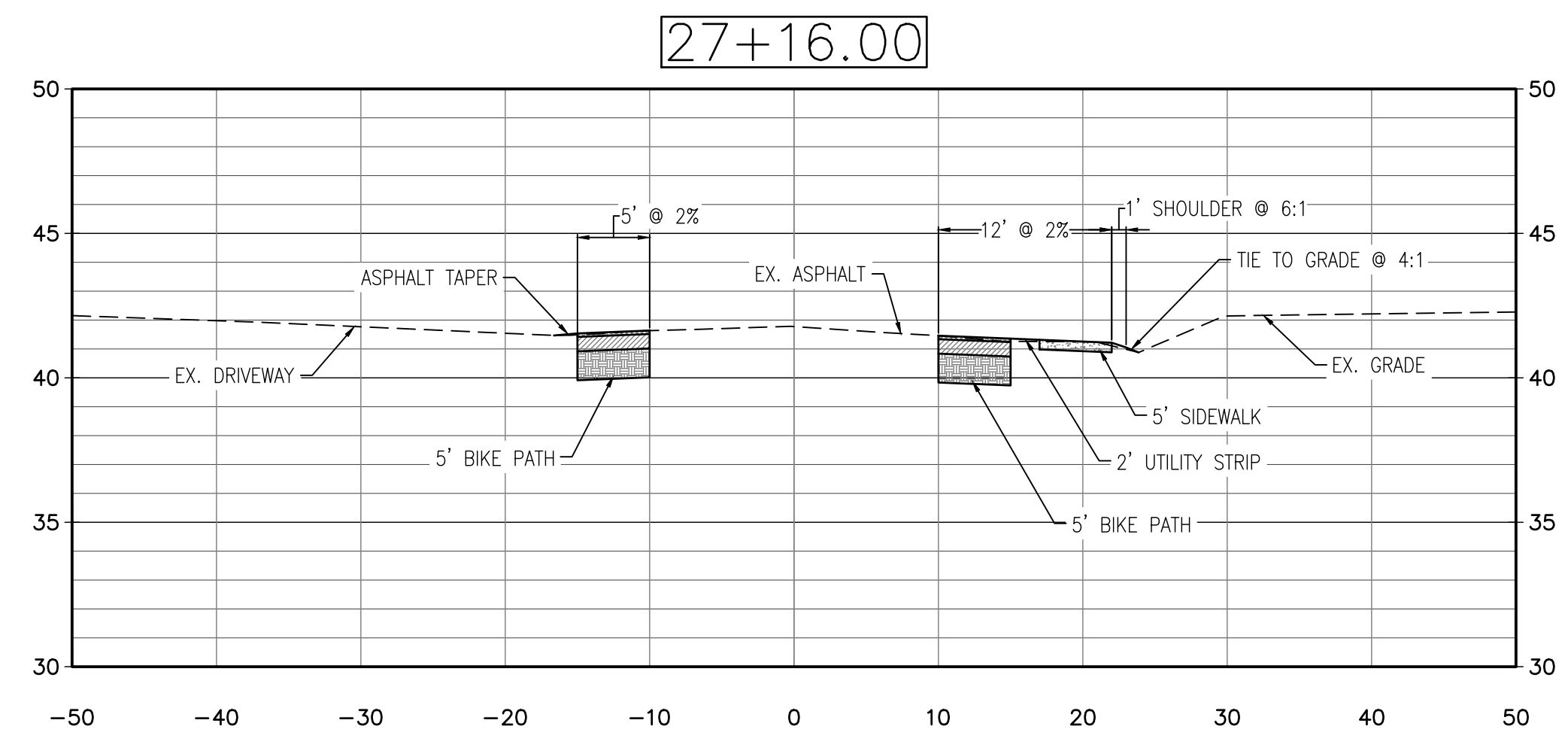
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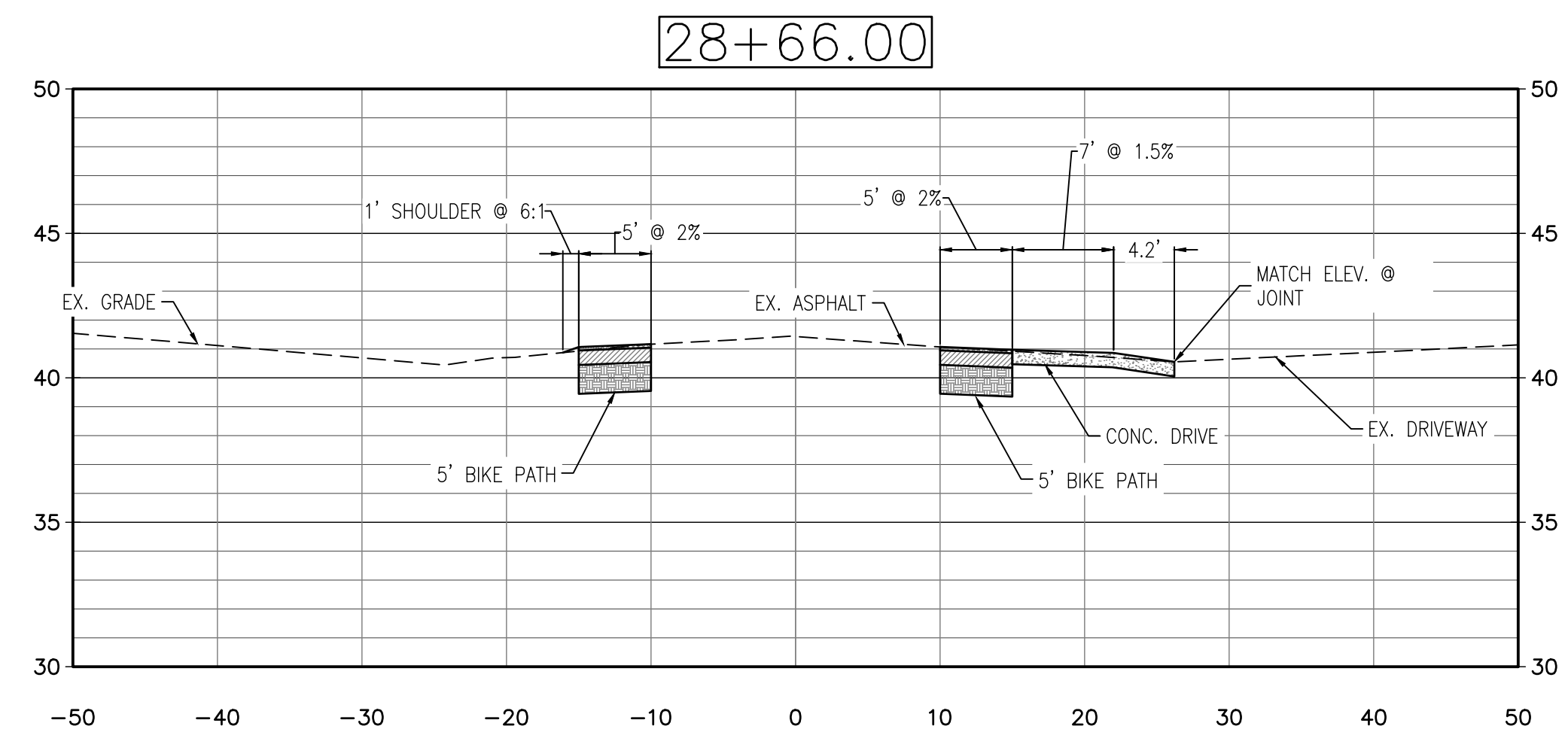
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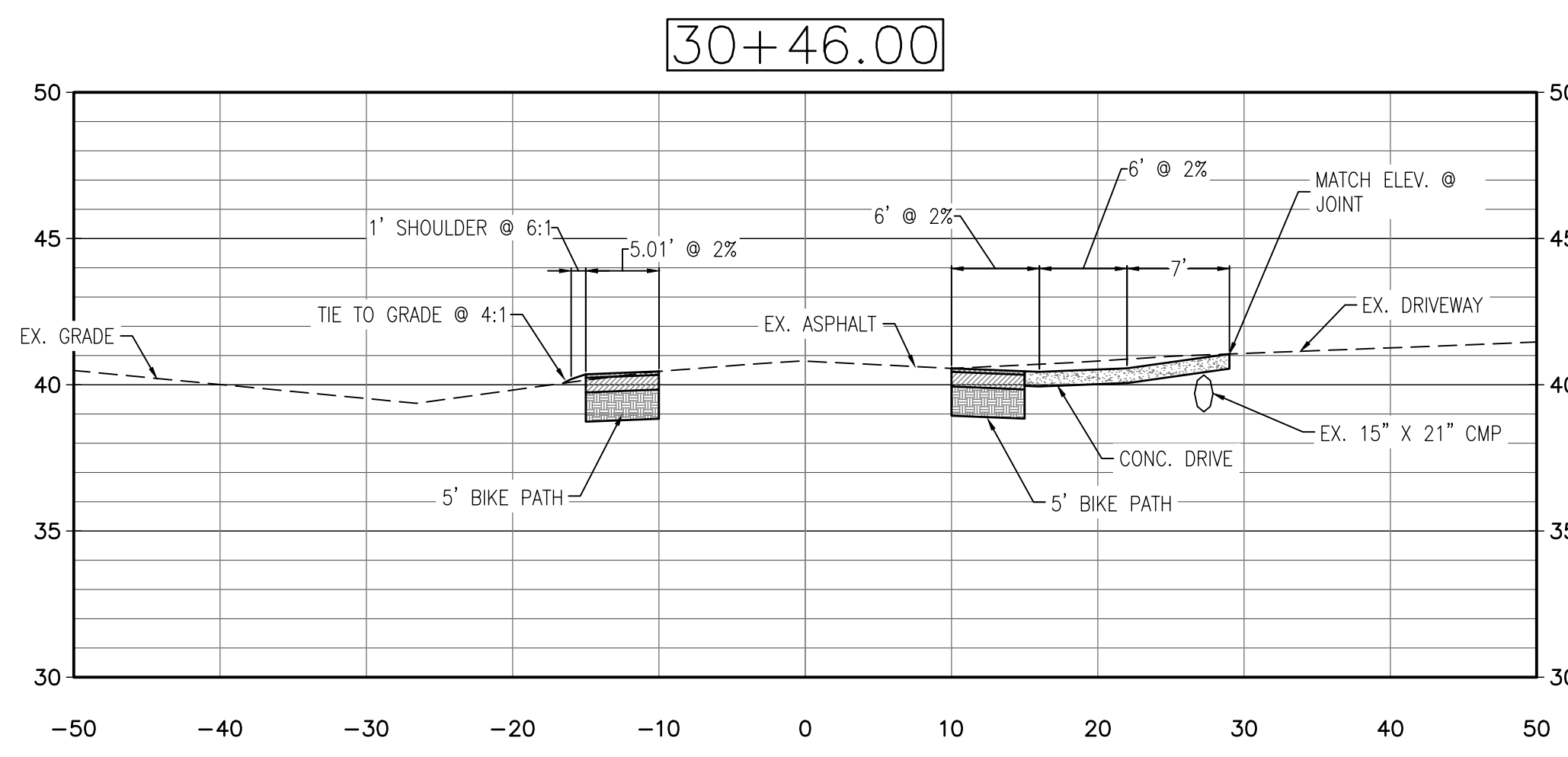
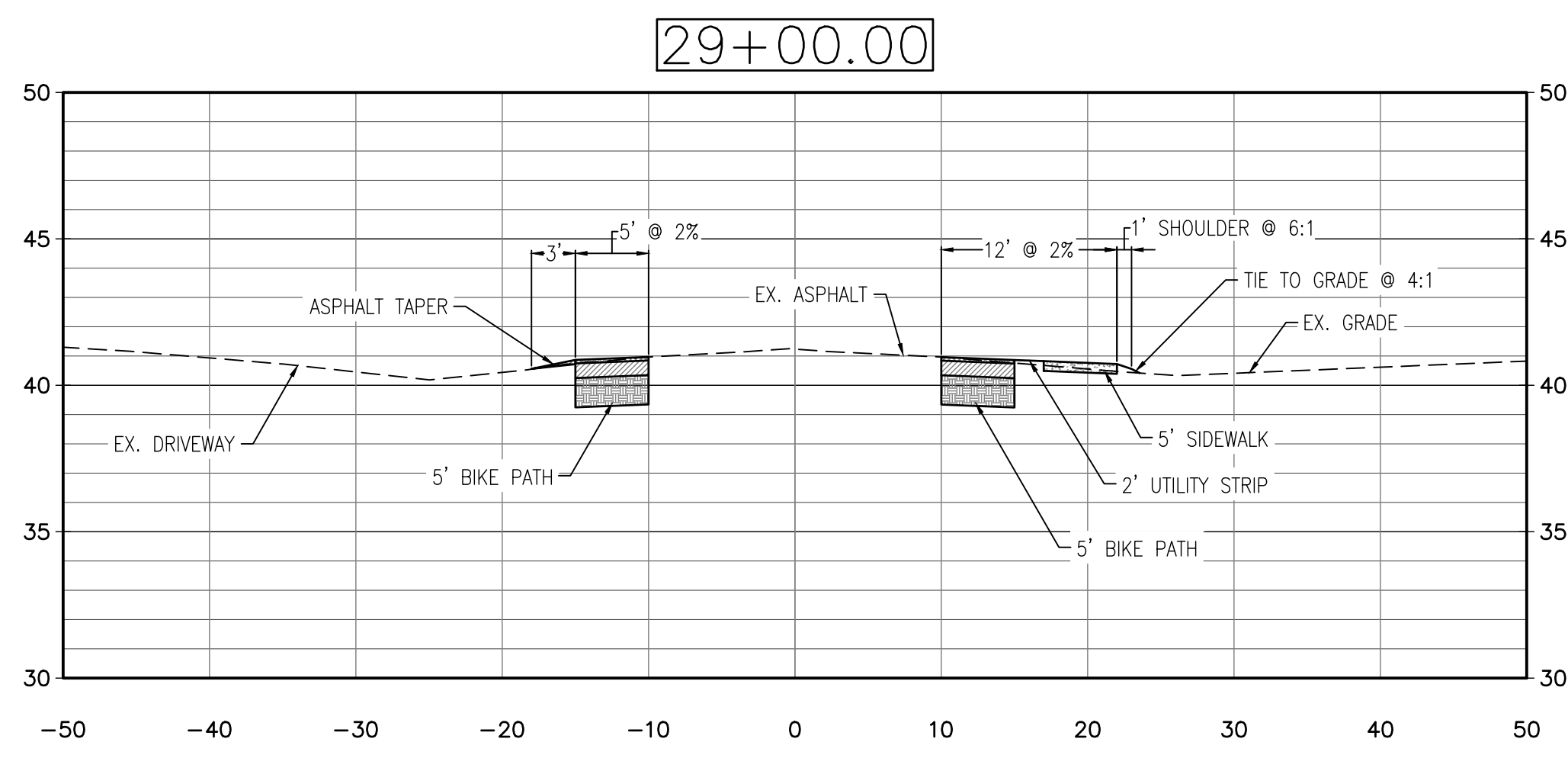
SRCC EDGEWOOD DRIVE	
DRAINAGE AND ROADWAY IMPROVEMENTS	
PROJECT NO: 2018-41	FLORIDA
STA. 25+48 - 28+66 CRITICAL CROSS SECTIONS	SANTA ROSA

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DESIGNED BY: RCK	NOT FOR CONSTRUCTION
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DATE: 03/10/2021	
PROJECT NO: 2018-41	
C304	
SHEET: 45	OF 62

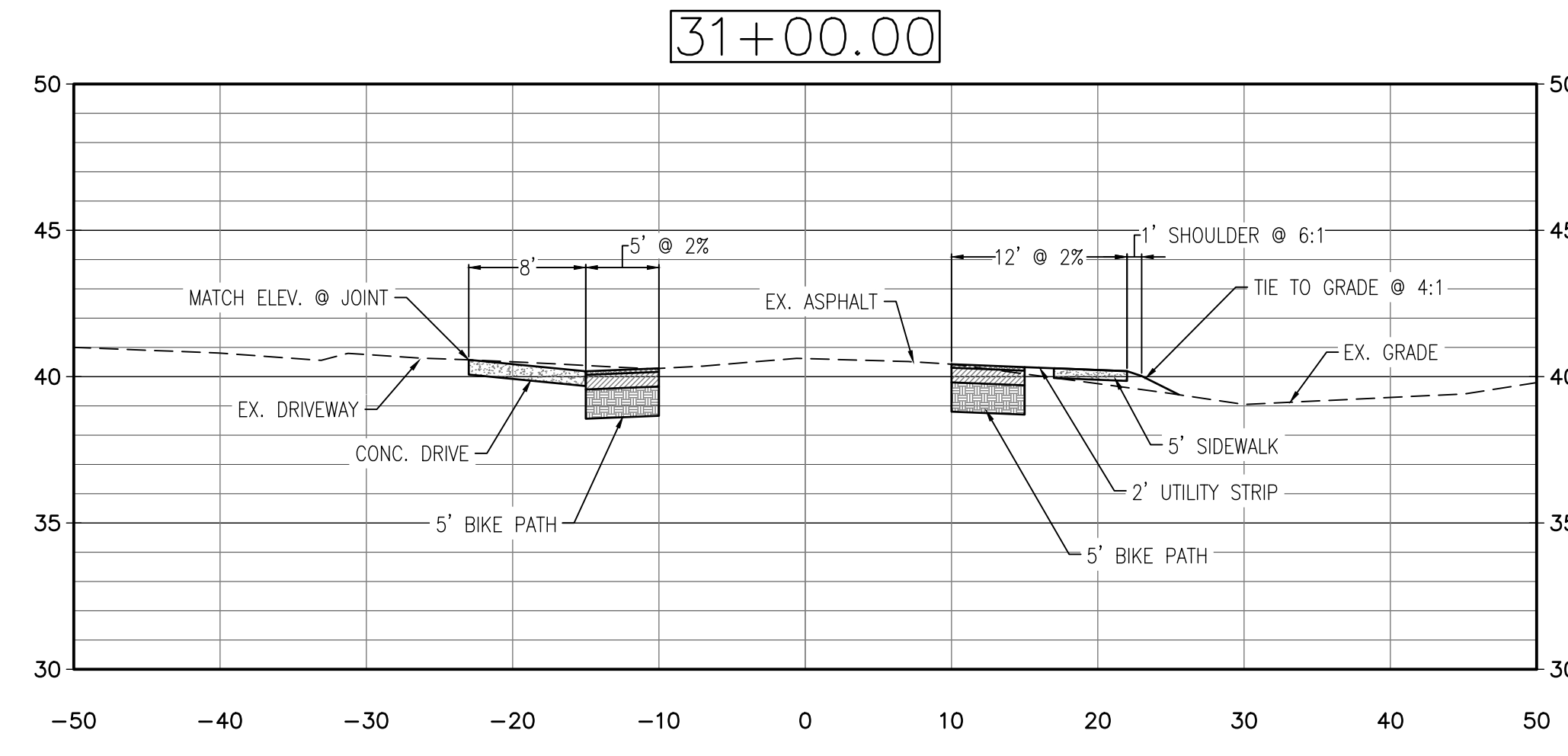
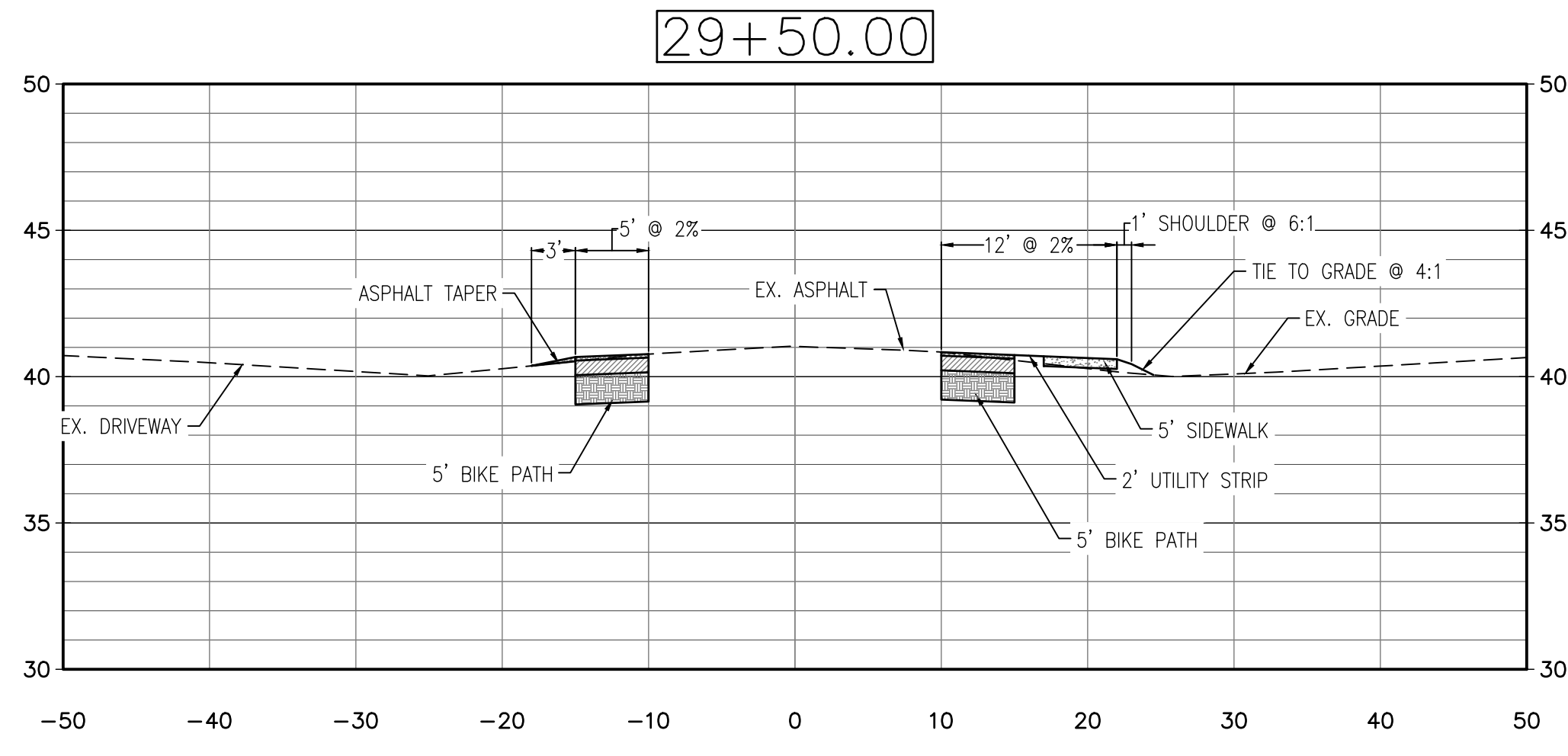
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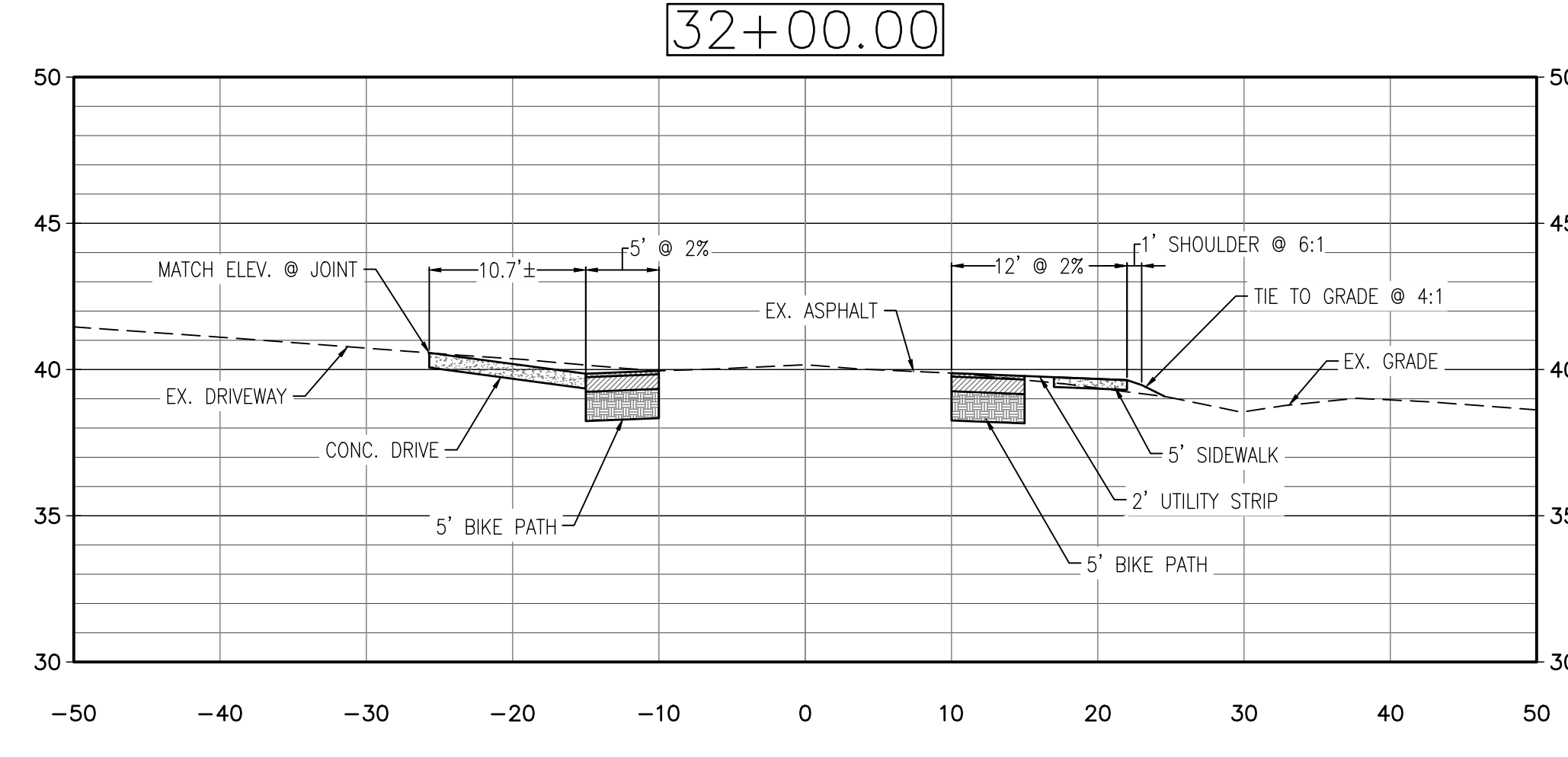
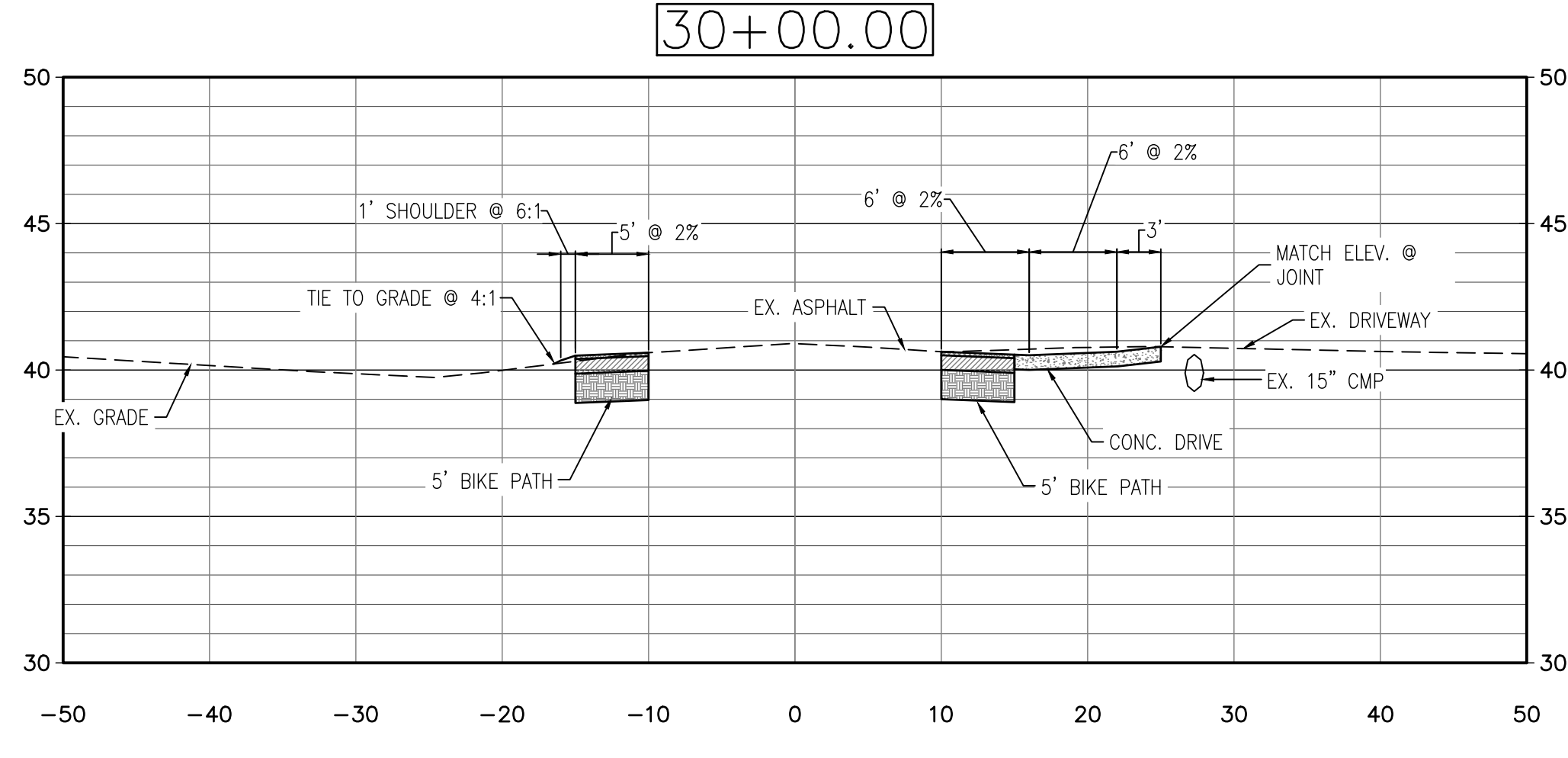


2



3

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SRCO EDGEWOOD DRIVE
DRAINAGE AND ROADWAY IMPROVEMENTS

STA. 29+00 - 32+00 CRITICAL CROSS SECTIONS
SANTA ROSA FLORIDA

PROJECT NO: 2018-41
C305
SHEET: 46 OF 62

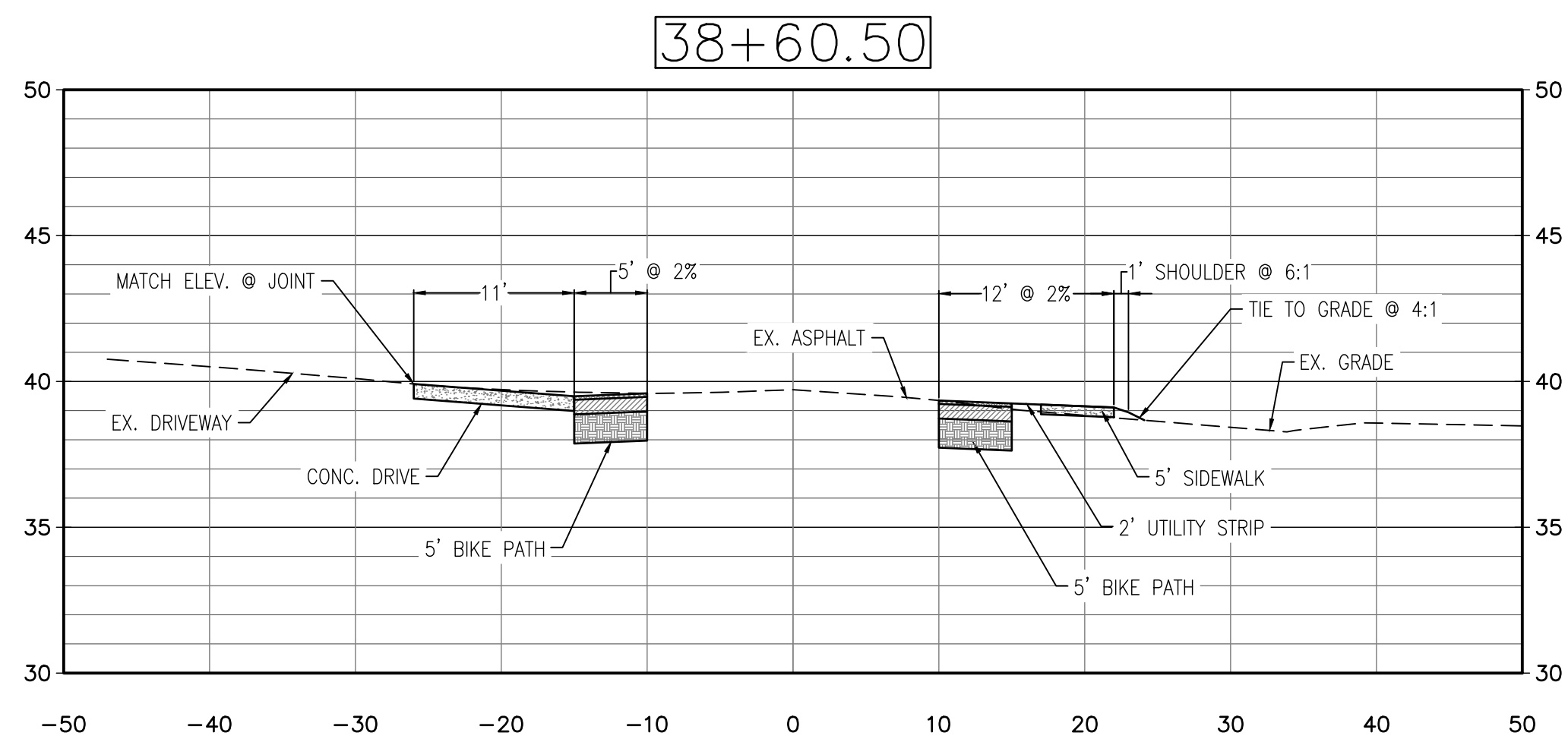
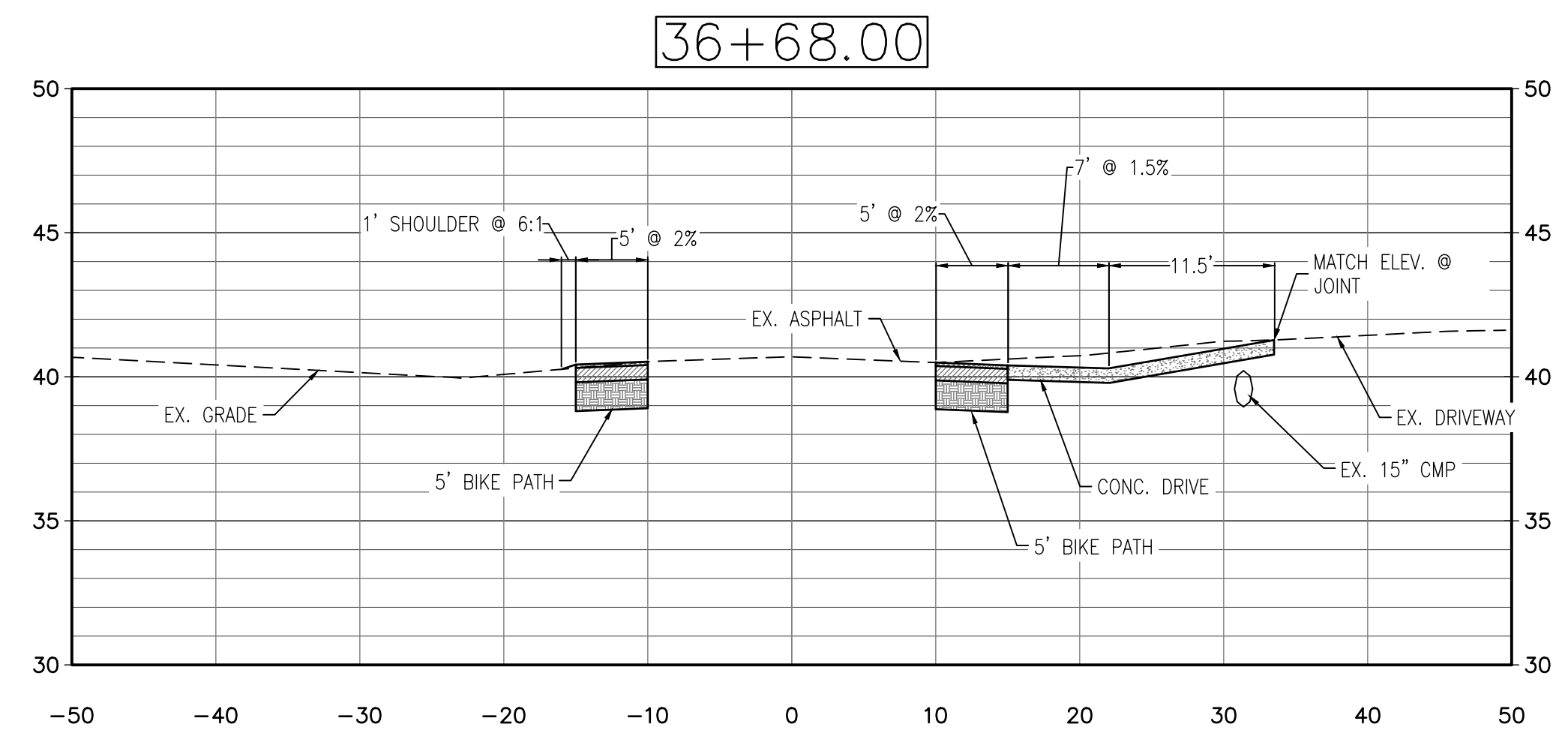
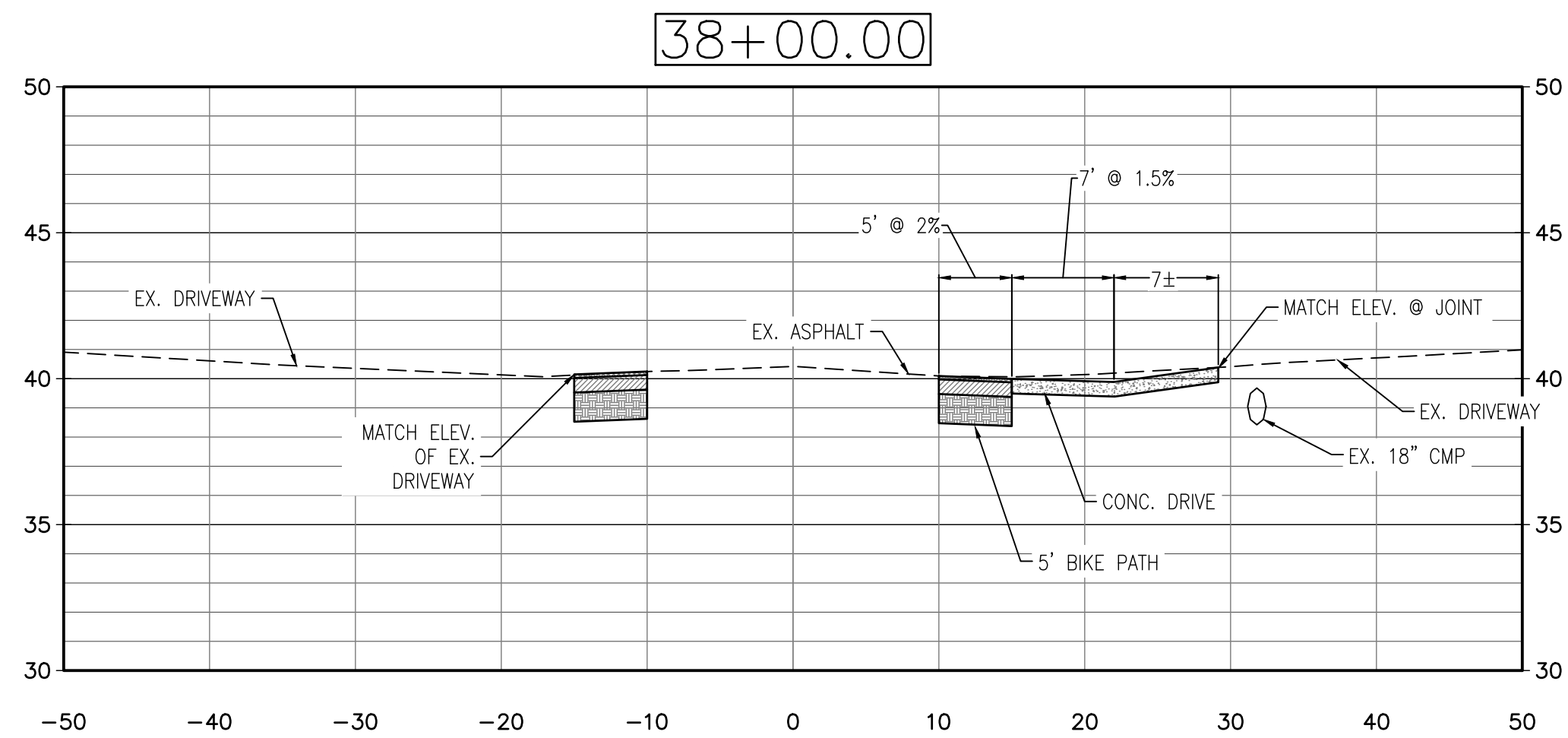
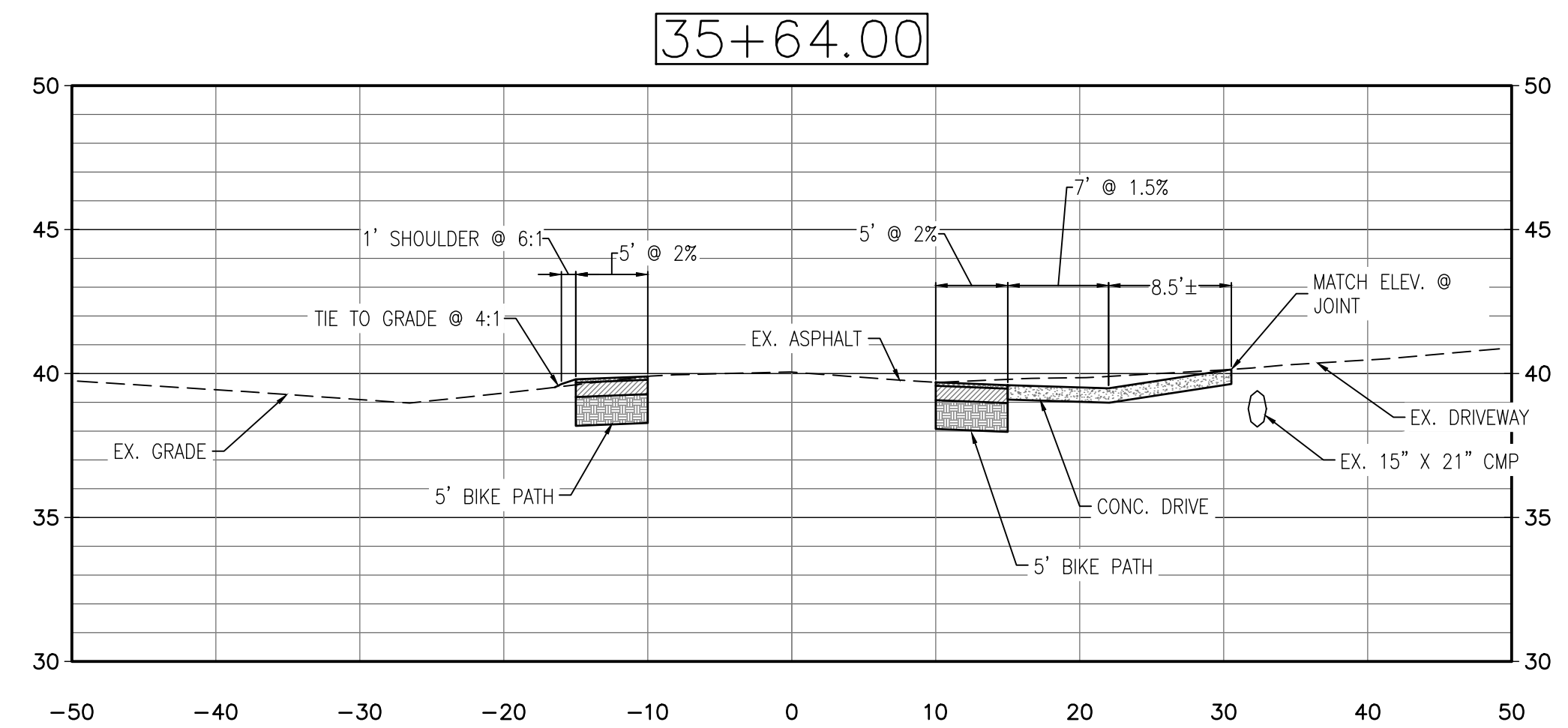
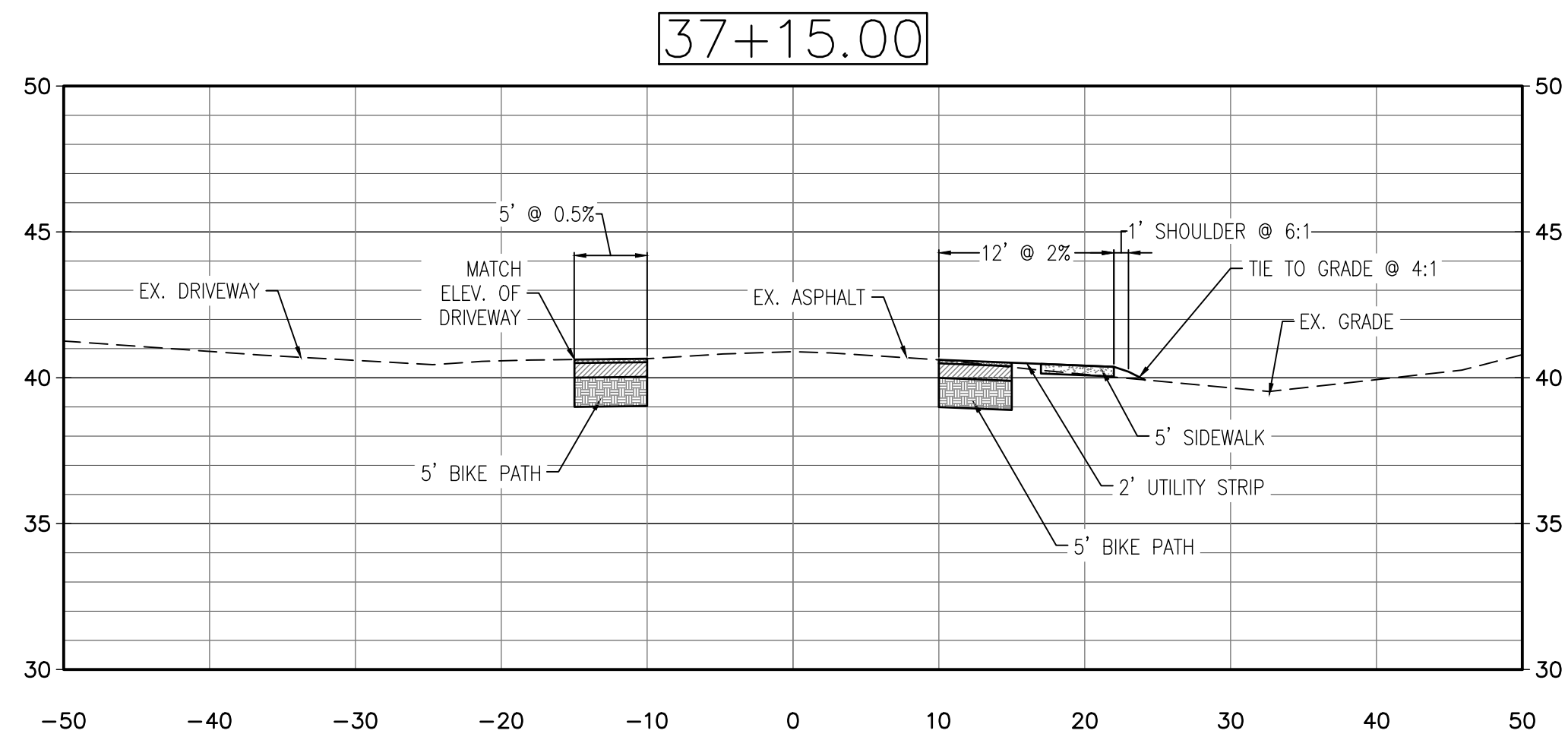
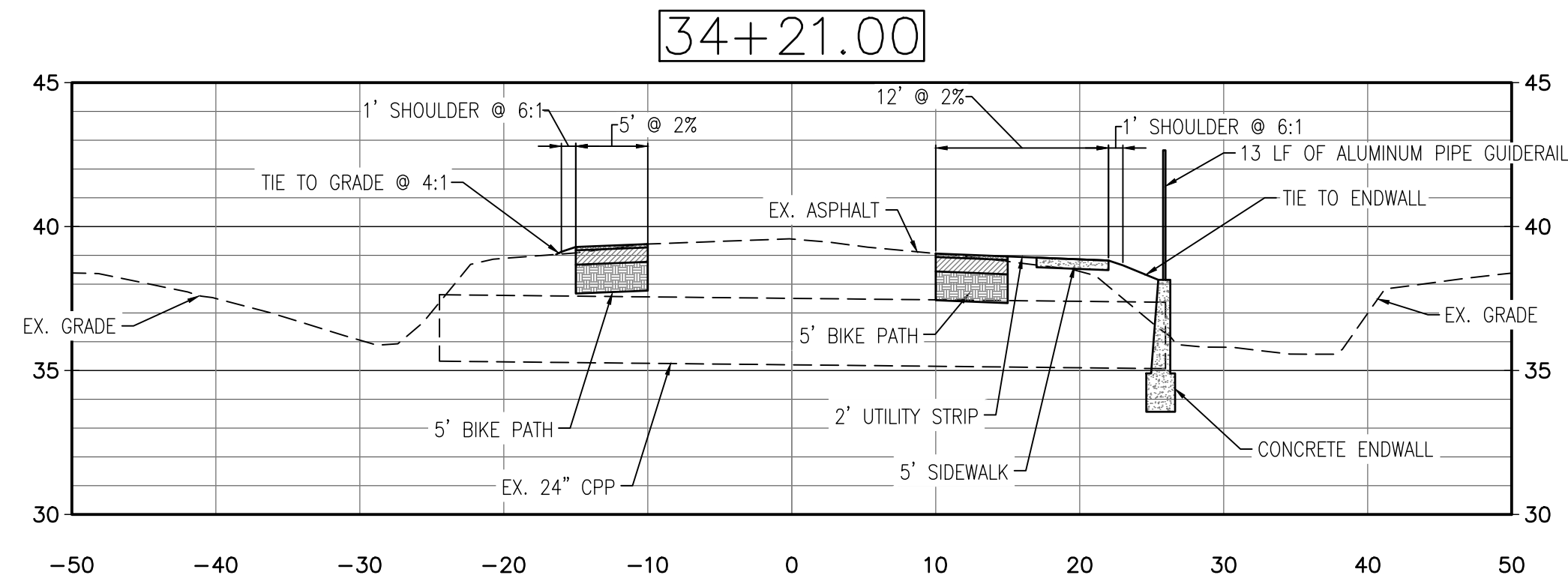
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FL. PE 49949

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PROJECT NO: 2018-41
C305
SHEET: 46 OF 62

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FL CERTIFICATE OF AUTHORIZATION NO. 8288

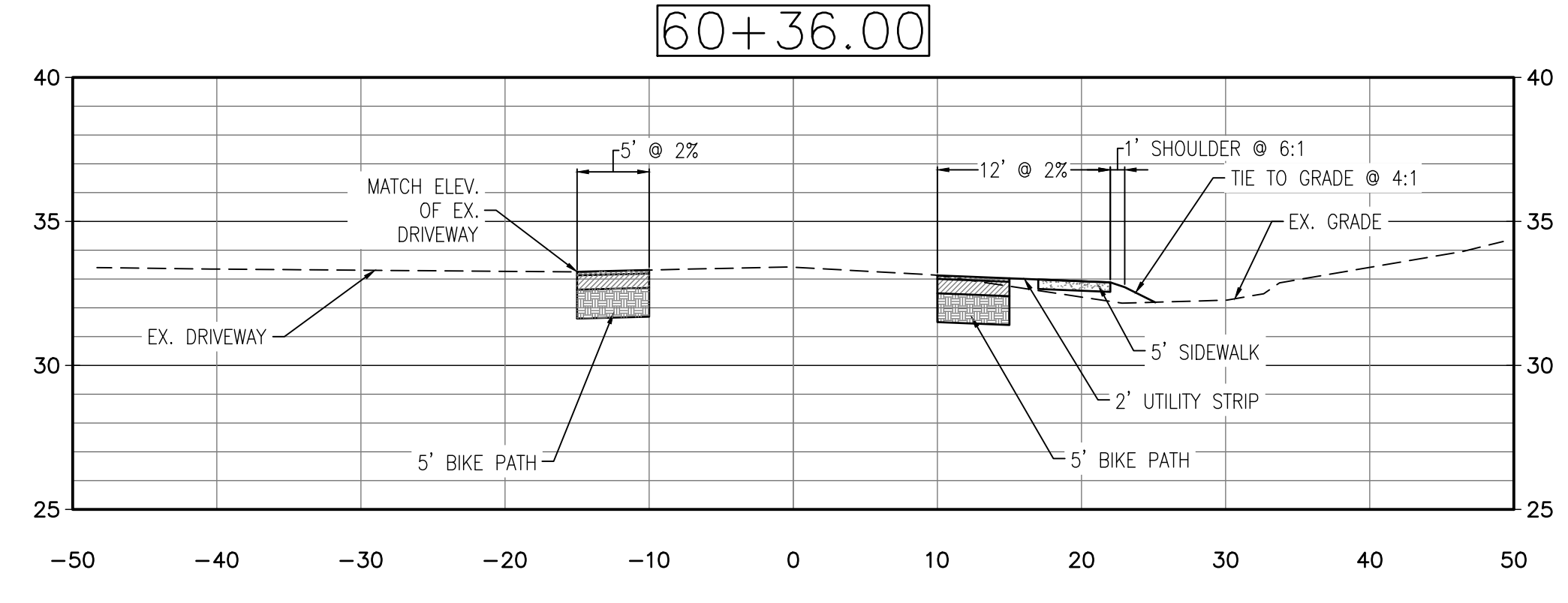
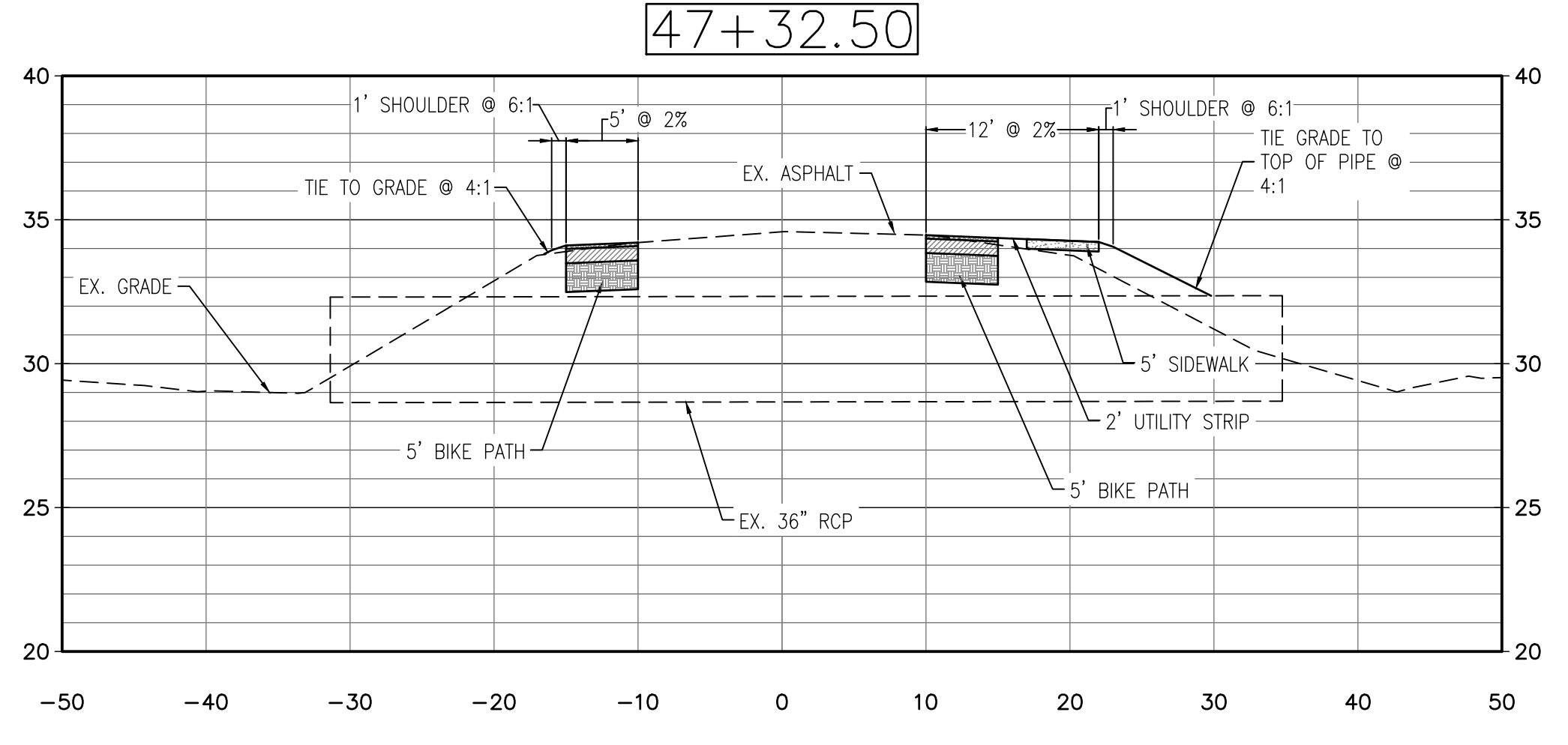
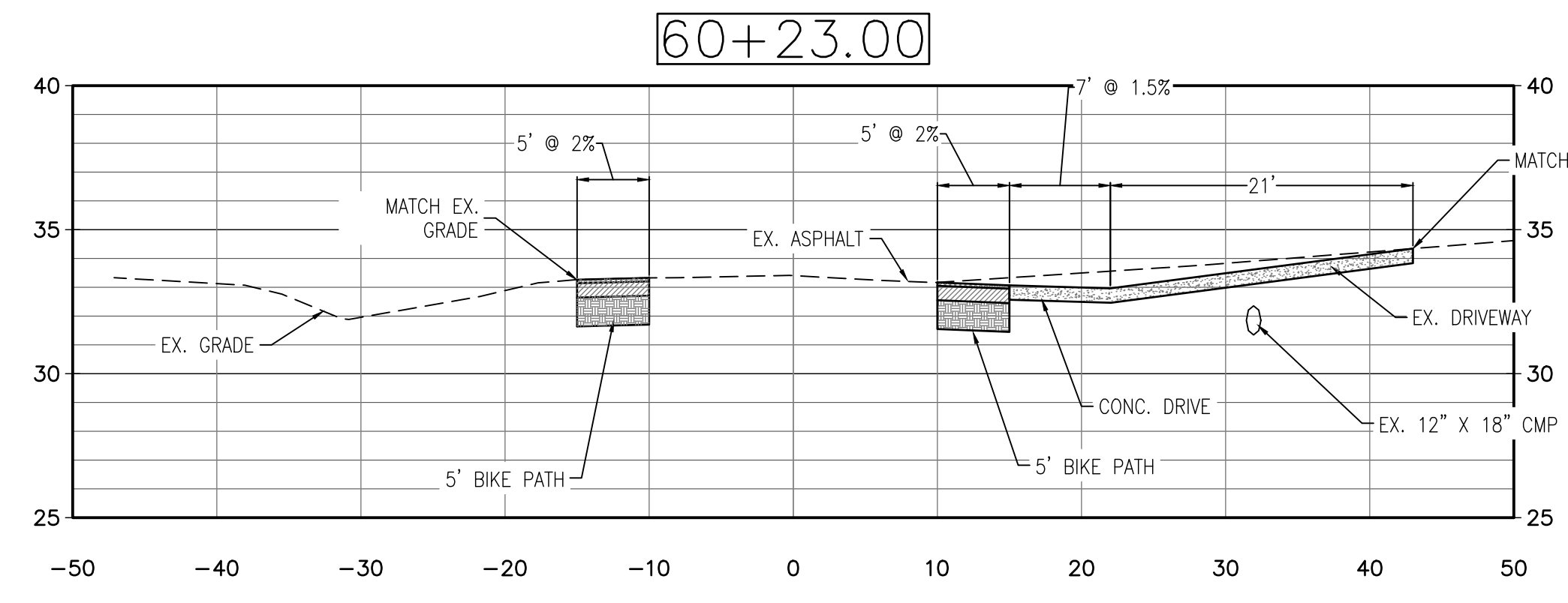
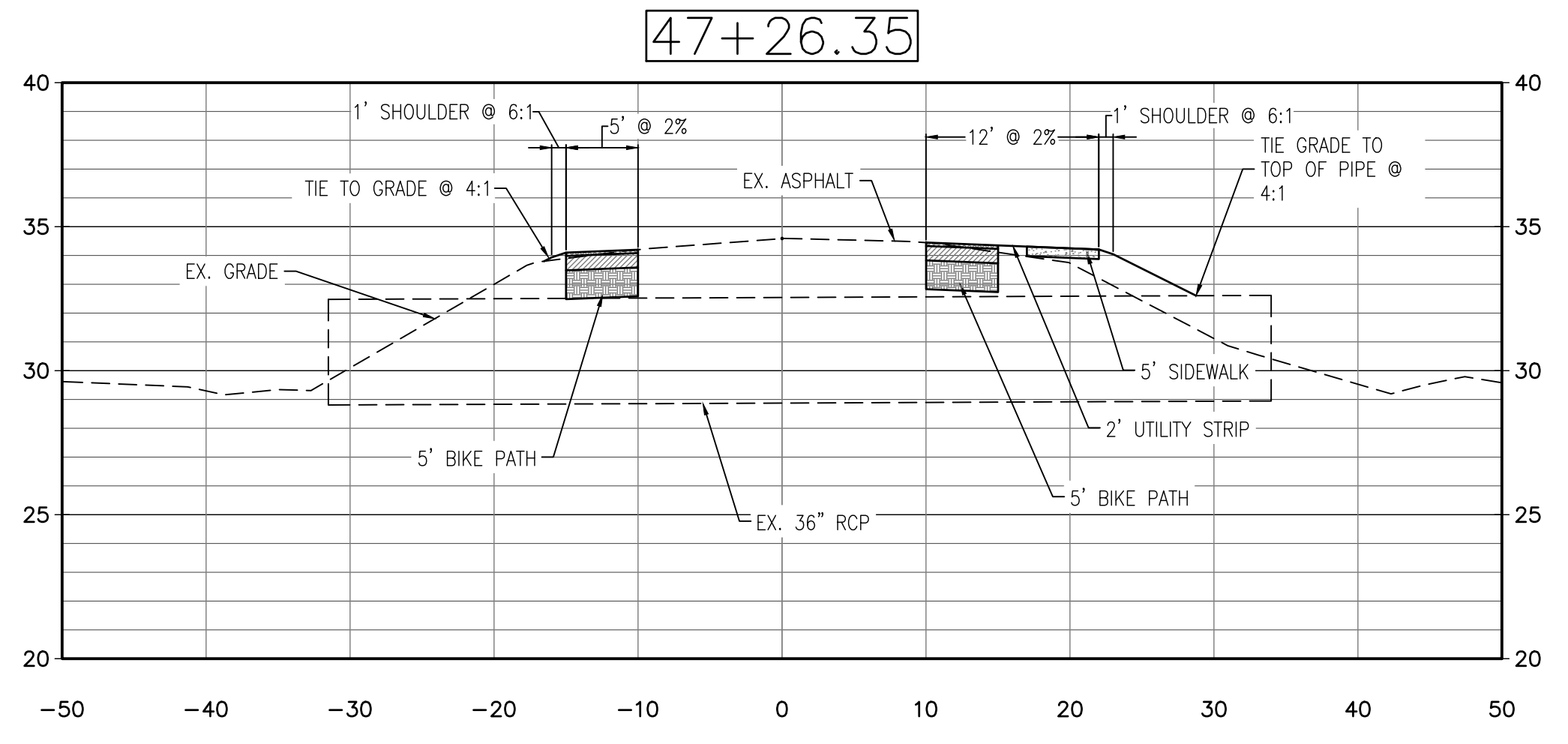
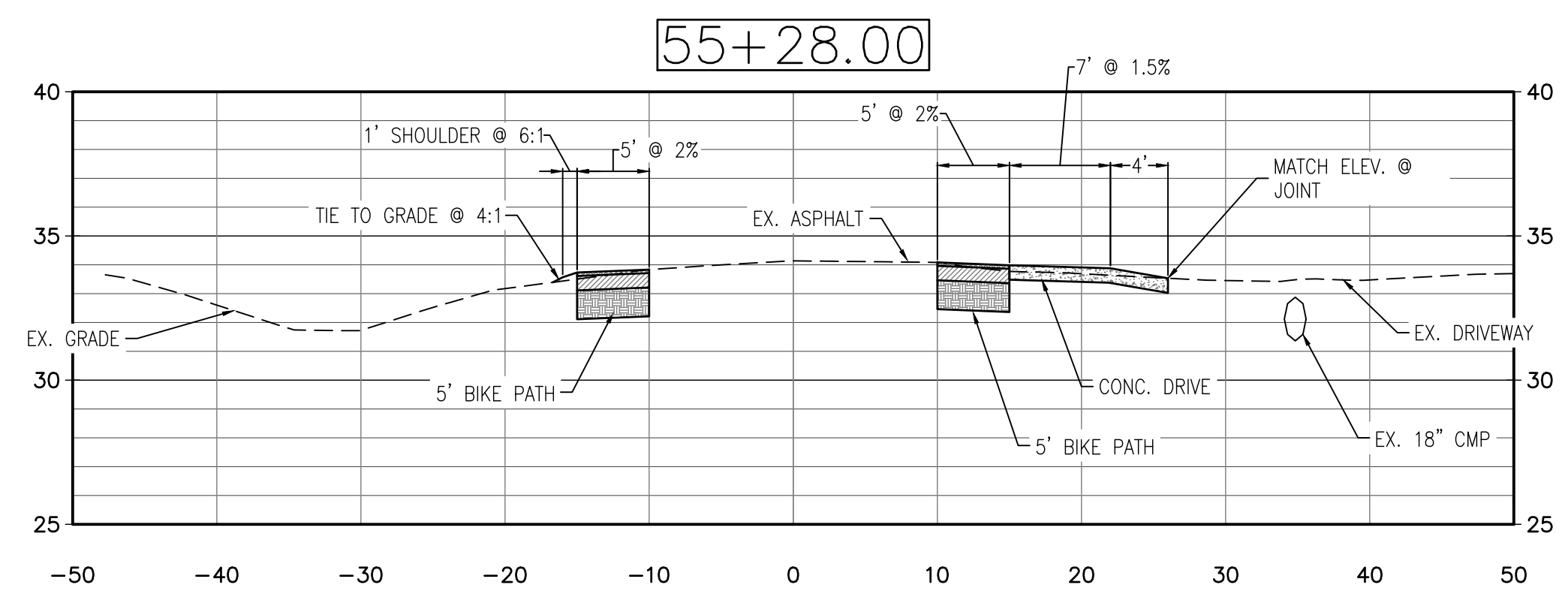
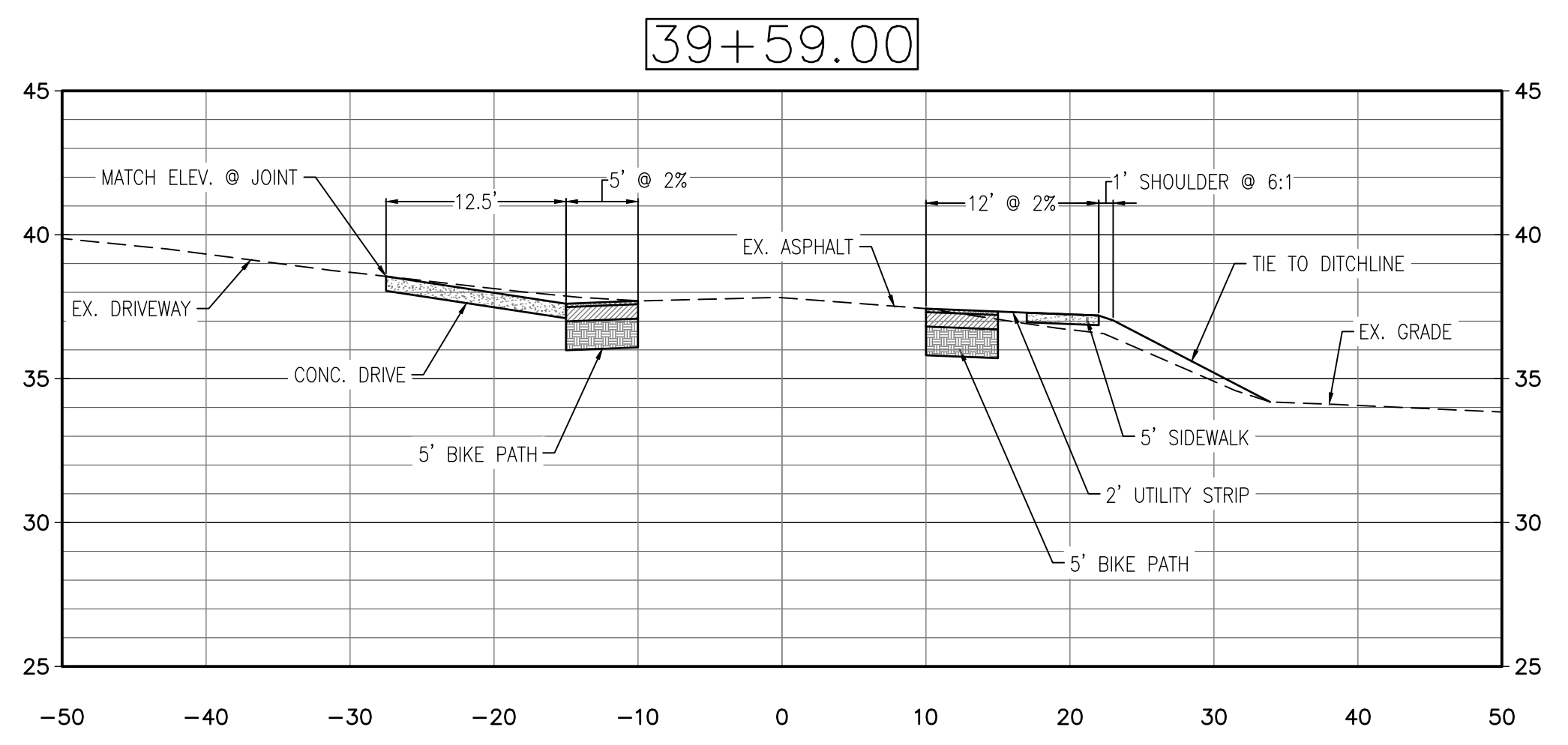
SRCO EDGEWOOD DRIVE
DRAINAGE AND ROADWAY IMPROVEMENTS

STA. 34+21 - 38+60.50 CRITICAL CROSS SECTIONS
SANTA ROSA FLORIDA

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DESIGNED BY: RCK	C306
CHECKED BY: RCK	SHEET: 47 OF 62
DATE: 03/10/2021	
SCALE: 1" = 10'	
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BY: DATE:	

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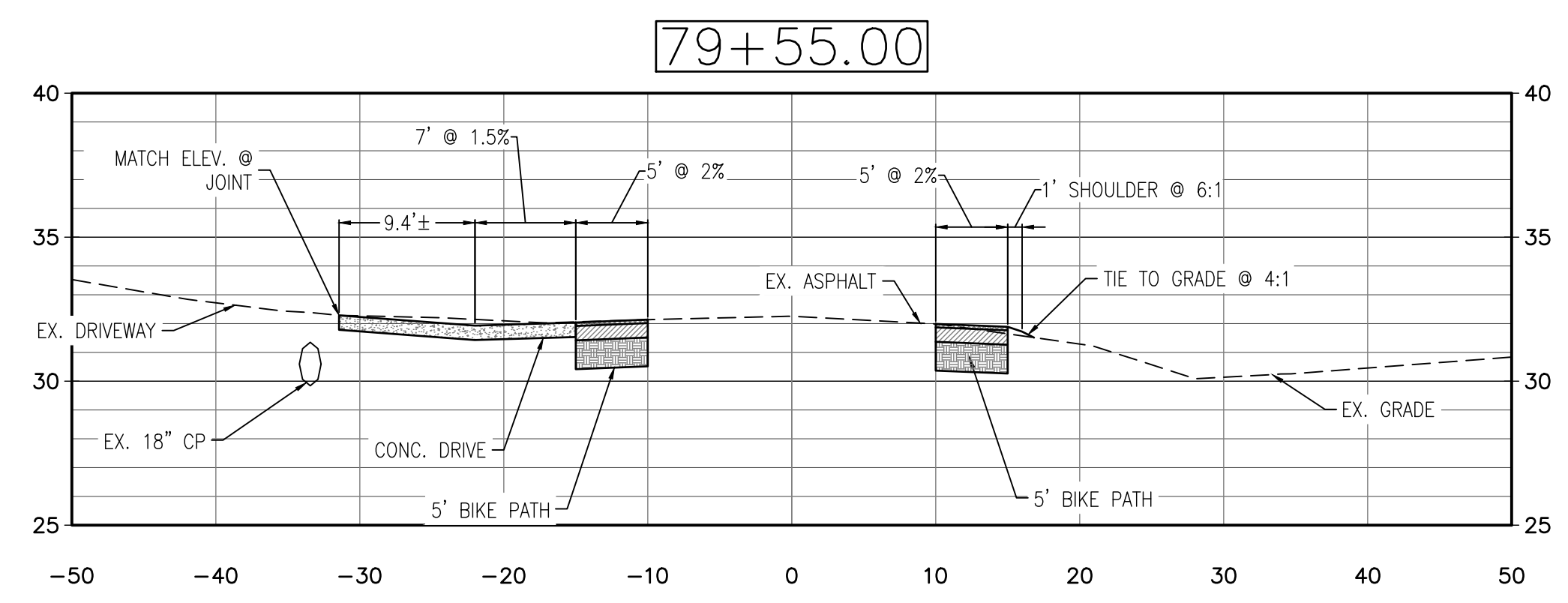
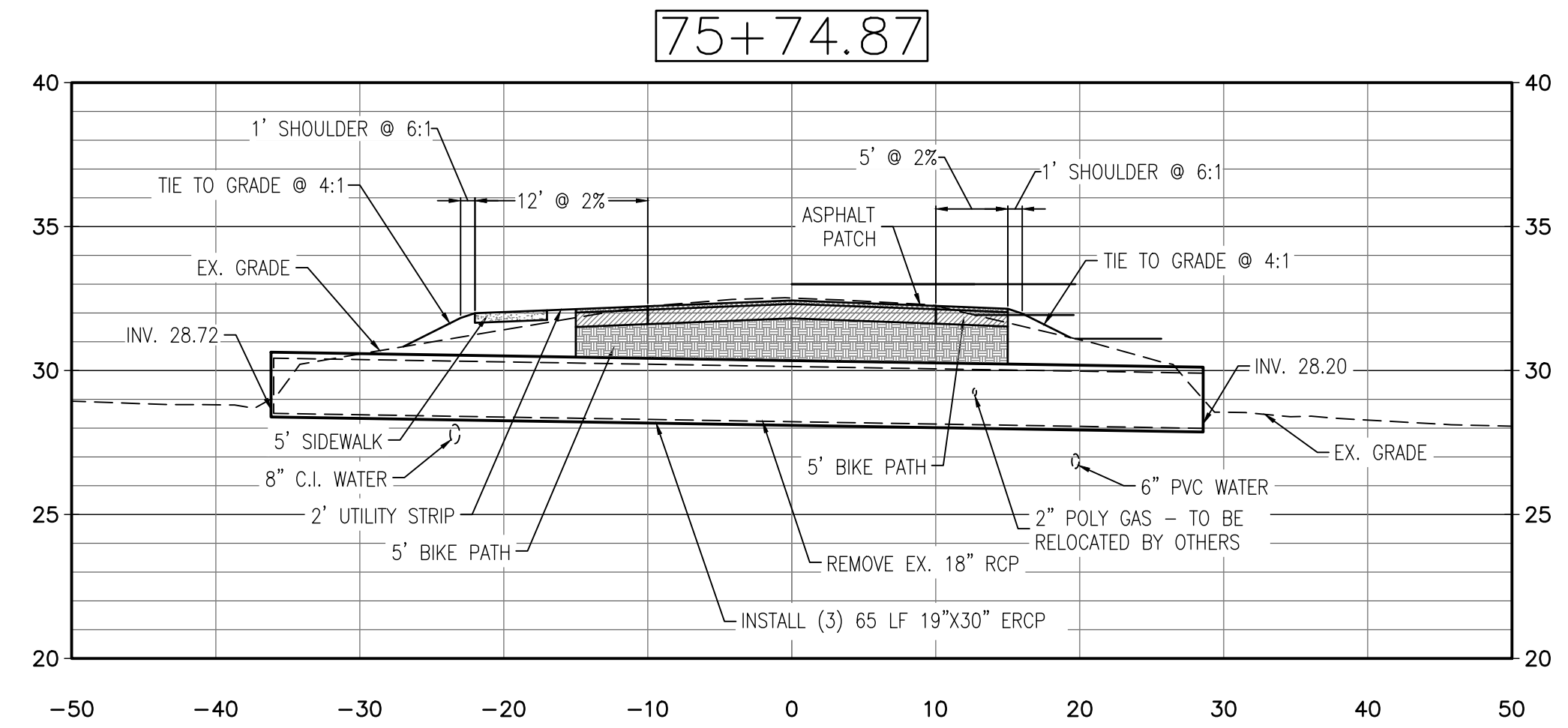
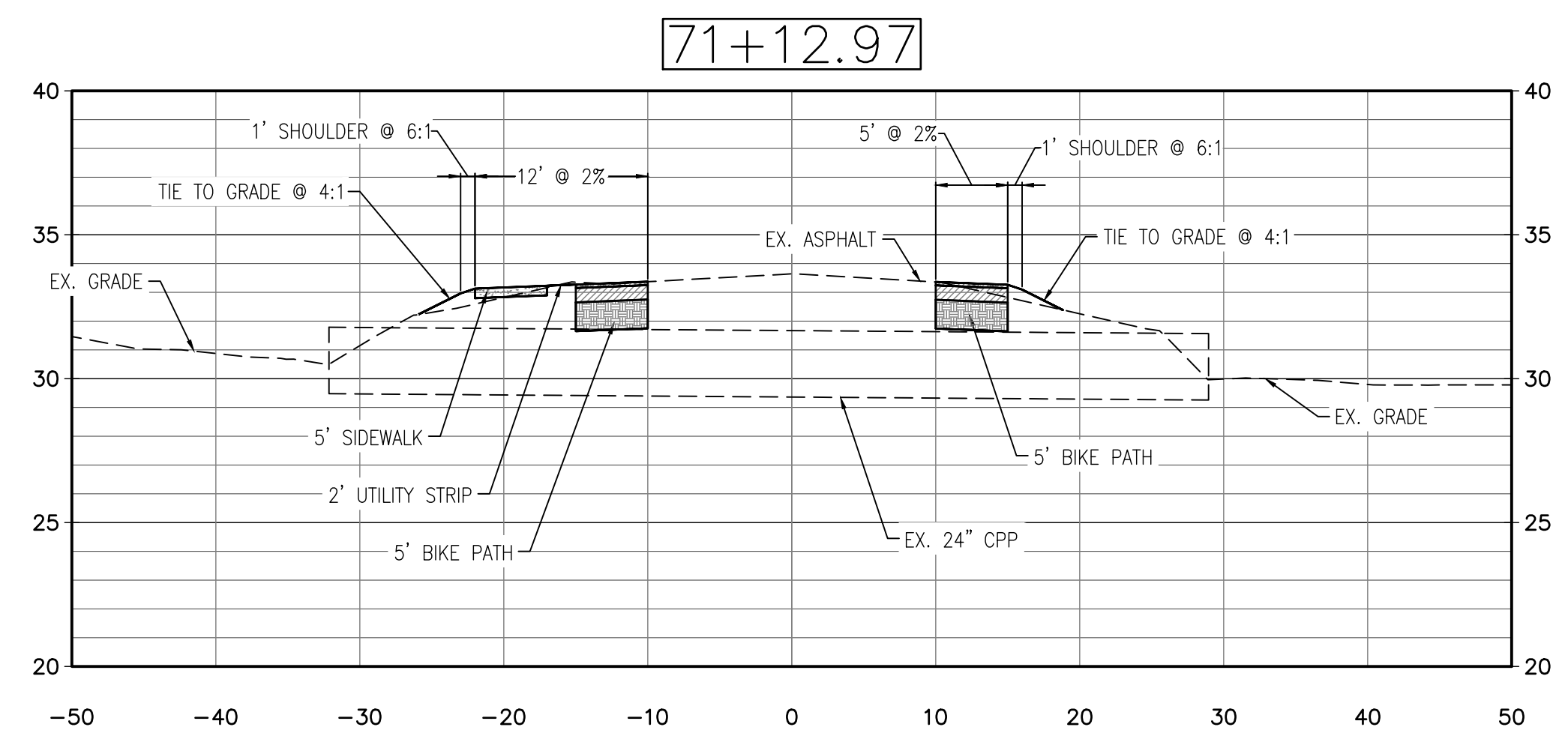
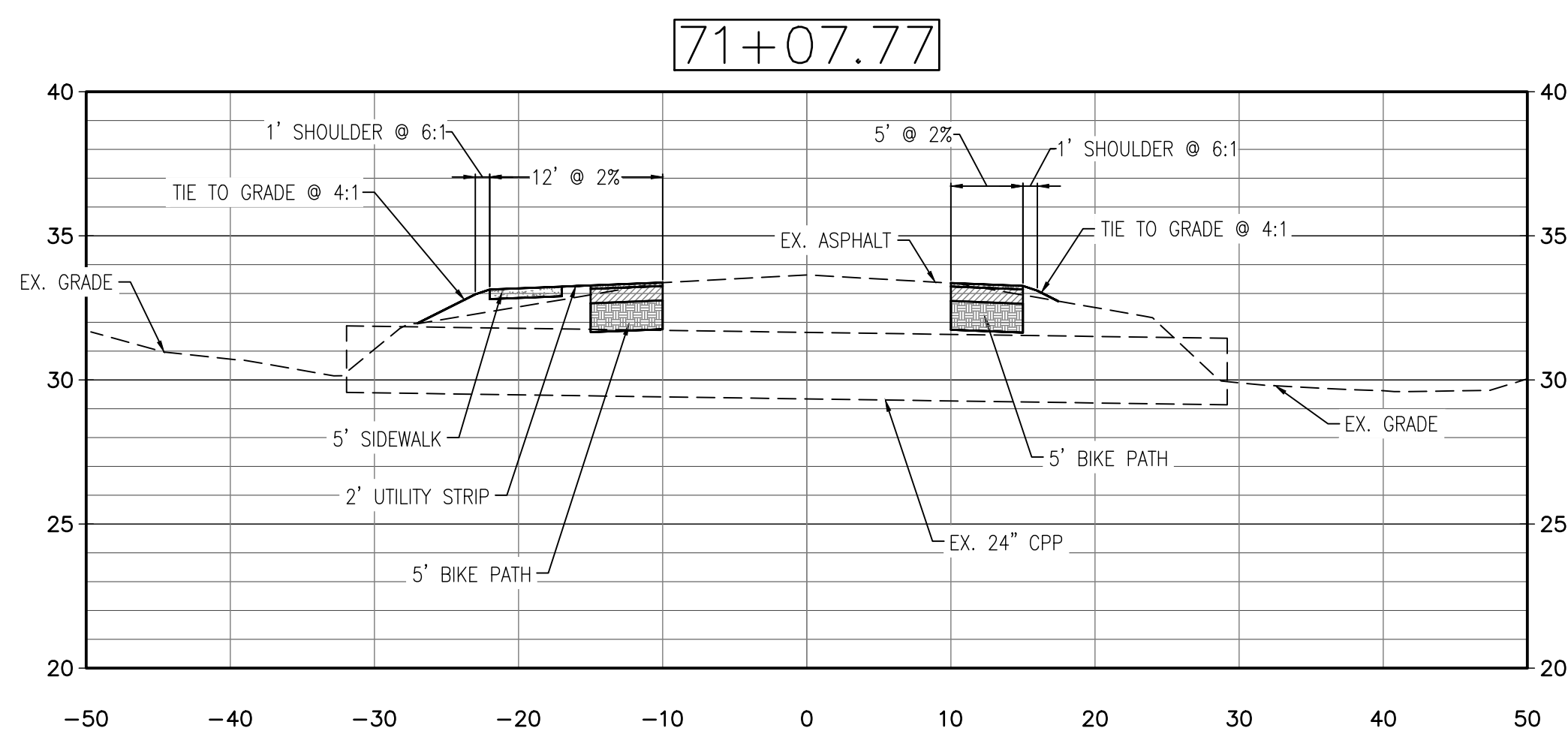
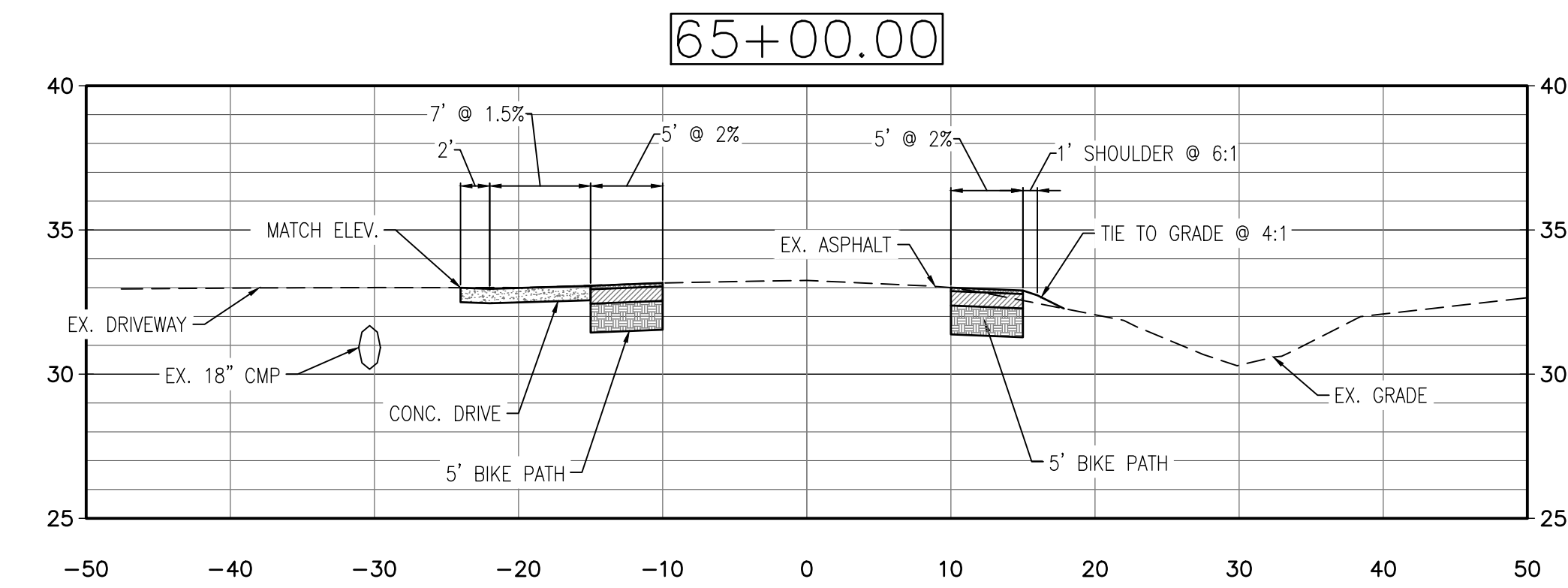
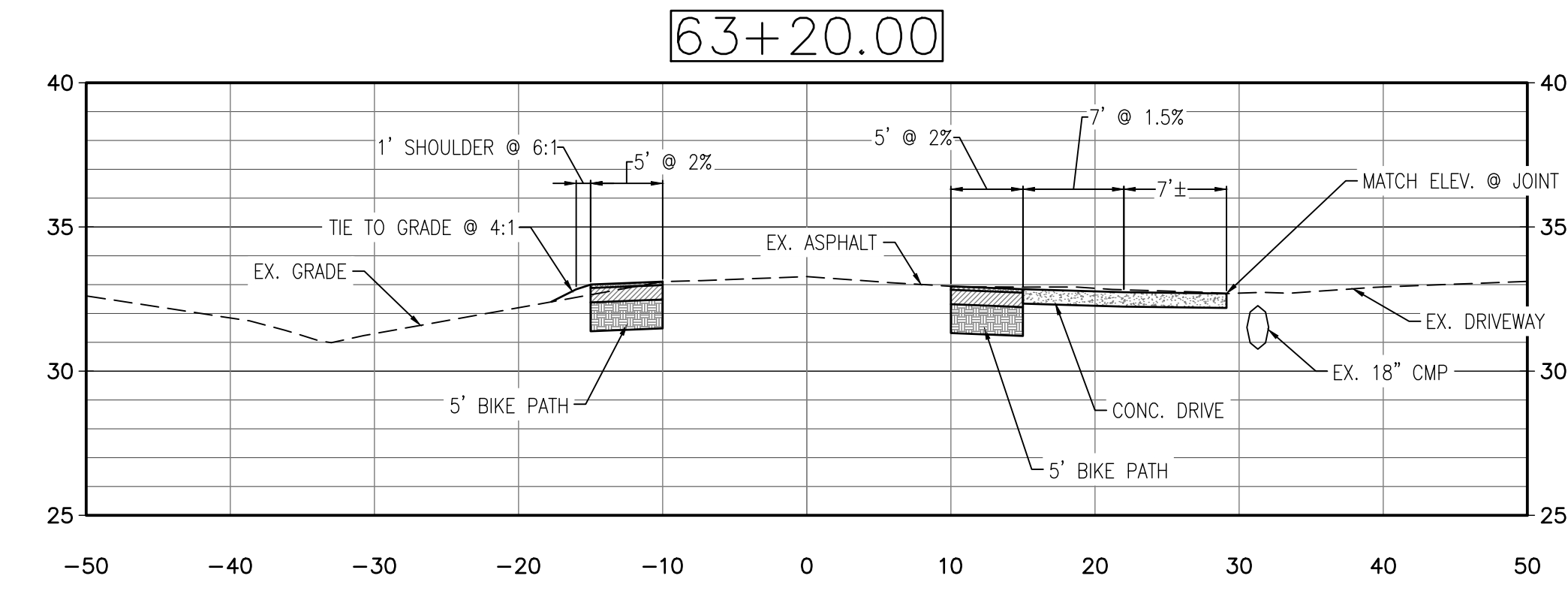
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 FL. CERTIFICATE OF AUTHORIZATION NO. 8268

SRCO EDGEWOOD DRIVE
 DRAINAGE AND ROADWAY IMPROVEMENTS
 STA. 39+59 - 60+36 CRITICAL CROSS SECTIONS
 SANTA ROSA FLORIDA

DRAWN BY: PLC	PROJECT NO: 2018-41
DESIGNED BY: RCK	C307
CHECKED BY: RCK	SHEET: 48 OF 62
DATE: 03/10/2021	
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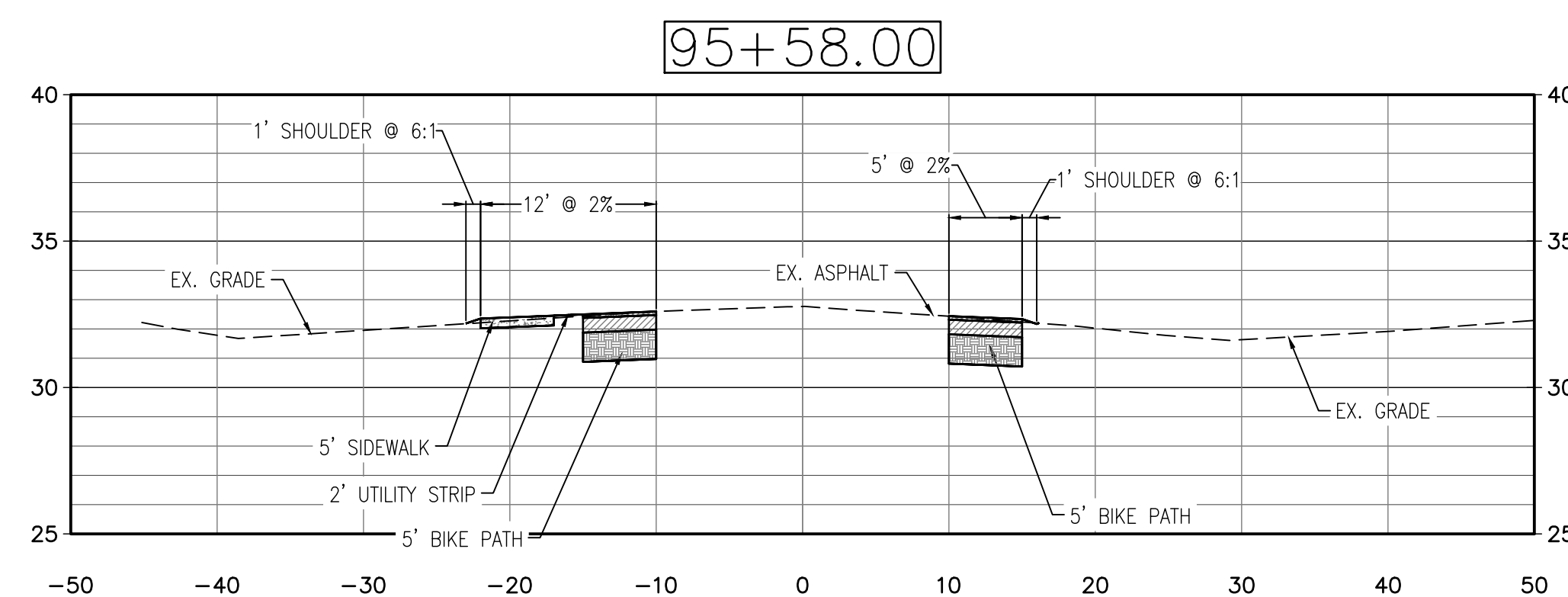
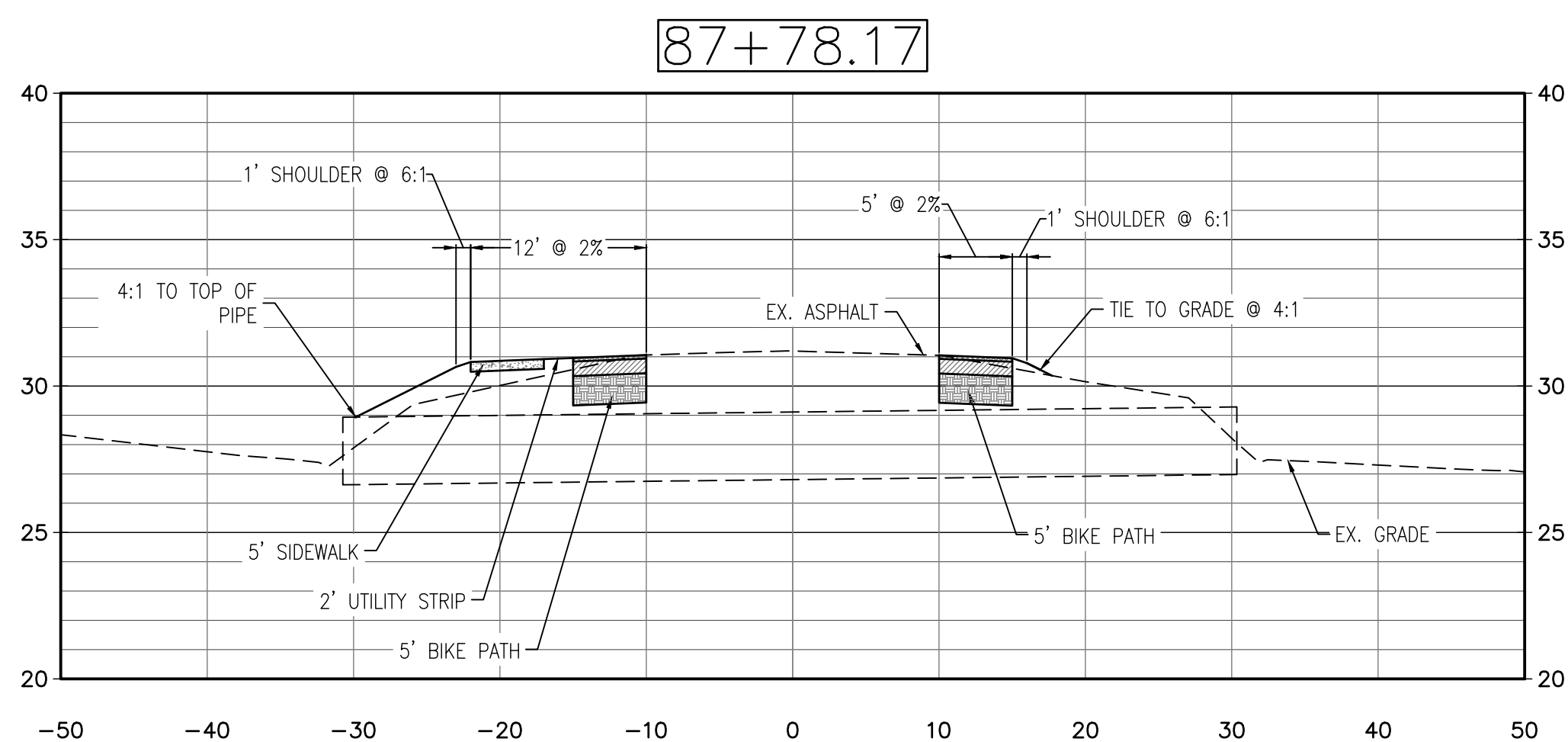
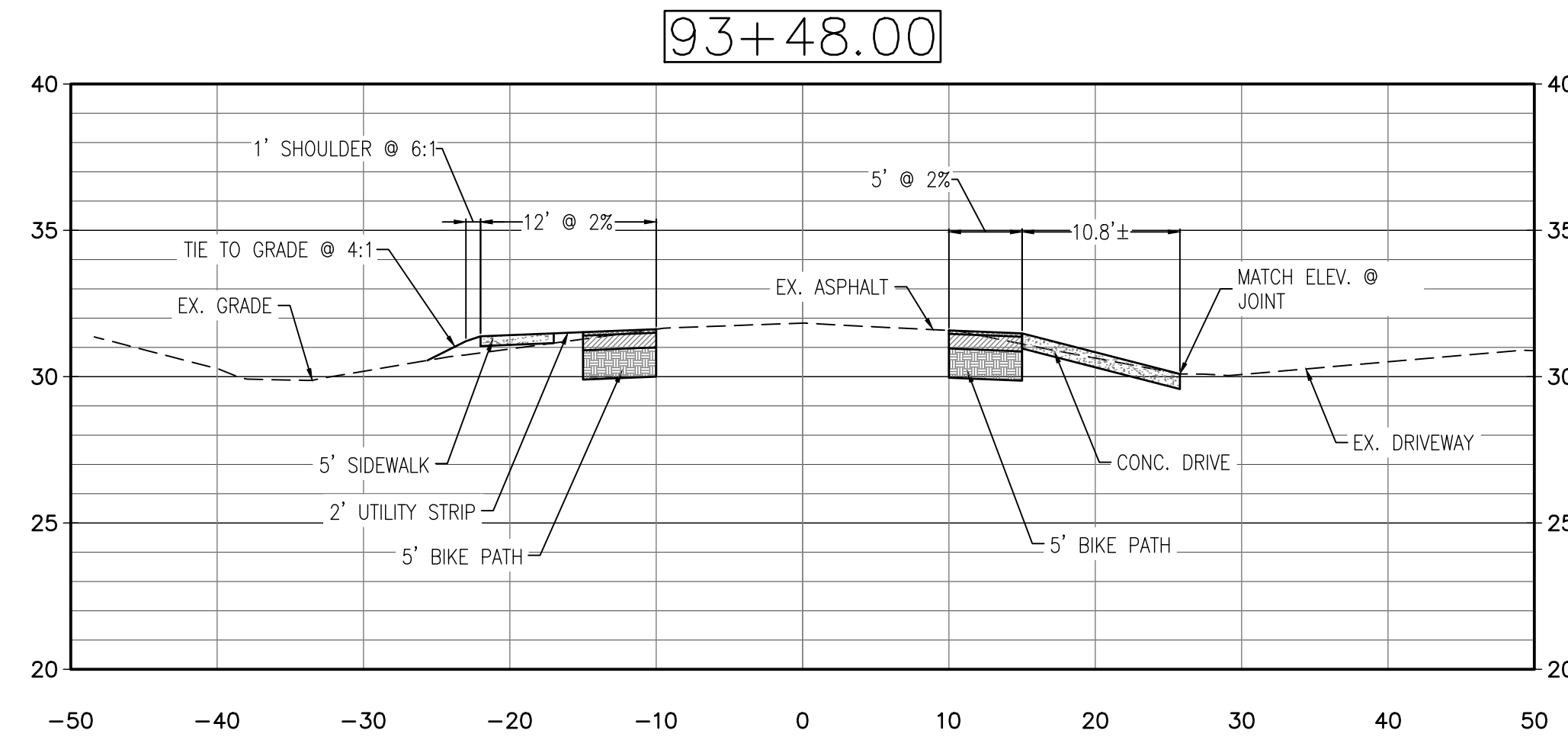
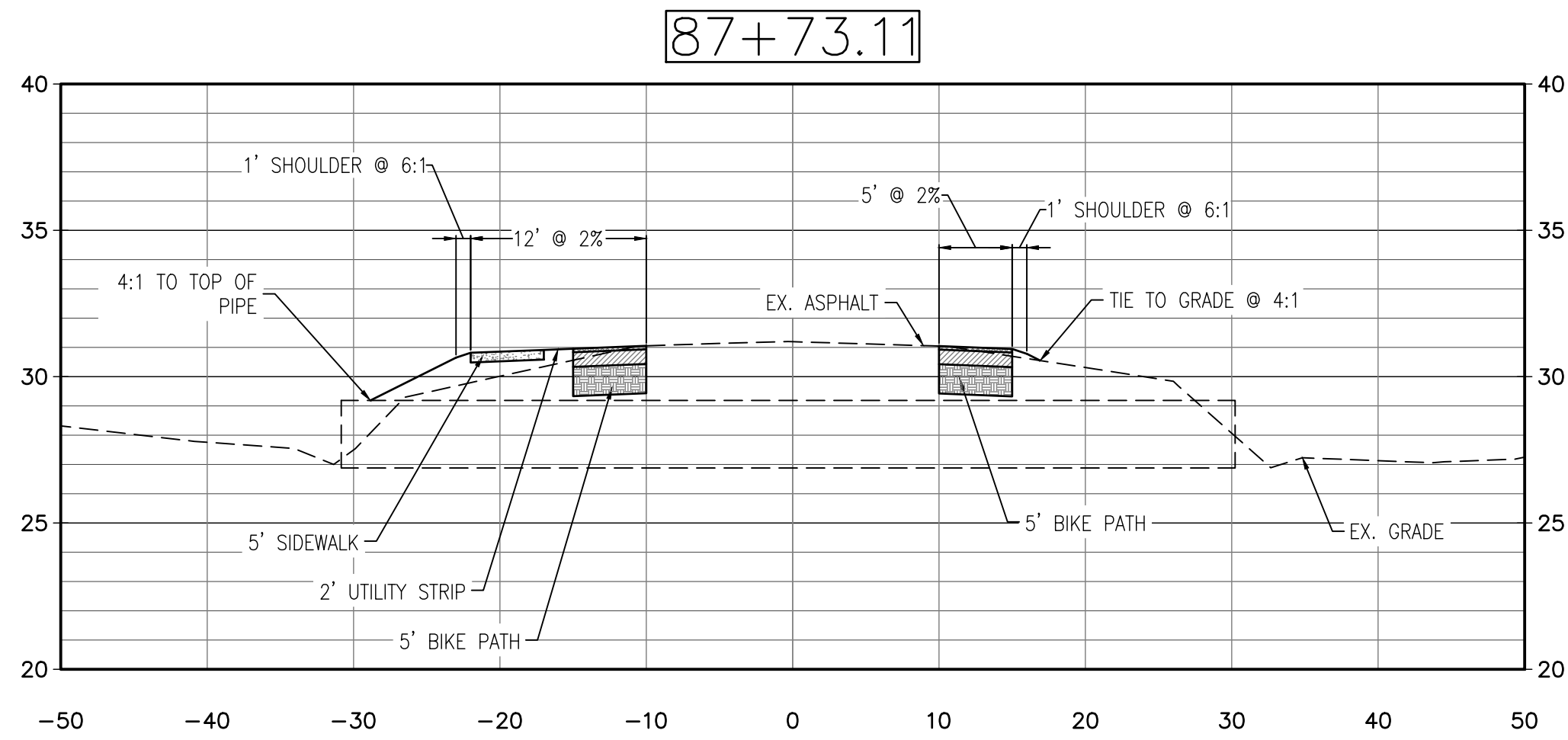
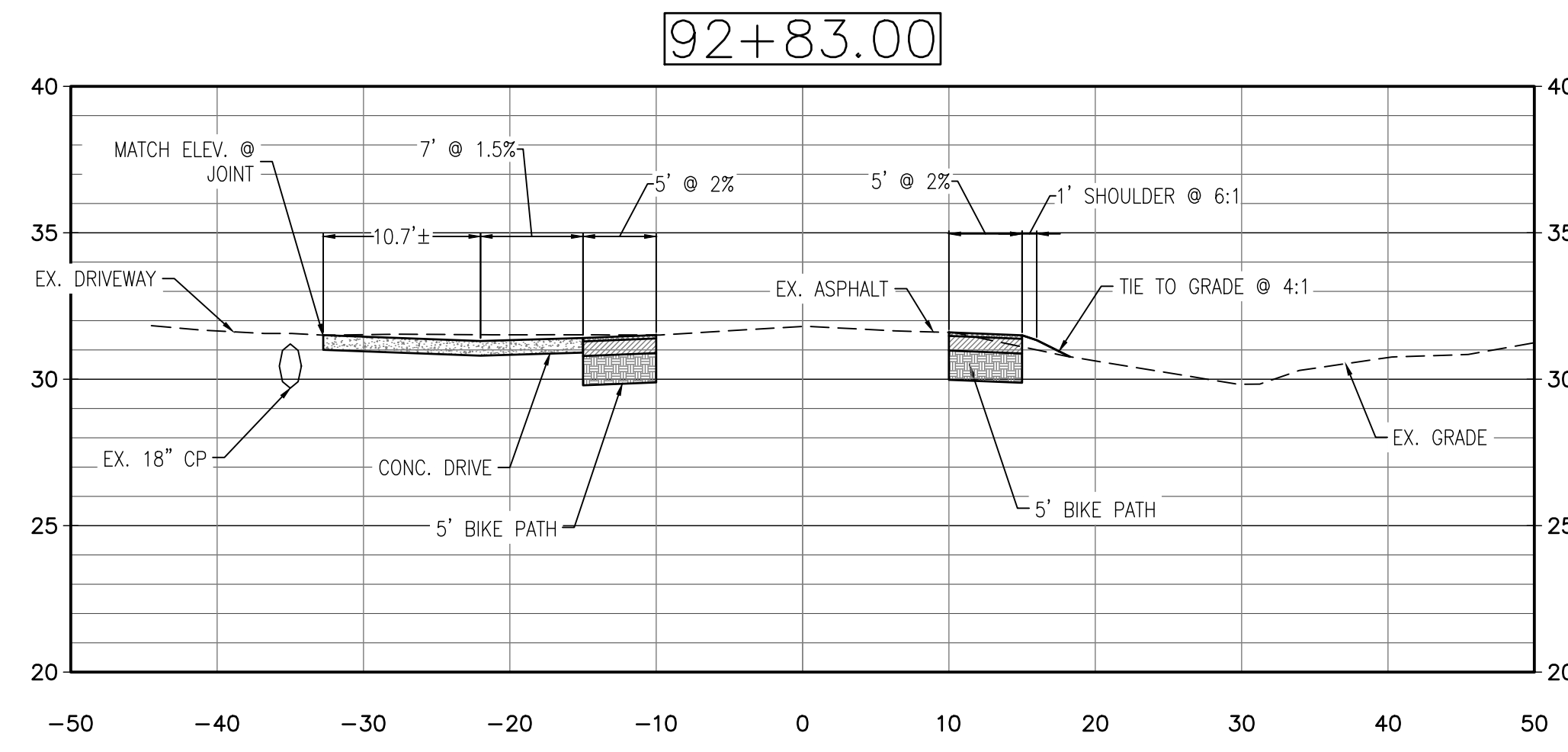
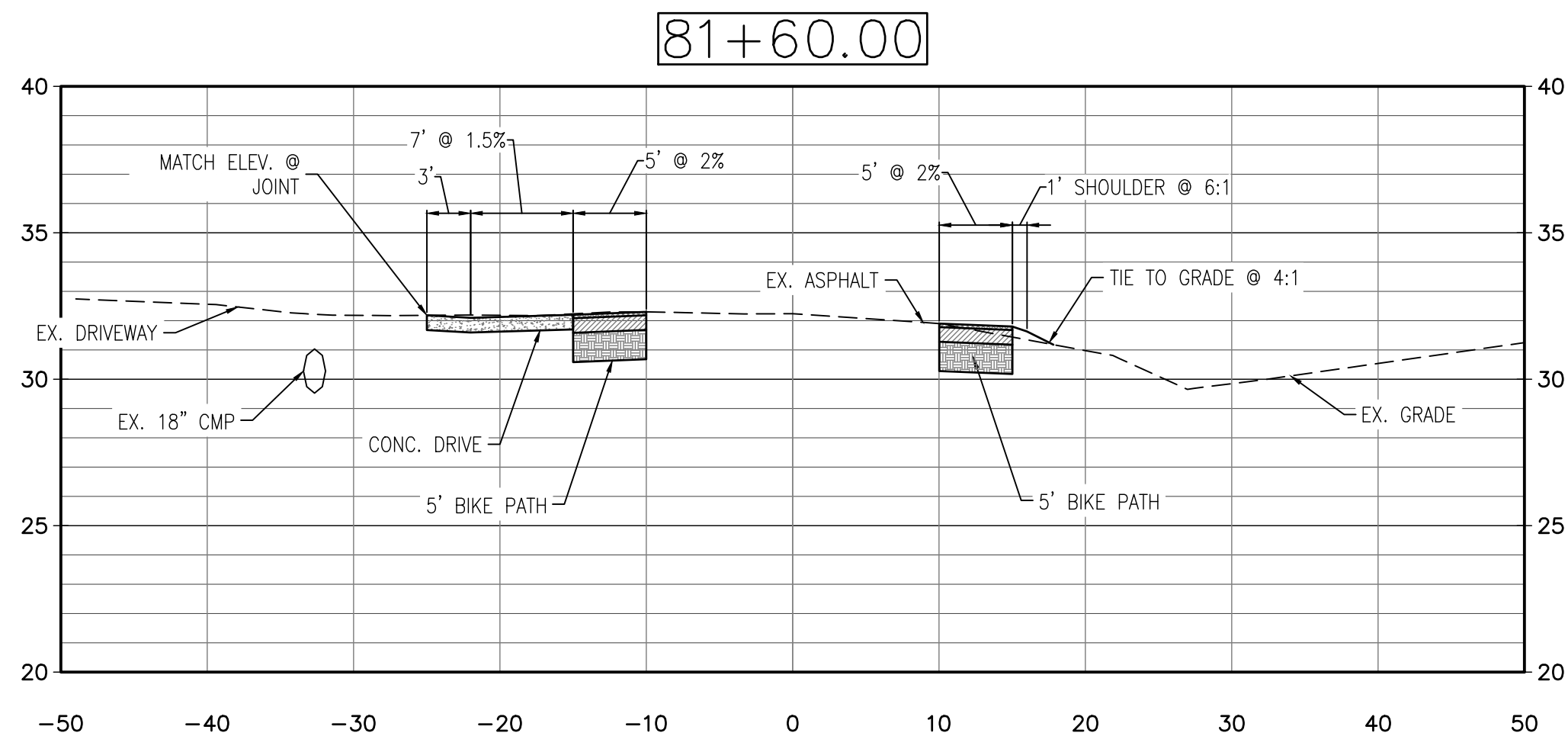
PO BOX 10689 PENSACOLA, FLORIDA 32524
7201 N. 9TH AVENUE, SUITE 6, PENSACOLA, FLORIDA 32504
(850) 471-9005 info@kh-a.com FAX (850) 471-0093
FL. CERTIFICATE OF AUTHORIZATION NO. 8288

SRCO EDGEWOOD DRIVE
DRAINAGE AND ROADWAY IMPROVEMENTS

STA. 75+74.87-87+00 CRITICAL CROSS SECTIONS
SANTA ROSA FLORIDA

DRAWN BY:	PLC
DESIGNED BY:	RCR
CHECKED BY:	RCR
DATE:	03/10/2021
SCALE:	1" = 10'
NOT FOR CONSTRUCTION	
BY:	DATE:
PROJECT NO:	2018-41
C308	
SHEET:	49 OF 62

S:\2018 Projects\2018-41 SRCO Edgewood Drive\DWGS\CIVIL\2018-41_C3XX_CROSS SECTIONS.dwg, Mar 11, 2021 - 8:40:48AM, priscilla



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ROBERT C. KRASNOSKY
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FL. CERTIFICATE OF AUTHORIZATION NO. 8288

SRCO EDGEWOOD DRIVE
DRAINAGE AND ROADWAY IMPROVEMENTS

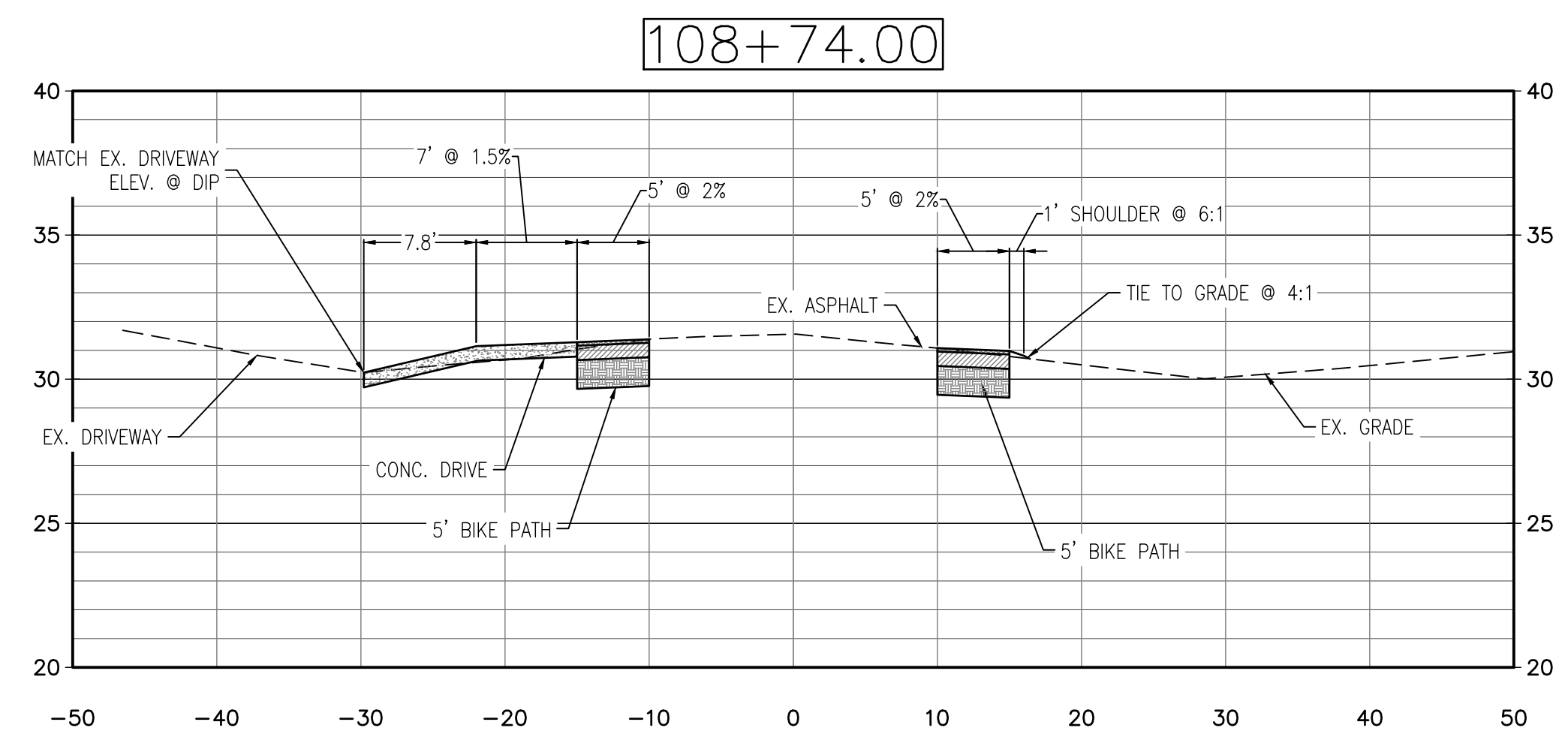
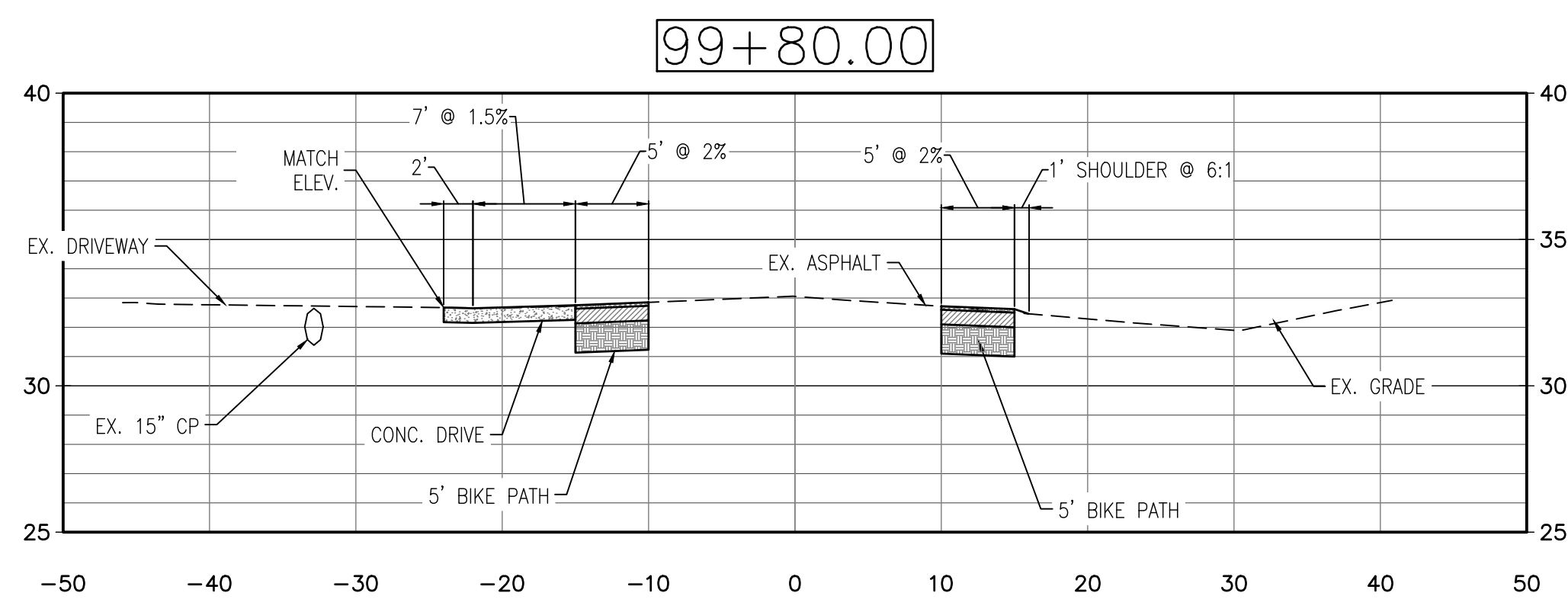
STA. 81+60 - 95+58 CRITICAL CROSS SECTIONS
SANTA ROSA FLORIDA

DRAWN BY: PLC	DESIGNED BY: RCK	CHECKED BY: RCK	DATE: 03/10/2021	SCALE: 1" = 10'
PROJECT NO: 2018-41				NOT FOR CONSTRUCTION
C309				BY: DATE:
SHEET: 50 OF 62				

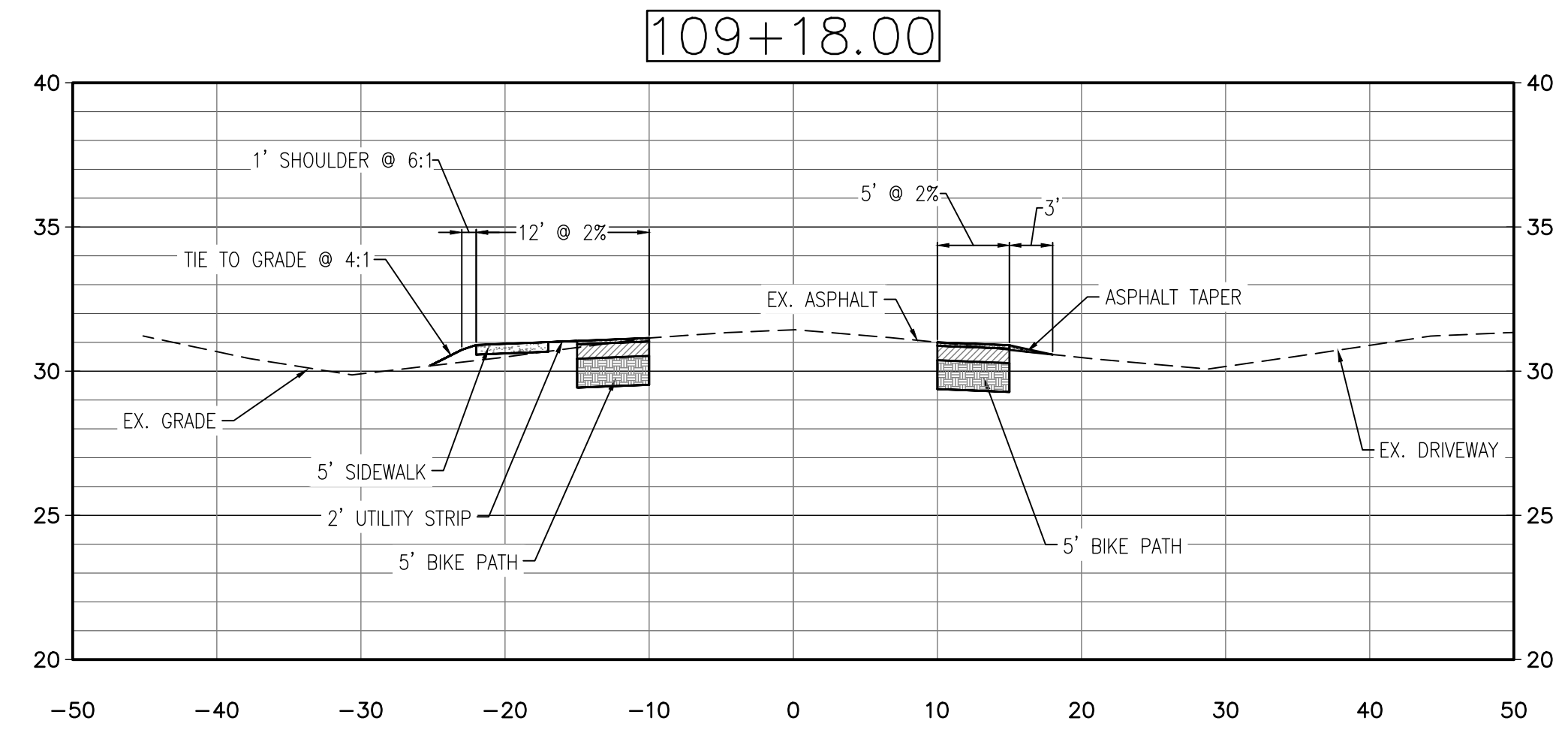
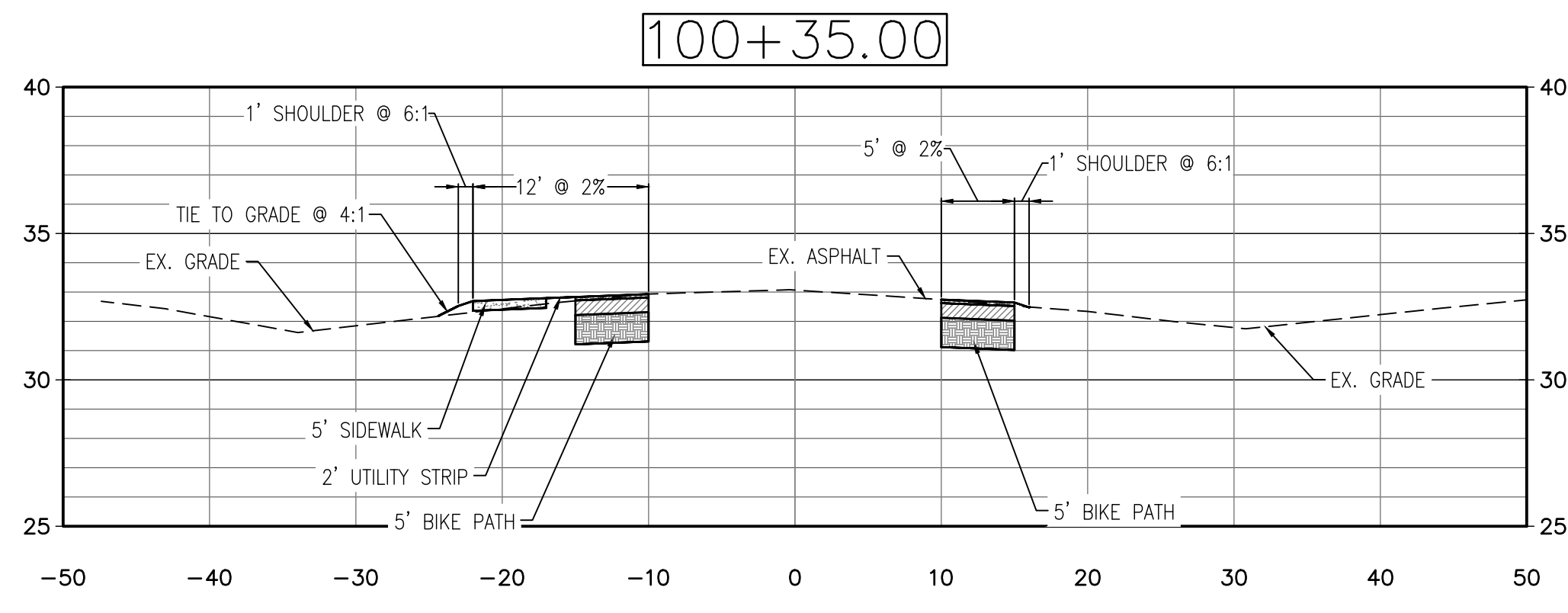
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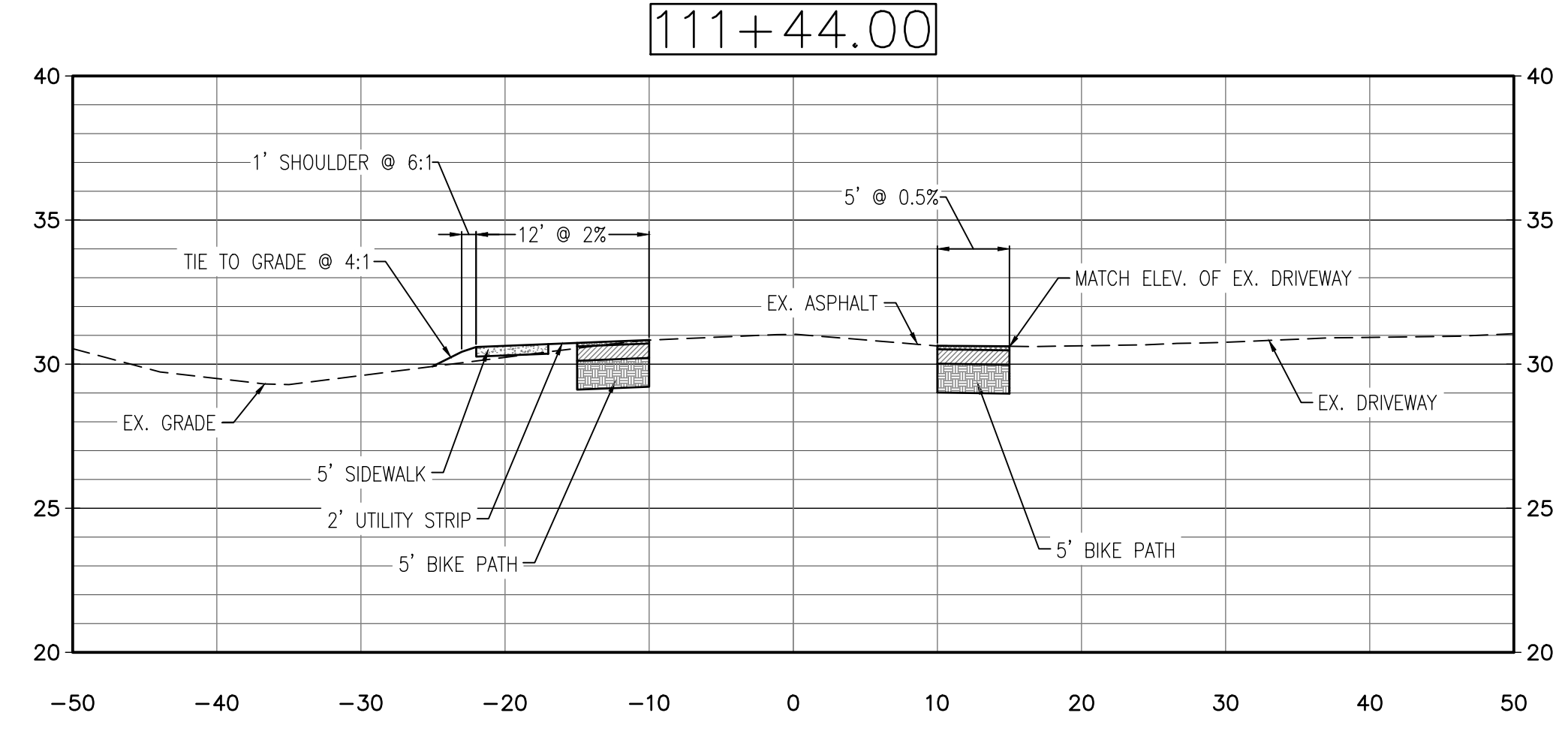
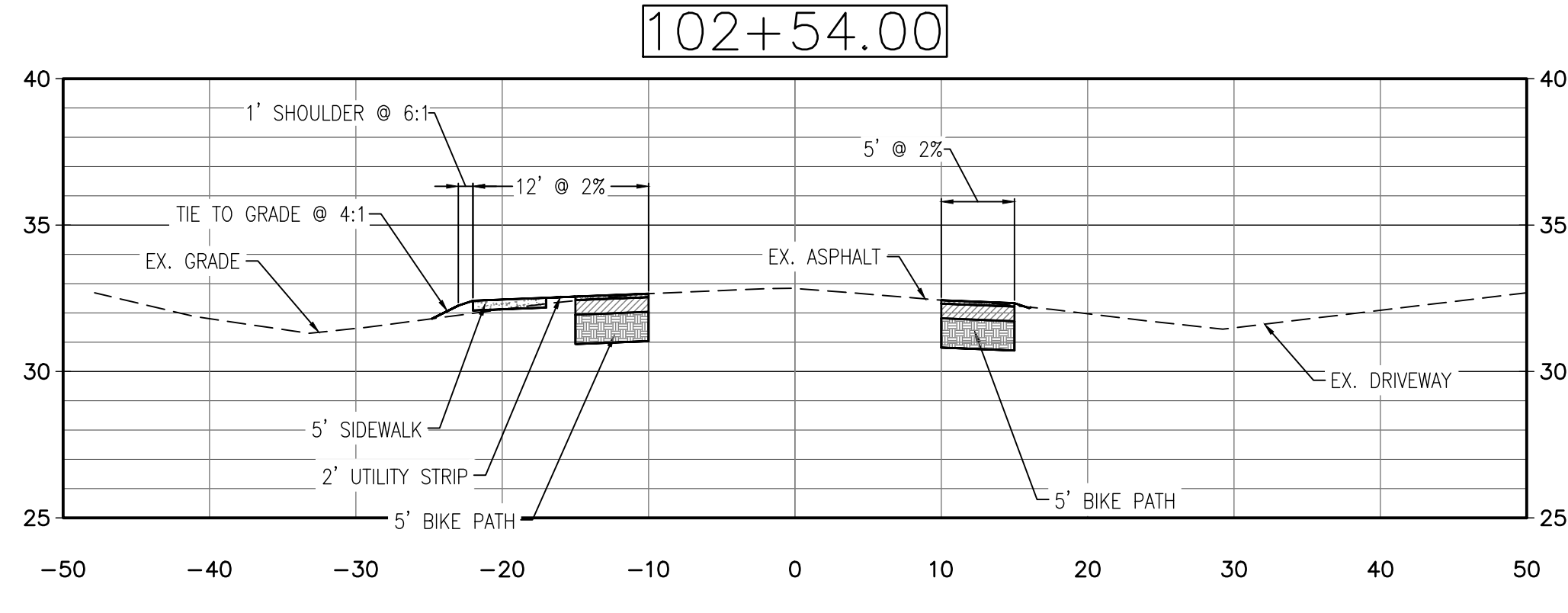
1



2



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4

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NO. DATE REVISIONS

NO. DATE

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SRCO EDGEWOOD DRIVE
 DRAINAGE AND ROADWAY IMPROVEMENTS
 STA. 99+80 - 111+44 CRITICAL CROSS SECTIONS
 SANTA ROSA FLORIDA

DRAWN BY: PLC
 DESIGNED BY: RCK
 CHECKED BY: RCK
 DATE: 03/10/2021
 SCALE: 1" = 10'
 NOT FOR CONSTRUCTION
 PROJECT NO: 2018-41
 SHEET: 51 OF 62

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1

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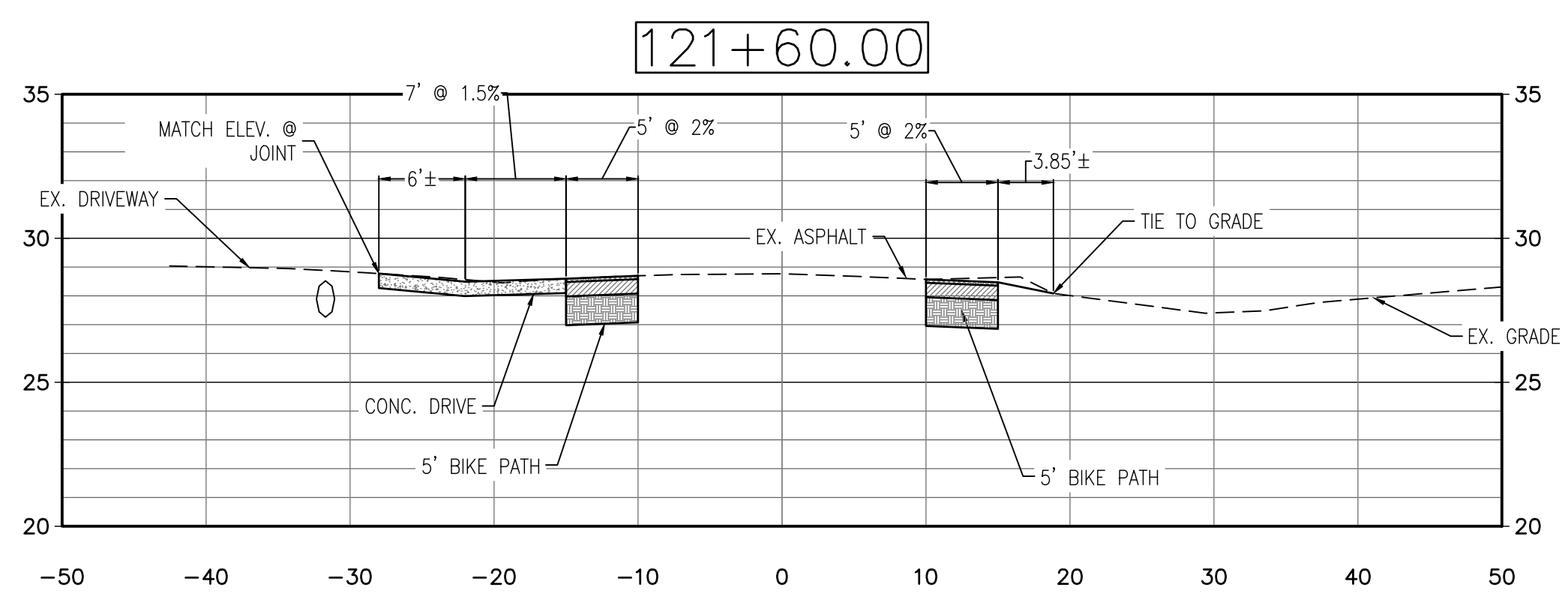
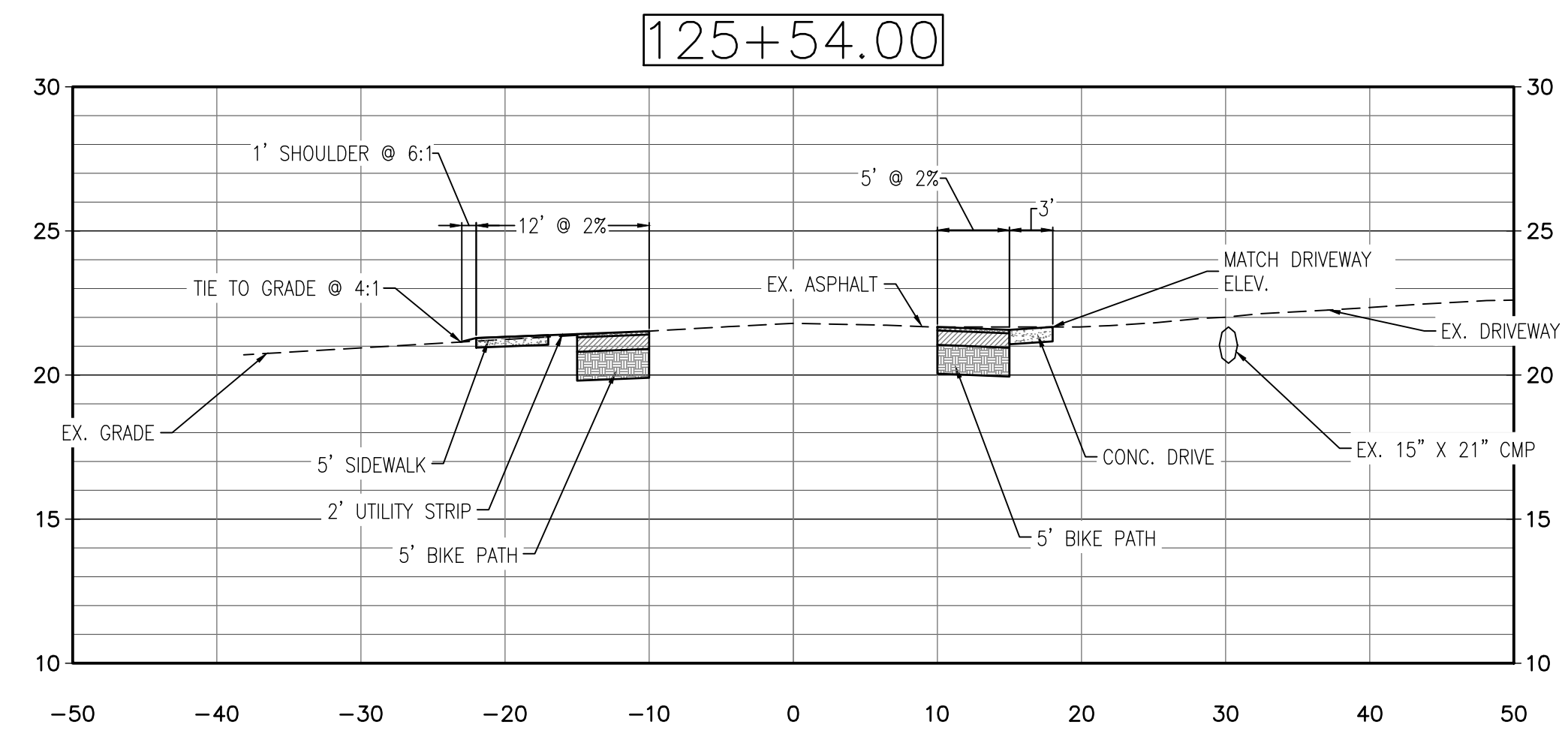
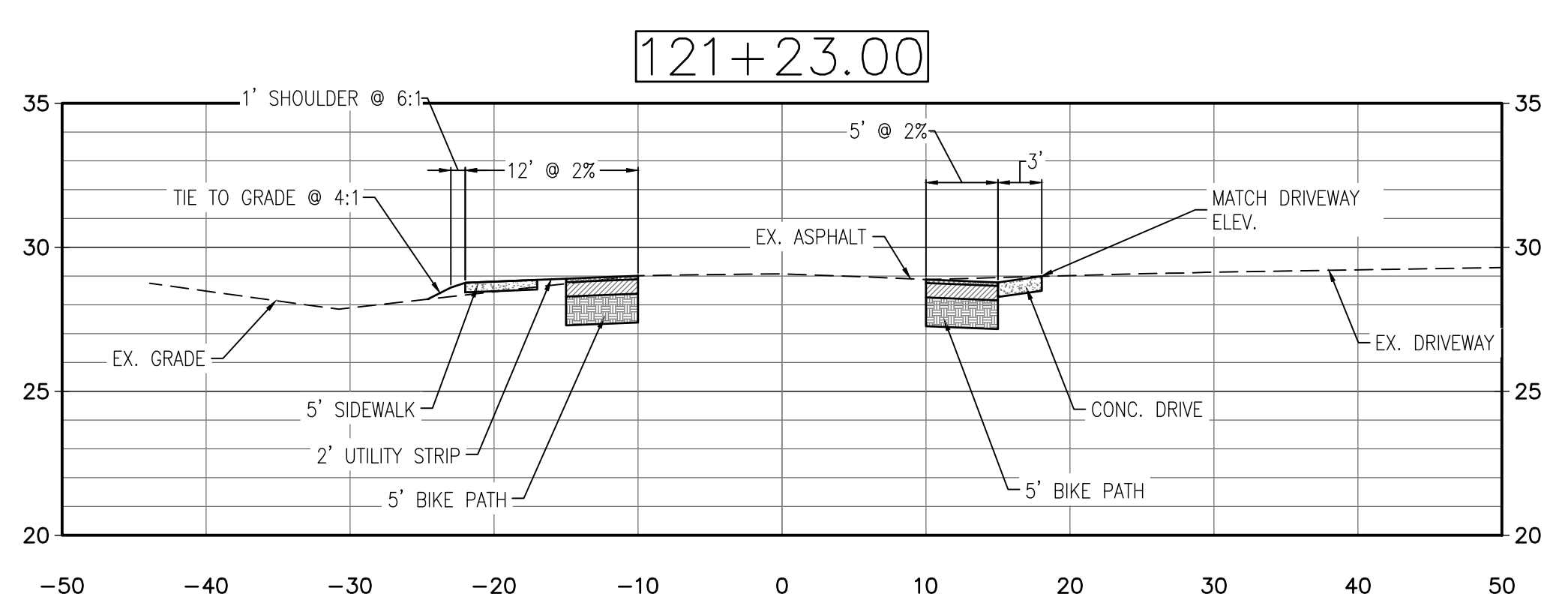
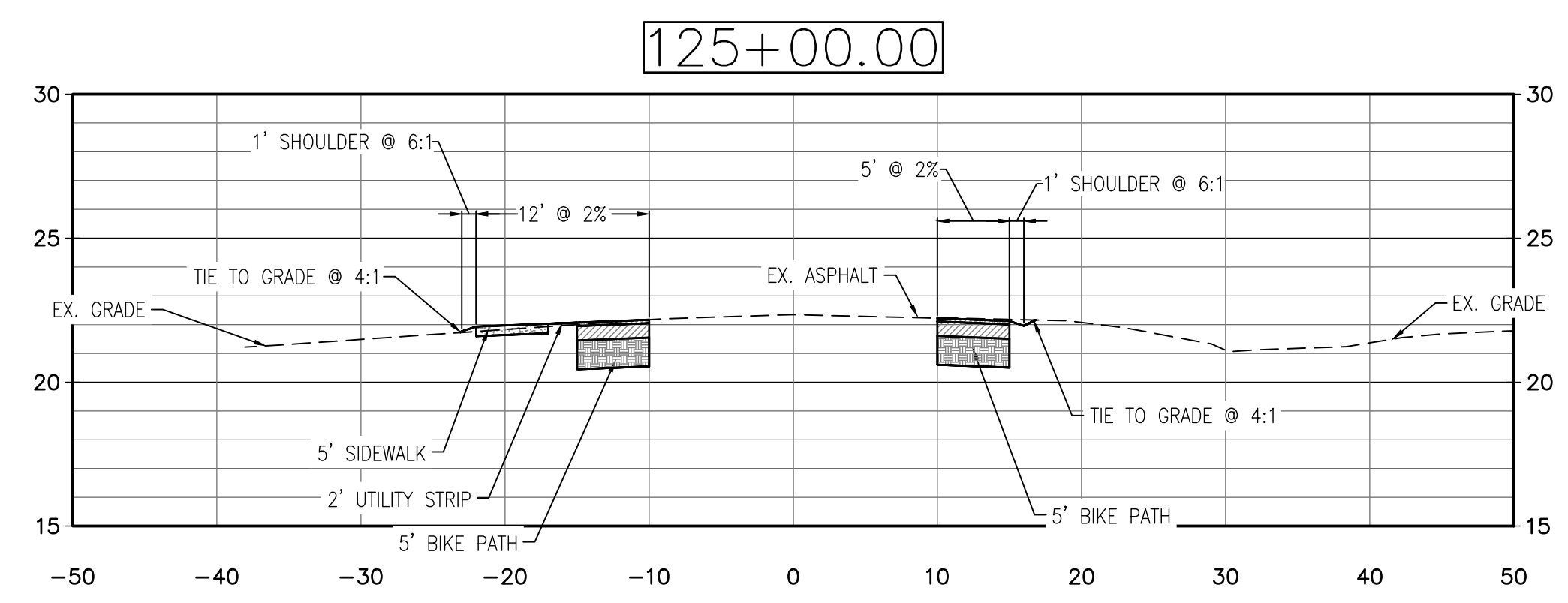
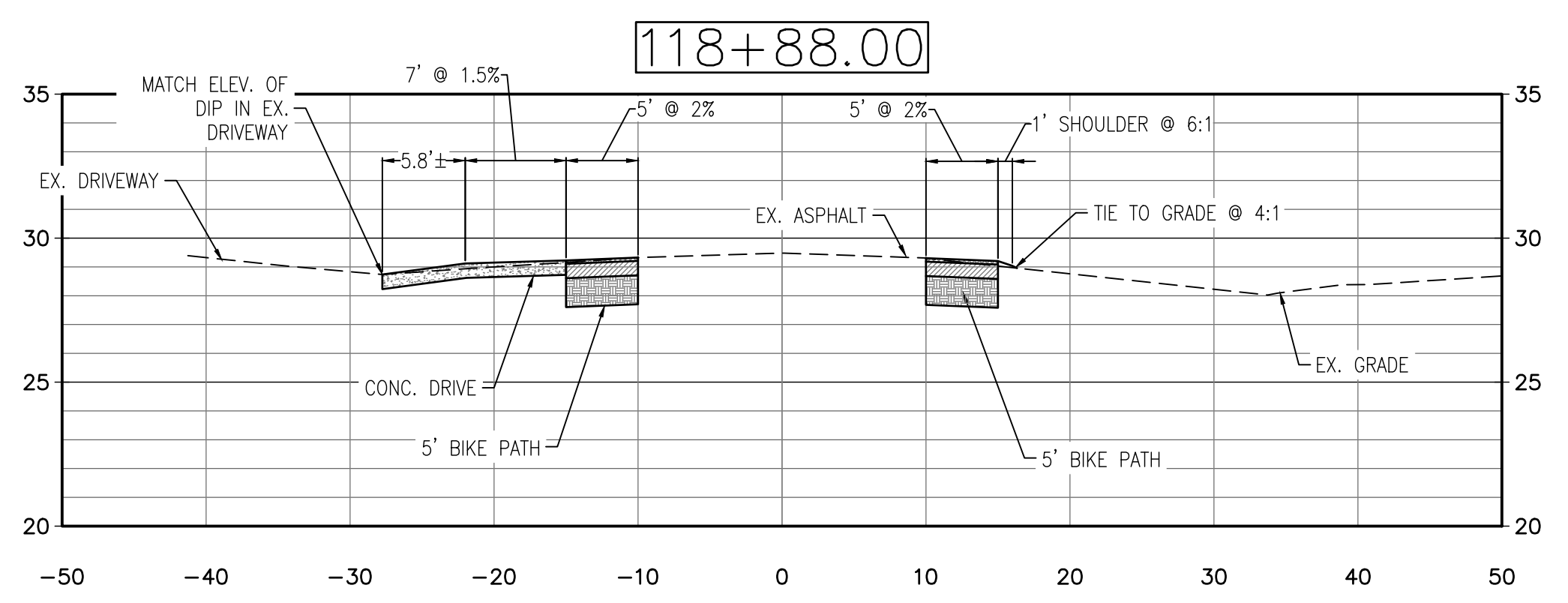
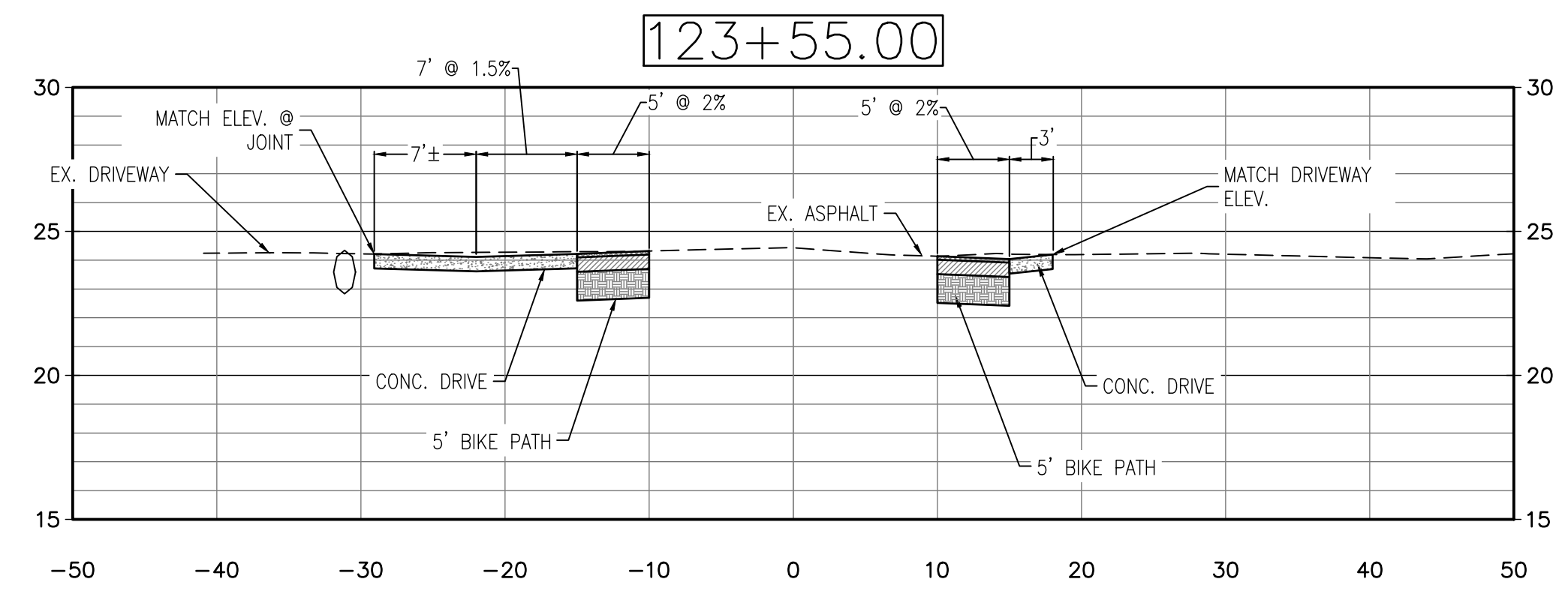
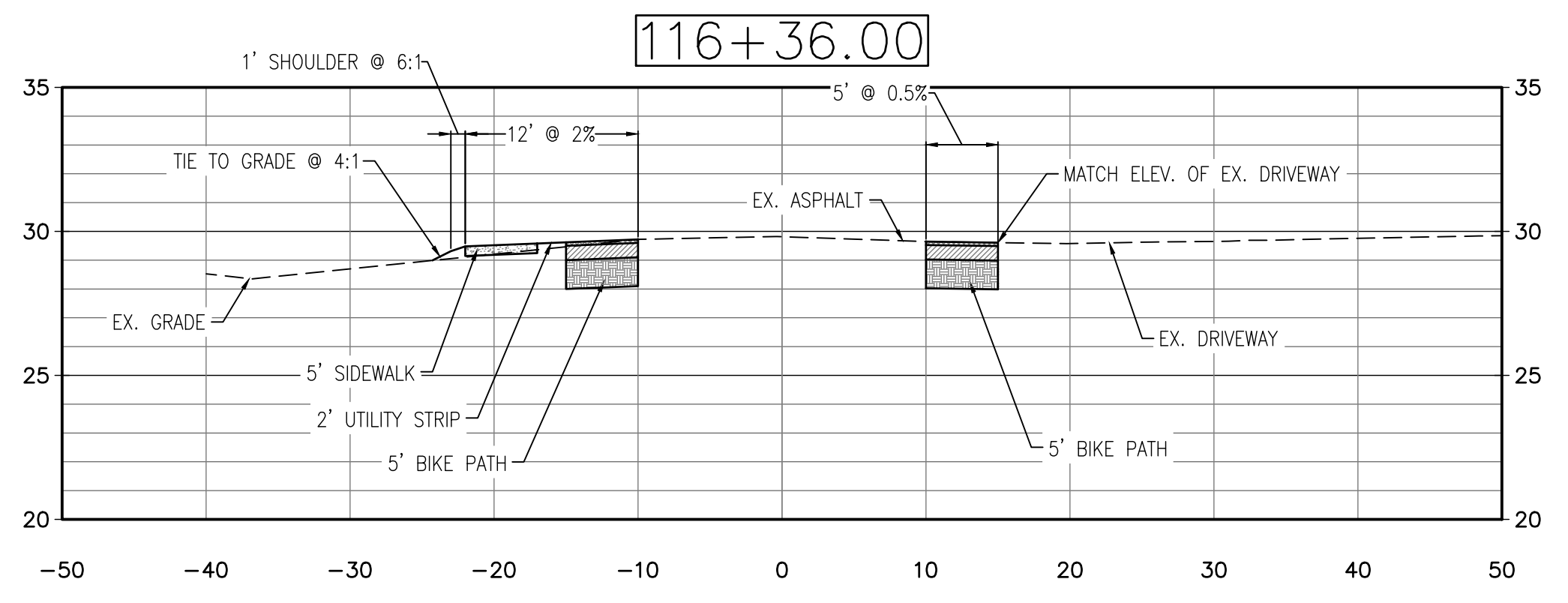
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S:\2018 Projects\2018-41 SRCC Edgewood Drive\DWGS\CIVIL\2018-41_C3XX_GROSS SECTIONS.dwg, Mar 11, 2021 - 8:41:36AM, priscilla

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FL. CERTIFICATE OF AUTHORIZATION NO. 8288

SRCC EDGEWOOD DRIVE
DRAINAGE AND ROADWAY IMPROVEMENTS

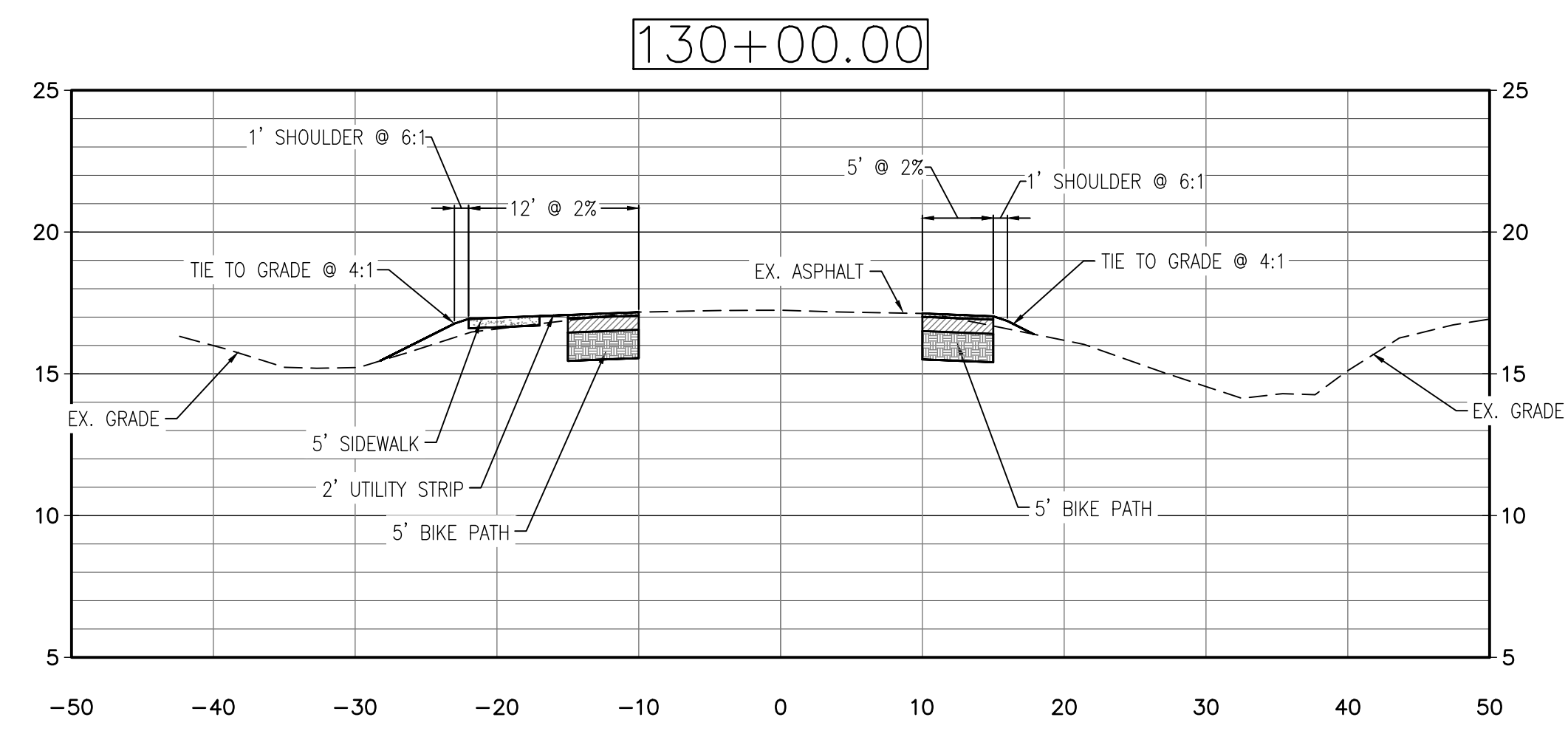
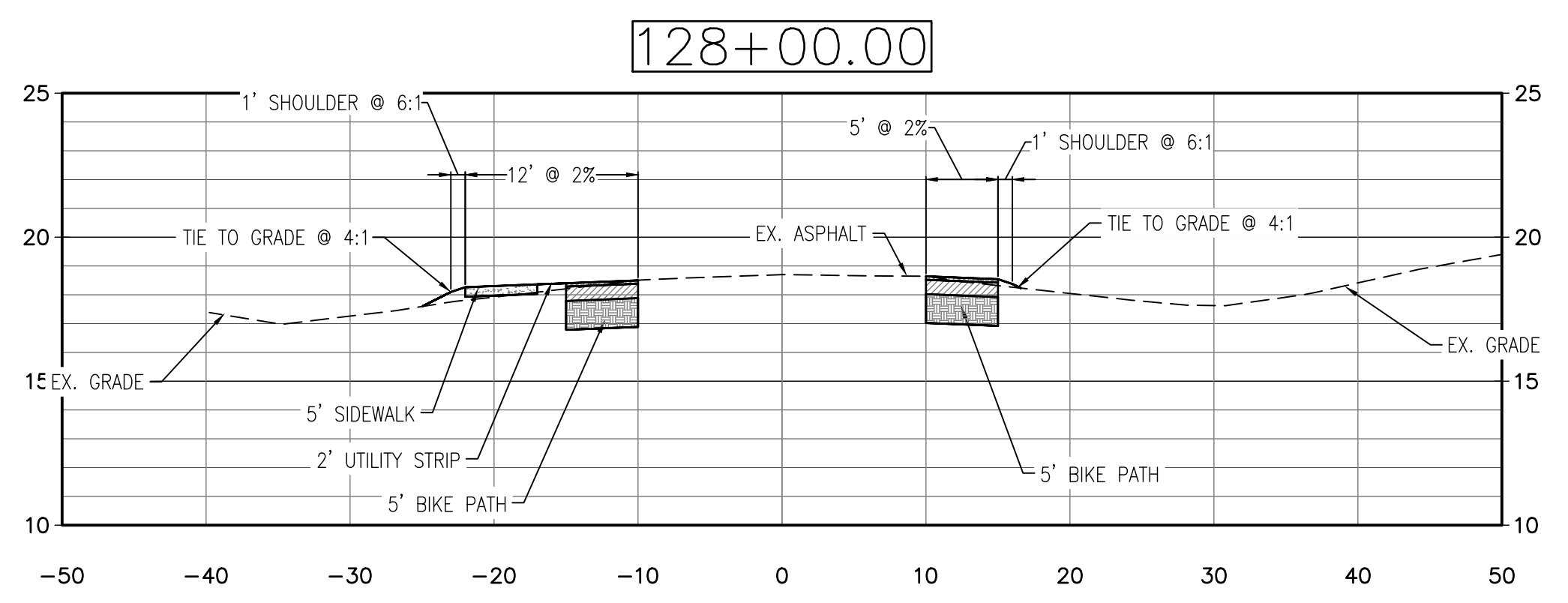
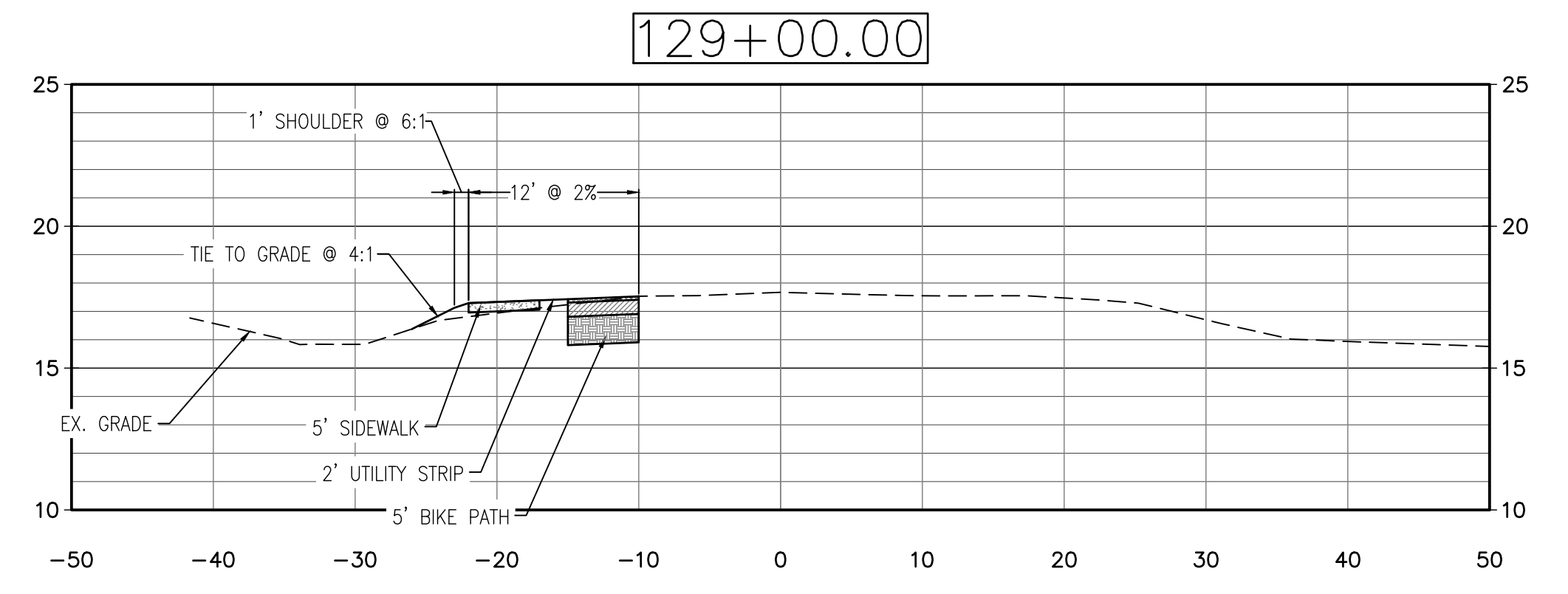
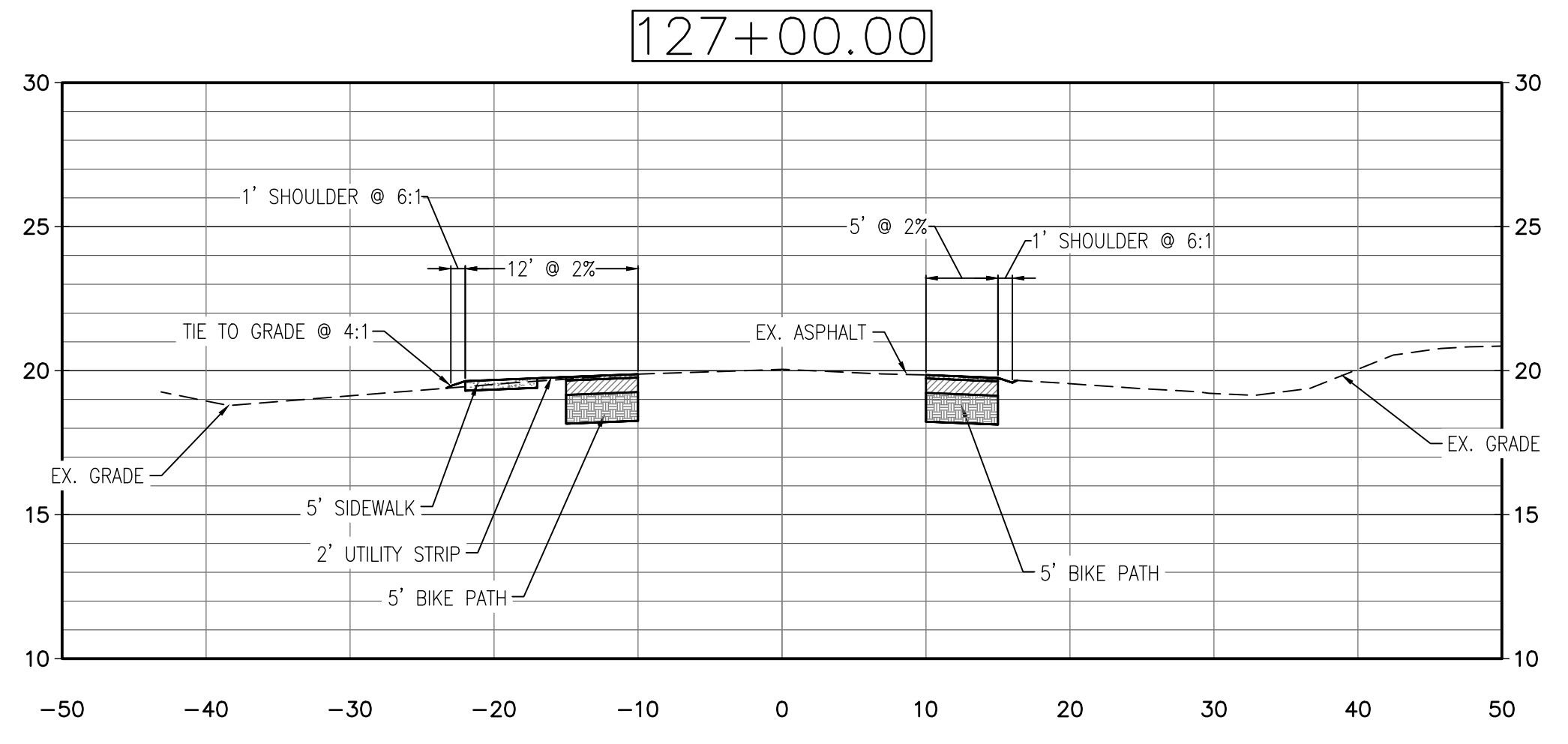
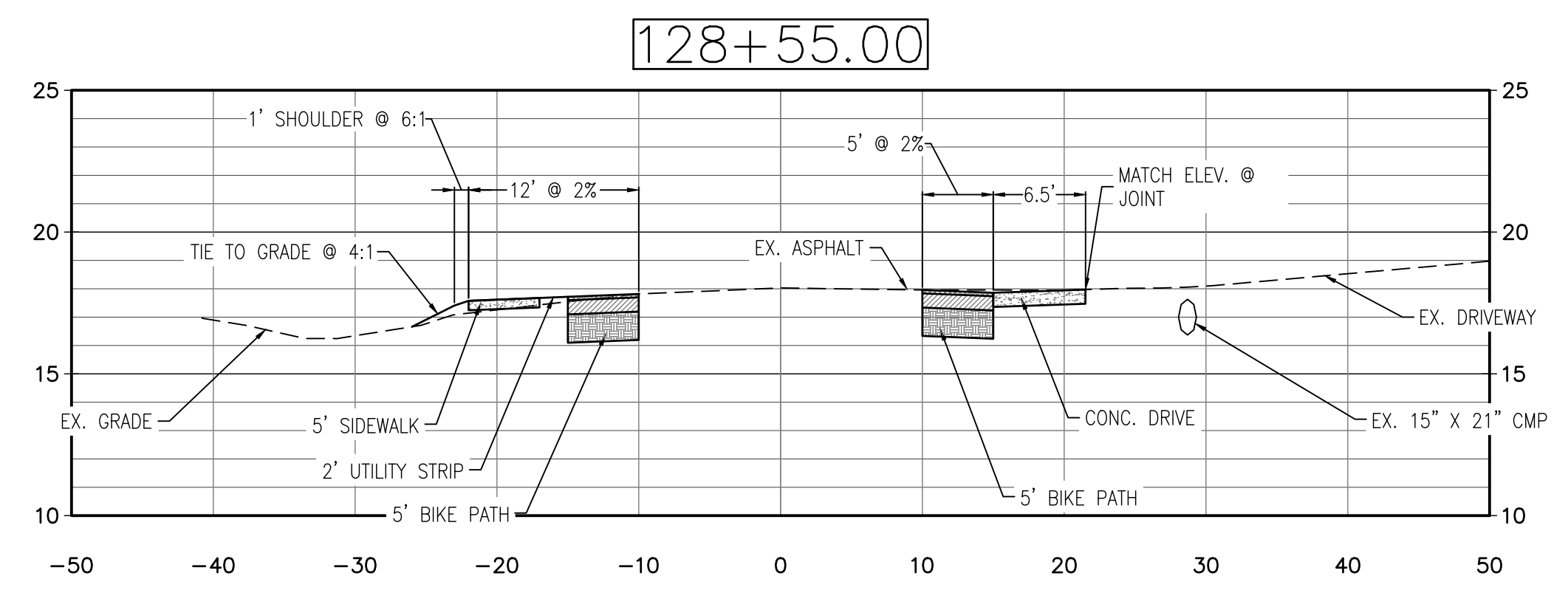
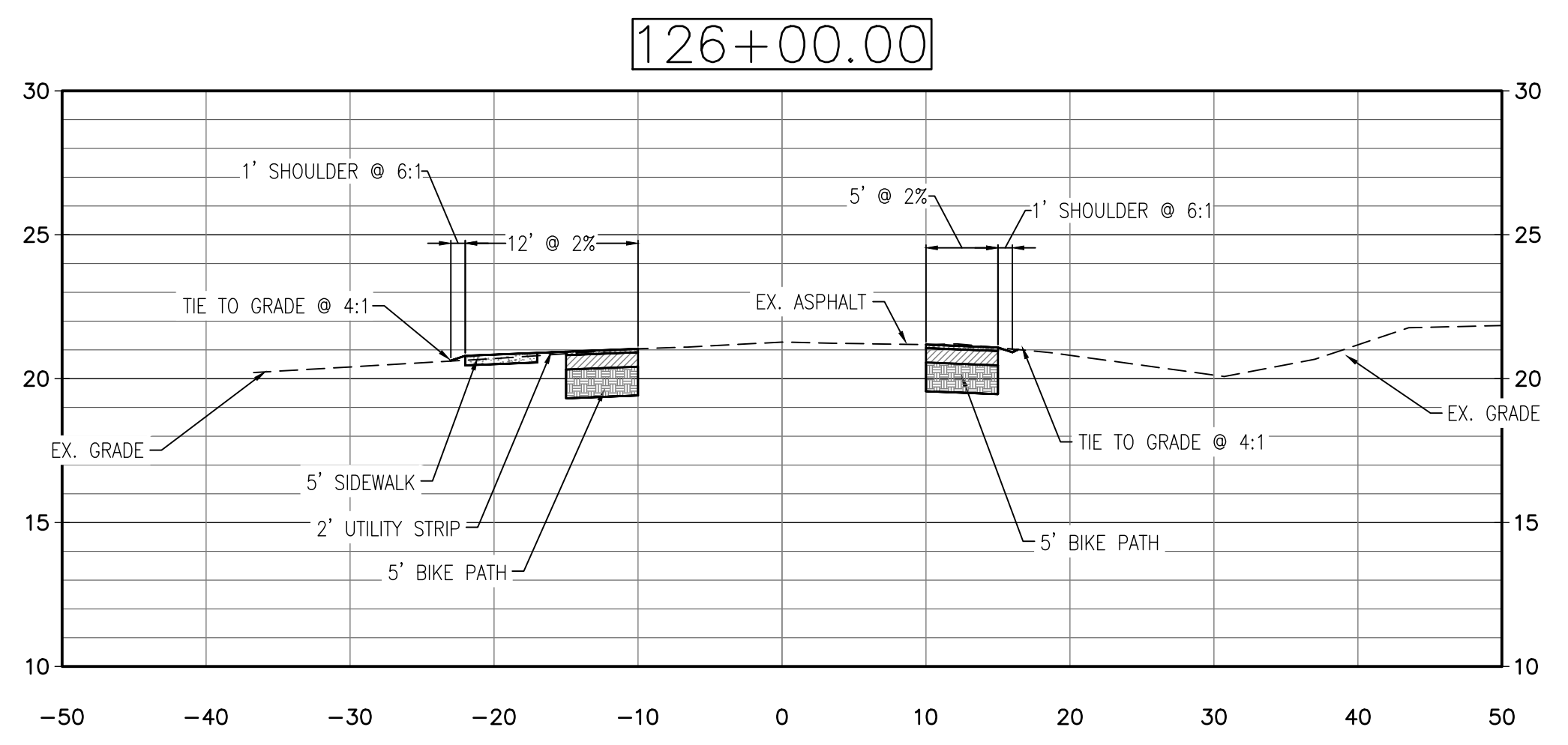
STA. 116+36 - 125+54 CRITICAL CROSS SECTIONS

SANTA ROSA FLORIDA

DRAWN BY: PLC	PROJECT NO: 2018-41
DESIGNED BY: RCK	C311
CHECKED BY: RCK	SHEET: 52 OF 62
DATE: 03/10/2021	
SCALE: 1" = 10'	
NOT FOR CONSTRUCTION	
BY: DATE:	

S:\2018 Projects\2018-41 SRCO Edgewood Drive\DWGS\CIVIL\2018-41_C3XX_CROSS SECTIONS.dwg, Mar 11, 2021 - 8:42:03AM, priscilla

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FL. CERTIFICATE OF AUTHORIZATION NO. 8288

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SRCO EDGEWOOD DRIVE
DRAINAGE AND ROADWAY IMPROVEMENTS

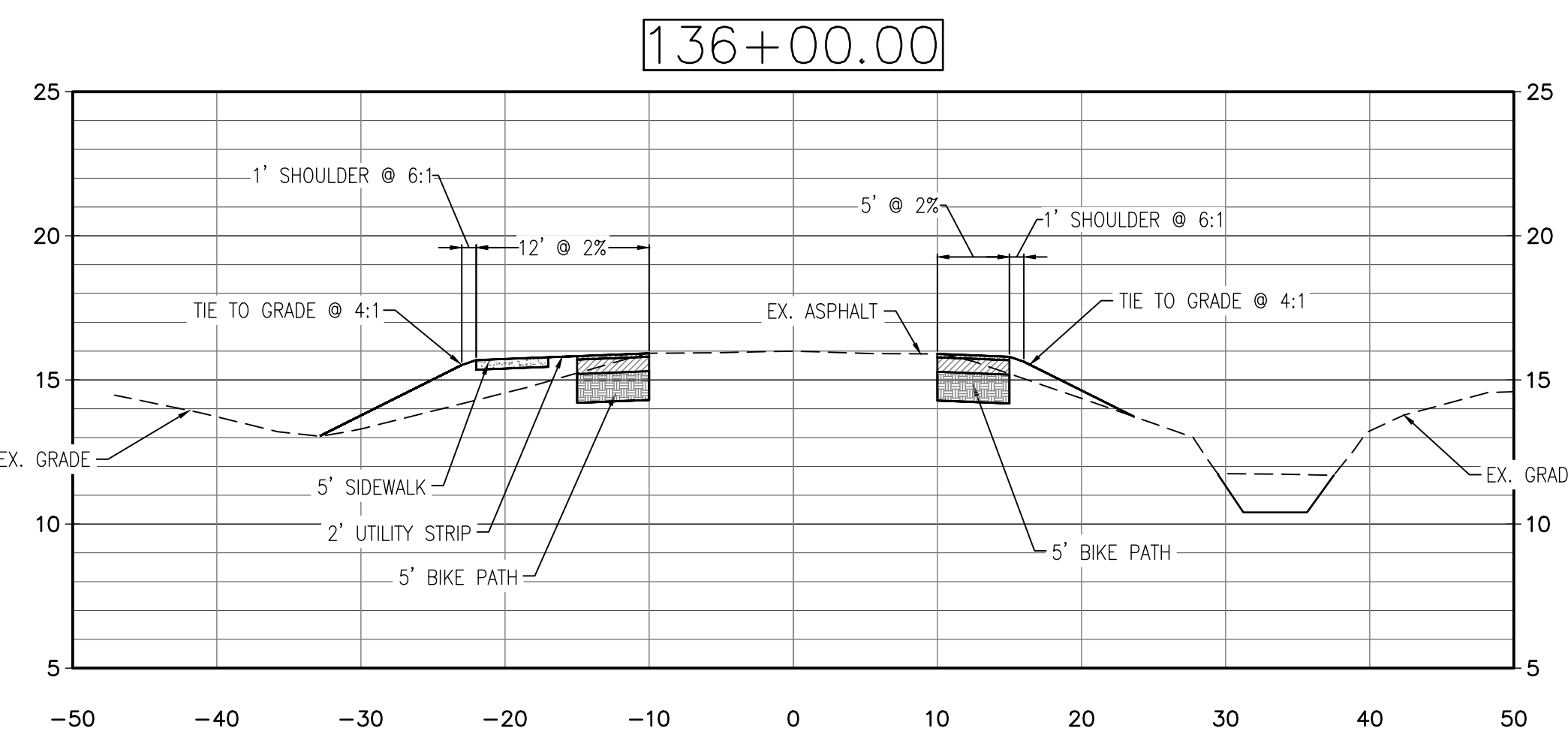
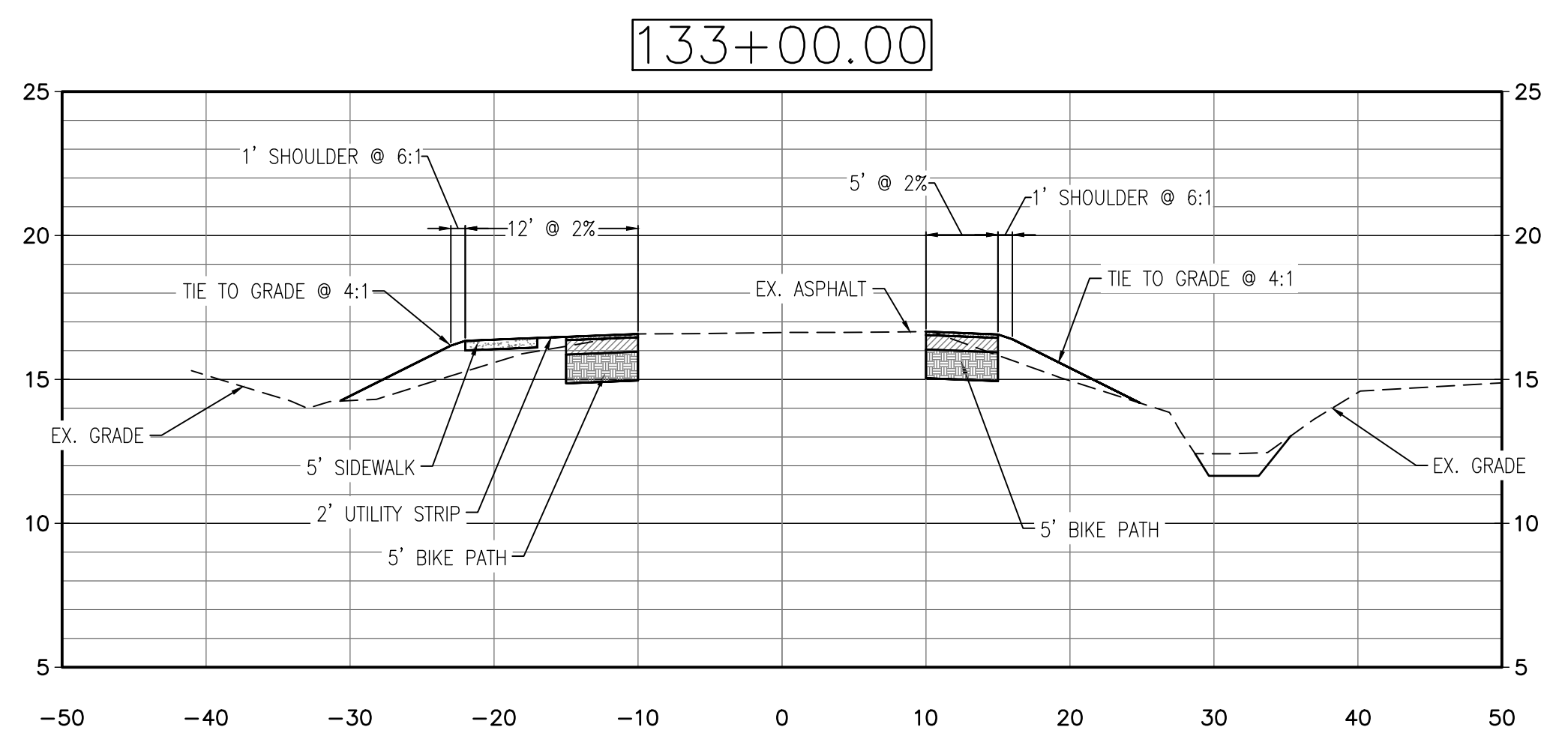
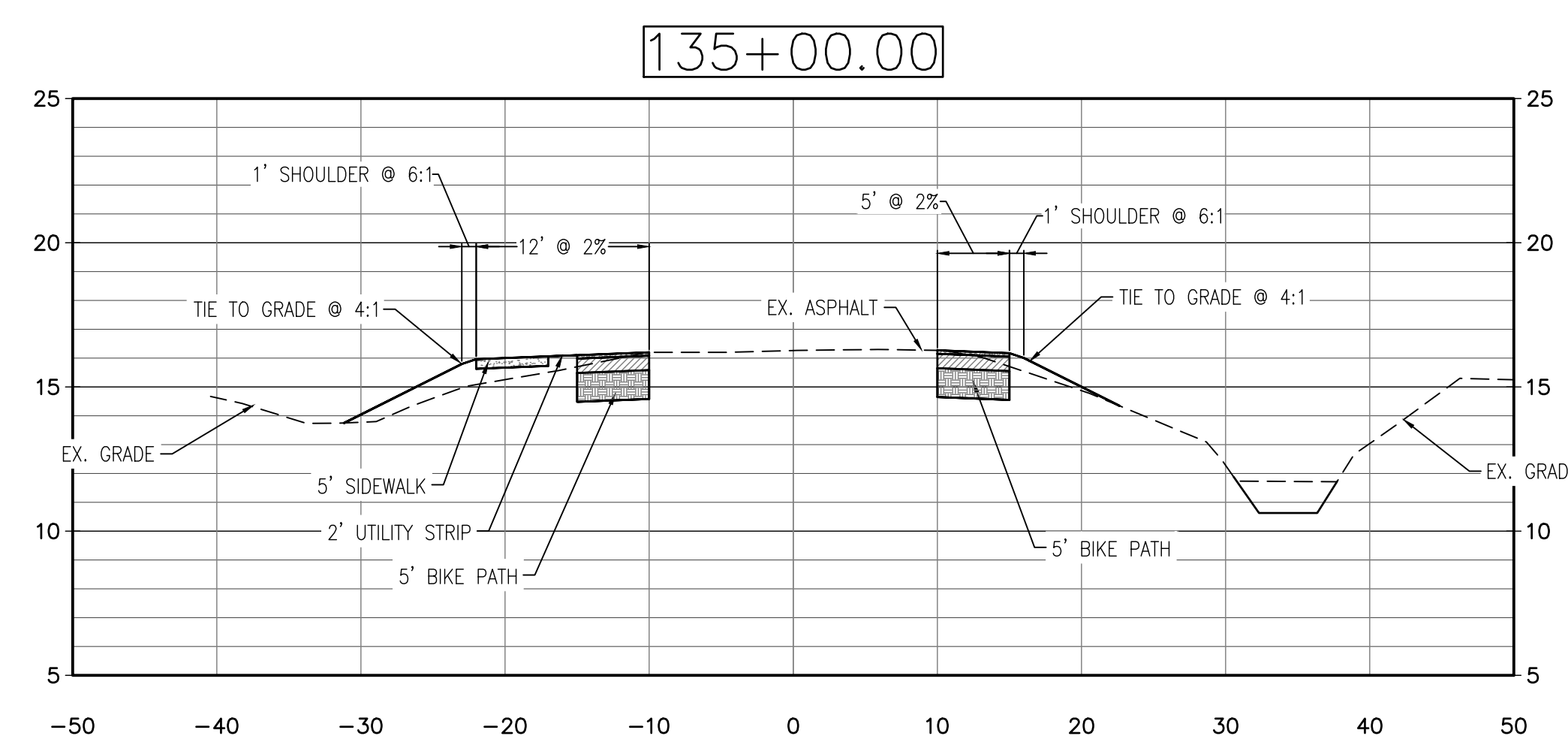
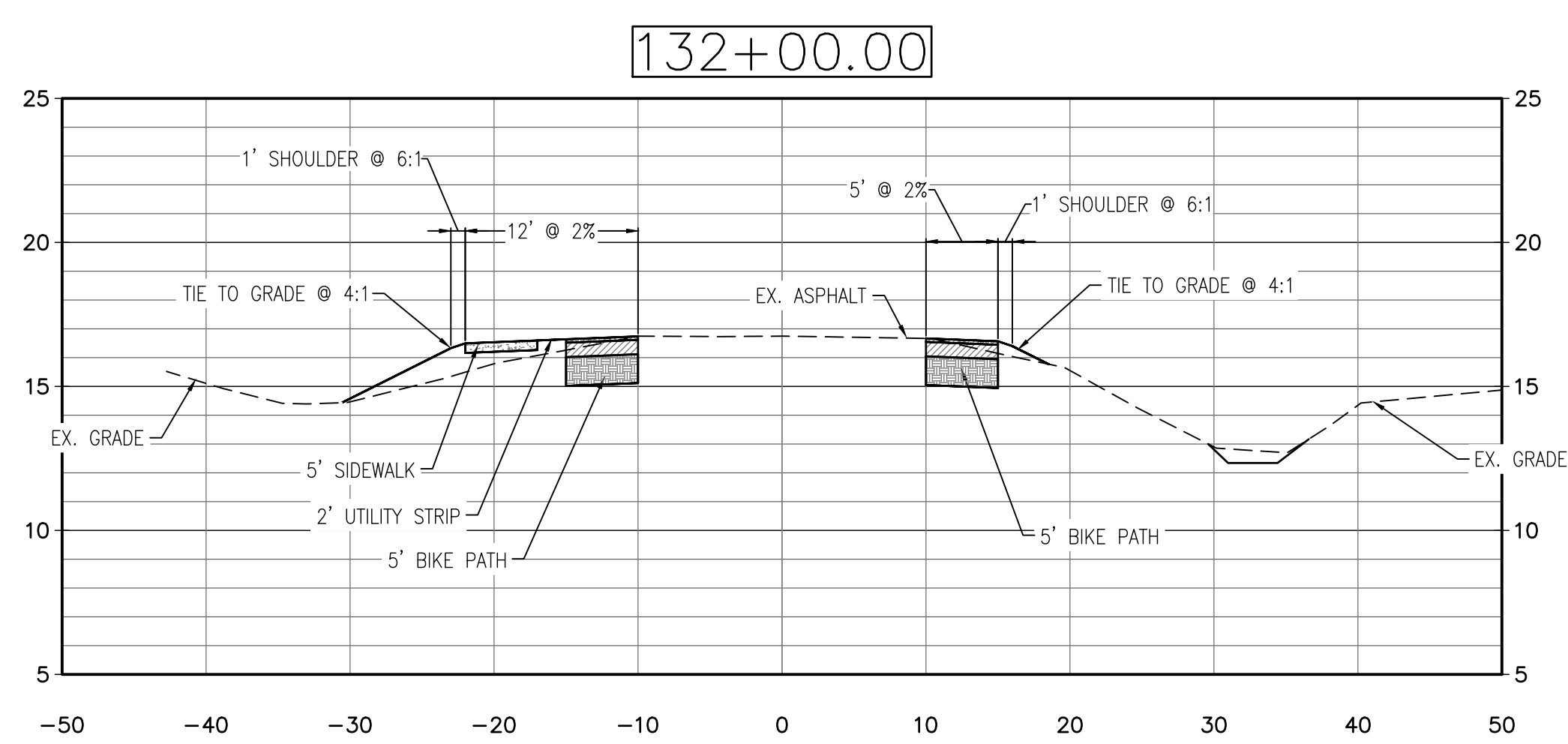
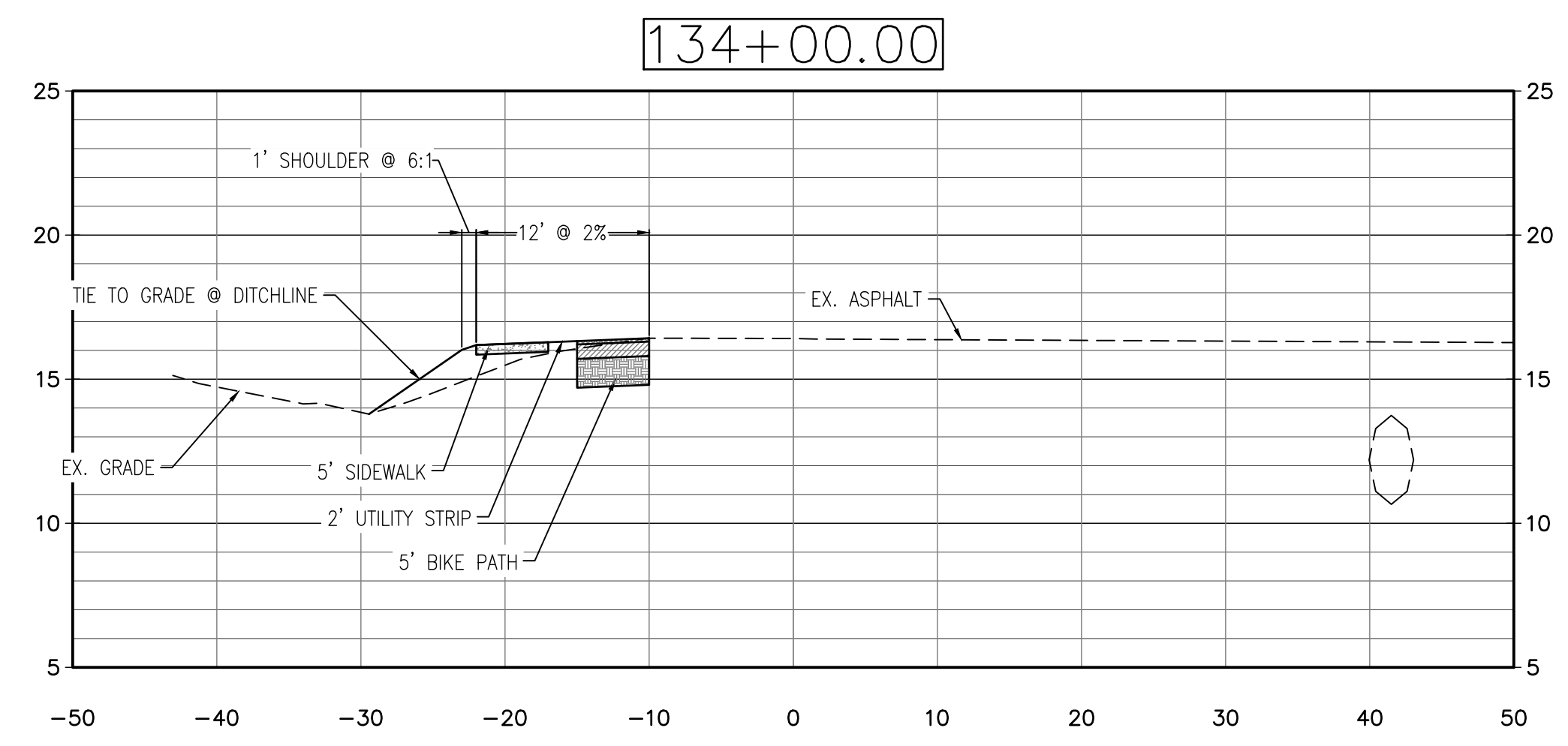
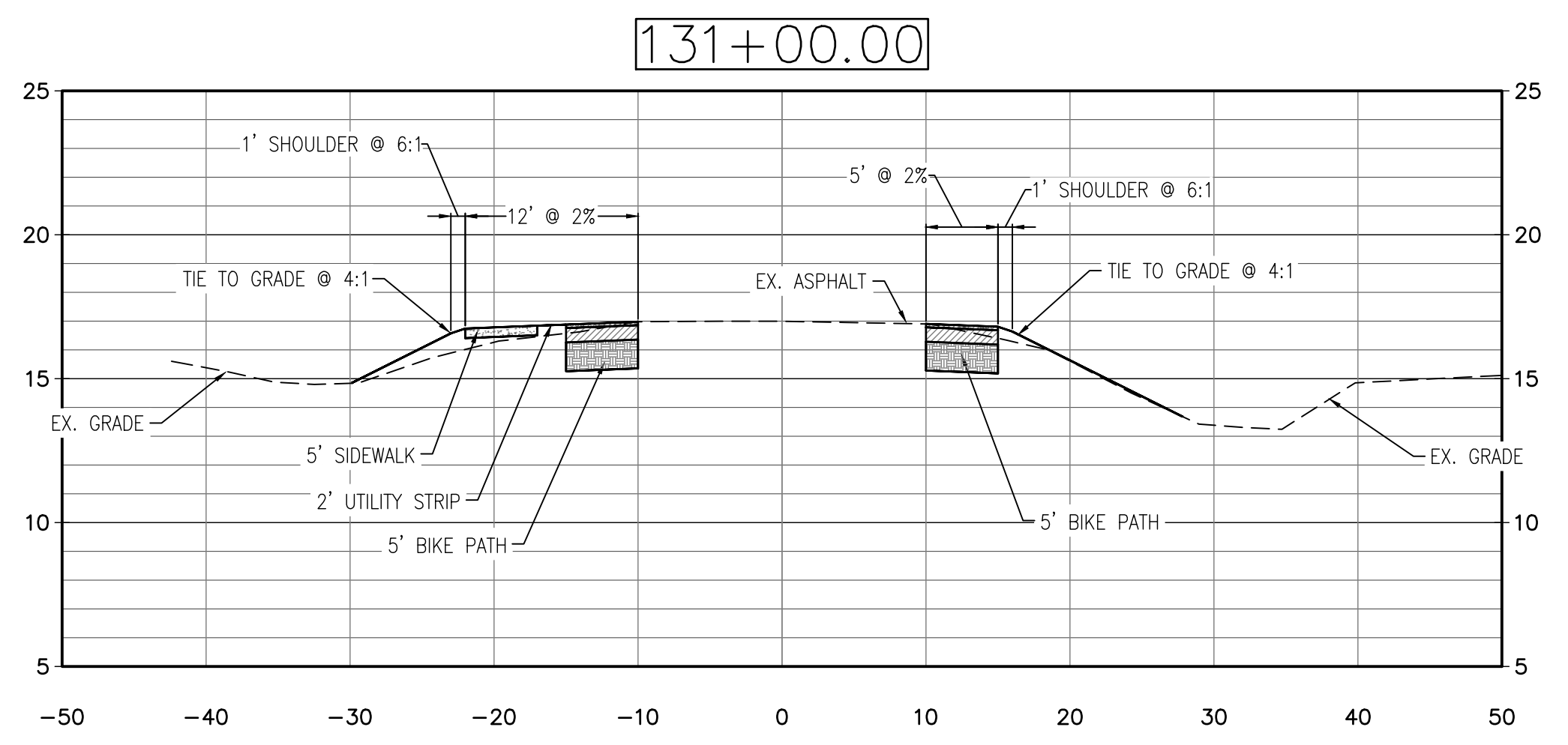
STA. 126+00 - 130+00 CRITICAL CROSS SECTIONS

SANTA ROSA FLORIDA

DRAWN BY: PLC	PROJECT NO: 2018-41
DESIGNED BY: RCK	C312
CHECKED BY: RCK	SHEET: 53 OF 62
DATE: 03/10/2021	
SCALE: 1" = 10'	
NOT FOR CONSTRUCTION	
BY: DATE:	

S:\2018 Projects\2018-41 SRCO Edgewood Drive\DWGS\CIVIL\2018-41_C3XX_GROSS SECTIONS.dwg, Mar 11, 2021 - 8:42:28AM, priscilla

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 FL. PE 49949

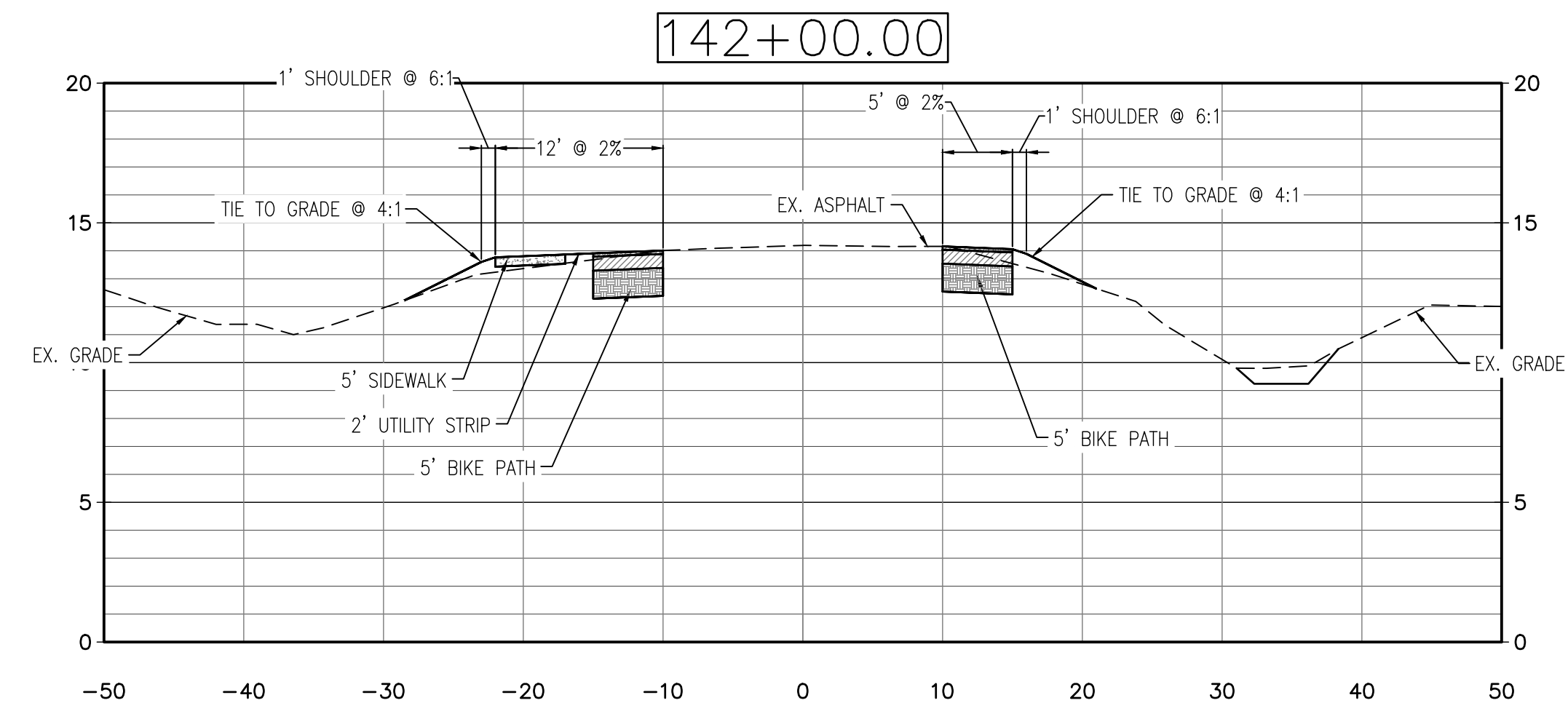
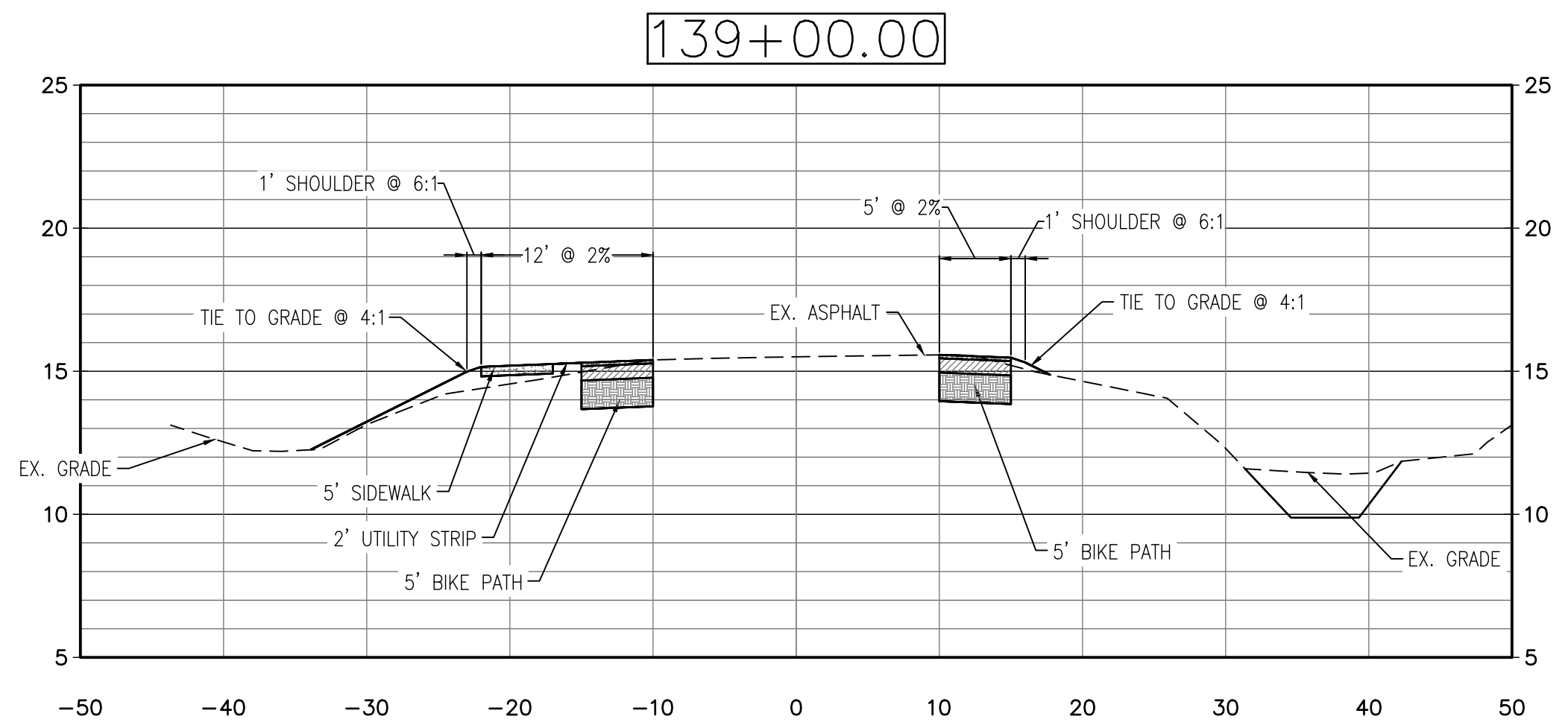
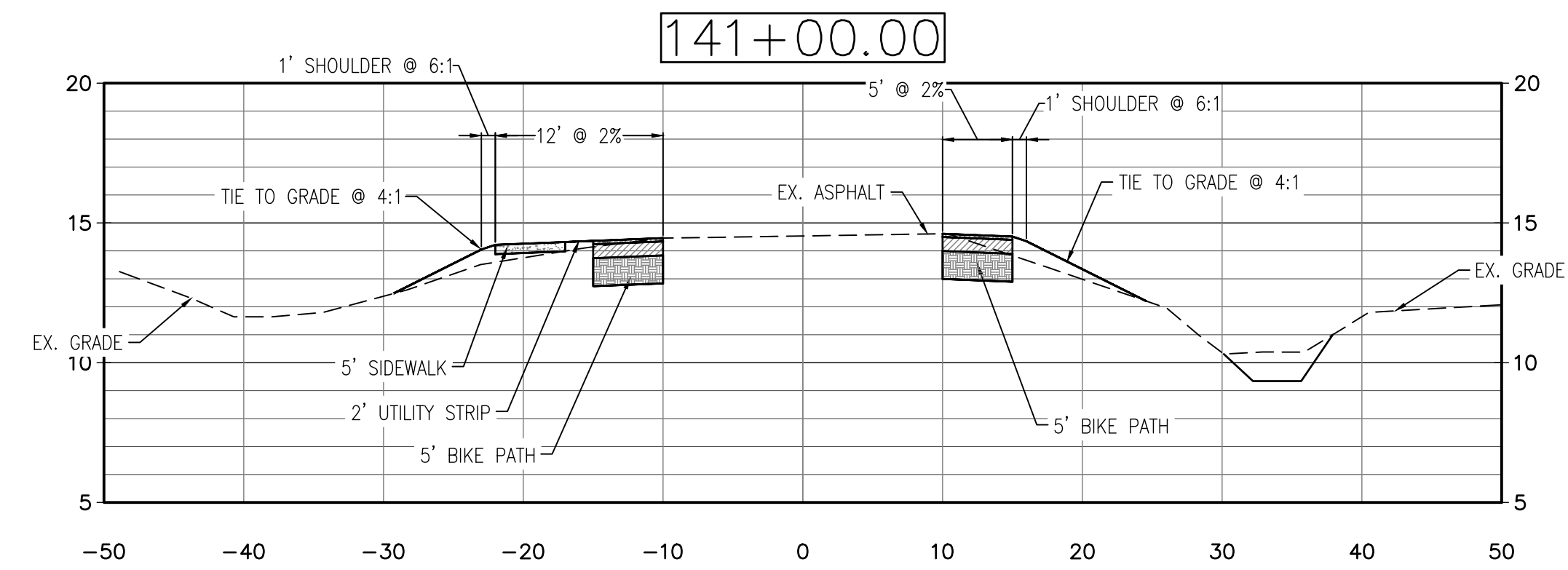
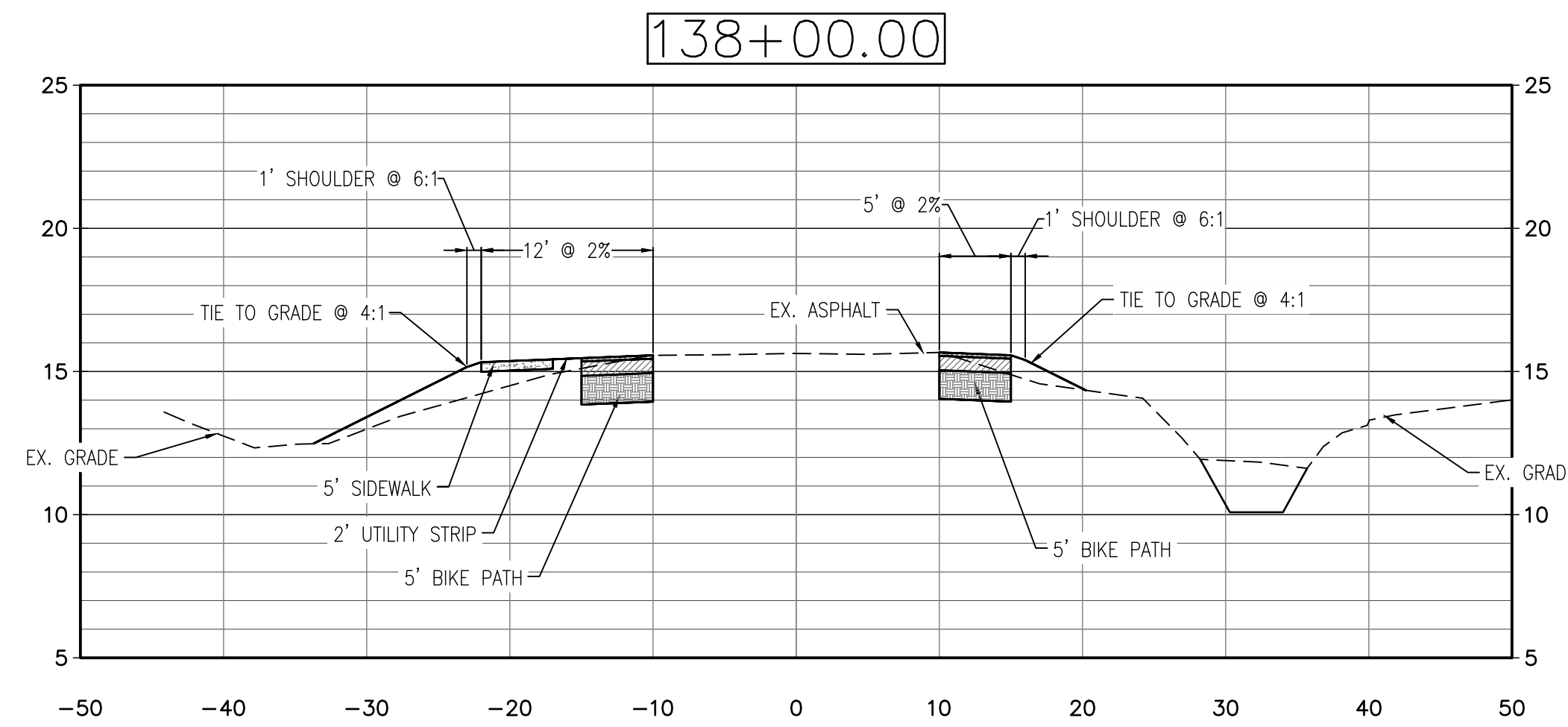
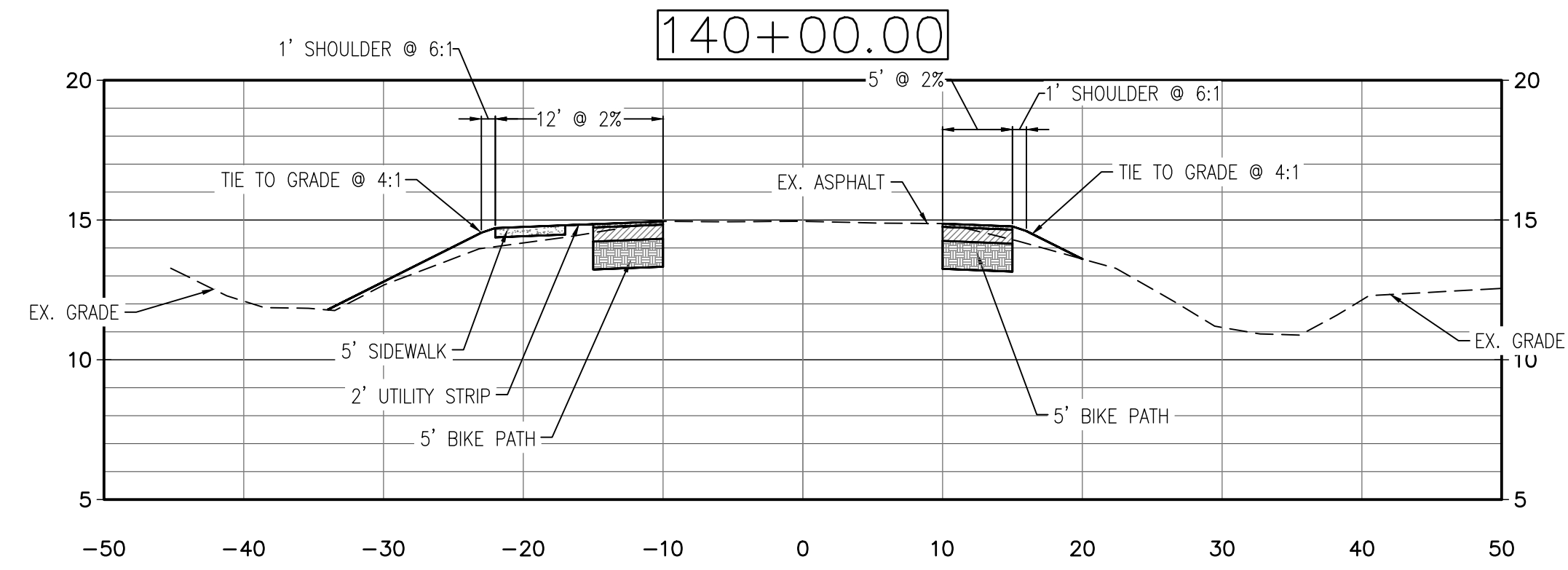
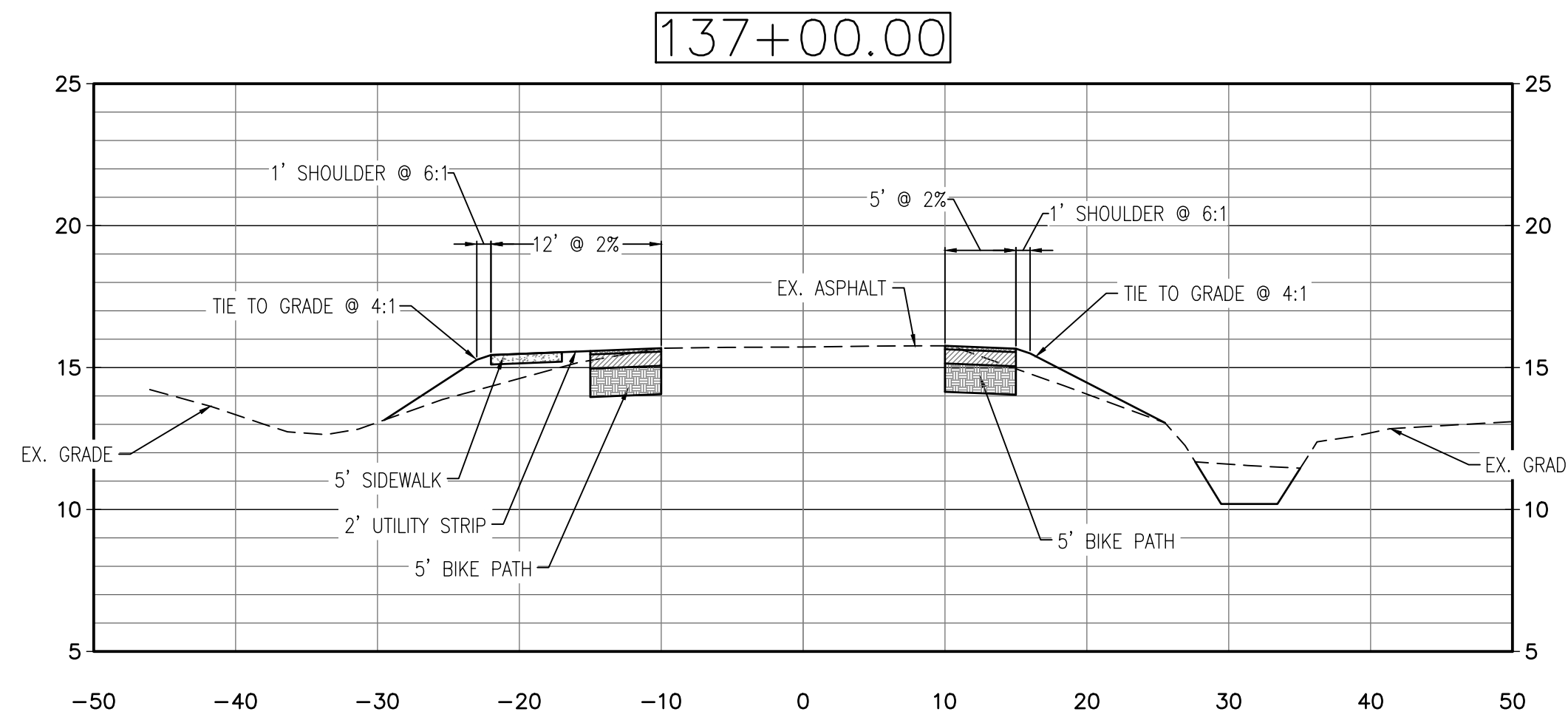
Kenneth Horne & Associates, Inc.
 CIVIL ENGINEERS
 PO BOX 10689 PENSACOLA, FLORIDA 32524
 7201 N. 9TH AVENUE, SUITE 6, PENSACOLA, FLORIDA 32504
 (850) 471-9005 info@kh-a.com FAX (850) 471-0093
 FL. CERTIFICATE OF AUTHORIZATION NO. 8288

SRCO EDGEWOOD DRIVE
 DRAINAGE AND ROADWAY IMPROVEMENTS
 STA. 131+00 - 136+00 CRITICAL CROSS SECTIONS
 SANTA ROSA FLORIDA

DRAWN BY:	PLC
DESIGNED BY:	RGK
CHECKED BY:	RGK
DATE:	03/10/2021
SCALE:	1" = 10'
NOT FOR CONSTRUCTION	
BY:	DATE:
PROJECT NO:	2018-41
C313	
SHEET:	54 OF 62

1
2
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S:\2018 Projects\2018-41 SRCO Edgewood Drive\DWGS\CIVIL\2018-41_C3XX_CROSS SECTIONS.dwg, Mar 11, 2021 - 8:42:54AM, priscilla



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(850) 471-9005 info@kh-a.com FAX (850) 471-0093
FL CERTIFICATE OF AUTHORIZATION NO. 8288



SRCO EDGEWOOD DRIVE
DRAINAGE AND ROADWAY IMPROVEMENTS

STA. 137+00 - 142+00 CRITICAL CROSS SECTIONS
SANTA ROSA FLORIDA

DRAWN BY:	PLC
DESIGNED BY:	RCK
CHECKED BY:	RCK
DATE:	03/10/2021
SCALE:	1" = 10'
NOT FOR CONSTRUCTION	
BY:	DATE:

PROJECT NO: 2018-41
C314
SHEET: 55 OF 62

S:\2018 Projects\2018-41 SRCO Edgewood Drive\DWGS\CIVIL\2018-41_C3XX_CROSS SECTIONS.dwg, Mar 11, 2021 - 8:43:19AM, priscilla

A B C D E F G H

1

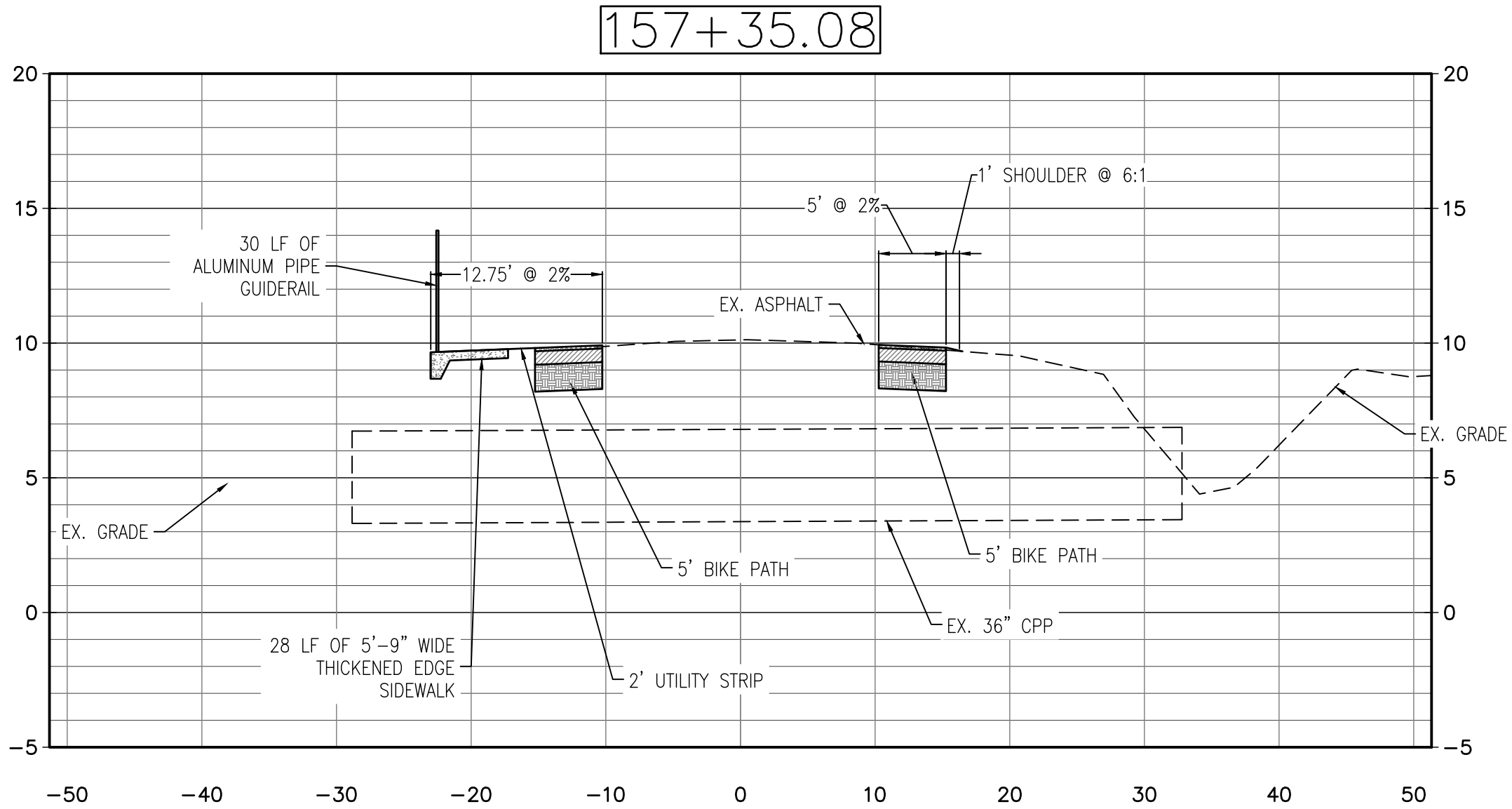
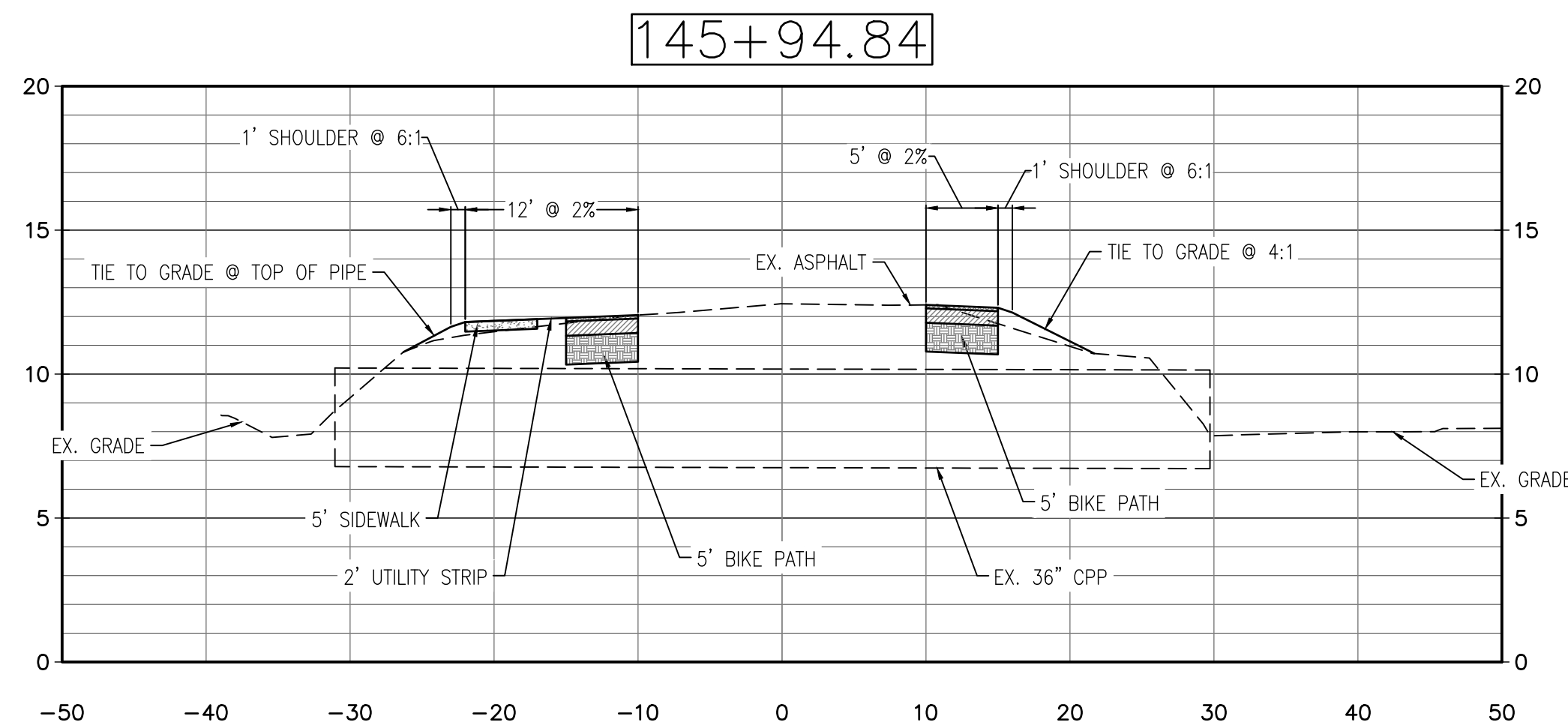
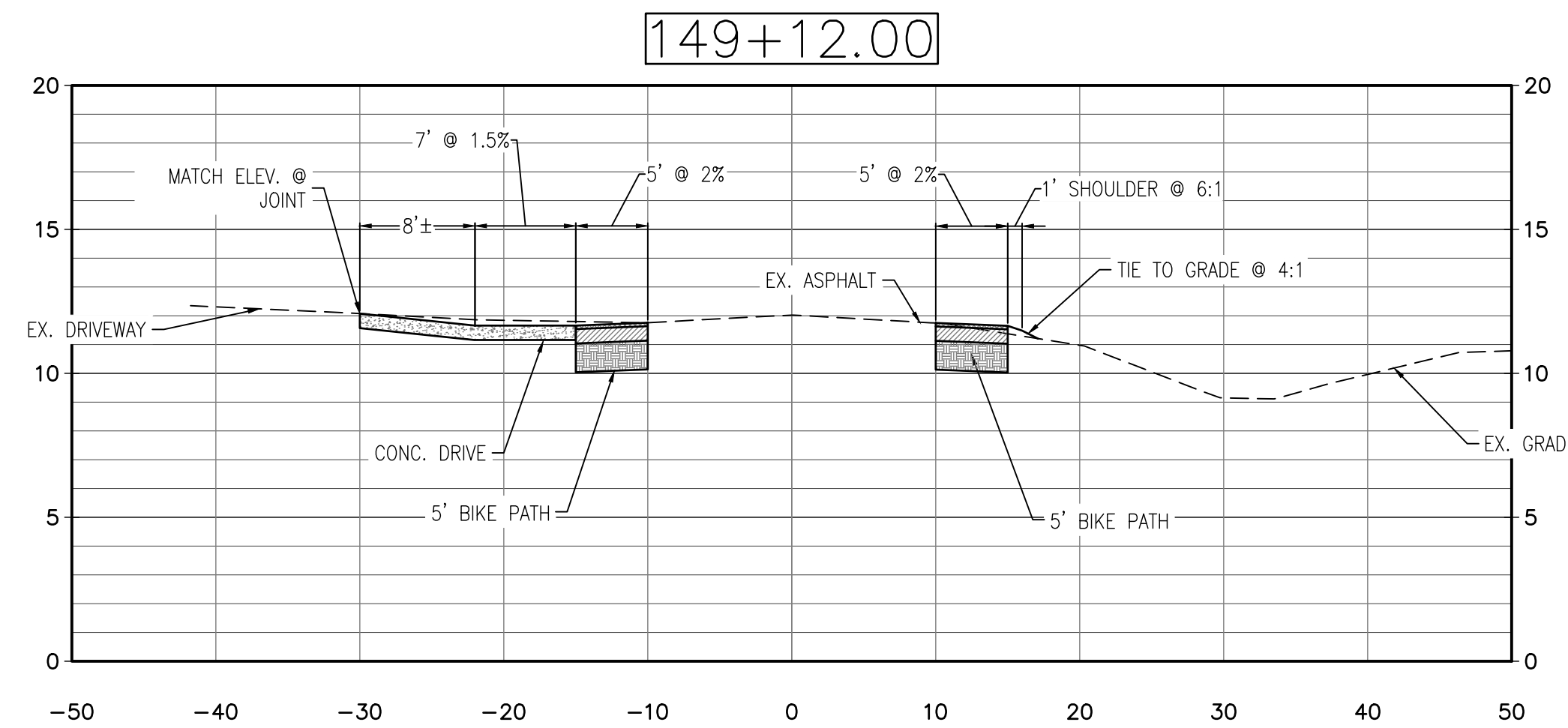
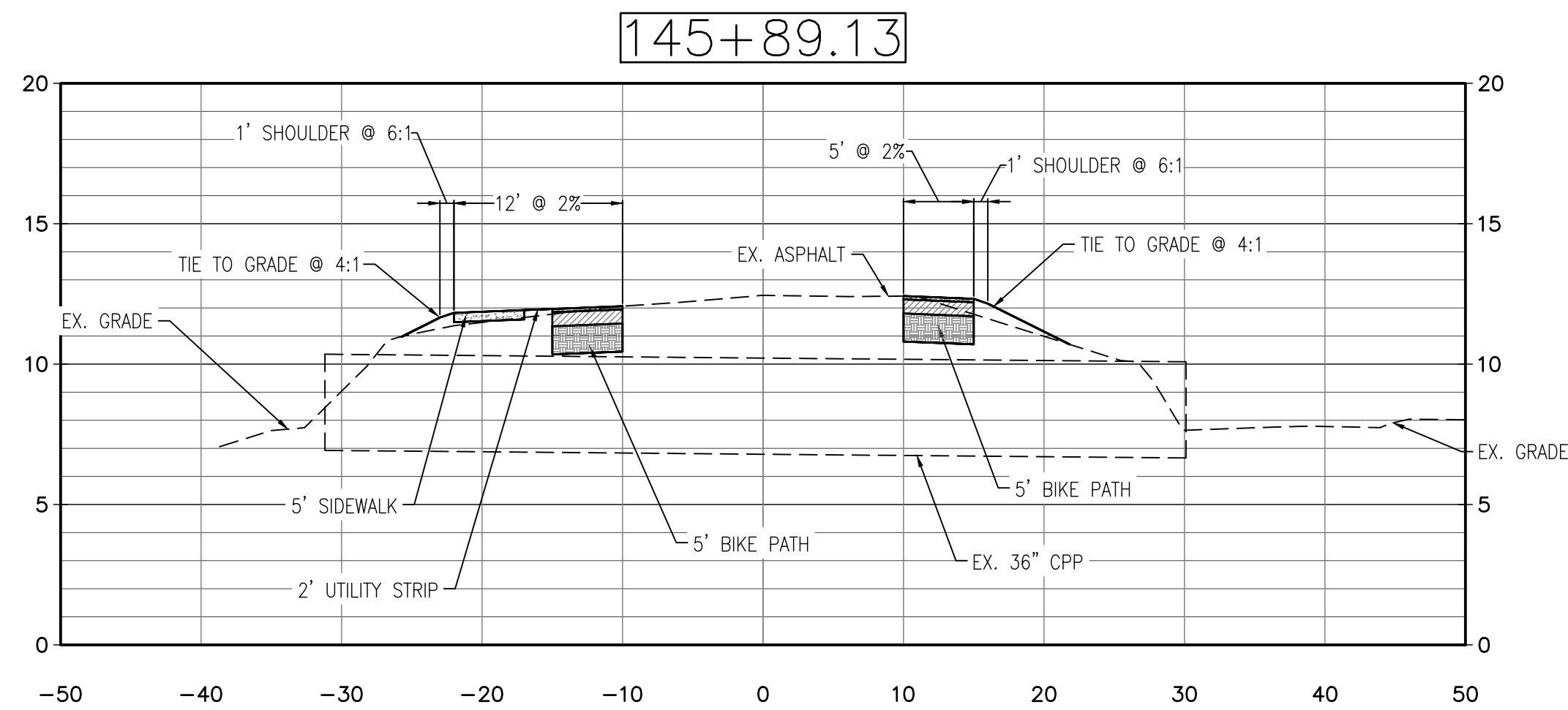
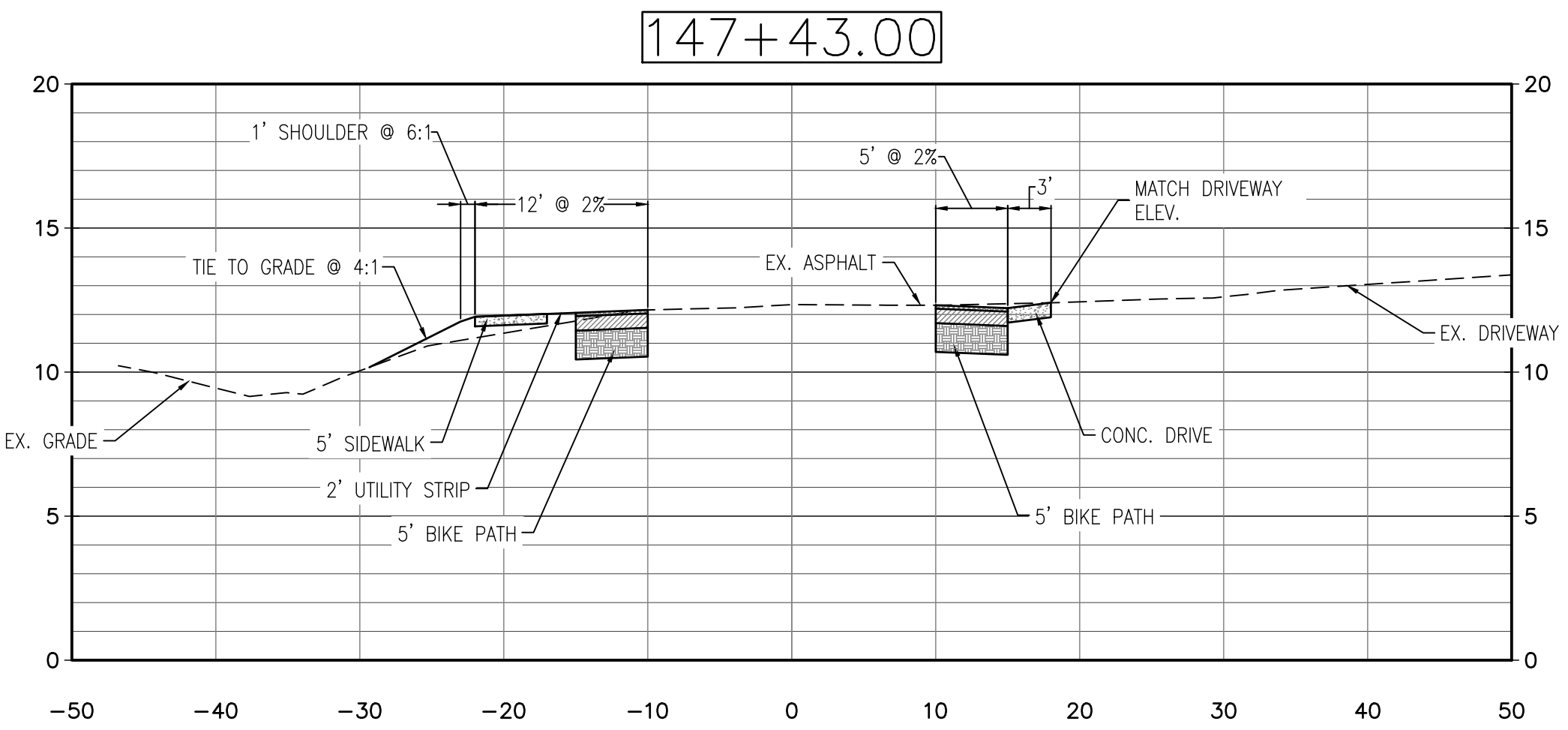
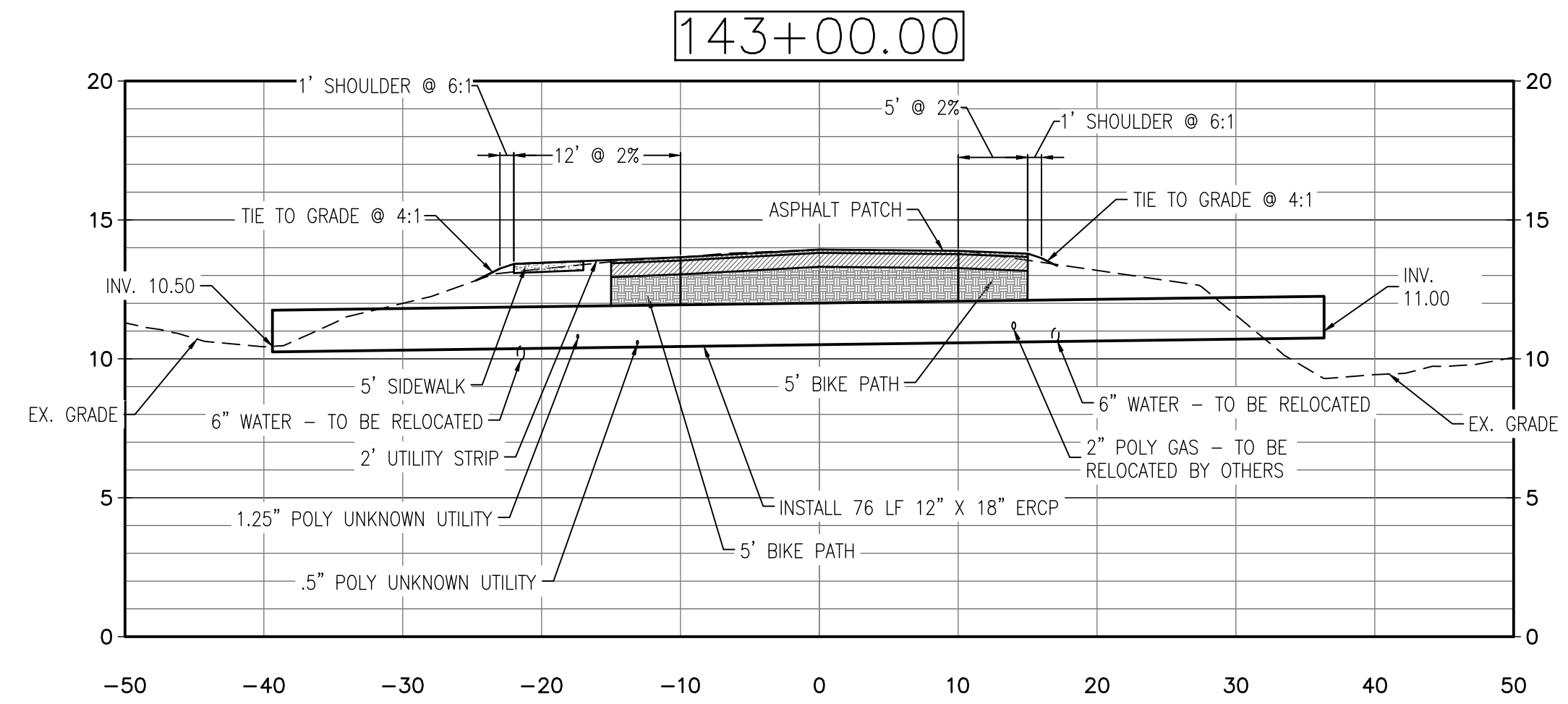
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 (850) 471-9005 info@kh-a.com FAX (850) 471-0093
 FL. CERTIFICATE OF AUTHORIZATION NO. 8268

SRCO EDGEWOOD DRIVE
 DRAINAGE AND ROADWAY IMPROVEMENTS
 STA. 143+00 - 157+35.08 CRITICAL CROSS SECTIONS
 SANTA ROSA FLORIDA

DRAWN BY:	PLC
DESIGNED BY:	RCK
CHECKED BY:	RCK
DATE:	03/10/2021
SCALE:	1" = 10'
NOT FOR CONSTRUCTION	
BY:	DATE:
PROJECT NO:	2018-41
C315	
SHEET:	56 OF 62

1

2

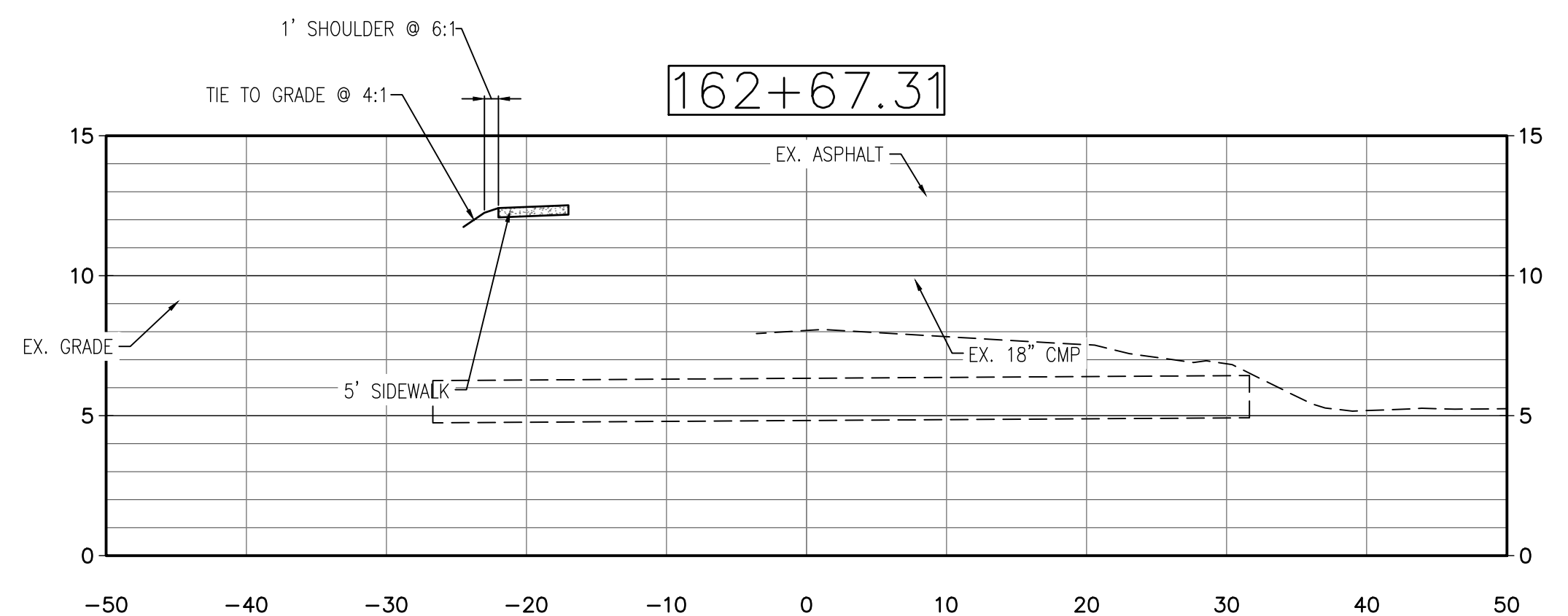
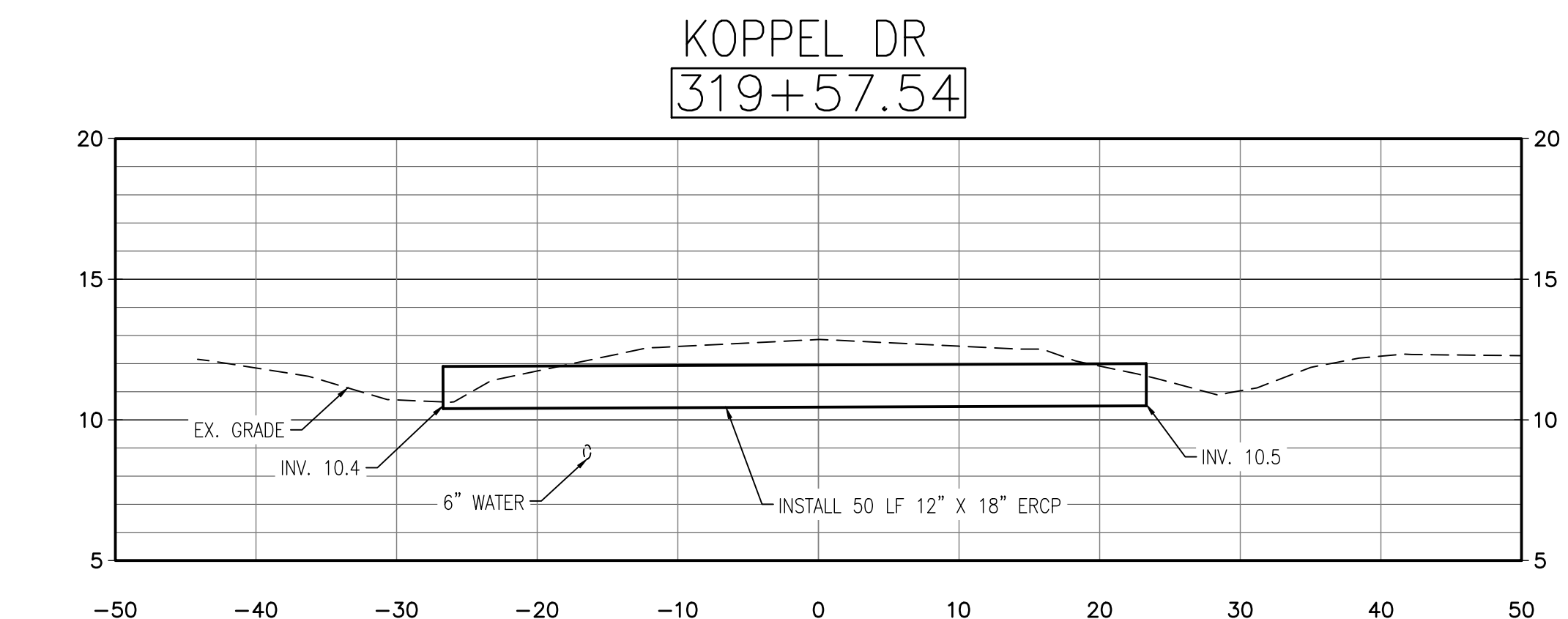
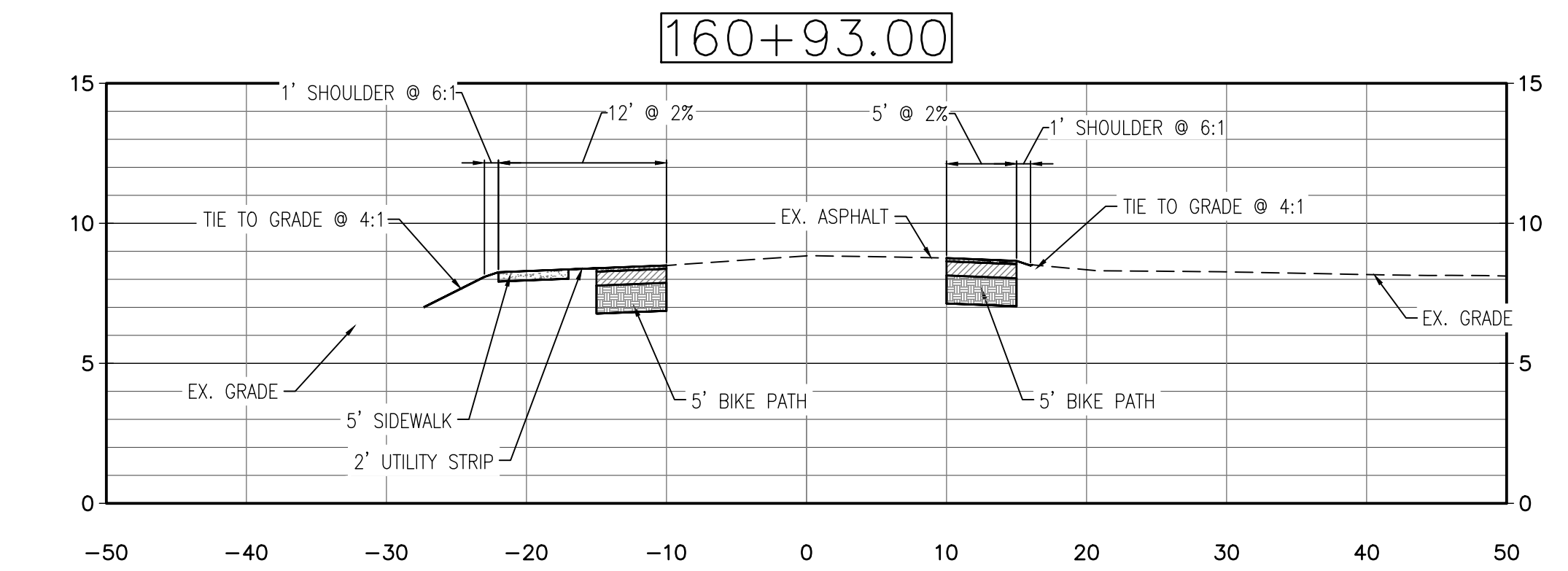
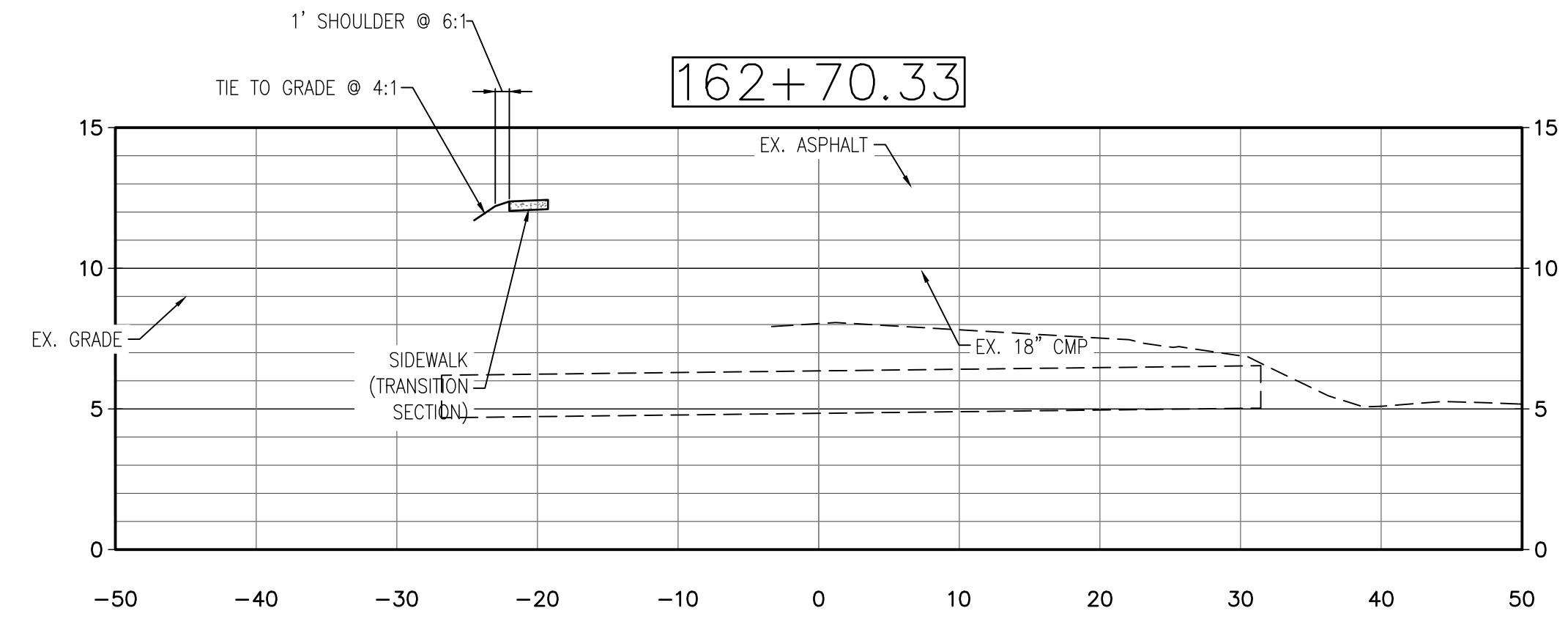
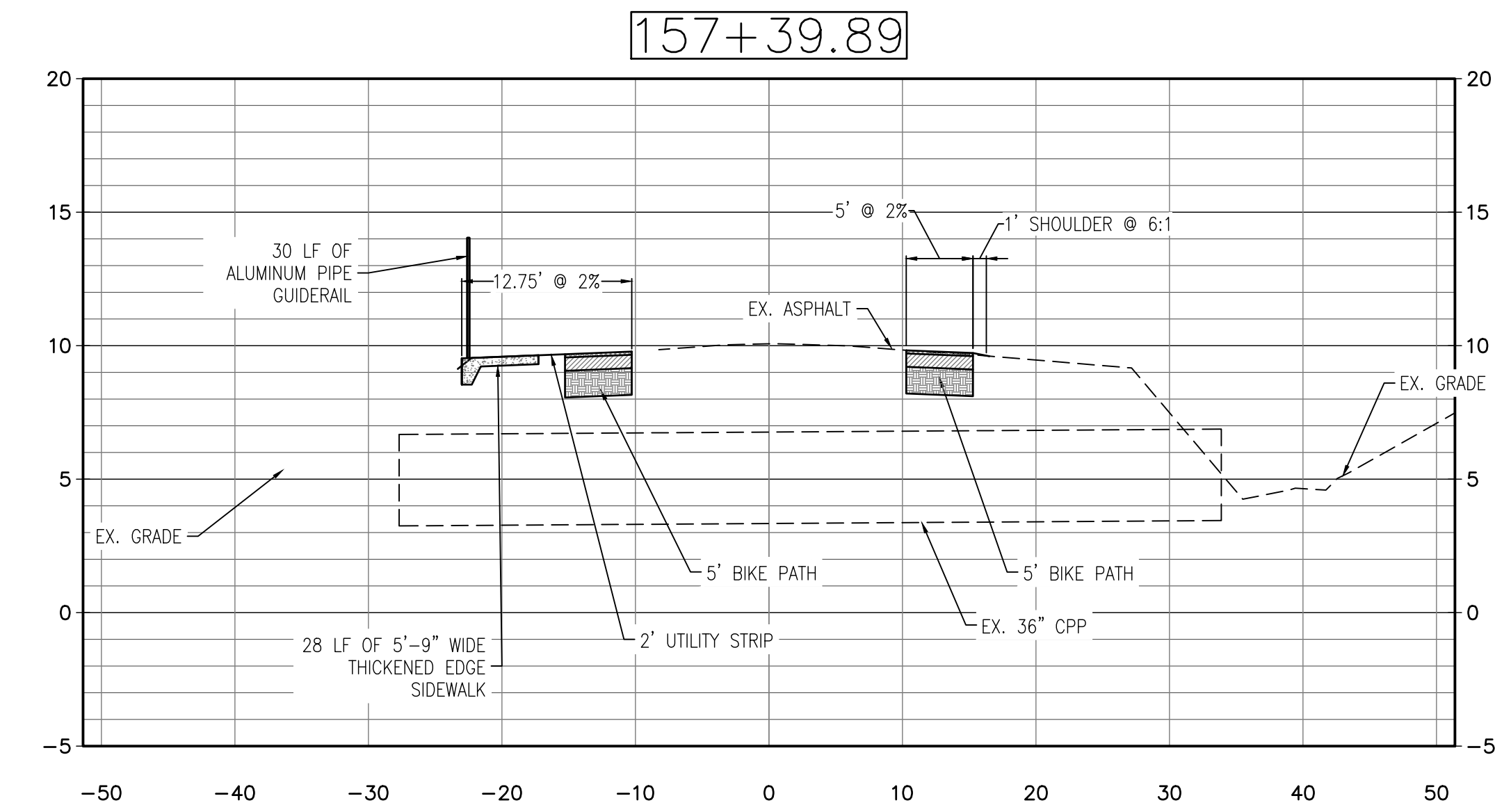
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S:\2018 Projects\2018-41 SRCO Edgewood Drive\DWGS\CIVIL\2018-41_C3XX_CROSS SECTIONS.dwg, Mar 11, 2021 - 8:43:44AM, priscilla



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FL. CERTIFICATE OF AUTHORIZATION NO. 8268

KH&A

SRCO EDGEWOOD DRIVE
DRAINAGE AND ROADWAY IMPROVEMENTS

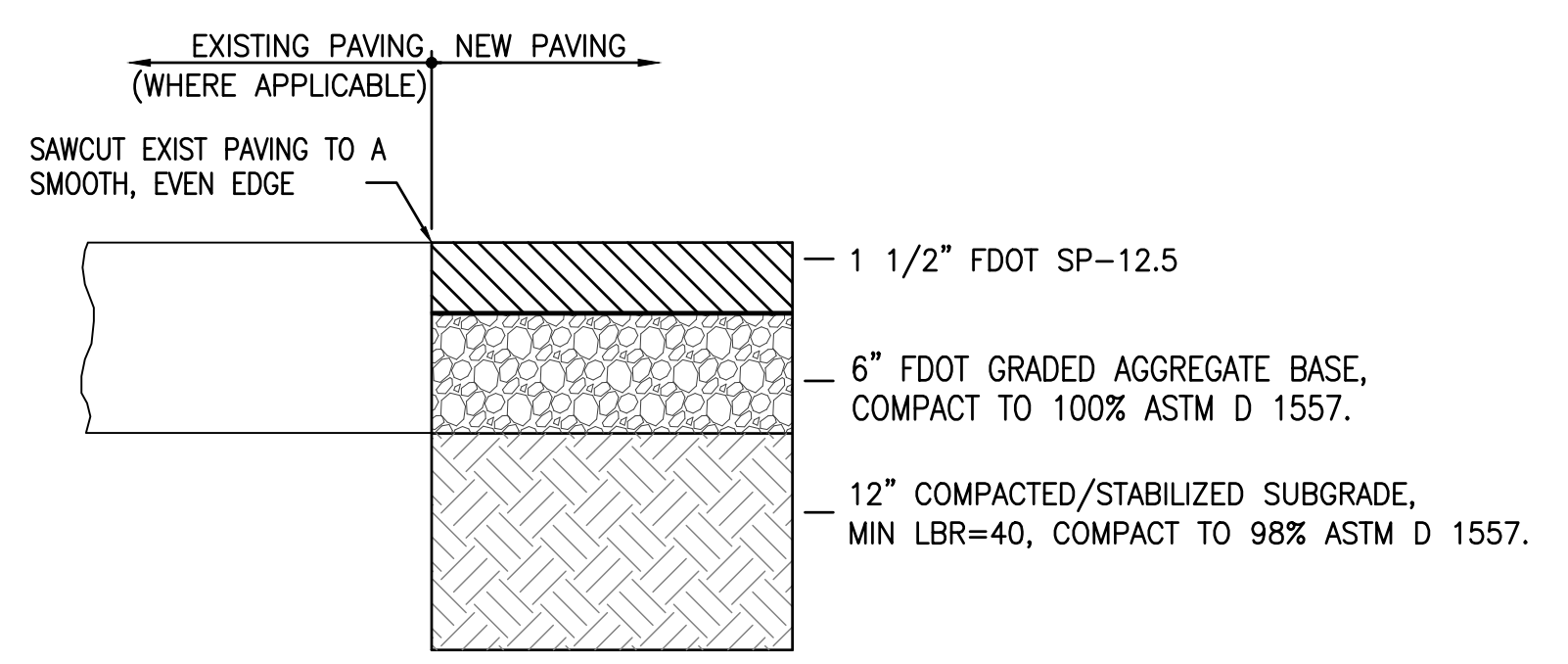
STA. 157+39.89 - 162+70.33 CRITICAL CROSS SECTIONS

SANTA ROSA FLORIDA

DRAWN BY: PLC
DESIGNED BY: RCK
CHECKED BY: RCK
DATE: 03/10/2021
SCALE: 1" = 10'
NOT FOR CONSTRUCTION
BY: DATE:

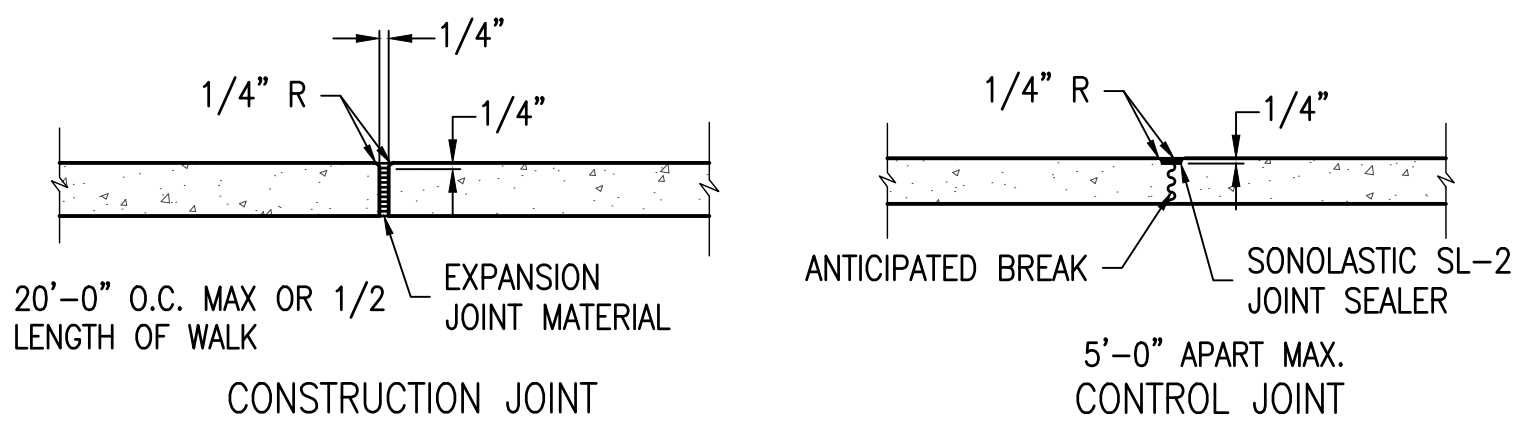
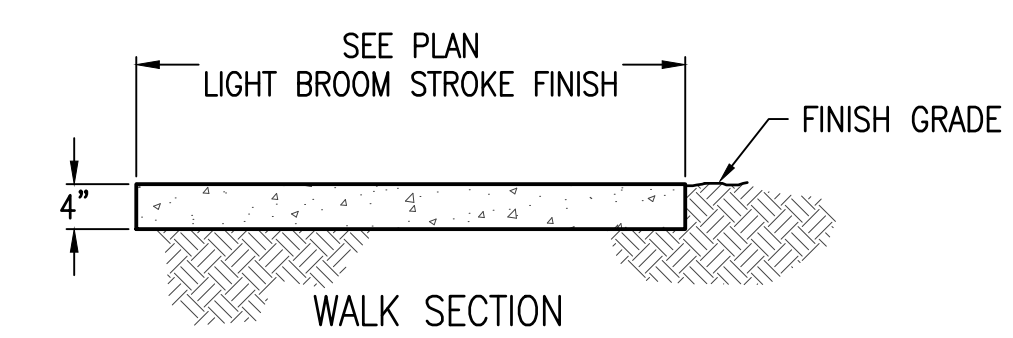
PROJECT NO: 2018-41
C316
SHEET: 57 OF 62

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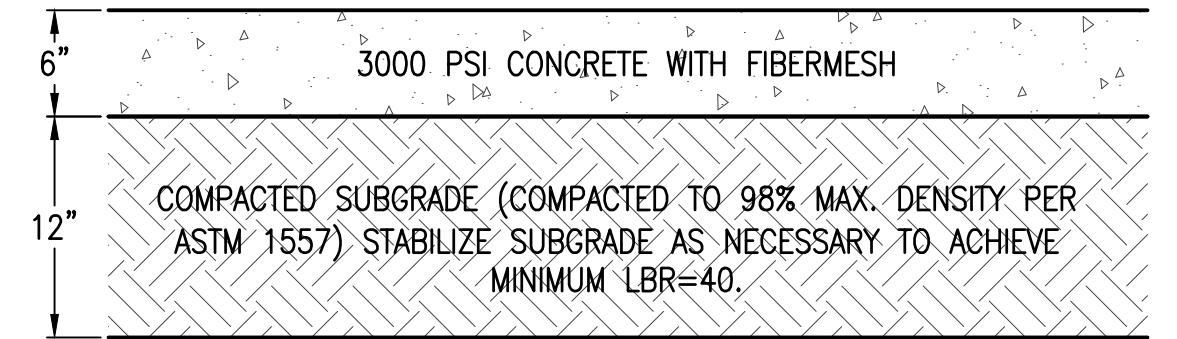


1 ASPHALT PAVEMENT SECTION
C501 NO SCALE

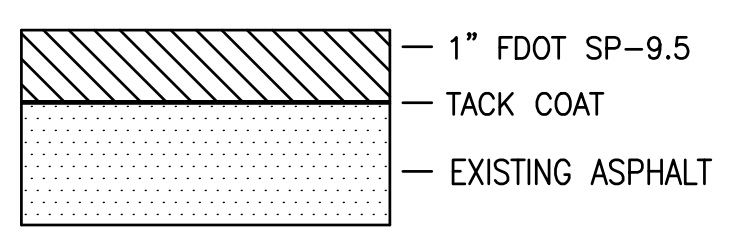
- NOTES:**
1. SAWED OR SCORED CONTROL JOINTS SHALL BE SPACED AT 5 FT. MAXIMUM INTERVALS.
 2. CONSTRUCT EXPANSION JOINTS WHERE NEW CONCRETE ABUTS NEW OR EXISTING CONCRETE CURBS, ASPHALT, OR OTHER STRUCTURES AND/OR ON 20 FT. CENTERS.
 3. JOINT SEALER TO BE FLEXIBLE EPOXY JOINTING COMPOUND, AS SPECIFIED.
 4. WALKWAY SLOPE VARIES, SEE PLANS. CROSS SLOPE NOT TO EXCEED 2%.
 5. 3000 PSI CONCRETE WITH FIBERMESH.



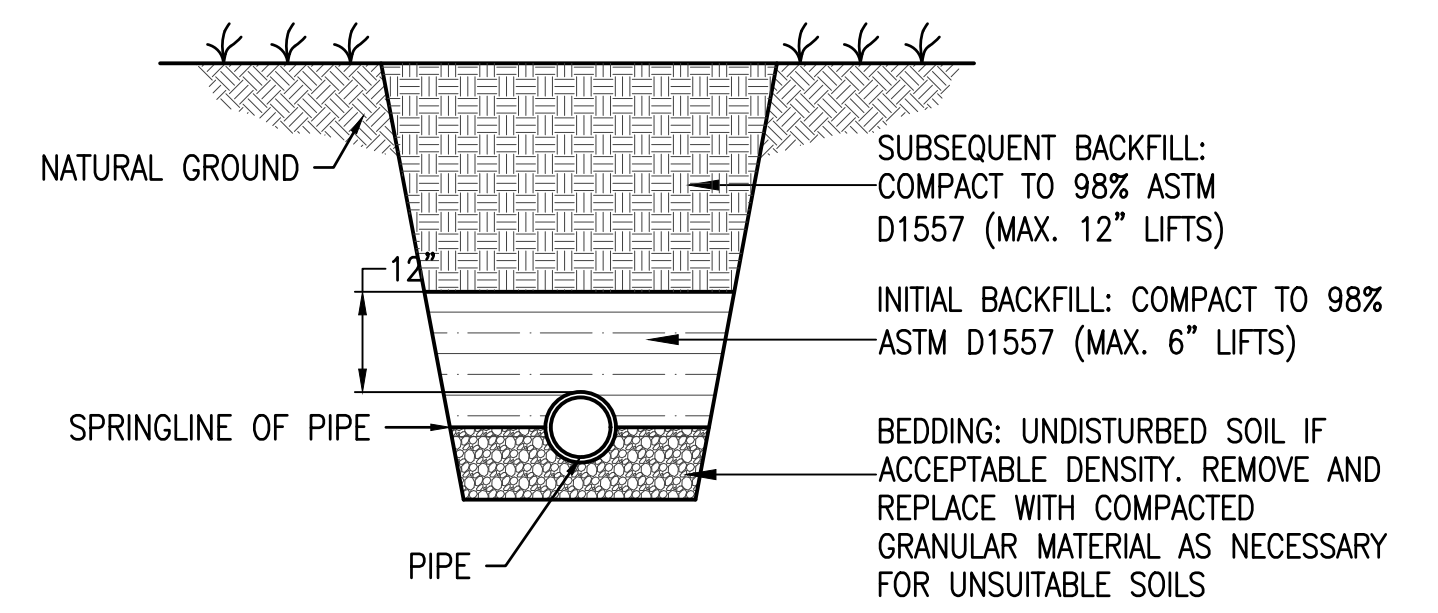
2 SIDEWALK DETAIL
C501 NOT TO SCALE



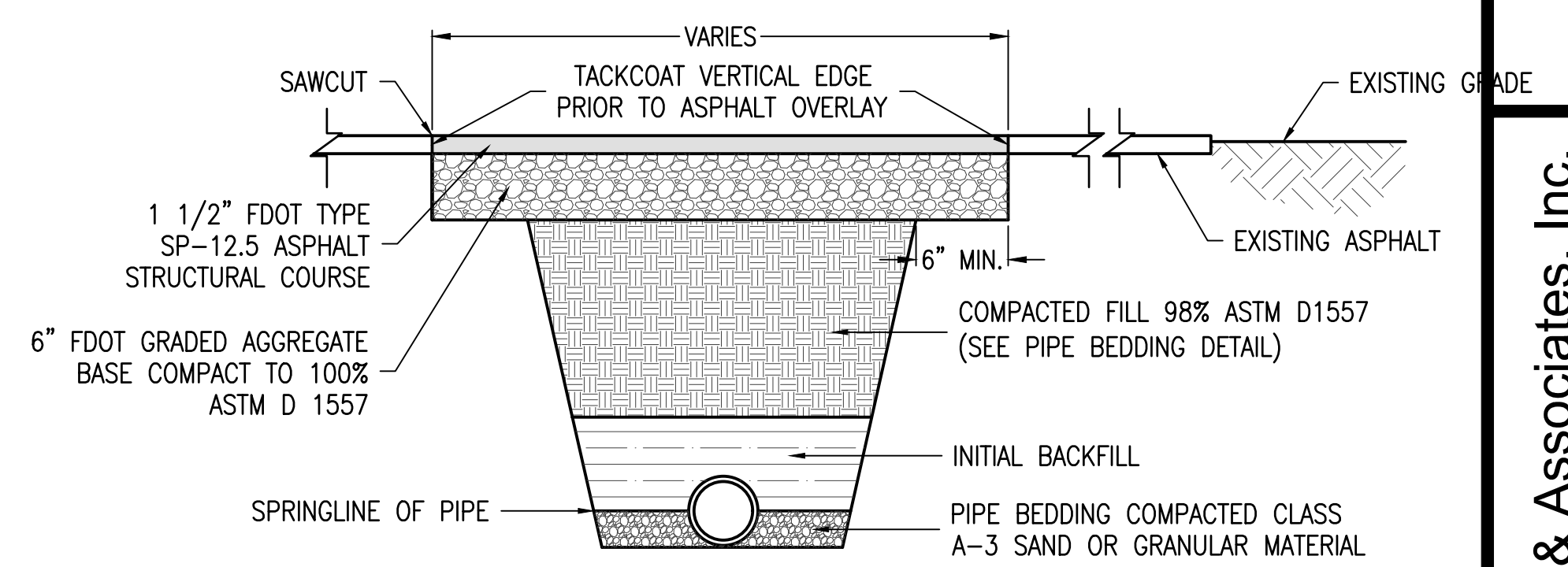
3 CONCRETE DRIVEWAY SECTION
C501



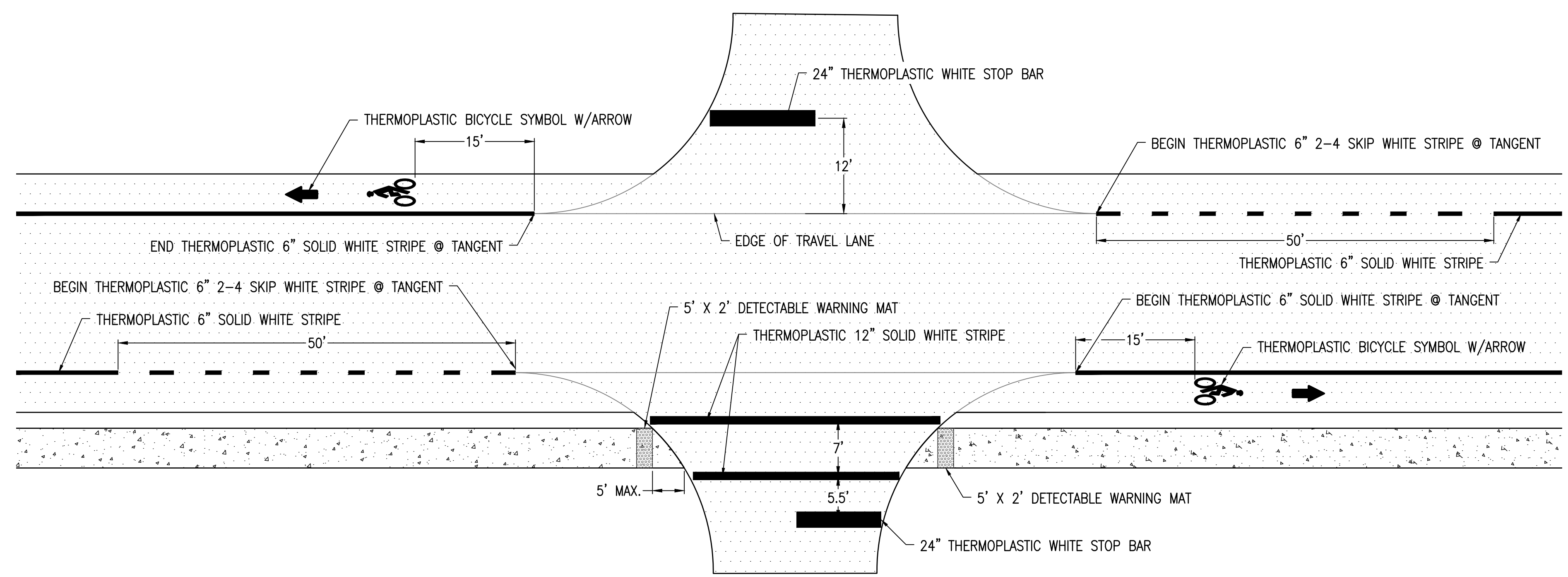
4 ASPHALT OVERLAY SECTION
C501 NO SCALE



5 PIPE BEDDING DETAIL
C501 NO SCALE



6 ASPHALT CUT AND PATCH DETAIL
C501 NO SCALE



7 INTERSECTION STRIPE DETAIL
C501 NOT TO SCALE

NO.	DATE	REVISIONS

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SRCC EDGEWOOD DRIVE
DRAINAGE AND ROADWAY IMPROVEMENTS

DETAILS

SANTA ROSA FLORIDA

DRAWN BY: PLC	DESIGNED BY: RCK	CHECKED BY: RCK	DATE: 03/10/2021	SCALE: N.T.S.	NOT FOR CONSTRUCTION
PROJECT NO: 2018-41					BY: DATE:
C501					
SHEET: 58 OF 62					

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STORM WATER POLLUTION PREVENTION PLAN

1.0 BACKGROUND & REQUIREMENTS:

1.1 Introduction:

The referenced support documentation for this Storm Water Pollution Prevention Plan (SWPPP) is the United States Environmental Protection Agency's (EPA) Storm Water Management for Construction Activities, Developing Pollution Prevention Plans and Best Management Practices Summary Guidance (EPA 833-R-92-001) and Storm Water Management for Construction Activities, Developing Pollution Prevention Plans and Best Management Practices (EPA 832-R-92-005). This SWPPP is designed to protect onsite and adjacent natural resources, including but not limited to, wetlands, marshes, bayous and bays, while preserving wildlife and archeological resources.

1.2 Notice of Intent (NOI):

Rule 62-621.300(4), FAC requires the construction operator of a site that disturbs one or more acres to obtain coverage from the Generic Permit for Stormwater Discharge from Construction Activities that Disturb Five or More Acres (CGP). The contractor is required to submit a Notice of Intent to Use Generic Permit for Stormwater Discharge from Construction Activities that Disturb One or More Acres (FDEP Form 62-621.300(4)(b)) along with the appropriate application fee to the following address 48 hours prior to commencing construction:

NPDES Stormwater Notices Center, MS # 2510
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

This form can be obtained from FDEP's website (www.dep.state.fl.us) or by contacting FDEP. Please note that the current application fee is \$150; however, this fee is subject to change without notice. Always refer to the most current version of Rule 62-4.050(4)(d), FAC to confirm the amount before submitting payment. If construction activity exceeds five years, the contractor must re-apply for coverage.

1.3 Stormwater Pollution Prevention Plan (SWPPP):

The contractor is required to certify this Stormwater Pollution Prevention Plan (SWPPP) below prior to submitting the NOI. This SWPPP is not required to be submitted with the NOI, but is required to be kept on site during all phases of construction. Because erosion and sediment controls and construction methods vary significantly from contractor to contractor, the contractor can propose alternative methods to this SWPPP that are equal or better at controlling erosion and sedimentation. At a minimum, the contractor must follow the erosion control plan specified in the construction plans and documents. Any modifications to this SWPPP must be documented and kept with the plan as part of the records keeping process to be in full compliance with the CGP.

1.4 Contractor's Certification:

I certify under penalty of law that I understand the terms and conditions of the general National Pollutant Discharge Elimination System (NPDES) permit that authorizes the storm water discharges associated with construction activity from the construction site identified as part of this certification.

Print & Sign Name Company & Address

Name & Title (Print)

Signature Date

Responsibilities (General Contractor, Site Contractor, Subcontractor, Other):

1.5 Notice of Termination (NOT):

The contractor is required to submit a Notice of Termination of Generic Permit Coverage (FDEP Form 62-621.300(6)) upon construction completion to discontinue permit coverage. The NOT is to be submitted to the following address:

NPDES Stormwater Notices Center, MS # 2510
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

This form can be obtained from FDEP's website (www.dep.state.fl.us) or by contacting FDEP. The NOT can not be submitted until all disturbed soils at the construction site have been finally stabilized and temporary erosion and sediment control measures have been removed or will be removed at an appropriate time. Final stabilization means that all soil disturbing activities at the site have been completed and that a uniform perennial vegetative cover with a density of 70 percent of the cover for unpaved areas and areas not covered by permanent structures has been established, or equivalent stabilization measures have been employed. If construction activity exceeds five years, the contractor must re-apply for coverage.

1.6 Application Information:

Project Address: Edgewood Dr.
Navarre, FL 32566

Latitude: N 30° 25' 26"
Longitude: W 86° 56' 51"

Water Management District: Northwest Florida (NWFWMD)

62-25 Permit No.: N/A

MS4 Operator Name:

Receiving Water Name: East Bay

2.0 SITE DESCRIPTION:

2.1 Nature of Construction Activities:

This project consists of construction adding bicycle paths and sidewalk to Edgewood Dr. along with upgrading the drainage.

2.2 Sequence of Major Soil Disturbing Activities:

The following sequence of major activities shall be followed unless the contractor can propose an alternative that is equal to or better at controlling erosion and sedimentation. The detailed sequence for the entire project can vary significantly from contractor to contractor. The contractor is responsible for documenting any changes.

- 1. Installation of all sediment and erosion control devices that can be placed prior to any major soil disturbances.
2. Clear and remove all existing vegetation in those areas where necessary. All remaining vegetation shall be properly protected and to remain in its natural state.
3. Immediate installation of all remaining sediment and erosion control devices.
4. Initiate construction of activities.
5. Upon completion of construction activities, provide restoration, fine grade remainder of site, and stabilize with temporary seeding.
6. Removal of appropriate temporary sediment and erosion control devices.

2.3 Area Estimates:

Total Area: 3.37 Ac.±

2.4 Runoff Data:

Project shall result in an addition of 52,263± sf of impervious area.

Soils Data:

Lakeland sand, 5 to 8 percent slopes
Troup sand, 0 to 5 percent slopes

2.5 Site Map:

The construction plans are to be used as the site maps. The location of the required information is described below. The sheet numbers for all the items discussed below are identified on the Cover Sheet of the construction plans.

- Drainage Patterns: No change in the existing drainage pattern shall occur as a result of this project's construction.
• Approximate Slopes: Existing slopes range from 0-5%. Final slopes shall be generally consistent with existing grades.
• Areas of Soil Disturbance: Soil disturbance is estimated to consist of XXX ± acres.
• Areas not to be Disturbed: Any areas not showing demolition work or permanent features are assumed not to be disturbed. It will be the contractor's responsibility to indicate on the plans any of these areas that do get disturbed as well as any areas used for staging and materials storage.
• Locations of Controls: It will be the contractor's responsibility to indicate on the plans all control locations.

- Areas to be Stabilized: Permanent stabilization is shown on the plans. It will be the contractor's responsibility to indicate the location on the plans of all temporary stabilization practices used during construction.
• Surface Waters: N/A

- Discharge Points: Stormwater discharge point will remain consistent with existing drainage pattern. Discharge to City property.

2.6 Receiving Waters:

Pensacola Bay is the receiving waters of the stormwater runoff from this project.

3.0 CONTROLS:

3.1 Erosion and Sediment Controls:

All erosion and sediment controls specified on these plans (limits of soil erosion and sedimentation control measures) shall be installed prior to any construction or demolition. Silt fencing and staked hay bales shall be installed along down-gradient limits to protect existing drainage structures and/or drainage systems from erosion and sedimentation.

Temporary seeding and mulching shall be applied after 14-day intervals of ceased disturbance activities that will exceed 20-day periods. Graded areas shall be stabilized with permanent seeding, mulching, and fertilizing, or sodding within five days of final grading. All grassing shall be accomplished between April 1st and August 1st. Landscaping, including sodding, shall be installed by an experienced Landscape Contractor. Proposed disturbed areas will not exceed 10 acres in any drainage area.

3.2 Stormwater Management:

See plan sheets C401 for stormwater collection as well as treatment and attenuation systems for the project.

3.3 Other Controls:

Waste Disposal: The contractor is responsible for all waste disposal from the site. The contractor shall employ waste disposal practices that meet all local, state, and federal guidelines and prevent discharge of solid materials to waters of the United States. The Contractor is responsible for documenting this portion of the SWPPP.

Offsite Vehicle Tracking: If off site tracking of sediments by construction vehicles occurs, the contractor is required to install a Soil Tracking Prevention Device (STPD) as per FDOT Standard Index 106 at all exits to the site where sediment tracking is occurring. The Contractor is also responsible for documenting this portion of the SWPPP.

4.0 MAINTENANCE:

Controls shall be kept in full operating condition throughout all phases of construction until all disturbed areas are completely stabilized. Maintenance, repair records and repair requests shall be documented. Repairs and deficiencies shall be completed as soon as possible and within seven days after inspection. Any required changes that are not covered in the SWPPP shall also be made as soon as possible within seven days and documented.

5.0 INSPECTIONS:

Qualified personnel shall inspect the following items, but not limited to, at least once every seven calendar days and within 24 hours of the end of a storm that is 0.25 inches or greater. Where sites have been finally stabilized, inspections shall be conducted at least once every month.

- Points of discharge to waters of the United States.
• Points of discharge to municipal separate storm sewer systems.
• Disturbed areas of the site that have not been finally stabilized.
• Areas used for storage of materials that are exposed to precipitation.
• Structural controls.
• Stormwater management systems.
• Locations where vehicles enter or exit the site.

6.0 NON-STORMWATER DISCHARGES:

The Contractor shall be responsible for reporting any hazardous substance spills that may equal or exceed a Reportable Quantity (RQ). Refer to EPA's List of Hazardous Substances and Reportable Quantities (EPA 40 CFR 302.4 & 117). This list can be obtained from EPA's website (www.epa.gov) or by contacting EPA. If an RQ release does occur the Contractor shall perform the following procedures:

- Notify the National Response Center immediately at 800-424-8802.
• Provide written description of the release within 14 days providing dates, cause and prevention methods to the regional EPA office.
• Modify the SWPPP as necessary to address added prevention methods.

7.0 IMPLEMENTATION CHECKLIST:

7.1 Records:

The Contractor shall maintain records of construction activities including, but not limited to:

- Dates when major grading activities occur.
• Dates when construction activities temporarily cease on a portion of the site.
• Dates when construction activities permanently cease on a portion of the site.
• Dates when stabilization measures are initiated on the site.

7.2 Inspection Reports:

The Contractor shall prepare inspection reports summarizing the following, but not limited to:

- Name of inspector.
• Qualifications of inspector.
• Measures/areas inspected.
• Observed conditions.
• Changes necessary to the SWPPP.

7.3 Releases of Reportable Quantities of Oil or Hazardous Materials:

The Contractor shall report any releases of reportable quantities of oil or hazardous materials if they occur as per the measures outlined in Section 6.0 of the SWPPP.

7.4 SWPPP Modification:

The Contractor shall modify the SWPPP as necessary to:

- Comply with minimum permit requirements when notified by FDEP that the plan does not comply.
• Address any changes in design, construction operations or maintenance, which has an effect on the potential for discharge of pollutants.
• Prevent recurrence of reportable quantity releases of hazardous material or oil.

8.0 TERMINATION CHECKLIST:

The following items shall be complete before submitting the NOT:

- All soil disturbing activities are complete.
• Temporary erosion and sediment control measures have been removed or will be removed at an appropriate time.
• All areas of the construction site not otherwise covered by permanent pavement or structure have been stabilized with uniform perennial vegetative cover with a density of 70% or equivalent measures have been employed.

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FL. CERTIFICATE OF AUTHORIZATION NO. 8268

SRCC EDGEWOOD DRIVE
DRAINAGE AND ROADWAY IMPROVEMENTS

SWPPP

SANTA ROSA FLORIDA

Table with 2 columns: Field (DRAWN BY, DESIGNED BY, CHECKED BY, DATE, SCALE, NOT FOR CONSTRUCTION, BY), Value (PLC, RCK, RCK, 03/10/2021, N.T.S., FOR CONSTRUCTION, DATE)

Table with 2 columns: Field (PROJECT NO., SHEET), Value (2018-41, 59 OF 62)

REVISIONS

NO. DATE

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STORMWATER POLLUTION PREVENTION PLAN GENERAL NOTES:

1. EROSION AND SEDIMENT CONTROL PRACTICES TO BE INSTALLED PRIOR TO ANY MAJOR SOIL DISTURBANCE, OR IN THEIR PROPER SEQUENCE, AND MAINTAINED UNTIL PERMANENT PROTECTION IS ESTABLISHED.
2. WORK AND MATERIALS TO BE IN ACCORDANCE WITH THE FDOT "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION", LATEST EDITION, SECTIONS 104, 570, 575 AND 980 TO 986.
3. SHOULD THE CONTROL OF DUST AT THE SITE BE NECESSARY, THE SITE WILL BE SPRINKLED UNTIL THE SURFACE IS WET, TEMPORARY VEGETATION COVER SHALL BE ESTABLISHED OR MULCH SHALL BE APPLIED IN ACCORDANCE WITH STATE STANDARDS FOR EROSION CONTROL.
4. SOIL WASHED, DROPPED, SPILLED OR TRACKED OUTSIDE THE LIMIT OF DISTURBANCE OR ONTO PUBLIC RIGHTS-OF-WAY WILL BE REMOVED IMMEDIATELY.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY EROSION OR SEDIMENTATION THAT MAY OCCUR BELOW STORMWATER OUTFALLS OR OFF SITE AS A RESULT OF CONSTRUCTION OF THE PROJECT.
6. SOIL STOCKPILES ARE TO BE TEMPORARILY STABILIZED IN ACCORDANCE WITH SOIL EROSION AND SEDIMENT CONTROL NOTE NUMBER 2 (ABOVE).
7. THE SITE SHALL ALWAYS BE GRADED AND MAINTAINED SUCH THAT STORM WATER RUNOFF IS DIVERTED TO SOIL EROSION AND SEDIMENT CONTROL FACILITIES.
8. AREAS USED FOR THE CONTRACTOR'S STAGING, INCLUDING BUT NOT LIMITED TO, TEMPORARY STORAGE OF STOCKPILED MATERIALS (E.G. CRUSHED STONE, QUARRY PROCESS STONE, SELECT FILL, EXCAVATED MATERIALS, ETC.), SHALL BE ENTIRELY PROTECTED BY A SILT FENCE ALONG THE LOW ELEVATION SIDE TO CONTROL SEDIMENT RUNOFF.
9. THE CONTRACTOR'S MEANS AND METHODS OF GROUNDWATER DEWATERING SHALL COMPLY WITH REGULATORY REQUIREMENTS FOR THE TEMPORARY DIVERSION OF GROUNDWATER AND ITS DISCHARGE, INCLUDING FDEP CHAPTER 62-621 "GENERAL PERMIT FOR THE DISCHARGE OF PRODUCED GROUNDWATER FROM ANY NON-CONTAMINATED SITE ACTIVITY". ANY COST ASSOCIATED WITH DEWATERING SHALL BE INCLUDED IN THE BID PRICE FOR THE ITEM REQUIRING SUCH.

DUST CONTROL

1. AREAS OF CLEARING AND EMBANKMENT AS WELL AS CONSTRUCTION HAUL ROADS SHALL BE TREATED AND MAINTAINED IN SUCH A MANNER AS TO MINIMIZE ANY DUST GENERATION.
2. CALCIUM CHLORIDE MAY BE APPLIED TO UNPAVED ROADWAY AREAS, ONLY, SUBJECT TO THE ENGINEER'S APPROVAL AND CONFORMANCE WITH FDOT STANDARD SPECIFICATIONS, SECTION 102-5, LATEST EDITION.

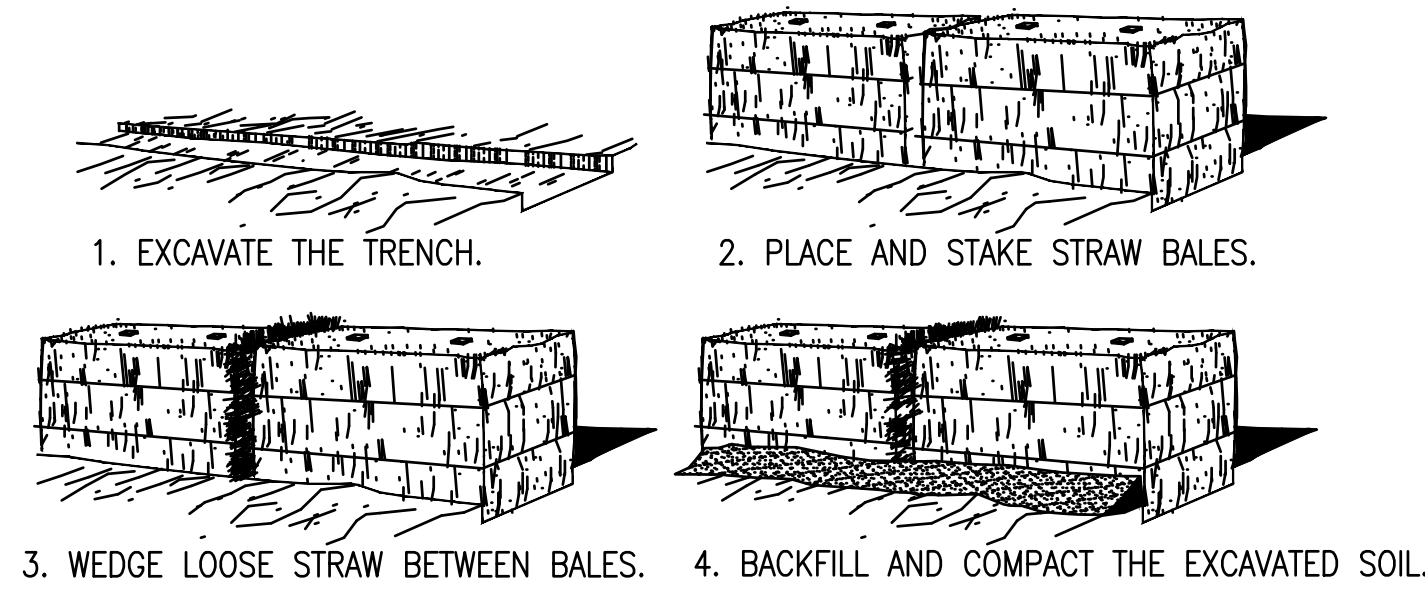
PROPOSED CONSTRUCTION

THIS PROJECT SHALL CONSIST OF THE CONSTRUCTION OF NEW STORMWATER MANAGEMENT SYSTEMS AND THE PROTECTION/RELOCATION OF EXISTING UTILITIES. THE CONSTRUCTION SHOULD PROCEED IN THE FOLLOWING MANNER:

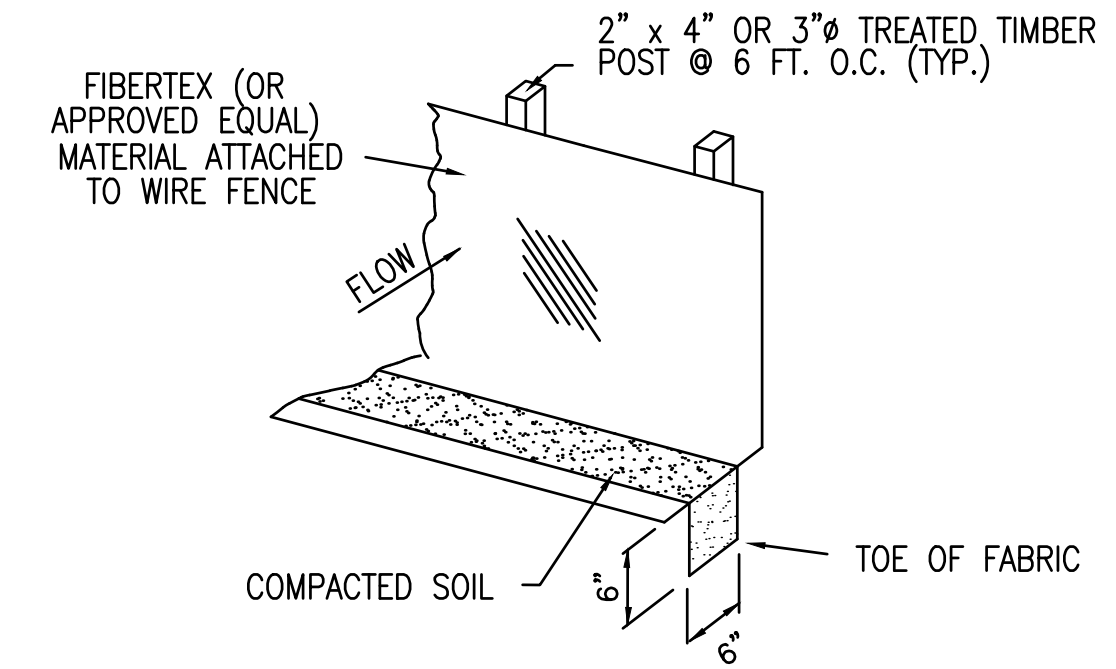
1. INSTALLATION OF SEDIMENT AND EROSION CONTROL DEVICES THAT CAN BE PLACED PRIOR TO ANY MAJOR SOIL DISTURBANCES.
2. CLEAR AND REMOVE EXISTING VEGETATION IN THOSE AREAS WHERE NECESSARY. REMAINING VEGETATION IS TO BE PROPERLY PROTECTED AND TO REMAIN IN ITS NATURAL STATE.
3. IMMEDIATE INSTALLATION OF REMAINING SEDIMENT AND EROSION CONTROL DEVICES.
4. INITIATE CONSTRUCTION
5. UPON COMPLETION OF CONSTRUCTION ACTIVITIES, PROVIDE RESTORATION, FINE GRADE REMAINDER OF SITE.
6. REMOVAL OF APPROPRIATE TEMPORARY SEDIMENT AND EROSION CONTROL DEVICES.

EROSION AND SEDIMENTATION CONTROL NOTES

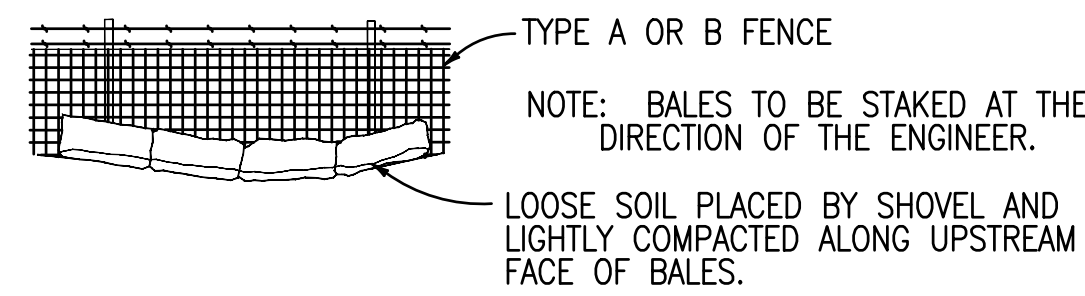
1. SILT FENCE SHALL BE PLACED IN A SINGLE ROW, LENGTHWISE ON THE CONTOUR, WITH ENDS OF ADJACENT FENCES TIGHTLY ABUTTING ONE ANOTHER PRIOR TO EARTHWORK OPERATIONS.
2. THE SILT FENCE BARRIER SHALL BE ENTRENCHED AND BACK FILLED. A TRENCH SHALL BE EXCAVATED THE LENGTH OF THE PROPOSED BARRIER TO A MINIMUM DEPTH OF 6 INCHES. THE EXCAVATED SOIL SHALL CONFORM TO THE GROUND LEVEL ON THE DOWNHILL SIDE AND SHALL BE BUILT UP TO 4 INCHES AGAINST THE UPHILL SIDE OF THE BARRIER.
3. SILT FENCE BARRIERS SHALL BE SECURELY ANCHORED.
4. SILT FENCE BARRIERS SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULNESS, BUT NOT BEFORE THE UPSLOPE AREAS HAVE BEEN PERMANENTLY STABILIZED.
5. SILT FENCE BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL.
6. CLOSE ATTENTION SHALL BE PAID TO THE REPAIR OF DAMAGED SILT FENCE, END RUNS AND UNDERCUTTING BENEATH FENCE.
7. NECESSARY REPAIRS TO SILT FENCE BARRIERS OR REPLACEMENT OF FENCE SHALL BE ACCOMPLISHED PROMPTLY.
8. SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH RAINFALL. THEY MUST BE REMOVED WHEN THE LEVEL OF DEPOSITION REACHES APPROXIMATELY ONE-HALF OF THE HEIGHT OF THE BARRIER.
9. SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE BARRIER IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEEDED.



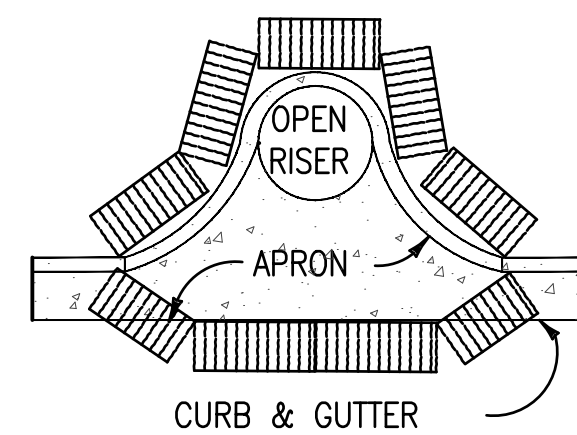
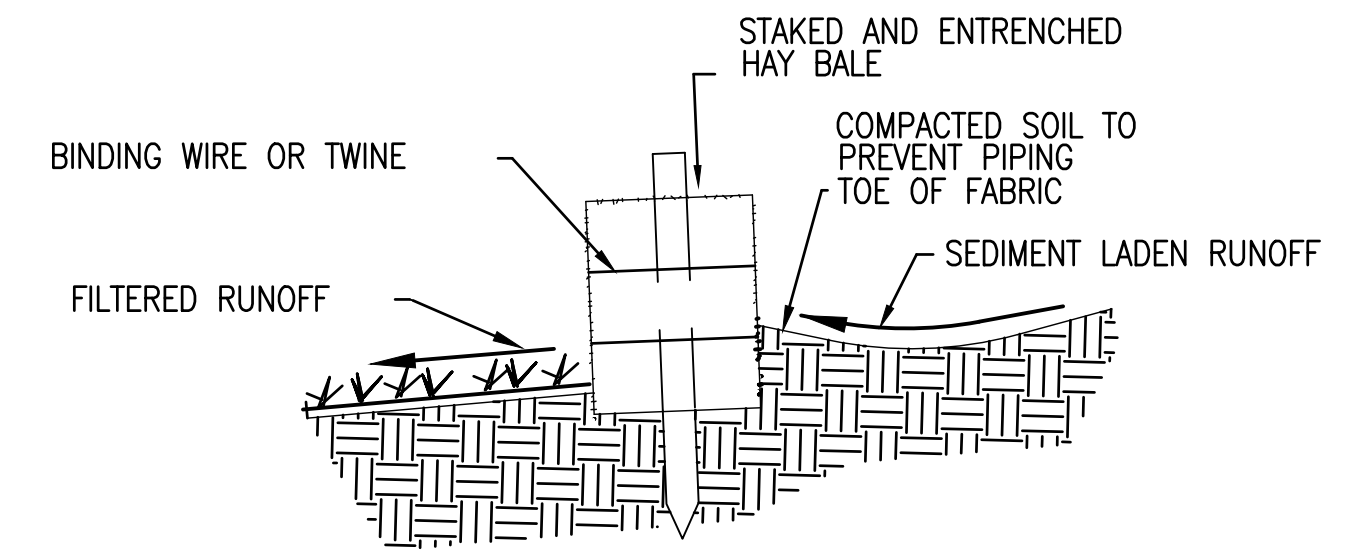
1 STRAW BALE BARRIER DETAIL
C502 NO SCALE



3 EROSION & SEDIMENTATION DETAILS
C502 NO SCALE



2 BALES BACKED BY FENCE
C502 NO SCALE



4 DETAIL OF PROTECTION AROUND INLETS AND SMALLER STRUCTURES
C502 NO SCALE

NO.	DATE	REVISIONS

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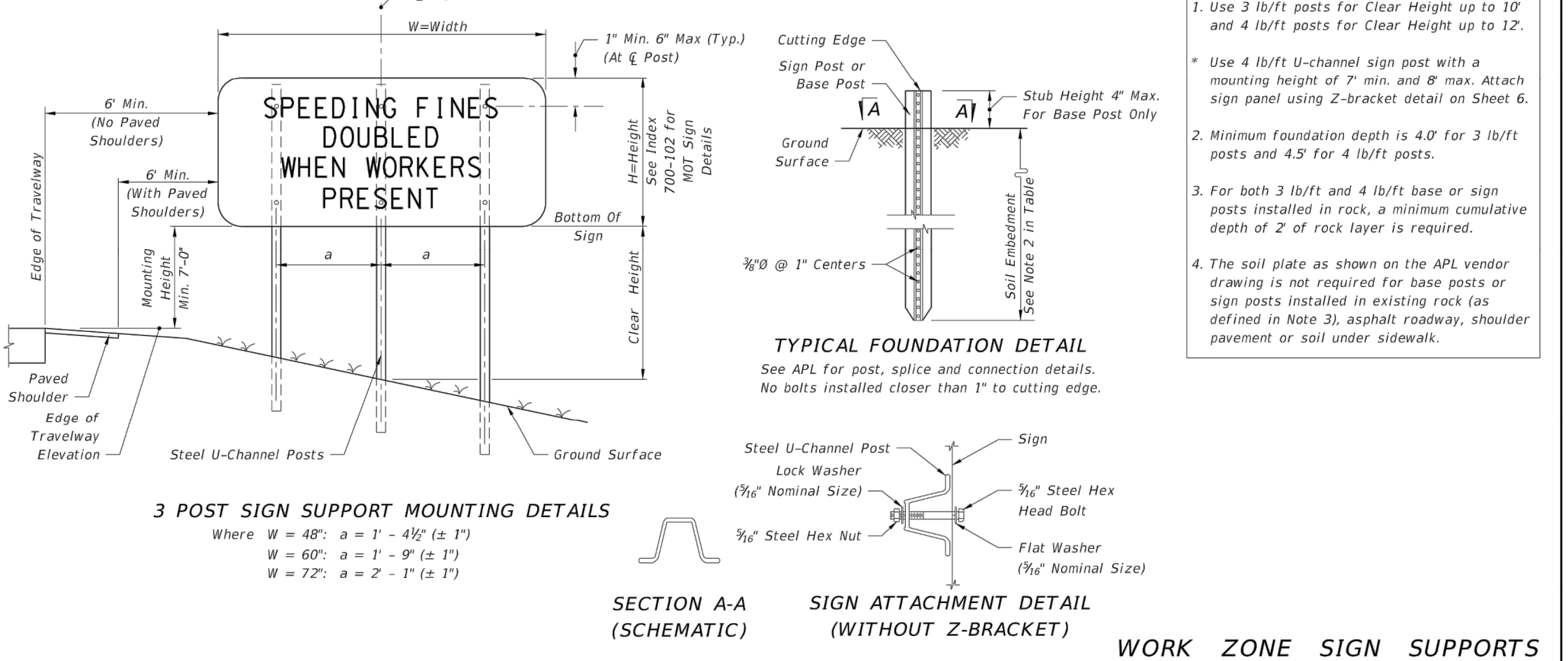
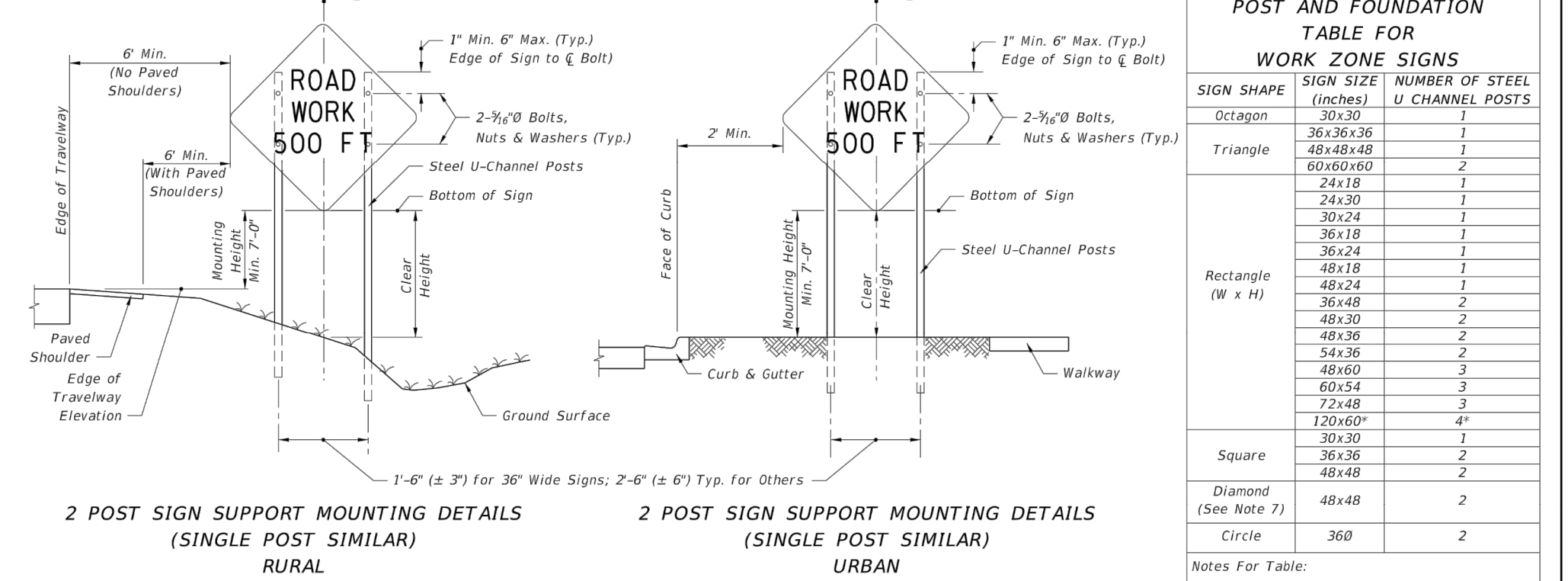
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SRCO EDGEWOOD DRIVE
DRAINAGE AND ROADWAY IMPROVEMENTS
EROSION CONTROL DETAILS
SANTA ROSA FLORIDA

DRAWN BY:	PLC
DESIGNED BY:	RCK
CHECKED BY:	RCK
DATE:	03/10/2021
SCALE:	N.T.S.
NOT FOR CONSTRUCTION	BY:
PROJECT NO:	2018-41
SHEET:	60 OF 62

TEMPORARY SIGN SUPPORT NOTES:

- All signs shall be post mounted when work operations exceed one day except for:
 - Road closure signs mounted in accordance with the vendor drawing for the Type III Barricade shown on the APL.
 - Pedestrian advanced warning or pedestrian regulatory signs mounted on sign supports in accordance with the vendor drawing shown on the APL.
 - Median barrier mounted signs per Index 700-013.
- Unless shielded with barrier or outside of the Clear Zone, signs mounted on temporary supports or barricades, and barricade/sign combination must be crashworthy in accordance with NCHRP 350 requirements and included on the Approved Products List (APL).
- Use only approved systems listed on the Department's Approved Products List (APL).
- Manufacturers seeking approval of U-Channel and steel square tube sign support assemblies for inclusion on the Approved Products List (APL) must submit an APL application, design calculations for square tube only, and detailed drawings showing the product meets all the requirements of this Index.
- Provide 3 lb/ft Steel U-Channel Posts with a minimum section modulus of 0.43 in³ for 60 ksi steel, a minimum section modulus of 0.37 in³ for 70 ksi steel, or a minimum section modulus of 0.34 in³ for 80 ksi steel.
- Provide 4 lb/ft Steel U-Channel Posts with a minimum section modulus of 0.56 in³ for 60 ksi steel, or a minimum section modulus of 0.47 in³ for 70 ksi or 80 ksi steel.
- U-channel posts shall conform with ASTM A 499, Grade 60, or ASTM A 576, Grade 1080 (with a minimum yield strength of 60 ksi). Square tube posts shall conform with ASTM A 653, Grade 50, or ASTM A 1011, Grade 50.
- Sign attachment bolts, washers, nuts, and spacers shall conform with ASTM A307 or A 36.
- For diamond warning signs with supplement plaque (up to 5' in area), use 4 lb/ft posts for up to 10 ft Clear Height (measure to the bottom of diamond warning sign).
- Install 4 lb/ft Steel U-Channel Posts with approved breakaway splice in accordance with the manufacturer's detail shown on the APL.
- The contractor may install 3 lb/ft Steel U-Channel Posts with approved breakaway splice in accordance with the manufacturer's detail shown on the APL.
- Install all posts plumb.
- The contractor may set posts in preformed holes to the specified depth with suitable backfill tamped securely on all sides, or drive 3 lb/ft sign posts and any size base post in accordance with the manufacturer's detail shown on the APL.



POST AND FOUNDATION TABLE FOR WORK ZONE SIGNS

SIGN SHAPE	SIGN SIZE (INCHES)	NUMBER OF STEEL U-CHANNEL POSTS
Octagon	30x30	1
Triangle	36x36x36	1
	48x48x48	1
	60x60x60	2
Rectangle (W x H)	24x18	1
	24x30	1
	30x24	1
	36x18	1
	36x24	1
	48x18	1
	48x24	1
	48x30	2
	48x36	2
	60x24	3
	60x30	3
	72x24	3
Square	120x60	4*
	30x30	1
	36x36	2
	48x48	2
Diamond (See Note 7)	48x48	2
Circle	360	2

Notes For Table:
 1. Use 3 lb/ft posts for Clear Height up to 10' and 4 lb/ft posts for Clear Height up to 12'.
 2. Minimum foundation depth is 4.0' for 3 lb/ft posts and 4.5' for 4 lb/ft posts.
 3. For both 3 lb/ft and 4 lb/ft base or sign posts installed in rock, a minimum cumulative depth of 2' of rock layer is required.
 4. The soil plate as shown on the APL vendor drawing is not required for base posts or sign posts installed in existing rock (as defined in Note 3), asphalt roadway, shoulder pavement or soil under sidewalk.

LAST REVISION	DESCRIPTION	INDEX	SHEET
11/01/18	FY 2019-20 STANDARD PLANS	102-600	5 of 12

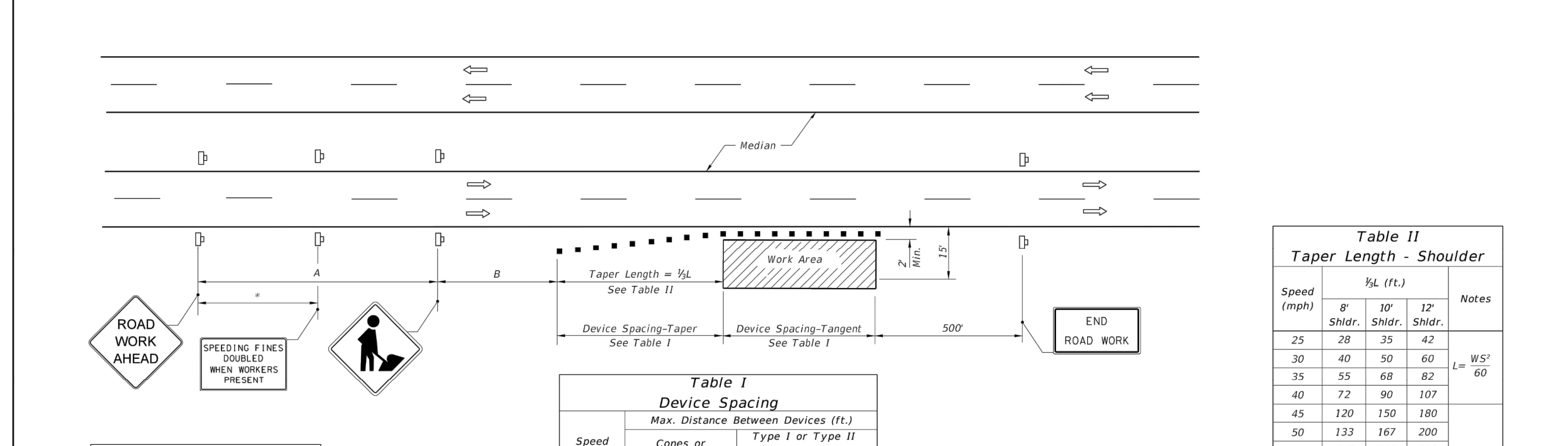


Table I Device Spacing

Speed (mph)	Max. Distance Between Devices (ft.)			
	Type I or Type II Tubular Markers		Type I or Type II Barricades or Vertical Panels or Drums	
	Taper	Tangent	Taper	Tangent
25	25	50	25	50
30 to 45	25	50	30	50
50 to 70	25	50	50	100

Table II Taper Length - Shoulder

Speed (mph)	L _s (ft.)			Notes
	8' Shldr.	10' Shldr.	12' Shldr.	
25	28	35	42	L _s = WS ² / 60
30	40	50	60	
35	55	68	82	L = WS
40	72	90	107	
45	120	150	180	S = minimum shoulder width.
50	133	167	200	
55	147	183	220	S = Posted speed limit (mph)
60	160	200	240	
65	173	217	260	
70	187	233	280	

GENERAL NOTES:

- When a high volume of work vehicles are entering and leaving the Work Area at speeds slower than 10 MPH below the posted speed, place an MOT-5-06 sign in the ROAD WORK AHEAD sign location and shift the ROAD WORK AHEAD sign upstream 500 ft.
- This TCZ plan also applies to work performed in the median more than 2' but less than 15' from the edge of travelway.
- When work is being performed on a multilane undivided roadway the signs normally mounted in the median (as shown) shall be omitted.
- WORKERS signs to be removed or fully covered when no work is being performed.
- SHOULDER WORK sign may be used as an alternate to the WORKER sign.
- When a side road intersects the highway within the TTC zone, additional TTC devices shall be placed in accordance with other applicable TCZ Indexes.
- For general TCZ requirements and additional information, refer to Index 102-600.

DURATION NOTES:

- Signs and channelizing devices may be omitted if all of the following conditions are met:
 - Work operations are 60 minutes or less.
 - Work in the work area has high-intensity, rotating, flashing, oscillating, or strobe lights operating.

CONDITIONS:

WHERE ANY VEHICLE, EQUIPMENT, WORKERS OR THEIR ACTIVITIES ENCRUCH ON THE AREA CLOSER THAN 15' BUT NOT CLOSER THAN 2' TO THE EDGE OF TRAVEL WAY.

LAST REVISION	DESCRIPTION	INDEX	SHEET
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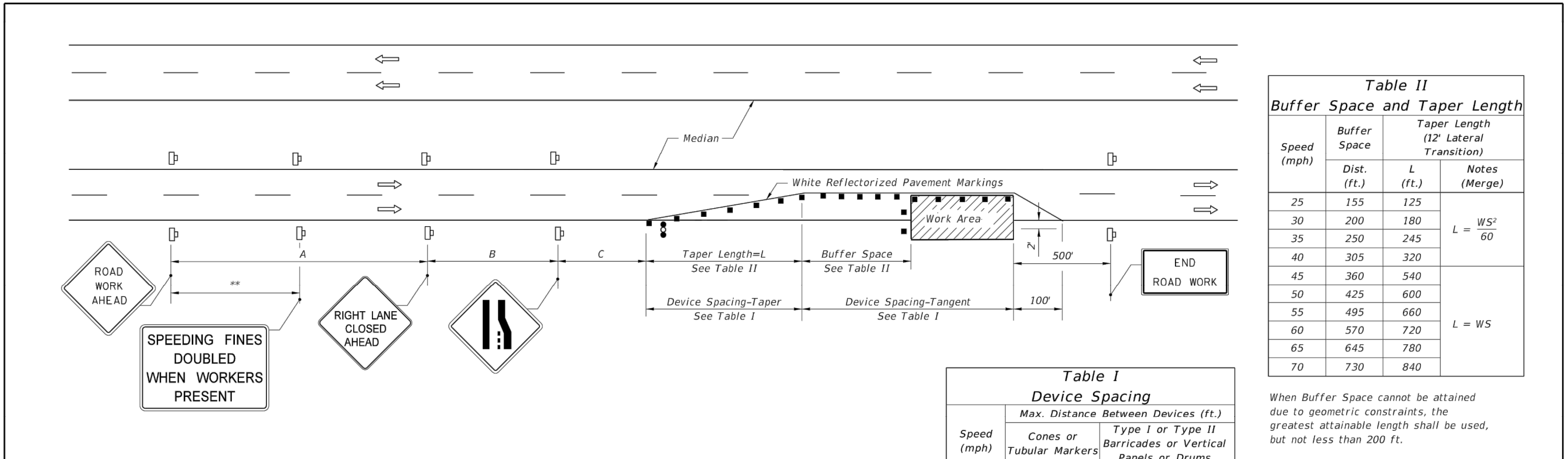


Table I Device Spacing

Speed (mph)	Max. Distance Between Devices (ft.)			
	Cones or Tubular Markers		Type I or Type II Barricades or Vertical Panels or Drums	
	Taper	Tangent	Taper	Tangent
25	25	50	25	50
30 to 45	25	50	30	50
50 to 70	25	50	50	100

Table II Buffer Space and Taper Length

Speed (mph)	Buffer Space (ft.)		Taper Length (12' Lateral Transition) (ft.)		Notes (Merge)
	Dist.	L	Dist.	L	
25	155	125	30	200	L = WS ² / 60
30	200	180	35	250	
40	305	320	50	425	L = WS
45	360	540	55	495	
50	425	600	60	570	S = Posted speed limit (mph)
55	495	660	65	645	
60	570	720	70	730	840
65	645	780			
70	730	840			

GENERAL NOTES:

- Work operations shall be confined to one traffic lane, leaving the adjacent lane open to traffic.
- On undivided highways the median signs as shown are to be omitted.
- When work is performed in the median lane on divided highways, the channelizing device plan is inverted and left lane closed and lane ends signs substituted for the right lane closed and lane end signs.

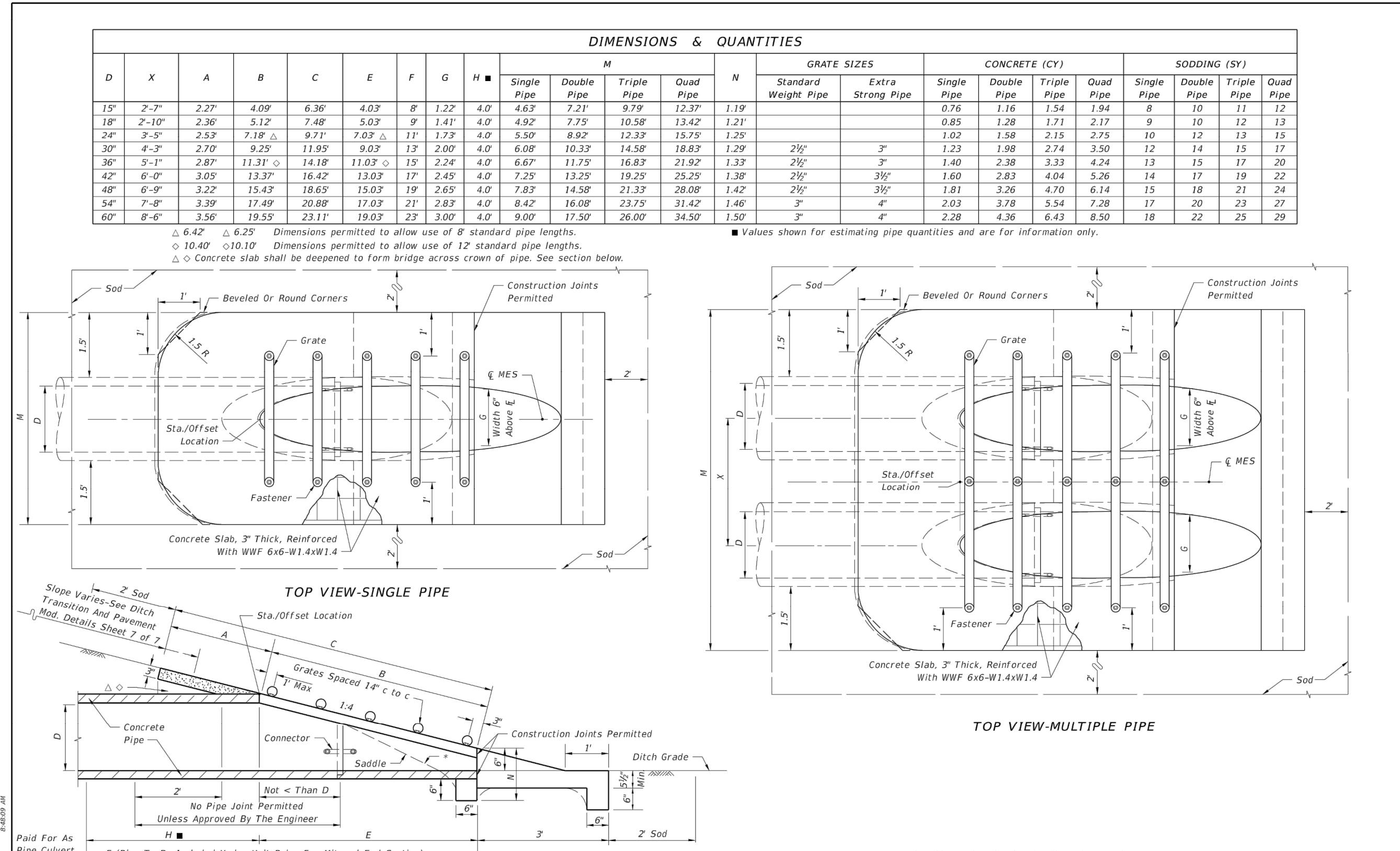
DURATION NOTES:

- Temporary white edgeline may be omitted for work operations less than 3 consecutive calendar days.
- For work operations up to approximately 15 minutes, signs, channelizing devices, arrow board, and buffer space may be omitted if all of the following conditions are met:
 - Speed limit is 45 mph or less.
 - No sight obstructions to vehicles approaching the work area for a distance equal to the buffer space and the taper length combined.
 - Volume and complexity of the roadway has been considered.
 - The closed lane is occupied by a class 5 or larger, medium duty truck(s) with a minimum gross weight vehicle rating (GVWR) of 16,000 lb with high-intensity, rotating, flashing, oscillating, or strobe lights mounted above the cab height and operating.
- For work operations up to 60 minutes, arrow board and buffer space may be omitted if conditions a, b, and c in DURATION Note 2 are met, and vehicles in the work area have high-intensity, rotating, flashing, oscillating, or strobe lights operating.

CONDITIONS:

WHERE ANY VEHICLE, EQUIPMENT, WORKERS OR THEIR ACTIVITIES ENCRUCH ON THE AREA CLOSER THAN 15' BUT NOT CLOSER THAN 2' TO EITHER SHOULDER AND THE AREA 2' OUTSIDE THE EDGE OF TRAVEL WAY.

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LAST REVISION	DESCRIPTION	INDEX	SHEET
11/01/17	FY 2019-20 STANDARD PLANS	430-022	1 of 7

REVISIONS

NO.	DATE	DESCRIPTION

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SRCO EDGEWOOD DRIVE
 DRAINAGE AND ROADWAY IMPROVEMENTS
FDOT INDEXES
 SANTA ROSA
 FLORIDA

NOT FOR CONSTRUCTION

DESIGNED BY: RCK	PLC
CHECKED BY: RCK	
DATE: 03/10/2021	
SCALE: N.T.S.	
DATE:	

PROJECT NO: 2018-41
 SHEET: 61 OF 62

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TREATMENTS FOR PROTECTION FROM CONCENTRATED ROADWAY RUNOFF EROSION AND SHOULDER RAVELING

Design Speed (mph)	Degree of Curve	Note:
30	7° Or Greater	Shoulder Pavement is required on all curves meeting the criteria tabulated. For curves not meeting the criteria, shoulders are to be paved where erosion of the shoulder is evident or anticipated.
40	5° Or Greater	
50	4° Or Greater	
60	3° Or Greater	
65	3° Or Greater	
70	2° Or Greater	

Design Speed (mph)	Degree of Curve	Note:
30	7° Or Greater	Shoulder Pavement is required on all curves meeting the criteria tabulated. For curves not meeting the criteria, shoulders are to be paved where erosion of the shoulder is evident or anticipated.
40	5° Or Greater	
50	4° Or Greater	
60	3° Or Greater	
65	3° Or Greater	
70	2° Or Greater	

TYPICAL SECTIONS FOR PLACEMENT OF SINGLE AND MULTI-COLUMN SIGN

GENERAL NOTES:

- Single-Column Signs Shown, Multi-Column Signs Similar. These typical sections serve as a guide for locating the traffic signs required under various roadside conditions. For size and details of sign construction and footing, refer to the appropriate Index and Plans.
- Verify the length of sign supports in the field prior to fabrication.
- Install ground signs at an angle of 1 to 4 degrees away from the traffic flow (see illustration). Install shoulder mounted signs rotated counterclockwise and median mounted signs rotated clockwise. Install signs on a curve as noted above from the perpendicular to the motorist line of sight.
- The setback for Stop and Yield signs may be reduced to 3' minimum from the edge of traveled way if required for visibility in business or residential sections with no curbs and speeds of 30 MPH or less.
- The mounting heights are measured from the bottom of the sign panel to a horizontal line extended from the Edge of Traveled Way or from the ground surface at the back of curb. If the standard heights cannot be met, the minimum heights are as follows:
 - 7' - Expressway & Freeway Systems Other Roadway Systems
 - 5' - Rural
 - 7' - Urban (including residential with parking and/or pedestrian activity)
- Expressway and Freeway Systems: If a secondary sign is mounted below the major sign, mount the major sign so that the bottom of the sign is at least 8' above the edge of the traveled way and the secondary sign at least 5' above the edge of the traveled way.
- Other Systems: Rural, mount the secondary sign at least 5' above the edge of the traveled way. Urban, mount the secondary sign at least 7' above the edge of the traveled way.
- Do not install sign supports in the bottom of ditches.
- Install sign supports so they do not reduce the accessible width of Sidewalks or Shared Use Paths to less than 4' min. clear width.

Design Speed (mph)	Degree of Curve	Note:
30	7° Or Greater	Shoulder Pavement is required on all curves meeting the criteria tabulated. For curves not meeting the criteria, shoulders are to be paved where erosion of the shoulder is evident or anticipated.
40	5° Or Greater	
50	4° Or Greater	
60	3° Or Greater	
65	3° Or Greater	
70	2° Or Greater	

TREATMENT I

TREATMENT II

COMPLETED SHOULDER

CRITERIA FOR USING TREATMENT I

- Project is resurfacing, widening and resurfacing or construction of shoulder pavement.
- Is rural or is urban without curb and gutter.
- Resurfacing build-up is less than 3".

CRITERIA FOR USING TREATMENT II

- Borrow must meet the requirements for a "Select" material in accordance with Index 120-001 and Specification 120.
- Borrow may be used in lieu of excavated turf and topsoil when economically feasible. There will be no additional payment for substituting borrow for excavated turf and topsoil.
- Special attention is to be directed at achieving the required Drop-Off at the edge of pavement, within the dimension range shown.
- Activities such as clearing, grading, and excavating that will disturb one or more acres of land require coverage under the Generic Permit for Stormwater Discharge from Large and Small Construction Activities from the Florida Department of Environmental Protection, and implementation of appropriate pollution prevention measures to minimize erosion and sedimentation and properly manage stormwater.
- Turf Establishment:
 - Wildflowers destroyed by shoulder sodding and turf operations are to be reestablished under the seeding rates prescribed for permanent wildflower #2 Group shown by table on Index 570-001.
 - Establish turf in accordance with Specification 570.

GENERAL NOTES

- Treatment I: If trenching under sod is necessary to achieve the required Drop-Off, excavated topsoil is to be used for filling voids and low areas at the edge of pavement or for flushing along the edge of sod. Excess material to be uniformly distributed over the shoulder.
- Treatment II: A. Borrow must meet the requirements for a "Select" material in accordance with Index 120-001 and Specification 120. B. Borrow may be used in lieu of excavated turf and topsoil when economically feasible. There will be no additional payment for substituting borrow for excavated turf and topsoil.
- Special attention is to be directed at achieving the required Drop-Off at the edge of pavement, within the dimension range shown.
- Activities such as clearing, grading, and excavating that will disturb one or more acres of land require coverage under the Generic Permit for Stormwater Discharge from Large and Small Construction Activities from the Florida Department of Environmental Protection, and implementation of appropriate pollution prevention measures to minimize erosion and sedimentation and properly manage stormwater.
- Turf Establishment:
 - Wildflowers destroyed by shoulder sodding and turf operations are to be reestablished under the seeding rates prescribed for permanent wildflower #2 Group shown by table on Index 570-001.
 - Establish turf in accordance with Specification 570.

PAVEMENT MARKINGS

NOTES FOR PAVEMENT MESSAGES:

- When an arrow and a pavement message are used together, locate the arrow a distance of "S" upstream from the pavement message. Measure the distance from the base of the arrow to the base of the pavement message. See the Pavement Message Spacing Table for "S" value.
- Place all pavement messages 25' back from the stop line.
- Dimensions are within 1/8".
- All grids are 4" x 4".
- All pavement messages must be white except route shields.
- Increase width of route shield for routes with three digits.

Posted Speed (mph)	Distance "S" (feet)
≤ 25	40
30 - 35	56
40 - 45	72
≥ 50	88

REVISIONS

NO.	DATE	DESCRIPTION

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FL. CERTIFICATE OF AUTHORIZATION NO. 9288

SRCCO EDGEWOOD DRIVE
DRAINAGE AND ROADWAY IMPROVEMENTS

FDOT INDEXES

SANTA ROSA FLORIDA

DRAWN BY: PLC	DESIGNED BY: RCK	CHECKED BY: RCK	DATE: 03/10/2021	SCALE: N.T.S.	NOT FOR CONSTRUCTION
PROJECT NO: 2018-41	C702	SHEET: 62 OF 62	DATE: 03/10/2021	BY: DATE:	

**Edgewood Drive Drainage
and Roadway Improvements**

**SECTION 02050
DEMOLITION**

PART 1-GENERAL

1.1 SUMMARY:

1.1.1. Demolition and removal of structures/slabs/pavement.

1.1.2. Required demolition is indicated on the drawings and is described herein.

1.2 RELATED WORK:

1.2.1. Clearing and Grubbing, Section 02100

1.2.2. Earthwork, Section 02200

1.3 QUALITY ASSURANCE:

1.3.1. Contractor Qualifications: Minimum of 5 years experience in demolition of comparable structures.

1.3.2. Requirements of Regulatory Agencies:

1.3.2.1. Comply with requirements of local ordinances.

1.3.2.2. Comply with requirements of local Public Health Authority

1.3.2.3. Comply with local utility companies and/or utility districts.

1.3.2.4. Comply with State and Federal regulations.

1.4 SUBMITTALS:

1.4.1. Certificates of severance of utility services.

1.4.2. Permit for transport and disposal of debris.

1.4.3. Demolition procedures and operational sequence for review by Owner's Representative.

1.5 JOB CONDITIONS:

1.5.1. Occupancy:

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**Edgewood Drive Drainage
and Roadway Improvements**

- 1.5.1.1. Adjacent structures will not be vacated during demolition activities.
- 1.5.1.2. Existing facility operations exist on adjacent parcels. Contractor shall maintain access to adjacent property owner at all times.

1.5.2. Existing Conditions:

- 1.5.2.1. After the project is begun, the Contractor is responsible for the condition of structures to be demolished. The owner does not warrant that the condition of structures to be demolished will not have changed since the time of inspection for bidding purposes.
 - 1.5.2.2. Contractor shall verify that demolition activities associated with utility removal do not impact adjacent property owner services.
- 1.5.3. Unforeseen Conditions: Should unforeseen conditions be encountered that affect design or function of project, the contractor shall report immediately to the engineer. While awaiting the engineer's response, reschedule operations if possible to avoid delay of overall project.
- 1.5.4. Protection: Erect erosion control devices to prevent sediment runoff.

1.6 MAINTAINING TRAFFIC:

- 1.6.1. Ensure minimum interference with roads and streets. Maintain safe access to adjacent facilities at all times. Any closure must have prior approval of the County Engineer.
- 1.6.2. Do not close or obstruct streets, sidewalks, alleys or passageways without permission from authorities having jurisdiction. See Clearing, Grubbing, and Stripping, Section 02100.

PART 2 - EXECUTION:

- 2.1 SCHEDULE: Do not commence work until conditions are acceptable to Owner's Representative.
- 2.2 PREPARATION:
 - 2.2.1. Arrange for shut off, and verify termination of utility services to include removing meters and capping lines.
 - 2.2.2. Protect items scheduled to remain for Owner.

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**Edgewood Drive Drainage
and Roadway Improvements**

2.2.3. Disconnect and cap indicated utilities before starting demolition operations.

2.2.4. Identify location of capped utilities on project record documents.

2.3 DEMOLITION:

2.3.1. Sprinkle debris to limit dust to lowest practicable level.

2.3.2. Break concrete and masonry into sections less than 3 ft. in any dimension.

2.3.3. Remove on-grade and covered slabs and appertained structures as shown on drawings.

2.3.4. Completely remove below grade construction, including foundation and above grade signs and footings.

2.3.5. Removal of water, sewer, electric, and gas lines shall be coordinated and according to local utility districts or companies.

2.4 FILLING BELOW GRADE AREAS AND VOIDS:

2.4.1. Below-grade areas and voids resulting from demolition of structures which occur in areas scheduled for new construction or pavements shall be filled or excavated further, as appropriate, according to requirements specified elsewhere in these specifications.

2.4.2. Areas not scheduled for new construction or pavements shall be filled according to requirements specified in this section.

2.4.3. Completely fill below-grade areas and voids resulting from demolition of structures.

2.4.4. Use only clean, non-frozen, and approved soil material, stone, gravel, or sand that is free from deleterious materials.

2.4.5. Do not place fill on saturated or frozen grade, frost, or deleterious material.

2.4.5. Place fill materials in 6 inch loose lifts and compact at optimum moisture content to original density of adjacent ground.

2.4.7. Grade completed surface to drain and to meet adjacent contours.

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**Edgewood Drive Drainage
and Roadway Improvements**

2.5 DISPOSAL:

2.5.1. Remove demolition debris daily.

2.5.2. Burning will not be permitted on project site.

2.5.3. Transport demolition debris to off-site and dispose of in a legal manner.

2.6.1 MEASUREMENT AND PAYMENT: Demolition shall be measured for payment by lump sum. Compensation for lump sum will include furnishing all materials, labor, equipment, tools, permits, and incidentals required to accomplish all work in accordance with the plans and these specifications.

END OF SECTION 02050

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**Edgewood Drive Drainage
and Roadway Improvements**

**SECTION 02100
CLEARING, GRUBBING, AND STRIPPING**

PART 1-GENERAL

- 1.1 DESCRIPTION: This Section describes the work included in clearing, grubbing, stripping, and otherwise preparing the project site for construction operations.
- 1.2 EXISTING TREES AND SHRUBBERY: Existing trees, shrubbery, and other vegetative material may not be shown on the drawings. Inspect the site as to the nature, location, size, and extent of vegetative material to be removed or preserved, as specified herein. Trees located directly on the right of way line are to remain.
- 1.3 CLEARING AND GRUBBING LIMITS: All excavation and embankment areas associated with new structures, slabs, roadway and general grading areas which are disturbed shall be cleared and grubbed.

PART 2 - EXECUTION

- 2.1 PRESERVATION OF EXISTING TREES, SHRUBS, AND OTHER PLANT MATERIAL
 - 2.1.1 All plant materials (trees, shrubbery, and plants) beyond the limits of clearing and grubbing shall be saved and protected from damage resulting from work- No filling, excavating, trenching, or stockpiling of materials will be permitted within the drip line of these plant materials. The drip line is defined as a circle drawn by extending a line vertically to the ground from the outermost branches of a plant or group of plants. To prevent soil compaction within the drip line area, no equipment will be permitted within this area.
 - 2.1.2 When trees are close together, restrict entry to area within drip line by fencing. In areas where no fence is erected, the trunks of all trees 2 inches or greater in diameter shall be protected by encircling the trunk entirely with boards held securely by 12-gauge wire and staples. This protection shall extend from ground level to a height of 6 feet. Cut and remove tree branches where such cutting is necessary to effect construction operation. Remove branches other than those required to effect the work to provide a balanced appearance of any tree. Sears resulting from the removal of branches shall be treated with tree sealant.
- 2.2 CLEARING AND GRUBBING
 - 2.2.1 Clearing and grubbing shall be performed in the areas indicated and where required to provide adequate work space areas, including ditches, where fill will be placed and where structures will be erected, and including spaces for control stakes and hubs for pipeline

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Edgewood Drive Drainage and Roadway Improvements

work. Should such items be damaged, they shall be replaced in kind or restored to at least as good condition as that in which they were found immediately before the work was begun, at the expense of the Contractor and to the satisfaction of the Engineer.

- 2.2.2 All weeds, rubbish and all other obstructions resting on or protruding through the surface of existing ground, shall be collected and satisfactorily disposed of as specified herein and in compliance with the applicable laws and regulations. All such material shall be removed to a depth of one foot below finish grade.
- 2.2.3 Where excavation is performed within areas cleared and grubbed, all stumps, roots over one inch in diameter, and deleterious material thereby exposed shall be removed to a depth of one foot below the excavated surface.
- 2.2.4 Where debris is removed from areas other than those where subsequent excavation, filling, and grading will be done, no depressions shall be left, but the resulting holes shall be filled and neatly graded to conform to the grades indicated on the drawings.

2.3 STRIPPING

- 2.3.1 Areas to be Stripped: All excavation and embankment areas associated with new structures, slabs, walks, and roadway shall be stripped. Stockpile areas shall be stripped.
- 2.3.2 Stripping: Remove and dispose of all organic sod, topsoil, grass and grass roots, and other objectionable material remaining after clearing and grubbing from the areas designated to be stripped.

2.4 DISPOSAL OF CLEARING AND GRUBBING DEBRIS

- 2.4.1 All material removed in clearing and grubbing shall be removed from the project site and disposed of as promptly as practical and shall not be left until the completion of the Contract.
- 2.4.2 Combustible clearing and grubbing materials from the site maybe burned in accordance with all local laws, codes, and ordinances. All necessary permits for burning shall be secured by the Contractor at his own expense. In the event permits for burning are denied for whatever reason the Contractor shall be responsible for disposing, clearing and grubbing material at a suitable city, county or private dump in accordance with all applicable laws and regulations. All dumping charges are to be paid by the Contractor.
- 2.4.3. The use of herbicides or blasting in clearing and grubbing is specifically prohibited.

END OF SECTION 02100

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**Edgewood Drive Drainage
and Roadway Improvements**

**SECTION 02200
EARTHWORK**

PART1-GENERAL

- 1.1 SCOPE: The work under this section includes the furnishing of all labor, materials, tools and equipment necessary to complete the earthwork shown on the drawings and specified herein, including rough grading.
- 1.2 GENERAL REQUIREMENTS:
- 1.2.1 Bidders shall examine the site of the work and make their own determination of the character of materials and the conditions to be encountered on the work, and their proposal shall be based upon their own investigations. Neither the Owner nor the Engineer shall be held responsible for variations found to exist between any soils data which may be included for information only, and actual field conditions that develop through the period of construction.
- 1.2.2 Underground structures and utilities shown on the drawings are located according to the best available records. However, it shall be the Contractor's responsibility to acquaint himself with all information and to locate all underground structures and utilities along the line of work in order to avoid conflict with existing facilities. Neither the Owner nor the Engineer shall be held responsible for the inaccuracies or omissions in the location or grade of facilities of this type.
- 1.2.3 Where actual conflicts are unavoidable, work shall be performed so as to cause as little interference as possible with the service rendered by the facility disturbed. Facilities or structures damaged in the prosecution of the work shall be repaired immediately at the Contractor's expense, in conformance with the best standard practice, to the satisfaction of the facility owner and to the extent required, including replacement.
- 1.2.4 Benchmarks and other reference points shall be carefully maintained and, if disturbed or destroyed by the Contractor, shall be replaced by a Professional Surveyor registered to practice in the State of Florida, to the satisfaction of the Engineer and at no additional cost to the Owner. Location of benchmarks and other reference points not shown on the drawings but used during construction shall be recorded on the Contractor's "as-builts" of the Contract Drawings.
- 1.2.5 On paved surfaces the Contractor shall not use or operate tractors, bulldozers, or other power operated equipment which would damage such surfaces. All surfaces which have been damaged by the Contractor's operations shall be restored to a condition at least equal to that in which they were found immediately before work was begun. Suitable materials

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**Edgewood Drive Drainage
and Roadway Improvements**

and methods as determined by the Engineer shall be used for such restoration.

- 1.2.6 Soil boring data, including groundwater elevations or conditions, are presented only for informational purposes. Data indicates certain conditions found and is limited to the exact locations and dates recorded. The inclusion of such data shall not be interpreted as an indication of conditions that may actually be encountered throughout the period of construction.

PART 2 - EXECUTION

2.1 STRIPPING AND STOCKPILING TOPSOIL

- 2.1.1 Topsoil suitable for final grading operations shall be stripped and stockpiled for reuse. Unsuitable material shall be removed from the site and disposed of in a manner satisfactory to the Engineer at no additional cost to the Owner.
- 2.1.2 The Owner reserves the right to claim and use for his own benefit all excess spoil material.

2.2 GRADING

- 2.1.2 Grade all areas as indicated. Fill shall be brought to finish grades shown and shall be graded to drain to positive outfall.

- 2.2.2 Overall Area Grading for Which No Grades are Indicated:
Within the limits of construction and outer limits of clearing and grubbing, all holes and other depressions shall be filled, all mounds and ridges cut down, and the area brought to sufficiently uniform control so that the Owner's subsequent mowing operation will not be hindered by irregular terrain. This work shall be done regardless of whether the irregularities were the result of the Contractor's operations or originally existed.

2.3 EXCESS MATERIAL:

- 2.3.1 Excess excavated material suitable for reuse as backfill, shall be immediately disposed of by the Contractor on site as directed by the Engineer or Owner, and at no additional cost to the Owner. Material shall be spread and graded in such a manner as to drain properly and not disturb existing drainage conditions.
- 2.3.2 Excess excavated material not suitable as reuse for backfill shall be immediately removed from the site and disposed of by the Contractor at no expense to the Owner.

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**Edgewood Drive Drainage
and Roadway Improvements**

- 2.4 UNSUITABLE MATERIAL: If unsuitable material is encountered, the Contractor shall immediately notify the Engineer. The Engineer shall arrange for an independent soils testing firm to define the limits of and quantify the unsuitable material to be removed and replaced. Contractor shall be responsible for the removal, disposal and replacement of unsuitable material. Wet materials will not be considered unsuitable and it is the Contractor's responsibility to dry suitable materials as necessary for use at the site.
- 2.5 DUST CONTROL: Dust control, if arises, will be the contractors responsibility. If, in the opinion of Owner or the Engineer, it is necessary to control dust from time to time during the progress of work, the Contractor shall use water trucks and/or furnish and spread calcium chloride at the site of the work as directed by the Engineer at no additional cost to the Owner.
- 2.6 SILTATION AND EROSION: The Contractor shall take steps and make suitable provisions to minimize siltation and erosion which may result from, or as a result of, his operations during the course of construction of this project. All siltation and erosion control shall be in strict accordance with applicable local, state, and federal requirements. The contractor shall be responsible for removing all erosion control barriers upon completion of the work.
- 2.7 COMPACTION: Refer to cover sheet of plans for density requirements.
- 2.8 TESTING: Testing shall comply with the requirements of paragraph 3.15 of Section 02215 entitled "Excavation, Backfill, and Compaction".

END OF [SECTION 02200](#)

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**Edgewood Drive Drainage
and Roadway Improvements**

**SECTION 02215
EXCAVATION, BACKFILL, AND COMPACTION**

PART1-GENERAL

- 1.1 DESCRIPTION: This section includes materials, testing, and installation of earthwork for excavations, fills and embankments for structures, pavements, rights-of-way, and trench excavating, backfilling, and compacting for underground pipelines and appurtenant structures.
- 1.2 STANDARDS:
- 1.2.1 Determine the density of soil in place by the sand cone method, ASTM D 1556, by nuclear methods, ASTM D2922; or by the rubber balloon method, ASTM D2167.
- 1.2.2 Determine laboratory options moisture-density relations of cohesive soils by ASTM D1557 (modified Proctor).
- 1.2.3 Sample backfill materials by ASTM D75.
- 1.2.4 For cohesive soils, "relative density" is the ratio, expressed as a percentage, of the in-place dry density to the laboratory maximum dry density as determined by ASTM D 1557 (modified Proctor).
- 1.2.5 Determine the relative density of non-cohesive soils by ASTM D2049.
- 1.3 DEFINITIONS:
- 1.3.1 Subgrade: The undisturbed material immediately below the bottom of an excavation, below an area of fill, or below a structure.
- 1.3.2 Excavation: Removal of earth or buried material, either temporarily or permanently, as specified or as necessary for construction of the project.
- 1.3.3 Over-excavation: Excavation exceeding that specified or shown on the plans.
- 1.3.4 Backfill: Earth material placed permanently in an excavated area.
- 1.3.5 Fill: Earth material placed permanently above the existing grade.
- 1.3.6 Borrow: Earth material brought from off the site to be used as fill or backfill.

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**Edgewood Drive Drainage
and Roadway Improvements**

- 1.3.7 Structural Backfill: Backfill placed beneath structures and in over-excavated areas
- 1.3.8 Structures: Buildings, foundations, and other man-made, stationary features above or below ground.

PART 2 - PRODUCTS

2.1 BACKFILL AND FILL

2.1.1 For Structures: Backfill and fill shall be clean soils that is free from clay balls containing no more than 10% by weight passing the No. 200 sieve. The gradation of this granular material shall be such as to achieve the specified compaction.

2.1.2 For pipe and appurtenance structures, conform as follows:

2.1.2.1 First Lift: From the excavation grade to a level 12 inches below the top of the pipeline. Exclude material with fragments larger than the following:

Pipe Type	Fragment Size (Greatest Dimension-Inches)
-----------	--

Concrete, steel, cast or ductile iron and corrugated metal	2
--	---

Polyvinyl Chloride (PVC) and Polyethylene (PE)	1/2
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2.1.2.2 Second Lift: From the top of the First Lift to the ground surface. Exclude material with fragments larger than six inches.

2.1.3 In the event there is insufficient satisfactory material from the excavation to meet the requirements for backfill or fill material, obtain borrow which meets the requirements for backfill material from sources secured by the Contractor,

2.2 STRUCTURAL BACKFILL: Structural backfill shall be free from clay balls and shall conform to ASTM D1241, Type 1, Gradation B.

2.3 WATER FOR COMPACTION: Water shall be free of acid, alkali, or organic materials and shall have a pH of 7.0 to 9.0. Provide all water needed for earthwork. Provide temporary piping, valves, and trucks to convey water from the source to the point of use. Provide any meters

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required if the water is taken from a public water system.

PART 3 - EXECUTION:

- 3.1 DEWATERING: Provide and operate equipment adequate to keep excavations free of water. Dewater subgrade to a minimum of 3 feet below the bottom of the excavation. Remove water during periods when concrete is being deposited, when pipe is being laid, during the placing of backfill, and for proper inspection and/or testing of the exposed subgrade. These provisions shall apply during the noon hour as well as overnight. Do not drain trench water through the pipeline under construction. Avoid settlement or damage to adjacent property. Dispose of water in a manner that will not damage adjacent property or interfere with normal drainage. When dewatering open excavations, dewater from outside the structural limits and from a point below the bottom of the excavation. Obtain and comply with all required discharge permits from appropriate regulatory authorities.
- 3.2 EXCAVATION:
- 3.2.1 Excavate to the elevations shown on the drawings, to the bottom elevations of the slabs, structures, and foundations or the bottom of the roadway subbase (top of subbase if only to be compacted), whichever is the lowest elevation.
- 3.2.2 Perform all excavation regardless of the type, nature, or condition of the material encountered to accomplish the construction. Excavate for foundations to a point 5' horizontally behind the outside face of footings and base mats.
- 3.2.3 After the excavation has been completed, the Owner or his representative will observe the exposed subgrade to determine the need for any additional excavation. It is intended that additional excavation be conducted in all areas where unacceptable material is encountered and as directed by the engineer. Refill the over-excavated areas with structural backfill. All such over-excavation and refilling shall be executed in accordance with a change order. Payment for over-excavation and refill shall be made in accordance with the Standard General Conditions. No payment will be made by the Owner for over-excavation of wet subgrade materials. It shall be the Contractor's responsibility to dry wet subgrade materials as necessary for proper compaction and stabilization.
- 3.2.4 Do not carry excavation for footings, slabs, or conduits deeper than the elevations shown on the plans. Backfill over-excavations below the elevations shown to the proper elevation with compacted structural backfill material. Correct cuts below grade by similarly cutting adjoining areas and creating a smooth transition.

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- 3.2.5 The Contractor will not receive any additional payment for over-excavation or refill material used for his convenience or which is not authorized by the Owner or his representative.
 - 3.2.6 The Contractor shall acquaint himself with existing conditions and locate all structures and utilities within the project area in order to avoid conflicts.
 - 3.2.7 Protect any pipes, conduits, wires, mains, footings or other underground structures encountered in trenching/excavating/backfilling from damage or displacement. Replace any pipes, conduits, wires, mains, footings or other structures disturbed during construction.
 - 3.2.8 Contact all utility companies with underground utilities in the project area and obtain their assistance in locating facilities prior to excavation.
 - 3.2.9 Excavate sufficiently in advance of pipe laying to discover obstructions in time to modify alignment, if necessary, to avoid the conflict. The Owner or his representative must review and approve such alignment modifications before they are encountered.
- 3.3 PREPARATION OF SUBGRADE PRIOR TO PLACING FOUNDATIONS: Excavate and shape subgrade to line, grade, and cross section. Remove soft material encountered and replace with structural backfill. Fill holes and depressions to the required line, grade, and cross sections with structural backfill. The finished subgrade shall be within a tolerance of ± 0.08 feet of the grade and cross section shown, smooth and free from irregularities, and at the specified relative density.
- 3.4 PREPARATION FOR PLACING FILL OR BACKFILL:
- 3.4.1 Remove loosened and disturbed materials at the subgrade.
 - 3.4.2 Remove any form materials and trash before placing fill or backfill. Obtain the specified compressive strength and finish of concrete work before backfilling.
 - 3.4.3 Do not operate earthmoving or excavation equipment within five feet of existing structures or newly completed structures. Place and compact fill or backfill adjacent to concrete walls with hand-operated tampers or other equipment that will not damage the structure.
 - 3.4.4 Fill or backfill around water-holding basins and channels only after specified leakage tests have been conducted.

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3.5 COMPACTION:

3.5.1 Unless otherwise specified or shown on the drawings, areas outside pipe trenches must meet the following compaction requirements.

3.5.1.1 Structural Backfill: 98% relative density in 6-inch maximum layers.

3.5.1.2 Subgrade Underfill or Backfill: 95% relative density to a depth of 12 inches.

3.5.1.3 Subgrade Under Structural Backfill or Structures: 95% relative density to a depth of 24 inches.

3.5.1.4 Backfill or Fill Under Pavement: 98% relative density in 6-inch maximum layers.

3.5.1.5 All Other Areas: 95% relative density in 9-inch maximum layers.

3.5.2 Compact by using methods acceptable to the Engineer (powered tampers, vibrators, etc.). Compact the first 2 feet of backfill over pipe either by hand-operated tampering devices or with powered equipment which will not damage the pipe. Flooding or puddling with water to consolidate backfill is not acceptable, except where sand is encountered and the specified density can be obtained using this method.

3.5.3 During the compacting operations, maintain material within $\pm 2\%$ of optimum moisture. Aerate material containing excessive moisture by blading, discing, or harrowing to hasten the drying process.

3.5.4 Pipe and Appurtenant Structures: Unless otherwise shown on the drawings or otherwise described in the specifications for the particular type of pipe installed, compact soil in pipe trenches to the following minimum:

3.5.4.1 First Lift: 95% relative density.

3.5.4.2 Second Lift not Beneath Paving: 90% relative density.

3.5.4.3 Second Lift in Paved Areas and Under Structures: 98% relative density.

3.5.4.4 Refill for Over-excavation: 95% relative density.

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3.6 SHEETING, SHORING, AND BRACING OF TRENCHES:

- 3.6.1 Install adequate sheeting and bracing to prevent damage to property and injury to persons. Comply with all applicable safety regulations and laws.
- 3.6.2 Remove sheeting when the trench has been backfilled to at least one-half its depth or when removal will not endanger proper pipe alignment or support.
- 3.6.3 When conditions or plans and specifications require that sheeting be left in place, cut off the top at an elevation 2.5 feet below finished grade, unless otherwise specified.

3.7 SIDEWALK, PAVEMENT AND CURB REMOVAL: Cut and remove bituminous and concrete pavements, curbs and sidewalks prior to excavation of the trenches. Width of the pavement or brick pavement cut shall be at least one foot wider than the required width of the trench at ground surface unless otherwise specified on the plans. Haul pavement and concrete materials from the site to disposal site secured by Contractor. Do not use for trench backfill.

3.8 TRENCHING:

- 3.8.1 Cut trenches to a minimum width equal to the outside diameter of the pipe at the joint plus eight inches for unsheeted trenches, or 12 inches for sheeted trenches. The maximum width of trench, measured at the top of the pipe, shall not exceed the outside pipe barrel diameter plus two feet, unless otherwise shown on the plans or details.
- 3.8.2 Maintain vertical trench walls from the bottom of the trench to a line measured 12 inches above the top of the pipe.
- 3.8.3 Utility Bedding: The minimum utility bedding allowable shall consist of a shaped trench bottom which provides firm bedding for the utility pipe. Bed the pipe in undisturbed firm soil of hand-shaped unyielding material, so that the pipe will be in continuous contact therewith for its full length and provide a minimum bottom segment support for the pipe equal to 0.6 of the outside diameter of the barrel. All bedding materials and installation for pipe shall be in accordance with the manufacturer's recommendations.
- 3.8.4 Construct special bedding as called for on the plans or in the contract documents as recommended by the pipe manufactures.
- 3.8.5 Excavate the trench to the lines and grades shown on the drawings with allowance for pipe thickness and for pipe base or special bedding. If the trench is excavated below the required grade, refill any part of the trench excavated below the required grade at no additional cost to the Owner. Place the refilling material over the full width of trench in

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compacted layers not exceeding six inches deep to the established grade with allowance for the pipe base or special bedding.

- 3.8.6 During trench excavation, place the excavated material only within the project area. Do not obstruct any roadways or streets. Conform to federal, state, and local codes governing the safe loading of trenches with excavated material.
- 3.8.7 Limit the length of open trench to 800 feet in advance of pipe laying or amount of pipe that maybe installed in one working day. Complete backfilling and temporary or first layer paving not more than 1200 feet in the rear of pipe laying.
- 3.9 **TRENCH EXCAVATION IN BACKFILL AND FILL AREAS:** Construct trench excavation for pipe, pipes, or conduit in backfill or fill areas in accordance with the following procedures:
 - 3.9.1 Construct and compact the backfill or fill to an elevation of one foot minimum over the top of the pipe or conduit to be installed.
 - 3.9.2 Excavate trench in the compacted backfill or fill. Place pipe base material, install pipe or conduit, and backfill to 12 inches above the pipe as specified for the type of pipe used. Compact backfill above this point to the same relative density as the adjacent embankment.
- 3.10 **STRUCTURAL BACKFILL:** Place structural backfill where specified and in over-excavation areas, to the lines and grades shown or specified. Compact each layer. Stop structural backfill at least 6 inches below finished grade in all areas where topsoil is to be replaced. Moisten material as necessary to aid compaction.
- 3.11 **TRENCH BACKFILLING:**
 - 3.11.1 Excavate bell holes at each joint to permit proper assembly and inspection of the entire joint.
 - 3.11.2 Backfill for non-plastic pipe and appurtenant structures in accordance with the following procedures:
 - 3.11.2.1 After pipe has been bedded, place "First Lift" material simultaneously on both sides of the pipe, keeping the level of backfill the same on each side. Carefully place the material around the pipe so that the pipe barrel is completely supported and that no voids or uncompacted areas are left beneath the pipe.

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Place material on the underside of the pipe in such a manner as to prevent lateral movement during subsequent backfilling.

3.11.2.2 Compact material placed within 12 inches of the outer surface of the pipe by hand tamping only.

3.11.2.3 Push the backfill material carefully onto the backfill previously placed in the "First Lift". Do not permit free fall of the material until at least two feet of cover is provided over the top of the pipe. Do not drop sharp, heavy pieces of material directly onto the pipe or the tamped material around the pipe.

3.11.3 Place backfill material in maximum 12 inch layers and compact each lift to the specified relative density.

3.12 SITE WORK

3.12.1 Shape the surface of earthwork to conform to lines, grades and cross sections that existed prior to beginning work or as shown on the drawings, within 1/10 of a foot. Round tops of banks to circular curves to not less than a 6-foot radius. Neatly and smoothly trim rounded surfaces. Do not over-excavate backfill to achieve the proper grade.

3.12.2 Remove excess, unsuitable, or cleared material resulting from the facility installation from the work site and dispose of at locations secured by the Contractor.

3.13 DRAINAGE, EROSION AND SEDIMENTATION: Maintain all existing drainage patterns and control run-off from the construction area to prevent erosion, sedimentation, or flooding due to the construction.

3.14 PROTECTION OF PROPERTY

3.14.1 Protect the trunks of trees adjacent to this work by enclosure with padding or wood. Operate excavating machinery with care to prevent damage to trees, particularly to overhanging branches and limbs.

3.14.2 Do not cut branches, limbs and roots unless they are within six inches of the facility under construction. Make all necessary cuts smoothly and neatly without splitting or crushing. Neatly trim and cover the tree with healing paint at all cut or damaged portions.

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- 3.14.3 Do not cut or operate on paved surfaces any equipment with treads or wheels which will cut or otherwise damage paved surfaces. Provide adequate protective measures to avoid damages to the paved surfaces.
- 3.14.4 As promptly as practicable, restore existing property or structures. Do not leave restoration until the end of the construction period.

3.15 TESTING

- 3.15.1 Field density tests will be made in each vertical layer, and using the following approximate spacing.
 - 3.15.1.1 Under structures and slabs, one per 2500 square feet with at least two per structure or area.
 - 3.15.1.2 In trenches, one every 300 feet in continuous trenches under pavements or future pavements plus one at each intersection or one every 500 feet in continuous trenches not under pavements, plus one at each pavement of driveway crossing.
 - 3.15.1.3 Under pavements (including widening areas), one every 500 feet for each lane.
- 3.15.2 If any field density tests are below the specified relative density, re-compact or re-excavate, re-backfill and re-compact the area until the specified density is obtained. Make a minimum of two field density tests per re-compacted and/or re-excavated area, but do not exceed the spacing specified above.

END OF SECTION 02215

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**SECTION 02500
SITE DRAINAGE**

PART 1 - GENERAL

- 1.1 SCOPE: The work under this section includes the furnishing of all labor material and equipment required to provide proper drainage of the site.
- 1.2 GENERAL REQUIREMENTS:
- 1.2.1 Pipe sizes shown on the drawings are based on concrete pipe with a coefficient of roughness based on Florida Department of Transportation Standards.
- 1.2.2 All workmanship, materials, equipment and plant shall be in accordance with the applicable portions of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, latest edition, and referred to hereinafter as Standard Specification. The specific sections of the above mentioned specifications which are applicable are listed below.

PART 2 - MATERIALS

- 2.1 CONCRETE PIPE:
- 2.1.1 Pipe: Concrete pipe for culverts shall conform to Section 449 of the Standard Specifications. All pipe shall be Class III unless otherwise noted on the drawings.
- 2.1.2 Sealing Joints: The joints of new pipe shall be sealed by use of round rubber gaskets as provided in Paragraph 430-7 of the Standard Specifications.
- 2.2 DRAINAGE STRUCTURES: Structures, including mitered end sections, shall be used where shown on the drawings and constructed in accordance with the details shown. Concrete shall be in accordance with Division III of the Standard Specifications.
- 2.3 POLYVINYL CHLORIDE PIPE:
- 2.3.1 Smooth Wall: Drainage pipe may be smooth wall PVC pipe in sizes ranging from 12 inches through 36 inches and conforming with AWWA C 900 or AWWA C 905, ASTM D 3034, minimum DR of 25.
- 2.3.2 Corrugated or Ribbed: Drainage pipe maybe corrugated ribbed PVC pipe with exterior ribs perpendicular to the axis ofthe pipe and in sizes ranging from 12 inches through 48 inches. Pipe shall conform to ASTM F 794 or ASTM F 949. Acceptable manufactures shall include Ultra-Rib, as manufactured by Extrusion Technologies, Inc., Contech A-2000 corrugated PVC sewer pipe, as manufactured by Contech Construction Products, Inc., or approved equal.

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2.4 POLYETHYLENE CORRUGATED PIPE:

- 2.4.1 Drainage pipe may be high density polyethylene corrugated exterior/smooth interior pipe in sizes 12 inches through 36 inches and conforming with AASHTO M294, Type S. Material shall meet ASTM D 1248 Type III Category 4, Grade P33, Class C; or ASTM D3350CeUClassification324420C. Minimum conveyance factor shall be a Manning "n" value of 0.010. Acceptable manufacturer shall be Hi-Q, as manufactured by Hancor, Inc., N-12 polyethylene pipe, as manufactured by Advanced Drainage Systems, Inc., or approved equal.
- 2.4.2 Couplings and Fittings: Coupling bands shall cover at least one full corrugation on each section of pipe. When gasketed coupling bands are required, the gasket shall be made of closed-cell synthetic expanded rubber meeting the requirements of ASTM D 1056, Type 2. Gaskets shall be installed on the coupling band by the pipe manufacturer. All coupling bands shall meet or exceed the soil-tightness requirement of the AASHTO Standard Specification for Highway Bridges, Section 23, Paragraph 23.3.1.5.4(e). Pipe fittings shall conform to AASHTO M294.

2.5 MANHOLES:

- 2.5.1 Precast Concrete Manholes: ASTM C 478, precast reinforced concrete, of depth indicated with provision for rubber gasket joints.

Base Section: 6-inch minimum thickness for floor slab and 4-inch minimum thickness for walls and base riser section, and having a separate base slab or base section with integral floor.

- 2.5.1.1. Riser Sections: 4-inch minimum thickness, 48-inch diameter, and lengths to provide depth indicated.
- 2.5.1.2. Top Section: Eccentric cone type, unless concentric cone or flat-slab-top type is indicated. Top of cone to match grade rings.
- 2.5.1.3. Grade Rings: Provide 2 or 3 reinforced concrete rings, of 6 to 9 inches total thickness and match 24-inch diameter frame and cover.
- 2.5.1.4. Gaskets: ASTM C 443, rubber.

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- 2.5.1.5. Steps: Cast into base, riser, and top sections sidewall at 12-to 16-inch intervals.
- 2.5.1.6. Pipe Connectors: ASTM C 923, resilient, of size required, for each pipe connecting to base section.
- 2.5.1.7. Channel and Bench: Concrete.
- 2.5.2 Cast-in-Place Manholes: Reinforced concrete of dimensions and with appurtenances indicated.
 - 2.5.2.1. Bottom, Walls, and Top: Reinforced concrete.
 - 2.5.2.2. Channel and Bench: Concrete.
 - 2.5.2.3. Steps: Cast into sidewall at 12- to 16-inch intervals.
- 2.5.3 Manhole Steps: Wide enough for an adult to place both feet on one step and designed to prevent lateral slippage off the step.

Material: Steel-reinforced plastic.
- 2.5.4 Manhole Frames and Covers: ASTM A 536, Grade 60-40-18, heavy-duty, ductile iron, 24-inch inside diameter by 7- to 9-inch riser with 4-inch minimum width flange, and 26-inch-diameter cover, indented top design, with lettering "STORM SEWER" cast into cover.

2.6 CATCH BASINS:

- 2.6.1 Precast Concrete Catch Basins: ASTM C 478 or ASTM C 858, precast reinforced concrete, of depth indicated. Sections shall have provision for rubber gasket joints. Base section slab shall have minimum thickness of 6 inches.
 - 2.6.1.1. Base Section: Base riser section and separate base slab, or base riser section with integral floor.
 - 2.6.1.2. Riser Sections: Sections shall be of lengths to provide depth indicated.
 - 2.6.1.3. Top Section: Type to match FDOT configuration detailed.
 - 2.6.1.3. Grade Rings: Provide 2 or 3 reinforced concrete rings, of 6 to 9 inches total thickness, as necessary.

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- 2.6.1.5. Gaskets: ASTM C 443, rubber.
- 2.6.1.6. Steps: Cast into riser sidewall at 12- to 16-inch intervals.
- 2.6.1.7. Pipe Connectors: ASTM C 923, resilient, of size required, for each pipe connecting to base section.
- 2.6.1.8. Channel and Bench: Concrete.
- 2.6.2 Cast-in-Place Catch Basins: Reinforced concrete of dimensions and with appurtenances indicated.
 - 2.6.2.1. Bottom, Walls, and Top: Reinforced concrete.
 - 2.6.2.2. Channel and Bench: Concrete.
- 2.6.3 Catch Basin Steps: Wide enough for an adult to place both feet on one step and designed to prevent lateral slippage off the step.

Material: Steel-reinforced plastic.
- 2.6.4 Catch Basin Frames and Grates: Per FDOT Standard Frame and Grates.
- 2.6.5 Curb Inlets: Precast concrete, brick, or other materials, of dimensions conforming to Santa Rosa County standards.
- 2.7 OUTFALLS: General: Construct of reinforced concrete pipe, mitered end section, toewalls, and rip rap, as indicated.
- 2.8 CONCRETE AND REINFORCEMENT:
 - 2.8.1 Concrete: Portland cement mix, 3,000 psi.

Cement: ASTM C 150, Type II.

 - 2.8.1.1. Fine Aggregate: ASTM C 33, sand.
 - 2.8.1.2. Coarse Aggregate: ASTM C 33, crushed gravel.
 - 2.8.1.3. Water: Potable.

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2.8.2 Reinforcement: Steel conforming to the following:

2.8.2.1. Fabric: ASTM A 185, welded wire fabric, plain.

2.8.2.2. Reinforcement Bars: ASTM A 615, Grade 60, deformed.

2.8.3 Forms:

2.8.3.1. Form Materials: Plywood, metal, metal-framed plywood, or other acceptable panel-type materials to provide full-depth, continuous, straight, smooth exposed surfaces without distortion or defects. Material shall be of size and strength to resist movement during concrete placement and to retain horizontal and vertical alignment until removal.

2.8.3.2. Form Release Agent: Provide commercial formulation form-release agent with a maximum of 350 mg/l volatile organic compounds (VOCs) that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces. Release agent to be within allowable volatile limits according to applicable local, state and federal codes.

2.9 MASONRY: Bricks for accessories shall be hard common clay brick. Mortar shall be one part Portland cement and three parts masonry sand to which shall be added lime putty in the amount of 50% of the volume cement. Special commercial mortar mixes maybe used if approved by the Engineer. All masonry materials shall conform to the latest applicable ASTM specifications. Set all masonry units in full beds of mortar, with full joints and strike all joints flush. Masonry reinforcements shall be galvanized Dur-O-Wal, or approved equal, and shall be installed at every other bed joint.

2.10 CURING MATERLALS:

2.10.1 Conform to TT-C-800, with 30-percent minimum solids content.

2.10.2 Absorptive Cover: Burlap cloth made from jute or kenaf, weighing approximately 9 oz. per sq. yard, complying with AASHTO M- 182, Class 2.

2.10.3 Moisture-Retaining Cover: One of the following, complying with ASTM C-171.

2.10.3.1. Waterproof paper

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- 2.10.3.2. Polyethylene film
- 2.10.3.3. White burlap-polyethylene sheet
- 2.10.4 Clear Solvent-Borne Liquid Membrane-Forming Curing Compound: This is a solvent-borne membrane-forming curing compound. Revise to Type II and verify manufacturer's products when a white pigmented curing compound is required. Do not use if water-borne low-VOC emissions compounds are required. ASTM C-309, Type L Class A or B, wax free.
- 2.10.5 Clear Water-borne Membrane-Forming Curing Compound:
 - 2.10.5.1. This is a water-borne membrane-forming curing compound. Use when low VOC emissions are required. ASTM C-309, Type 1, Class B.
 - 2.10.5.2. Provide material that has a maximum volatile organic compound (VOC) rating of 350 mg per liter.
- 2.10.6 Evaporation Control: Monomolecular film-forming compound applied to exposed concrete surfaces for temporary protection from rapid moisture loss.

PART 3 – EXECUTION

3.1 PREPARATION OF FOUNDATION FOR BURIED STORMWATER SYSTEMS:

- 3.1.1 Grade trench bottom to provide a smooth, firm, stable, and rock-free foundation, throughout the length of the pipe.
- 3.1.2 Remove unstable, soft, and unsuitable materials at the surface upon which pipes are to be laid, and backfill with clean sand or pea gravel to indicated level.
- 3.1.3 Shape bottom of trench to fit bottom of pipe. Fill unevenness with tamped sand backfill. Dig bell holes at each pipe joint to relieve the bells of all loads and to ensure continuous bearing of the pipe barrel on the foundation.

3.2 INSTALLATION, GENERAL:

- 3.2.1 General Locations and Arrangements: Drawings (plans and details) indicate the general location and arrangement of the underground stormwater system piping. Location and arrangement of piping layout take into account many design considerations. Install the piping as indicated, to the extent practical.

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- 3.2.2 Install piping beginning at low point of systems, true to grades and alignment indicated with unbroken continuity of invert, unless approved otherwise by the Engineer. Place bell ends of piping facing upstream. Install gaskets, seals, sleeves, and couplings in accordance with manufacturer's recommendations for use of lubricants, cements, and other installation requirements. Maintain swab or drag in line and pull past each joint as it is completed. The pipe shall be carefully examined for defects and the inside cleaned. After placing pipe in the ditch, the ends shall be wiped free from all dirt, sand and foreign material. All pipe and joints shall be made, handled, and installed in strict accordance with the manufacturer's recommendations and instructions. A copy of the installation manual shall be furnished to the Engineer prior to placing pipe on the job site.
- 3.2.2.1. Install concrete pipe in accordance with applicable provisions of American Concrete Pipe Association "Concrete Pipe Field Manual", unless otherwise indicated.
- 3.2.2.2. Place concrete pipe with elliptical reinforcing so that the reference lines indicating top of pipe are not more than 5 degrees from vertical plane through longitudinal axis of pipe.
- 3.2.3 Use manholes or catch basins for changes in direction, except where a fitting is indicated. Use fittings for branch connections, except where direct tap into existing sewer is indicated. The Engineer shall be notified at least 24 hours before the pouring of any concrete is to be started, and such pouring shall not be started until the reinforcement has been approved as placed.
- 3.2.4 Use proper size increasers, reducers, and couplings, where different size or material of pipes and fittings are connected. Reduction of the size of piping in the direction of flow is prohibited.
- 3.2.5 Install piping pitched down in direction of flow, at minimum slope per plans.
- 3.2.6 Tunneling: Install pipe under streets or other obstructions that cannot be disturbed, by tunneling, jacking, or a combination of both.

3.3 MANHOLES:

- 3.3.1 General: Install manholes complete with accessories as indicated. Form continuous concrete or split pipe section channel and benches between inlets and outlet. Set tops of frames and covers flush with finish surface where manholes occur in pavements. Elsewhere, set tops 3 inches above finished grade, unless otherwise indicated.

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- 3.3.2 Place precast concrete manhole sections as indicated, and install in accordance with ASTM C 891.
- 3.3.3 Construct cast-in-place manholes as indicated.
- 3.3.4 Provide rubber joint gasket complying with ASTM C 443 at joints of sections.
- 3.3.5 Apply bituminous mastic coating at joints of sections.
- 3.4 **CATCH BASINS:**
 - 3.4.1 Construct catch basins to sizes and shapes indicated.
 - 3.4.2 Set frames and grates to elevations indicated.
- 3.5 **OUTFALLS:** Construct outfalls of reinforced concrete which will attain 28-day compressive strength of not less than 3000 psi.
- 3.6 **TAP CONNECTIONS:**
 - 3.6.1 Make connections to existing piping and underground structures so that finished work will conform as nearly as practicable to the requirements specified for new work.
 - 3.6.2 Use commercially manufactured wye fittings for piping branch connections. Remove section of existing pipe, install wye fitting into existing piping, and encase entire wye fitting plus 6-inch overlap, with not less than 6 inches of 3000-psi 28-day compressive-strength concrete.
 - 3.6.3 Make branch connections from side into existing 15 to 18-inch piping by removing section of existing pipe and installing wye fitting into existing piping. Encase entire wye with not less than 6 inches of 3000-psi 28-day compressive-strength concrete.
 - 3.6.4 Make branch connections from side into existing 24-inch or larger piping or to underground structures by cutting opening into existing unit sufficiently large to allow 3 inches of concrete to be packed around entering connection. Cut end of connection pipe passing through pipe or structure wall to conform to shape of and be flush with inside wall, unless otherwise indicated. On outside of pipe or structure wall, encase entering connection in 6 inches of concrete for minimum length of 12 inches to provide additional support of collar from connection to undisturbed ground.

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3.6.4.1. Provide concrete that will attain minimum 28-day compressive strength of 3000 psi, unless otherwise indicated.

3.6.4.2. Use epoxy bonding compound as interface between new and existing concrete and piping materials.

3.6.5 Protect existing piping and structures to prevent concrete or debris from entering while making tap connections. Remove debris, concrete, or other extraneous material that may accumulate.

3.7 CLOSING ABANDONED STORMWATER SYSTEMS:

3.7.1 Abandoned Piping: Close open ends of abandoned underground piping that is indicated to remain in place. Provide sufficiently strong closures to withstand hydrostatic or earth pressure that may result after ends of abandoned utilities have been closed.

3.7.1.1. Close open ends of concrete pipe or structures with not less than 8-inch-thick brick masonry bulkheads. Fill pipe under roadways with grout as indicated on plans.

3.7.1.2. Close open ends of other piping with plastic plugs, or other acceptable methods suitable for size and type of material being closed. Wood plugs are not acceptable.

3.7.2 Abandoned Structures: Remove structure and close open ends of the remaining piping or remove top of structure down to not less than 3 feet below final grade; fill structure with stone, rubble, gravel, or compacted dirt, to within 1 foot of top of structure remaining, and fill with concrete.

3.8 FIELD QUALITY CONTROL:

3.8.1 Testing: Perform testing of completed piping in accordance with local authorities having jurisdiction. All sampling and testing shall be conducted by a testing laboratory under the direction of a Professional Engineer, licensed in the State of Florida, at the contractor's expense. Submit test results directly to the Engineer. The following tests shall be taken:

3.8.1.1. 28-day compressive test of concrete, minimum of three test cylinders per 50 cubic yards of concrete poured.

3.8.1.2. Air content, minimum one test for each day's pour.

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- 3.8.1.3. Slump test, minimum one test for each day's pour.
 - 3.8.1.4. Contractor shall replace materials removed for testing purposes.
 - 3.8.1.5. Should any work or materials fail to meet the requirements set forth in the plans and specifications, contractor shall pay for retesting of same.
- 3.8.2 Cleaning: Clear interior of piping and structures of dirt and other superfluous material as work progresses. Maintain swab or drag in piping and pull past each joint as it is completed.
- 3.8.2.1. In large, accessible piping, brushes and brooms may be used for cleaning.
 - 3.8.2.2. Place plugs in ends of uncompleted pipe at end of day or whenever work stops.
 - 3.8.2.3. Flush piping between manholes, to remove collected debris.
- 3.8.3 Interior Inspection: Inspect piping to determine whether line displacement or other damage has occurred.
- 3.8.4 Make inspections after pipe between manholes has been installed, cleaned and approximately 2 feet of backfill is in place, and again at completion of project. Each section of pipe between structures is to show from either end on examination, a full circle of light. Each appurtenance to the system shall be of the specified size and form, to neatly and substantially constructed, with the top set permanently to exact position and grade.
- If inspection indicates poor alignment, debris, displaced pipe, infiltration, or other defects, correct such defects and reinspect. All repairs shown necessary by the inspections are to be made, broken or cracked pipe replaced, all deposits removed and the pipe left true to line and grade as herein specified, or shown on the plans, entirely clean and free from abnormalities and ready for use.
- 3.8.5 Limits of Infiltration and Methods of Testing: The allowable limit of groundwater infiltration for the entire system of new stormwater systems or any one trunk, or interceptor shall be in complete accordance with ASTM C425-7 I T and shall not exceed a limit of infiltration equal to 0.2 gal/inch diameter/hour/100 linear feet of pipe.
- 3.8.5.1. The test will be made by measuring the infiltrated flow of water over a measuring weir set up in the invert of the sewer, or by an alternate method approved by the Engineer, a known distance from a temporary bulkhead

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or other limiting point of infiltration. After the sewer or sewers have been pumped out, and normal conditions prevail, tests shall be started.

3.8.5.2. Tests shall be run continuously for a period of not less than three(3) hours, with weir readings taken at 20 minute intervals. The tests shall be made by the Contractor. The Engineer shall be notified 24 hours in advance. Where infiltration occurs in excess of the specified amount, the defective pipe or joints shall be located and repaired at the expense of the Contractor. If the defective portions cannot be located, the Contractor, at his own expense, shall remove and reconstruct as much of the original work as necessary to obtain a sewer within allowable infiltration limits upon such retesting as necessary.

3.8.6 Clean-up: Before final inspection and acceptance, the Contractor shall clean ditches, shape shoulders and restore all disturbed areas, including street crossings, grass plots, to as good as condition as existed before work started. All trenches shall be leveled and loose material removed from pavement gutters, sidewalks, pipe lines, and inlet sediment traps, employing hand labor, if necessary.

3.9 MEASUREMENT AND PAYMENT: No additional payment shall be made for the work herein before specified. The Contractor's unit price or lump sum bid as set forth in the PROPOSAL shall constitute full compensation for the work involved for each item.

END OF SECTION 02500

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**SECTION 02513
ASPHALT CONCRETE PAVING**

PART 1-GENERAL

- 1.1 RELATED DOCUMENTS: Drawings and general provisions of Contract, including General and Supplementary Conditions and Division I of the FDOT Standard Specifications sections, apply to work of this section.
- 1.2 DESCRIPTION OF WORK:
- 1.2.1 Extent of asphalt concrete paving work is shown on drawings.
- 1.2.2 Prepared aggregate base is specified in earthwork and appropriate base sections.
- 1.2.3 Saw-cutting of edges of existing pavement is specified in site clearing section.
- 1.3 SUBMITTALS:
- Material Certificates: Provide copies of materials certificates signed by material producer and Contractor, certifying that each material item complies with, or exceeds, specified requirements.
- 1.4 QUALITY ASSURANCE: Codes and Standards: Comply with State highway or transportation department standard specifications, latest edition, and with local governing regulations if more stringent than herein specified.
- 1.5 SITE CONDITIONS:
- 1.5.1 Weather Limitations: Apply prime and tack coats when ambient temperature is above 50 deg.F (10 deg.C), and when temperature has not been below 35 deg.F (I deg.C) for 12 hours immediately prior to application. Do not apply when base is wet or contains an excess of moisture.
- 1.5.2 Construct asphalt concrete surface course when atmospheric temperature is above 40 deg.F (4 deg.C), and when base is dry. Base course maybe placed when air temperature is above 30 deg.F (-I deg.C) and rising.
- 1.5.3 Grade Control: Establish and maintain required lines and elevations.

PART 2-PRODUCTS

2.1 MATERIALS:

- 2.1.1 General: Use locally available materials and gradations which exhibit a satisfactory record of previous installations.

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- 2.1.2 Base Course Aggregate Sound, angular crushed stone, crushed gravel, or crushed slag, sand, stone or slag screenings. Uncrushed gravel may be used in base course mixture if required to suit local material availability.
- 2.1.3 Surface Course Aggregate Crushed stone, crushed gravel, crushed slag, and sharp-edged natural sand. Sand prepared from stone, blast-furnace slag, or gravel, or combinations thereof may be used if required to suit local material availability.
- 2.1.4 Mineral Filler: Rock or slag dust, hydraulic cement, or other inert material complying with AASHTO M 17 (ASTM D 242).
- 2.1.5 Asphalt Cement: AASHTOM226 (ASTMD 946) for penetration-graded material and AASHTO M 2 (ASTM D 946) for penetration-graded material.
- 2.1.6 Prime Coat: Cut-back asphalt type; AASHTO M 82 (ASTM D 2027) MC- 30, MC-70 or MC-250.
- 2.1.7 Tack Coat: Emulsified asphalt; AASHTO M 140 (ASTM D 977) or M 208 (D 2397); SS-1, SS-1h, CSS-1 or CSS-1h, diluted with one part water to one part emulsified asphalt.
- 2.1.8 Herbicide Treatment: Commercial chemical for weed control, registered by Environmental Protection Agency. Provide granular, liquid, or wettable powder form.
 - 2.1.8.1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products which may be incorporated in the work include, but are not limited to, the following:
 - 2.1.8.2. Manufacturers: Subject to compliance with requirements, provide products of one of the following:
 - Allied Chemical Corp.
 - Achem Products, Inc.
 - Ciba-Geigy Corp.
 - Dow Chemical U.S.A.
 - E.I. DuPont De Nemours & Co., Inc.
 - FMC Corp.
 - Thompson-Hayward Chemical Co.
 - U.S. Borax and Chemical Corp.
- 2.1.9 Lane Marking Paint: Paint shall meet or exceed Federal Specification TT-P- I 952B and conform to the reflective requirements of FDOT Specifications, Section 710.
- 2.2 ASPHALT-AGGREGATE MIXTURE: Provide plant-mixed, hot-laid asphalt-aggregate mixture complying with AS TM D 3 5 15 and as recommended by local paving authorities to suit project conditions.

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PART 3 - EXECUTION

3.1 SURFACE PREPARATION:

- 3.1.1 Remove loose material from compacted subbase surface immediately before applying herbicide treatment.
- 3.1.2 Proof roll prepared subbase surface to check for unstable areas and areas requiring additional compaction.
- 3.1.3 Notify Engineer of unsatisfactory conditions. Do not begin paving work until deficient subbase areas have been corrected and are ready to receive paving.
- 3.1.4 Herbicide Treatment: Apply chemical weed control agent in strict compliance with manufacturers recommended dosages and application instructions. Apply to compacted, dry subbase prior to application of prime coat.
- 3.1.5 Prime Coat: Apply at rate of 0.30 to 0.50 gal. per sq. yd., over compacted base. Apply material to penetrate and seal, but not flood, surface. Cure and dry as long as necessary to attain penetration and evaporation of volatile.
- 3.1.6 Tack Coat: Apply to contact surfaces of previously constructed asphalt or portland cement concrete and surfaces abutting or projecting into asphalt concrete pavement. Distribute at rate of 0.05 to 0.15 gal. per sq. yd. of surface.
- 3.1.7 Allow to dry until at proper condition to receive paving.
- 3.1.8 Exercise care in applying bituminous materials to avoid smearing of adjoining concrete surfaces. Remove and clean damaged surfaces.

3.2 PLANT MIX ASPHALTIC SURFACE COURSE:

- 3.2.1 General: This item shall consist of a wearing surface constructed of asphaltic concrete on a prepared base, in accordance with the plans and specifications.
- 3.2.2 Materials: The materials and construction methods shall comply with those set forth for Superpave Asphaltic Concrete in the latest edition of the FDOT Standard Specifications, Section 334. The asphaltic cement shall meet the requirements of Section 320 for plant methods, and equipment. Meet the general requirements of Section 330, including the provisions for Quality Control Plans and Quality Control Systems as specified in 6-8.
- 3.2.3 Thickness: The thickness of the surface shall be as shown on the construction plans. This requirement shall be checked by cores and where a deficiency of more than 1/4" exists, the Contractor shall be required to correct the deficiency either by replacing the full thickness or overlaying the area to the satisfaction of the Engineer.

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3.3 PLACING MIX:

3.3.1 General: Place asphalt concrete mixture on prepared surface, spread and strike-off. Spread mixture at minimum temperature of 225 deg.F (107 deg.C). Place inaccessible and small areas by hand. Place each course to required grade, cross-section, and compacted thickness.

3.3.2 Paver Placing: Place in strips not less than 10' wide, unless otherwise acceptable to Engineer. After first strip has been placed and rolled, place succeeding strips and extend rolling to overlap previous strips. Complete base course for a section before placing surface course.

3.3.3 Joints: Make joints between old and new pavements, or between successive days' work, to ensure continuous bond between adjoining work. Construct joints to have same texture, density and smoothness as other sections of asphalt concrete course. Clean contact surfaces and apply tack coat.

3.4 ROLLING:

3.4.1 General: Begin rolling when mixture will bear roller weight without excessive displacement. Compact mixture with hot hand tampers or vibrating plate compactors in areas inaccessible to rollers.

3.4.2 Breakdown Rolling: Accomplish breakdown or initial rolling immediately following rolling of joints and outside edge. Check surface after breakdown rolling, and repair displaced areas by loosening and filling, if required, with hot material.

3.4.3 Second Rolling: Follow breakdown rolling as soon as possible, while mixture is hot. Continue second rolling until mixture has been thoroughly compacted.

3.4.4 Finish Rolling: Perform finish rolling while mixture is still warm enough for removal of roller marks. Continue rolling until roller marks are eliminated and course has attained maximum density.

3.4.5 Patching: Remove and replace paving areas mixed with foreign materials and defective areas. Cut-out such areas and fill with fresh, hot asphalt concrete. Compact by rolling to maximum surface density and smoothness.

3.4.6 Protection: After final rolling, do not permit vehicular traffic on pavement until it has cooled and hardened. Erect barricades to protect paving from traffic until mixture has cooled enough not to become marked.

3.5 TRAFFIC AND LANE MARKINGS:

3.5.1 Cleaning: Sweep and clean surface to eliminate loose material and dust.

3.5.2 Striping: Paint shall meet or exceed Federal Specification II-P- I 952B and conform to the reflective requirements of MOT Specifications, Section 710.

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- 3.5.3 Striping: Use chlorinated-rubber base factory-mixed, quick-drying, and non-bleeding.

Color: White, yellow and blue.

Apply paint with mechanical equipment to produce uniform straight edges. Apply in 2 coats at manufacturer's recommended rates.

3.6 FIELD QUALITY CONTROL:

- 3.6.1 General: Test in-place asphalt concrete courses for compliance with requirements for thickness and surface smoothness. Repair or remove and replace unacceptable paving as directed by Engineer. Contractor to replace asphalt removed for testing purposes.

- 3.6.2 Should any work or materials fail to meet the requirements set forth in the plans and specifications, Contractor shall pay for retesting of same.

- 3.6.3 A minimum of four cores and density test shall be made. Engineer shall determine location of cores and test.

- 3.6.4 Thickness: In-place compacted thickness will not be acceptable if exceeding following allowable variation from required thickness:

3.6.4.1. Base Course: 1/4", plus or minus.

3.6.4.2. Surface Course: 1/4", plus or minus.

- 3.6.5 Surface Smoothness: Test finished surface of each asphalt concrete course for smoothness using 10 straightedge applied parallel with, and at right angles to centerline of paved area. Surfaces will not be acceptable if exceeding the following tolerances for smoothness.

3.6.5.1. Base Course Surface: 1/4".

3.6.5.2. Wearing Course Surface: 3/16".

3.6.5.3. Crowned Surfaces: Test with crowned template centered and at right angle to crown. Maximum allowable variance from template, 1/4".

Check surface areas at intervals as directed by Engineer.

END OF SECTION 02513

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SECTION 02525 – GRASSING

PART 1-GENERAL

1.1 RELATED DOCUMENTS:

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Specifications Sections apply to this Section.
- B. Florida Department of Transportation, Standard Specifications for Road and Bridge Construction(FDOT Specs), latest edition as modified herein.

1.2 SUMMARY:

- A. Extent of grassing work is as specified or shown on the construction plans. Sodded areas disturbed during construction shall be re-sodded to match existing species.

1.3 SUBMITTALS:

- A. See paragraph entitled "Quality Control" for submittal requirements.

1.4 DELIVERY AND STORAGE:

- A. All seed shall be labeled in accordance with U.S. Department of Agriculture Rules and Regulations under the Federal Seed Act in effect on the date of invitation for bids. All seed shall be furnished in sealed standard containers, unless exception is granted in writing. Seed which have become wet, moldy, or otherwise damaged in transit or in storage shall not be used. Fertilizer shall be delivered to the site in the original, unopened containers, each bearing the manufacturer's guaranteed analysis. Any fertilizer which becomes caked or otherwise damaged, making it unsuitable for use, shall not be used. Seed, fertilizer and other grassing materials shall be stored under cover and protected from damaged which would make them unacceptable for use.

PART 2 - PRODUCTS

2.1 MATERIALS:

- A. Lime: Lime shall be ground limestone (Dolomite) containing not less than 85 percent of total carbonates, and shall be ground to such a fineness that 50-percent will pass a 100-mesh sieve and 90-percent will pass a 20-mesh sieve.
- B. Fertilizer: Commercial fertilizer shall be 16-4-8 formulation of which 60-percent of the nitrogen is in the urea-formaldehyde form and shall conform to the applicable State Fertilizer laws. It shall be granulated so that 80-percent is held on a 16-mesh screen, uniform in composition, dry and free-flowing.
- C. Sod: All sod shall be healthy. Sod shall be strongly rooted, free of weeds and undesirable grasses, and capable of providing vigorous growth and development when planted. Sod shall match existing species where restoration is required as a result of the Contractor's work.

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PART 3 - EXECUTION

3.1 REQUIREMENTS:

All areas indicated and all other areas disturbed by the Contractor's operations, shall be sodded.

3.2 ESTABLISHMENT OF TURF

- A. Grading: Areas to be grassed shall be graded to remove depressions, undulations, and irregularities in the surface before grassing. Adhere to grades as shown on plans.
- B. Tillage: The area to be grassed shall be thoroughly tilled to a depth of four inches using a plow and disc harrow or rotary tilling machinery until a suitable bed has been prepared and no clods or clumps remain larger than 1-1/2 inches in diameter. Remove sticks, roots, and rubbish.
- C. Applying Lime: The pH of the soil shall be determined. If the pH is below 5.0, sufficient lime shall be added to provide a pH between 5.5 and 6.5. The lime shall be thoroughly incorporated into the top three to four inches of the soil. Lime and fertilizer may be applied in one operation.
- D. Applying Fertilizer: Fertilizer shall be applied at the rate of 12 pounds per 1,000 sq. ft. and shall be thoroughly incorporated into the top three to four inches of soil before sod or seed is installed.
- E. Seeding: Apply seed in accordance with FDOT Specs Section 570.
- F. Maintenance: Maintenance shall begin immediately following the last operation of grassing and continue until final acceptance. Minimum maintenance period shall be 90 days from date of sodding. Maintenance shall include watering, mowing, replanting, and all other work necessary to produce a uniform stand of grass.

3.3 PLANTING SOD:

- A. The sod shall be live, fresh, and uninjured at the time of planting and shall have a thick mat of roots with enough adhering soil to assure growth. Apply sod within 24 hours of stripping. Do not plant dormant sod or if ground is frozen. Protect sod against drying and breaking of rolled strips.
- B. Placement: Prepare the ground by loosening the soil. Place sod on the prepared soil to form a solid mass with tightly fitted joints. Butt ends and sides of sod strips; do not overlap. Stagger strips to avoid a continuous downhill seam. Tamp or roll lightly to ensure contact with subgrade. Tamp the outer edges of the sodded area to produce a smooth contour. Work sifted soil into minor cracks between pieces of sod; remove excess to avoid smothering of adjacent grass. Water sod thoroughly with a fine spray immediately after planting.
- C. Watering: Keep sod continuously moist to a depth below the root zone for three weeks after placement. If there is no water available to the site, the Contractor shall provide the water for the sod.

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- D. Clean-Up: All excess soil, excess grass materials, stones, pallets and other waste shall be removed from the site daily and not allowed to accumulate. All paved areas shall be kept clean at all times.

- E. Maintenance: Maintain sod by watering, fertilizing, weeding, mowing, trimming and other operations such as rolling, re-grading, and re-planting as required to establish a lawn free of eroded or bare areas and acceptable to the Engineer. Where inspected work and materials do not comply with requirements, replace rejected work and continue maintenance until re-inspected by Engineer and found to be acceptable. Remove rejected materials promptly from the project site.

END OF SECTION 02525

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SECTION 02580 - MAINTENANCE OF TRAFFIC

PART 1-GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Specifications Sections, apply to work of this section.
- B. Unless otherwise specified on the plan sheets or in other sections of this contract, all materials and work shall conform to the applicable requirements in the following documents:
 - (1) Florida Department of Transportation *Roadway and Traffic Design Standards*, Indices 600 through 651 (latest edition).
 - (2) Florida Department of Transportation *Standard Specifications for Road and Bridge Construction*, Section 102 (latest edition).
 - (3) Florida Department of Transportation *Minimum Specifications for Traffic Control Signals and Devices*, Section 102 - Maintenance of Traffic Devices (latest edition).
 - (4) USDOT, Federal Highway Administration *Manual on Uniform Traffic Control Devices for Streets and Highways (ANSI D6.1e-1989)*, Part VI (latest edition).

1.2 SUMMARY OF WORK

The work under this section includes the maintenance of traffic within the limits of the project for the duration of construction.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

3.1 RESPONSIBILITIES OF CONTRACTOR

- 3.1.1 Control and maintain traffic and provide for the safety of the work. Conduct operations in a manner that will not interrupt pedestrian and vehicle traffic except as approved by the Engineer. Confine the work area to the smallest area practical to allow the maximum use of the street and sidewalk and to reduce any hazard to vehicles and pedestrians to a minimum.
- 3.1.2 Maintain access to properties which adjoin the work. Contact property owners and assure that access is coordinated prior to commencing work which may block access. Maintain safe access to adjacent properties at all times.
- 3.1.3 Furnish all labor, materials, tools, supplies, equipment, and machinery needed to fully comply with the specifications described on the plan sheets and in this Section. At all times, the Contractor shall use workers and traffic control devices necessary to comply with all applicable provisions contained in the reference documents listed in Section 1. 1.

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3.1.4 No work shall be performed within the right-of-way until the proper maintenance of traffic (MOT) is in place according to the appropriate 600 series index. The MOT set-up shall be done by an FDOT certified worksite traffic supervisor. No lane closures during the hours of 6:00 a.m. to 8:00 a.m. Also no lane closures on Holiday week-end or special events including the day preceding and following the Holiday or special event. All lanes must be open for traffic during an evacuation notice of a hurricane or other catastrophic event and shall remain open for the duration of the evacuation or event as directed by the local FDOT maintenance engineer, or the County Engineer.

3.1.5 The Contractor shall notify the agencies and media listed below in writing, 48 hours in advance, of any work within the road right-of-way which may interfere with vehicle and/or pedestrian traffic.

- (1) Santa Rosa County Engineering Department (981-7100)
- (2) Pensacola News Journal (435-8500)
- (3) Santa Rosa County Emergency Management Department (983-5360)
- (4) Santa Rosa County Sheriff (983-1161)
- (5) Florida Highway Patrol (484-5000)
- (6) Santa Rosa County School District (983-5000)

3.2 PENALTIES AND SUSPENSION OF WORK

3.2.1 The Engineer may verbally direct the Contractor to immediately suspend work if, in the opinion of the engineering department, unsafe traffic conditions exist, due to construction activities, or a violation of safety regulations is found. In such an event, the Contractor shall immediately stop work and secure any potential hazards from the public until the violation is corrected to the satisfaction of the Engineer. Law enforcement officers may be called to assist the Engineer in suspending work if the Contractor is not responsive. Suspension of work for violation of safety regulations shall not be grounds for a contract time extension.

END OF SECTION 02580

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SECTION 02900 EROSION CONTROL

PART ONE

This section designates the requirements for erosion control of the project site.

PART TWO-PRODUCTS

All materials used for erosion control shall meet federal, state and local requirements and shall conform with the requirements of FDOT Specification Section 104.

PART THREE-EXECUTION

- 3.1 The Contractor shall take steps and make suitable provisions to prevent or minimize siltation and erosion which may result from, or be as a result of, his operations during the course of construction of these projects.
- 3.2 The Contractor shall maintain silt fence barriers, and turbidity screens at all times during construction where siltation and erosion may occur and as shown on the project drawings.
- 3.3 The Contractor shall submit to the engineer, for written approval prior to construction, the methods to be used to control siltation and erosion. The Engineer's approval of the method to be used in no way relieves the Contractor of liability in case of a citation by federal, state, or local regulatory agency having jurisdiction thereof.

END OF SECTION 02900

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**SECTION 03270
MILLING OF EXISTING ASPHALT PAVEMENT**

1.1 Description.

Remove existing asphalt concrete pavement by milling to improve the rideability and cross slope of the finished pavement, to lower the finished grade adjacent to existing curb prior to resurfacing, or to completely remove existing pavement.

When milling to improve rideability, the plans will specify an average depth of cut.

Take ownership of milled material.

2.2 Equipment.

Provide a milling machine capable of maintaining a depth of cut and cross slope that will achieve the results specified in the Contract Documents. Use a machine with a minimum overall length (out to out measurement excluding the conveyor) of 18 feet and a minimum cutting width of 6 feet.

Equip the milling machine with a built-in automatic grade control system that can control the transverse slope and the longitudinal profile to produce the specified results.

To start the project, the Engineer will approve any commercially manufactured milling machine that meets the above requirements. If it becomes evident after starting milling that the milling machine cannot consistently produce the specified results, the Engineer will reject the milling machine for further use.

The Contractor may use a smaller milling machine when milling to lower the grade adjacent to existing curb or other areas where it is impractical to use the above described equipment.

Equip the milling machine with means to effectively limit the amount of dust escaping during the removal operation.

For complete pavement removal, the Engineer may approve the use of alternate removal and crushing equipment in lieu of the equipment specified above.

3.3 Construction.

Remove the existing raised reflective pavement markers prior to milling. Include the cost of removing existing pavement markers in the price for milling.

When milling to improve rideability or cross slope, remove the existing pavement to the average depth specified in the plans, in a manner that will restore the pavement surface to a uniform cross-section and longitudinal profile. The Engineer may require the use of a stringline to ensure maintaining the proper alignment.

Establish the longitudinal profile of the milled surface in accordance with the milling plans. Ensure that the final cross slope of the milled surface parallels the surface cross slope shown on the plans or as directed by the Engineer. Establish the cross slope of the milled surface by a second sensing device near the outside edge of the cut or by an automatic cross slope control mechanism. The plans may waive the requirement of automatic grade or cross slope controls where the situation warrants such action.

Multiple cuts may be made to achieve the required pavement configuration or depth of cut. Include in the Quality Control Plan a system to control the cross slope of the milling surface with a minimum frequency of one cross slope measurement every 250 feet during milling operations in order to ensure that the slopes are uniform and in compliance with the designed milling slope. When the difference between the measured cross slope and the designed cross slope exceeds $\pm 0.2\%$ for travel lanes (including turn lanes) and $\pm 0.5\%$ for shoulders, make all corrections immediately to bring the cross slope into an acceptable range. The Engineer may periodically verify the Contractor's measurements at the job site.

The Engineer will randomly take ten measurements of the cross slope per day for the first two

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days of milling operation. If the average cross slope of the ten random measurements per day varies more than the required tolerance (0.2% for travel lanes including turn lanes and 0.5% for shoulders), the milling operation shall be stopped until appropriate corrective actions are made to bring the cross slope into an acceptable range. Approval of the Engineer will be required prior to resuming the milling operation. A recheck of ten random measurements will be made after corrective actions are taken. If the recheck indicates that the cross slope is out of control, the deficient section(s) shall be corrected to bring the cross slope into an acceptable range. During milling operations, the Engineer reserves the right to take ten cross slope measurements per day. If the average cross slope of the ten measurements varies more than the permissible tolerance, the milling operation will be stopped until appropriate corrective actions are made to bring the cross slope into an acceptable range and the deficient sections shall be corrected accordingly.

The Engineer may waive the corrections specified above if an engineering determination indicates that the deficiencies are sufficiently separated so as not to significantly affect the final cross slope.

For intersections, tapers, crossovers, transitions at the beginning and end of the project and in other similar areas, the cross slope will be adjusted as directed by the Engineer to match the actual site conditions.

Operate the milling machine to minimize the amount of dust being emitted. The Engineer may require pre-wetting of the pavement.

Provide positive drainage of the milled surface and the adjacent pavement. Perform this operation on the same day as milling. Repave all milled surfaces no later than the day after the surface was milled unless otherwise stated in the plans.

If traffic is to be maintained on the milled surface prior to the placement of the new asphalt concrete, provide suitable transitions between areas of varying thickness to create a smooth longitudinal riding surface. Produce a pattern of striations that will provide an acceptable riding surface. The Engineer will control the traveling speed of the milling machine to produce a texture that will provide an acceptable riding surface.

Prior to opening an area which has been milled to traffic, sweep the pavement with a power broom or other approved equipment to remove, to the greatest extent practicable, fine material which will create dust under traffic. Sweep in a manner that will minimize the potential for creation of a traffic hazard and to minimize air pollution.

Sweep the milled surface with a power broom prior to placing asphalt concrete.

In urban and other sensitive areas, use a street sweeper or other equipment capable of removing excess milled materials and controlling dust. Obtain the Engineer's approval of such equipment, contingent upon its demonstrated ability to do the work.

Perform the sweeping operation immediately after the milling operations or as directed by the Engineer.

4.4 Milled Surface.

Provide a milled surface with a reasonably uniform texture, within 1/4 inch of a true profile grade, and with no deviation in excess of 1/4 inch from a straightedge applied to the pavement perpendicular to the centerline. Ensure that the variation of the longitudinal joint between multiple cut areas does not exceed 1/4 inch. The Engineer may accept areas varying from a true surface in excess of the above stated tolerance without correction if the Engineer determines that they were caused by a pre-existing condition which could not have reasonably been corrected by the milling operations. Correct any unsuitable texture or profile, as determined by the Engineer, at no additional expense to the Department.

The Engineer may require re-milling of any area where a surface lamination causes a non-uniform texture to occur.

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5.5 Method of.

The quantity to be paid for will be the plan quantity area, in square yards, over which milling is completed and accepted.

6.6 Basis of Payment.

Price and payment will be full compensation for all work specified in this Section, including hauling off and stockpiling or otherwise disposing of the milled material.

END SECTION 03270

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**SECTION 03300
CAST-IN-PLACE CONCRETE**

PART 1-GENERAL

- 1.1 GENERAL DESCRIPTION OF WORK COVERED: Mixing, placing, finishing and providing all related services necessary to construct all cast-in-place concrete work indicated on plans.
- 1.2 QUALITY ASSURANCE:
- 1.2.1 Comply with the latest published edition of the American Concrete institute (ACI) and American Society of Testing and Materials (ASTM) standards and codes:
1. ACI 301 - Specification for Structural Concrete for Buildings.
 2. ACI 305 - Placing Concrete in Hot Weather
 3. ACI 306 - Placing Concrete in Cold Weather
 4. ACI 318 - Building Code Requirements for Reinforced Concrete.
- 1.2.2 Manufacturer's Data: Submit manufacturer's product data with installation instructions for proprietary materials including reinforcement and forming accessories, admixtures, joint materials, hardeners, curing materials and others as requested by Engineer.
- 1.2.3 Laboratory Reports: Submit 2 copies of laboratory test or evaluation reports for concrete materials and mix designs as requested by Engineer.
- 1.2.4 Mix Proportions and Design: Proportion mixes complying with mix design procedures specified in ACI 301.
- 1.2.4.1. Submit written report to Engineer for each proposed concrete mix at least 15 days prior to start of work. Do not begin concrete production until mixes have been reviewed and are acceptable to Engineer.
- 1.2.4.2. Mix designs may be adjusted when material characteristics, job conditions, weather, test results or other circumstances warrant. Do not use revised concrete mixes until submitted to and accepted by Engineer.
- 1.2.4.3. Use air-entering admixture in all concrete, providing not less than 4 percent nor more than 6 percent entrained air for concrete exposed to freezing and thawing, and from 2 percent to 4 percent for other concrete.
- 1.2.5 Concrete Testing Service: Employ acceptable testing laboratory to perform materials evaluation, testing and design of concrete mixes. (when required by Owner).
- 1.2.5.1. Sampling: ASTM C 172
- 1.2.5.2. Slump: ASTM C 143, one test for each load at point of discharge.
- 1.2.5.3. Air Content: ASTM C 173, one for each set of compressive strength specimens.

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and Roadway Improvements**

- 1.2.5.4. Compressive Strength: ASTM C 39, one set for each 50 cu. yds. or fraction thereof of each class of concrete; one specimen tested at 7 days, one specimen tested at 28 days, and one retained for later testing if required.
- 1.2.5.5. When the total quantity of a given class of concrete is less than 50 cu. yds., strength tests may be waived by Engineer, if field experience indicates evidence of satisfactory strength.
- 1.2.5.6. Test results will be reported in writing to Engineer, Contractor, and concrete producer within 24 hours after tests are made.

PART 2 - PRODUCTS

2.1 PRODUCTS:

- 2.1.1 Portland Cement: ASTM C 150, type as required.
- 2.1.2 Fly Ash: ASTM C 618, Type C or F.
- 2.1.3 Limit use of fly ash in concrete mix design to not exceed 25 percent of cement content by weight.
- 2.1.4 Aggregates: ASTM C 33, except local aggregates of proven durability may be used when acceptable to Engineer.

2.2 WATER: Potable.

2.3 ADMIXTURES:

- 2.3.1 Air-Entraining Admixture: ASTM C 260.
- 2.3.2 Water-Reducing Admixture: ASTM C 494, type as required to suit project conditions. Only use admixtures which have been tested and accepted in mix designs, unless otherwise acceptable. Superplasticizers are not permitted without prior approval of Engineer.

2.4 RELATED MATERIALS:

- 2.4.1 Waterstops: Flat dumbbell or centerbulb type, size to suit joints, of either rubber (CRD C 513) or PVC (CRD C 572).
- 2.4.2 Moisture Barrier: Clear 8-mils thick polyethylene; polyethylene-coated barrier paper, or 1/8" thick asphalt core membrane sheet.
- 2.4.3 Membrane-Forming Curing Compound: ASTM C 309, Type 1.
- 2.4.4 Joint Fillers:

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and Roadway Improvements**

- 2.4.4.1. Joint Sealer: Hot poured, non-extruding, elastic, ASTM 1190.
- 2.4.4.2. Performed Expansion Joint Filler: Non-extruding, bituminous fiber, ASTM ASTM D 1751

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- 2.4.5 Provide form materials with sufficient stability to withstand pressure of placed concrete without bow or deflection.
 - 2.4.6 Exposed Concrete Surfaces: Material to suit project conditions.
- 2.5 REINFORCING MATERIALS:
- 2.5.1 Deformed Reinforcing Bars: ASTM A 615, Grade 60, unless otherwise indicated.
 - 2.5.2 Welded Wire Fabric: ASTM A 185.
- 2.6 FORMING AND PLACING CONCRETE:
- 2.6.1 Job-Site Mixing: Use drum type batch machine mixer, mixing not less than 1 ½ minutes for one cu. yd. or smaller capacity. Increase mixing time at least 15 seconds for each additional cu. yd. or fraction thereof.
 - 2.6.2. Ready-Mix Concrete: ASTM C 94.
 - 2.6.3. Form work: Construct so that concrete members and structures are for correct size, shape, alignment, elevation and position.
 - 2.6.3.1. Provide openings in form work to accommodate work of other trades. Accurately place and securely support items built into forms.
 - 2.6.3.2. Clean and adjust forms prior to concrete placement. Apply form release agents or wet forms, as required. Re-tighten forms during concrete placement if required to eliminate mortar leaks.
 - 2.6.4 Reinforcement: Position, support and secure reinforcement against displacement. Locate and support with metal chairs, runners, bolsters spacers and hangers, as required. Set wire ties so ends are directed into concrete, not toward exposed concrete surfaces.
 - 2.6.5 Install welded wire fabric in as long lengths as practical, lapping at least one mesh at both ends and sides. Tie at laps.
 - 2.6.6 Joints: Provide construction, isolation, and control joints as indicated or required. Locate construction joints so as to not impair strength and appearance of structure. Locate isolation and control joints in slabs-on-ground to accommodate differential settlement and prevent random cracking.

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**Edgewood Drive Drainage
and Roadway Improvements**

2.6.7 Installation of Embedded Items: Set and build into work anchorage devices and other embedded items required for other work that is attached to, or supported by cast-in-place concrete. Use setting diagrams templates and instructions provided by others for locating and setting.

2.6.8 Concrete Placement: Comply with ACI, placing concrete in a continuous operation within planned joints or sections. Do not begin placement until work of other trades affecting concrete is completed.

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2.6.9 Consolidate concrete using mechanical vibrating equipment, hand rodding and tamping, so that concrete is well compacted around reinforcement and other embedded items and into forms.

2.6.10 Protect concrete from physical damage or reduced strength due to weather extremes during mixing, placement and curing.

2.6.10.1. In cold weather comply with ACI 306.

2.6.10.2. In hot weather comply with ACI 305.

2.7 CONCRETE FINISHES:

2.7.1 Exposed-to-view Surfaces: Provide a smooth finish for exposed concrete surfaces and surfaces that are to be covered with a coating or covering material applied directly to concrete. Remove fins and projections, patch defective areas with cement grout, and rub smooth.

2.7.2 Slab Trowel Finish: Apply trowel finish to monolithic slab surfaces that are exposed-to-view or are to be covered with resilient flooring, paint or other thin film coating. Consolidate concrete surfaces by floating then finish troweling, free of trowel marks and uniform in texture and appearance.

2.7.3 Broom Finish: Apply broom finish to monolithic slab surfaces that are exposed to view and subject to vehicular or pedestrian traffic. Consolidate concrete surfaces by floating and troweling prior to applying broom finish.

2.7.4 Curing: Begin initial curing as soon as free water has disappeared from exposed surfaces. Where possible, keep continuously moist for not less than 72 hours. Continue curing by use of moisture-retaining cover or membrane-forming curing compound. Cure formed surfaces by moist curing until forms are removed. Provide protections as required to prevent damage to exposed concrete surfaces.

END OF SECTION 3300



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REPORT OF GEOTECHNICAL EXPLORATION

EDGEWOOD DRIVE DRAINAGE AND
ROADWAY IMPROVEMENTS

NAVARRE, SANTA ROSA COUNTY, FLORIDA

UES PROJECT NUMBER 1730.1900052.0000
UES DOCS REPORT NUMBER 1721098

OCTOBER 28, 2019

Prepared For:

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October 28, 2019

Kenneth Horne and Associates, Inc.
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Attention: Mr. Charlie Krasnosky, P.E.
charlie@kh-a.com

Reference: Report of Geotechnical Exploration
EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS
Navarre, Santa Rosa County, Florida
UES Project Number 1730.1900052.0000
UES Report Number 1721098

Mr. Krasnosky:

Universal Engineering Sciences, Inc. (UES) has completed the authorized geotechnical exploration for the above referenced project in Navarre, Santa Rosa County, Florida. The scope of our exploration was performed in general accordance with the scope of services presented in the UES Proposal Number 1596955 dated August 19, 2018. This exploration was performed in accordance with generally accepted geotechnical engineering practices. No other warranty, express or implied, is made.

The following report presents the results of our field exploration and laboratory testing services, and presents a geotechnical engineering interpretation of the results with respect to the project characteristics provided to us. We have included our estimates of the seasonal high groundwater level at our boring locations, and geotechnical recommendations for pavement design, site preparation, and construction related services.

We appreciate the opportunity to have worked with you on this project and look forward to our continued association. Please contact us if you have any questions, or if we may be of further assistance.

Respectfully Submitted,
UNIVERSAL ENGINEERING SCIENCES, INC.
Certificate of Authorization No. 549

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1.0 INTRODUCTION

1.1 GENERAL

In this report, we present the results of the geotechnical exploration of the site for the proposed project. We have divided this report into the following sections:

- SCOPE OF SERVICES - Defines what we did
- FINDINGS - Describes what we encountered
- RECOMMENDATIONS - Describes what we encourage you to do
- LIMITATIONS - Describes the restrictions inherent in this report
- APPENDICES - Presents support materials referenced in this report

2.0 SCOPE OF SERVICES

2.1 PROJECT DESCRIPTION

Project information was provided to us via email correspondence from Mr. Charlie Krasnosky, P.E. on September 3, 2019. Included in this email was a link to access and download the 95 percent submittal entitled "Site Construction Documents for Edgewood Drive Drainage and Roadway Improvements" dated August 22, 2019. These documents/drawings were used for planning of the field exploration services, and is the primary source of information relative to our understanding of the proposed project.

Edgewood Drive is approximately 2.9 miles in length, and runs from Navarre Parkway/U.S. Highway 98 north to East Bay Boulevard in Navarre, Santa Rosa County, Florida. The roadway improvements and associated information for which field exploration services were performed include the following.

- On both sides and running the full length of Edgewood Drive, it is proposed to construct asphalt paved bike paths/lanes. The paths/lanes will be 5 feet in width, and will abut to even saw cut edges on both sides of the existing pavement for Edgewood Drive.
- At the south end of Edgewood Drive, at the intersection with Navarre Parkway/U.S. Highway 98, a right hand turn lane will be constructed west of and immediately adjacent to the new bike path/lane. The turn lane will be approximately 210 feet in length (including a tapered length of 50 feet), with a width of 10 feet (for an overall width of 15 feet for the bike path/lane and turning lane).
- The proposed pavement section for the bike paths/lanes and turning lane will consist of 1-½ inches of FDOT SP-12.5, overlying 6 inches of graded aggregate base compacted to at least 100 percent of the modified Proctor (ASTM D1557) maximum dry weight, overlying 12 inches of stabilized subgrade (minimum LBR of 40) compacted to at least 98 percent of the ASTM D1557 maximum dry weight. No curbing is proposed for the bike path/lane and turning lane pavements.
- A concrete sidewalk will be constructed along the full length of Edgewood Drive. From Navarre Parkway north approximately 5,400 feet to the south side of Leisure Street, the sidewalk will be located on the east side of Edgewood Drive. From the north side of Leisure Street to East Bay Boulevard, the sidewalk will be located on the west side of Edgewood Drive. The sidewalk will be 5 feet in width, will be separated from the bike path/lane by 2



feet, will be 4 inches thick, and soil subgrade supported. The concrete for the sidewalk construction will be a minimum 3,000 psi compressive strength mix with fibermesh reinforcement.

The proposed drainage improvements for the project will entail the removal and replacement of existing drainage pipes/culverts crossing Edgewood Drive and associated side roads/streets. The drainage pipe/culvert crossings for which field exploration services were performed include the following.

- Culvert/pipe crossing on Edgewood Drive at approximate station number 75+68 - Remove existing 18 inch RCP and install three 19 inch by 30 inch ERCP with an approximate invert elevation of 28.5 feet.
- Culvert/pipe crossing on Bushton Street – Remove existing 18 inch RCP and install two 19 inch by 30 inch ERCP with an approximate invert elevation of 14 feet.
- Culvert/pipe crossing on Britt Street – Remove existing 24 inch RCP and install two 24 inch RCP with an approximate invert elevation of 10 feet.
- Culvert/pipe crossing on Koppel Drive at approximate station number 307+92 - Remove existing 36 inch CMP and install two 36 inch RCP with an approximate invert elevation of 5.7 feet.

For the pipe/culvert crossings, the construction documents show the following:

- From the bottom of the trench to the springline of the pipes, the pipes will sit in “pipe bedding compacted class A-3 sand or granular material”:
- From the springline to one foot over the top of the pipe, the “initial” fill in the trench will be placed in maximum lifts of 6 inches, and compacted to at least 98 percent of the ASTM D1557 maximum dry density; and
- From one foot over the top of the pipe to the bottom of the graded aggregate base for the replacement pavement section, the “subsequent” fill in the trench will be placed in maximum lifts of 12 inches, and compacted to at least 98 percent of the standard Proctor (ASTM D698) maximum dry density.

It should be noted that the general “PIPE BEDDING DETAIL” in the construction documents show the “subsequent” fill to be compacted to at least 98 percent of the modified Proctor (ASTM D1557) maximum dry density. This discrepancy was discussed with the client, and the client indicated that the modified Proctor (ASTM D1557) criterion, and not the standard Proctor (ASTM D698) criterion, was to be used.

It is our understanding that finished elevations for the pavement and sidewalk areas will coincide with or be within approximately 1 foot of existing site and/or pavement elevations. Therefore, fill and excavation depths of less than approximately 1 to 2 feet are anticipated for the proposed asphalt pavement and sidewalk construction. Based on our review of the provided construction documents, it is estimated that excavation depths associated with the installation of the proposed pipe/culvert crossings will range from approximately 4 to 6 feet below existing road elevations.



Our recommendations are based upon the previously discussed supplied information. If any of this information is incorrect or changes, please inform Universal Engineering Sciences, Inc. (UES) so that we may review our recommendations. Without such a review, the recommendations herein may not be valid. No other site or project facilities should be designed using the soil information contained herein. As such, UES will not be responsible for the performance of any other site improvement designed using the data in this report.

2.2 PURPOSES

The purposes of the exploration program were:

- To explore the general subsurface conditions in the proposed bike path/turn lane pavement areas, the proposed sidewalk areas, and the proposed pipe/culvert crossing areas;
- To interpret and review the subsurface conditions with respect to the proposed construction;
- To perform a series of laboratory tests on selected subsurface soil samples to assist with engineering soil classification, and to establish relevant soil engineering characteristics; and
- To provide geotechnical engineering recommendations for groundwater control, pavement construction, and site preparation

This report presents an evaluation of site conditions on the basis of traditional geotechnical procedures for site characterization. The recovered samples were not examined, either visually or analytically, for chemical composition or environmental hazards. UES would be pleased to perform these services, if you desire.

Our exploration was confined to the zone of soil likely to be impacted by the proposed construction. Our work did not address the potential for surface expression of deep geological conditions. This evaluation requires a more extensive range of field services than performed in this study. We will be pleased to provide a proposal for an exploration to evaluate the probable effect of the regional geology upon the proposed construction, if you desire.

2.3 GEOTECHNICAL EXPLORATION

The field exploration program was initiated on September 19, 2019, and completed on October 8, 2019. In lieu of a boring location plan that would typically be used, the approximate location for each individual boring is shown on the attached Boring Logs in Appendix B.

The approximate boring locations for the exploration were determined in the field by our personnel using the site plans provided to us, existing field reference points on the site, and a tape measure and measuring wheel. As such, the locations presented on the attached Boring Logs should be considered accurate only to the degree implied by the method of measurement used.

Approximate ground surface elevations at the boring locations are presented on the attached Boring Logs, and were estimated by interpolation between elevation contours shown on the site topographic plans provided to us. As such, the presented elevations on the Boring Logs should be considered approximate.



During the testing and/or sampling in each boring, recovered soil samples were placed in labeled plastic containers, sealed, and transported to our laboratory where they were classified by a member of our geotechnical staff. Some of the recovered soil samples were then selected for specific laboratory tests. The soil samples recovered from the field exploration will be held in our laboratory for your inspection for 60 days following the issue date of this report, and then discarded unless we are notified and other arrangements are made.

2.3.1 Field Procedures

The field exploration for this project consisted of the following:

- Performing 30 auger borings, each boring to a depth of 5 feet below existing grade (BEG), in the proposed bike path and sidewalk areas along the length of Edgewood Drive;
- Performing two auger borings with dynamic cone penetrometer (DCP) testing, each boring to a depth of 5 feet BEG, in the proposed turn lane area; and
- Performing four Standard Penetration Test (SPT) borings, each boring to a depth of 20 feet BEG, and one boring at each of the four pipe/culvert crossing locations.

The auger borings were performed by manually twisting a hand-held barrel into the soils to boring termination depth. The SPT borings were performed by mechanically twisting hollow stem augers into the soils to boring termination depth. Reference the Field Procedures attachment in Appendix B for more detailed discussions of the drilling procedures used. In addition, logs for the borings are presented in Appendix B.

2.4 LABORATORY TESTING PROGRAM

2.4.1 Visual Classification

The soil samples collected from the exploration were visually classified in general accordance with the USCS Soil Classification System (ASTM D2487). A summary of the resulting soil descriptions are shown on the Boring Logs presented in Appendix B.

2.4.2 Laboratory Index Testing

Laboratory soil tests were performed on selected soil samples obtained from the borings to aid in the classification of the soils, and to help in the evaluation of pertinent engineering characteristics of the soils. The classifications and laboratory testing completed for this project consisted of performing the following procedures/tests in general accordance with the methods listed.

- Soil Classification per the Unified Soil Classification System – ASTM D 2487
- Natural Moisture Content Tests – ASTM D 2216
- Percent -200 Soil Fines Content Tests – ASTM D 1140
- Organic Content Tests – AASHTO T 257

Detailed explanations of these test procedures are presented in Appendix C. The results of the tests are summarized on the boring logs presented in Appendix B.



3.0 FINDINGS

3.1 REGIONAL GEOLOGY

Santa Rosa County is located in the Coastal Lowlands physiographic province of the Florida Panhandle region. The general geology of the Coastal Lowlands province consists of unconsolidated sands, limestones, silts, and clays ranging in age from Cretaceous to recent (Pratt, *et al*, 1966). The Sand and Gravel Aquifer, which ranges in thickness from approximately 250 feet to 500 feet, is the most important water-bearing zone in Santa Rosa County. The aquifer is comprised of three major zones: the surficial zone, the intermediate low permeability zone, and the main producing zone (Pratt, *et. al.*, 1966). The Sand and Gravel aquifer is recharged by infiltration of local rainfall and, due to the high permeability of local soils, the entire area of the aquifer is considered a recharge area.

The surficial zone (which contains the unconfined water table surface) generally averages less than 100 feet in thickness and is composed primarily of inter-bedded fines sands, silts, and clays (Pratt, *et al*, 1966). Underlying the surficial zone is an intermediate zone of low permeability that averages approximately 50 to 100 feet in thickness (Pratt, *et al*, 1966). The intermediate zone acts as a leaky confining layer that separates the water table aquifer from the more productive main producing zone of the Sand and Gravel Aquifer.

The Floridian aquifer is also present in Santa Rosa County, and underlies the Sand and Gravel Aquifer. However, water from the Floridian in this region is highly mineralized and is not considered a source of potable water in Santa Rosa County (Pratt, *et. al*, 1966).

3.2 USDA NRCS SOIL SURVEY

Based on the Web Soil Survey for Santa Rosa County, Florida, as prepared by the USDA NRCS, the predominant, pre-development soil types at the site are identified as; 21 – Lakeland sand, 0 to 5 percent slopes; 24 – Leon sand, 0 to 2 percent slopes; 33 – Ortega sand, 0 to 5 percent slopes; 34 – Pactolus loamy sand, 0 to 5 percent slopes; 35 – Pickney loamy sand; and 40 – Rutlege loamy sand. A summary of the characteristics of this soil series was obtained from the Soil Survey and is included in Table 1. **Please note the soils presented in the following table are the pre-development soils, and may have been altered during any past development of the site.**

Table 1 – Summary of USDA Soil Survey Information								
Soil Type	Constituents	Internal Drainage	Hydrologic Soil Group	Soil Permeability		Seasonal High Water Table (ft)	Corrosion Potential	
				Depth (in)	Perm (in/hr)		Steel	Concrete
21 – Lakeland sand, 0 to 5% slopes	SP, SP-SM	Excessively Drained	A	0-62	>20	> 6	Low	Moderate
				62-83	>20			
24 – Leon sand, 0-2% slopes	SP-SM, SP, SM	Poorly Drained	A/D	0-16	6.0-20.0	0-1.0	High	High
				16-32	0.6-6.0			
				32-80	>20			



Table 1 – Summary of USDA Soil Survey Information								
Soil Type	Constituents	Internal Drainage	Hydrologic Soil Group	Soil Permeability		Seasonal High Water Table (ft)	Corrosion Potential	
				Depth (in)	Perm (in/hr)		Steel	Concrete
33 – Ortega sand, 0 to 5% slopes	SP, SP-SM	Moderately Well Drained	A	0-88	6.0-20.0	3.5-5	Low	High
34 – Pactolus loamy sand, 0 to 5% slopes	SM, SP-SM	Moderately Well Drained	A/D	0-52 52-80	6.0-20 6.0-20	1.5-2.5	High	High
35 – Pickney loamy sand	SP-SM, SM, SP	Very Poorly Drained	A/D	0-35 35-70	6.0-20 6.0-20	0-1.0	High	High
40 – Rutlege loamy sand	SP-SM, SM, SP	Very Poorly Drained	A/D	0-21 21-61	6.0-20 6.0-20	0-1.0	High	High

3.3 SURFACE CONDITIONS

UES personnel visited the project site during the performance of the field exploration. At the time of the field exploration, the project site generally consisted of cleared and reasonably maintained right-of-ways for Edgewood Drive and associated side streets/roads.

3.4 SUBSURFACE CONDITIONS

The general subsurface conditions encountered during the field exploration are described in Table 2. For more detailed soil descriptions and stratifications at the boring locations, the Boring Logs presented in the Appendix should be reviewed. Also, see the attachment entitled **KEY TO BORING LOGS**, presented in Appendix B, for further explanation of the symbols and placement of data on the Boring Logs. The Boring Logs represent our interpretation of the subsurface conditions based on a review of the field logs, an engineering examination of the recovered soil samples, and a limited number of laboratory tests. The horizontal stratification lines designating the interface between various strata represent approximate boundaries. Transition between different strata in the field may be gradual in both the horizontal and vertical directions. Groundwater, or lack thereof, encountered in the borings, and noted on the attached Boring Logs, represents conditions only at the time of the exploration. The following Table 2 summarizes the soil conditions found.

Table 2 – General Soil Profile				
Stratum No.	Typical depths (ft)		Soil Descriptions	Range of SPT “N” Blow Counts
	From	To		
1	0	1.5	Approximately 2 to 6 inches of sandy topsoil overlying fill materials generally comprised of sand and sand with silt [SP and SP-SM]	N/A
2	1.5	20	Very Loose to medium dense relatively clean SANDS, [SP and SP-SM]	2 to 24

* Termination depth of the deepest boring
 [] Brackets indicate Unified Soil Classification System (ASTM D 2487)



Some notable exceptions to the general profile conditions presented in Table 2 are:

- At the locations of Borings AB-7, AB-8, AB-13 to AB-15, and AB-27, The native soils encountered in the borings to an approximate termination depth of 5 feet were generally comprised of silty and/or clayey sands [SM, SC, and SC-SM]; and
- At the locations of the SPT borings performed for the pipe/culvert crossings (C-1 to C-4), depths of fill and possible fill materials ranged from 2 to 6 feet below existing grades (the greater depths of fill are likely associated with the installation of the existing drainage pipes/culverts in the immediate vicinity of each boring).

At the time of our field exploration, groundwater levels measured at or shortly after the time of boring completion ranged from 2.7 feet to 4.9 feet below existing grade (BEG) at seven auger boring locations and all four SPT boring locations. Groundwater was not present in the remaining auger boring locations, at an approximate termination depth of 5 feet BEG, immediately following completion of the borings. **With the exception of Borings AB-21 to AB-23 (approximate stations 114+75 to 125+25 along Edgewood Drive), the USDA Soil Survey identifies the potential for a seasonal high groundwater table to form from 0 to 5 feet BEG.**

4.0 RECOMMENDATIONS

4.1 GEOTECHNICAL ASSESSMENT

In this section of the report, we present recommendations for pavement design/construction, site preparation, and construction related services. The following geotechnical design recommendations have been developed on the basis of the previously described project characteristics, and the subsurface conditions encountered by the exploration. If there are any changes in these project criteria, a review should be made by UES to determine if modifications to the recommendations are warranted.

Once final design plans and specifications are available, a general review by UES is recommended as a means to check that the evaluations made in preparation of this report are correct, and that recommendations are properly interpreted and implemented.

4.2 GROUNDWATER CONSIDERATIONS

The groundwater table will fluctuate seasonally depending upon local rainfall. The typical wet season groundwater level is defined as the highest groundwater level sustained for a period of two to four weeks during the "wet" season of the year, for existing site conditions, in a year with average normal rainfall amounts. Based on historical data, the rainy season in Northwest Florida is typically between June and September of any given year.

At the time of our field exploration, groundwater levels measured at or shortly after the time of boring completion ranged from 2.7 feet to 4.9 feet below existing grade (BEG) at seven auger boring locations and all four SPT boring locations. Groundwater was not present in the remaining auger boring locations, at an approximate termination depth of 5 feet BEG, immediately following boring completion. With the exception of Borings AB-21 to AB-23 (approximate stations 114+75 to 125+25 along Edgewood Drive), our best estimate for the stabilized, seasonal high groundwater table could be on the order of 0.5 to 4.5 feet BEG at the boring locations. This estimate is based upon our review of U.S.G.S. data, Escambia County Soils Survey, and regional



hydrogeology, Please see the boring logs in **Appendix B** for individual estimated wet seasonal water table depths.

The estimated seasonal high groundwater depths should be considered accurate to about ½ foot +/- . Please note that groundwater levels could temporarily be higher than these estimated levels during any given year in the future. Should impediments to surface water drainage exist on the site, or should rainfall intensity, rainfall duration, and/or total rainfall quantities exceed the normally anticipated climatic and/or rainfall quantities, groundwater levels may be higher than our previously discussed estimates.

We recommend positive drainage be established and maintained on the site during construction. We further recommend permanent measures be constructed to maintain positive drainage throughout the life of the project. **All site improvement designs should incorporate the seasonal high groundwater levels as appropriate.**

4.2.1 Temporary Groundwater Control

If encountered during construction, we recommend that the groundwater table be lowered and maintained at a depth of at least 2 feet below bearing levels and excavation bottoms. Dewatering may consist of ditching, well points, or other means. However, groundwater control means and methods are the sole responsibility of the contractor. Furthermore, we recommend that the contractor determine the actual groundwater levels at the time of construction to determine the groundwater impact on the construction procedures. If groundwater is encountered during trenching or pavement installation, UES should be notified so that we can determine whether there is a need for pavement section drainage, perimeter drains, or other recommendations for dewatering.

4.3 ASPHALT (FLEXIBLE) PAVEMENT

Based on experience with similar projects, and in the absence of any traffic loading information for the proposed pavement areas (of particular note is the turn lane), the flexible pavement section presented in the provided Construction Documents is anticipated to be a reasonable design for the proposed turn lane and bike paths/lanes. The proposed pavement section will consist of 1-½ inches of FDOT SP-12.5, overlying 6 inches of graded aggregate base compacted to at least 100 percent of the modified Proctor (ASTM D1557) maximum dry weight, overlying 12 inches of stabilized subgrade (minimum LBR of 40) compacted to at least 98 percent of the ASTM D1557 maximum dry weight. No curbing is proposed for the bike path/lane and turning lane pavements. Our recommendations for each of the components of the pavement section, along with other aspects of the pavement construction, are presented in the subsequent sections.

4.3.1 Stabilized Subgrade

The stabilized subgrade is the top surface of a roadbed upon which the pavement structure and shoulders are constructed. The primary function of the stabilized subgrade is to provide a stable and firm platform for construction of the pavement without undue deflection that would impact the pavement's performance. In addition, the stabilized subgrade enhances the overall strength of the pavement section.

Beneath all base course materials, we recommend a stabilized subgrade having a minimum Limerock Bearing Ratio (LBR) (FM 5-515) of 40 percent and a minimum compacted thickness of 12 inches as specified by the latest version of the Florida Department of Transportation (FDOT) "Standard Specifications for Road and Bridge Construction" (SSRBC) for Type B Stabilized



Subgrade, Section 160 and Section 914. The stabilized subgrade material should be compacted to at least 98 percent of the modified Proctor maximum dry density (ASTM D 1557) at a moisture content within ± 2 percent of the modified Proctor optimum moisture content.

Based on experience, it is anticipated that most of the on-site surficial soils will not be capable of meeting the minimum LBR requirement for a stabilized subgrade. For soils not meeting the LBR requirement, stabilized subgrade can be constructed by blending the soils with a stabilizing agent such as limerock or soil fines. If a blend is proposed, we recommend that the Contractor perform a mix design to determine the optimum mix proportions. The need for a stabilizing agent to be mixed with either on-site native soils or proposed imported fill soils to meet the required LBR of 40 percent for the stabilized subgrade should be verified by the Contractor before bidding and construction.

Some owners/contractors opt to forgo using a stabilized subgrade and instead prefer to use additional pavement base material for time savings, although typically at a materially higher cost. For this project, we would recommend substituting the 12 inches of stabilized subgrade (LBR 40) with 6 inches of base material (LBR 100). The proposed base course thickness previously discussed still applies. Therefore, for the proposed pavement section, the alternate section would consist of 1.5 inches of asphalt, 6 inches of base (LBR 100), and an additional 6 inches of base (LBR 100) in lieu of the 12 inches of stabilized subgrade (LBR 40). The additional base course material used in lieu of the stabilized subgrade should comply with the recommendations presented in the following Section 4.3.2.

4.3.2 Base Course

The base course is a layer or layers of select or specified material of designed thickness placed on a subbase or stabilized subgrade to provide uniform and stable support for binder and surface courses. The base course typically provides a significant portion of the structural capacity in a flexible pavement system.

For this project, we recommend the base course consist of graded aggregate base (GAB) complying with Section 204 of the latest edition of the FDOT SSRBC. A minimum LBR of 100 should be used for GAB courses. The base course should be compacted to 100 percent of the modified Proctor maximum dry density at a moisture content within ± 2 percent of the modified Proctor optimum moisture content.

4.3.3 Surface Course

The surface course is one or more layers of a pavement structure designed to accommodate traffic loading, the top layer of which resists skidding, traffic abrasion, and the disintegrating effects of climate. Additionally, the surface course provides a significant fraction of the overall structural capacity of the pavement.

The surface course should consist of FDOT SuperPave (SP fine) asphaltic concrete having a minimum field density of 93.5% of the laboratory maximum density (G_{mm}). Specific requirements for the SuperPave asphaltic concrete structural course are outlined in the current edition of the FDOT SSRBC, Section 334.

After placement and field compaction, the asphaltic concrete should be cored to evaluate material thickness and to perform laboratory densities. Cores should be obtained at frequencies of at least one core per 2,000 square feet of placed pavement, or a minimum of two cores per day's production, whichever is greater.



4.3.4 Effects of Groundwater

One of the most critical factors influencing pavement performance in Northwest Florida is the relationship between the pavement subgrade and the groundwater level. Roadways and parking areas have been damaged as a result of deterioration of the base conditions and/or the base/surface course bond. We would normally recommend that the seasonal high groundwater table and the bottom of the flexible pavement base course be separated by at least 24 inches. Based on the turn lane borings (P-1 and P-2), it is anticipated that compliance with this recommendation will be possible.

Considering the traffic loading conditions anticipated for the bike paths/lanes (primarily bicycles with an occasional motor vehicle), it is anticipated that reducing the separation between the base and seasonal high groundwater table from 24 inches to 6 inches will be acceptable. However, based on the boring data obtained and the finished elevations of the proposed construction, it is anticipated that compliance with the reduced separation dimension may still be a problem in some areas of the proposed bike paths/lanes. Where separation is a problem, it is often recommended to raise finished elevations sufficiently to provide for the separation (likely not an option for this project) or to incorporate underdrains into the design. In areas where the separation is not obtained and suitable measures are not implemented, isolated pavement areas requiring more frequent repair and maintenance can be anticipated.

4.3.5 Curbing

As noted previously, we understand that no curbing is proposed for the bike path/lane and turning lane pavements. However, if curbing should be required and/or used, then the following recommendations are made.

Typical curbing is extruded and placed atop the pavement surface. This type of curbing does not act as a horizontal cutoff for lateral migration of storm and irrigation water into the base material. As a result of this, it is not uncommon for base and subgrade materials adjacent to these areas to become saturated, promoting subsequent localized pavement deterioration. Consequently, we recommend that all pavements abutting irrigated landscape areas be equipped with an underdrain system that penetrates a minimum depth equal to the bottom of stabilized subgrade to intercept trapped shallow water and discharge it into a closed system or other acceptable discharge point.

Alternatively, curbing around any landscaped sections adjacent to parking lots and driveways could be constructed with full-depth curb sections to reduce horizontal water migration. However, underdrains may still be required dependent upon the soil type and spatial relationships. UES should review final grading plans to evaluate the need and placement of pavement and landscape underdrains.

4.3.6 Construction Traffic

Incomplete pavement sections will not perform satisfactorily under construction traffic loadings. We recommend that construction traffic (e.g., construction equipment, concrete trucks, sod trucks, dump trucks, etc.) be rerouted away from these pavements during construction. Alternatively, the pavement section can be only partially completed until the need for most of the construction traffic has gone away. For instance, allow construction traffic to drive over the compacted base course, and then repair the base course locally as needed, and install the pavement section after the need for the majority of the construction traffic has gone away.



4.4 PIPE/CULVERT CROSSINGS

Regarding the proposed pipe/culvert crossings, the following evaluations and recommendations are presented based on the boring and laboratory test data obtained from the exploration, our experience with similar site and subsurface conditions in the area of the project site, and our understanding of the proposed construction.

- Based on proposed approximate invert elevations and groundwater levels encountered in the borings at the time of the field exploration, it is estimated that bottoms of the trench excavations would be from approximately 1 foot above to approximately 2 feet below groundwater levels. During periods of seasonal high groundwater conditions, it is estimated that all of the trench bottoms will be at or below groundwater levels. Therefore, it is anticipated that temporary dewatering of the pipe/culvert excavations will be required.
- It appears that the excavation bottom subgrade conditions will generally consist of loose to very loose native relatively clean sands [SP and SP-SM] that, with suitable dewatering measures and compaction operations, will likely be suitable for support of the proposed pipe/culvert construction.
- It would appear that the soils to be excavated will generally consist of existing fill soils comprised of sand with silt [SP-SM] and silty sand [SM]. The moisture contents for these soils, above groundwater, were relatively dry (approximately 4 to 7 percent by dry weight) at the time of the field exploration. However, our experience with similar soils indicate that the soils will be extremely sensitive to changes in moisture content. Therefore, as a minimum, it is anticipated that at least some moisture conditioning of the excavated soil materials will be required to facilitate reuse for trench backfill. During periods of extremely wet weather and seasonal high groundwater conditions, it is anticipated that reuse of the soils would be difficult at best, and, in some instances, would prove to be impractical. The excavated soils would then have to be removed from the site, and suitable fill materials be imported for backfilling of the trenches. As such, provide a fee proposal would be prudent to include a contingency line item in the bid documents for the project addressing the possible removal and replacement of soils materials excavated from the trenches.
- It is recommended that measures be taken to evaluate the effects of buoyant forces on the pipes/culverts when empty and submerged beneath groundwater. If proper measures are not taken to counteract these forces, then the pipes/culverts could exert uplift forces on overlying structures (i.e. pavements) or could even “float” out of the trenches. Measures to counteract hydrostatic uplift forces could include the addition of dead weight to the pipes/culverts or the use of some form of anchoring system around or attached to the pipes/culverts. At your request, we would be pleased to provide a fee proposal to assist you with the evaluation uplift protection requirements.

4.5 SITE PREPARATION AND EARTHWORK

We recommend only normal, good practice site earthwork construction procedures. These procedures may include: stripping proposed construction areas of existing topsoil, organics, and pavement materials (including base materials); the performance of safe excavations for pipe installation; and the placement of engineered to desired finished grades. An expanded and more detailed synopsis of this work is provided in the following sections.



4.5.1 Temporary Groundwater Control

As previously discussed, groundwater was present at approximate depths of 2.7 to 4.9 feet BEG in some of the proposed construction areas, on the dates the borings were drilled. During periods of seasonal high groundwater conditions, groundwater levels on the order of 0.5 to 4.5 feet BEG could be prevalent in most of the proposed construction areas. Therefore, it is anticipated that temporary groundwater control may be required during earthwork operations. Groundwater control means and methods are the sole responsibility of the contractor.

To minimize problems with elevated groundwater conditions, it would be prudent to schedule, as much as is practical, all site work, grading, and construction operations during extended periods of dry weather. If such operations are performed during extended periods of wet weather, such as may be encountered during the late summer and early fall months of hurricane season, then possible problems with elevated groundwater conditions could occur.

4.5.2 Nearby Structures and Vibrations

Care should be exercised to avoid damaging any nearby structures while the earthwork operations are underway. Prior to commencing site work operations in areas that will be constructed near adjacent structures and/or developments, we recommend that occupants of adjacent structures be notified, and the existing conditions of the structures be documented with photographs and survey. Compaction should cease if deemed detrimental to adjacent structures.

Pre-construction building surveys of all off-site adjacent structures are also recommended, but absent these surveys, we recommend that the vibratory function of the compaction equipment be turned off when operating within 50 feet of any adjacent structures. UES can provide vibration monitoring services to help document and evaluate the effects of the surface compaction operations on existing structures.

4.5.3 Existing Underground Utilities

The location of any existing underground utility lines within the proposed construction areas should be established prior to initiating construction. Where possible, provisions should be made to relocate or abandon interfering utilities. It should be noted that if underground pipes are not properly removed or plugged, they might serve as conduits for subsurface erosion, which may subsequently lead to excessive settlement of overlying pavements and structures.

If relocation and/or abandonment are not options, then, as a minimum, it is recommended that: the trench and excavation fill materials for existing utilities be excavated to undisturbed native soils; the exposed utilities be evaluated for any deterioration or damage (pressure testing being recommended for any water bearing utilities); any damage or deterioration discerned be properly repaired; and the utility trenches be backfilled to finished elevations in accordance with recommendations presented in subsequent sections of this report. Based on the boring data obtained, it is anticipated that the materials excavated will likely be suitable for backfilling the trenches. However, some preparation of the excavated materials (likely in the form of wetting or drying) may be required to facilitate reuse and compaction.

4.5.4 Site Preparation and Grading

Strip the proposed construction limits of all deleterious materials including topsoil vegetation, and pavement section materials (including asphalt and base materials). In grassed, landscaped and undeveloped construction areas, expect typical approximate depths of stripping of 6 to 12 inches.



During general construction operations, loose sandy soils will likely be encountered at the stripped subgrade level. As a result, unstable subgrade conditions may be anticipated during general construction operations. The use of light construction equipment would aid in reducing subgrade disturbance. The use of remotely operated equipment, such as a backhoe, would be beneficial to perform cuts and reduce subgrade disturbance.

Following completion of the initial stripping operations, and after rough grade has been established in areas at or below finished subgrade elevations, a visit should be made to the site(s) by a UES Geotechnical Engineer or his representative. If possible, the engineer will observe vibratory or static proofrolling of the exposed soil subgrades. The purposes of the proofrolling will be to densify loose surficial soils, and identify pockets of unsuitable material which may require densification in-place or undercutting and replacement. Ideally, vibratory proofrolling would be most suitable for the prevalent soil materials (relatively clean sands). However, because of relatively shallow groundwater conditions indicated by at least some of the borings, vibratory proofrolling of the exposed subgrades may result in liquefaction and stability/failure problems within the sands. Static proofrolling with a loaded dump truck or other pneumatic tired construction vehicle of similar size and weight may be performed in lieu of vibratory proofrolling in areas where shallow groundwater may preclude the performance of vibratory proofrolling operations.

It is imperative to the success of the site and subgrade preparation operations that a UES Geotechnical Engineer or his representative be on the site immediately prior to, and during the performance of any proofrolling operations on the project site. The engineer will be able to observe site conditions at the time of the proofrolling operations, and be immediately available to make recommendations regarding subgrade preparation or assist in developing appropriate stabilization procedures based on the observed conditions encountered during construction. Engineering observation and involvement is especially critical due to the presence of relatively shallow groundwater conditions.

The number of passes required during proofrolling operations to evaluate subgrade conditions and densify the upper zone of sands will be a function of the following: the applied dynamic force of the compaction equipment; the prevalent moisture content of the sands; the prevalent weather and groundwater conditions at the time of the proofrolling operations; and the quantity of fines present in the sands. The specific number of passes required to achieve the density criterion discussed in a subsequent section of this report is best determined by performing test strips prior to or during the initial phases of the site preparation activities with the actual compaction equipment to be used. Based on experience with similar soil conditions and suitable compaction equipment, it is anticipated that a typical proofrolling sequence required to evaluate subgrade conditions would entail a minimum of two passes of the compaction equipment in each of two perpendicular directions. However, due to the limited widths of the proposed construction areas (typically approximately 15 feet or less), proofrolling in only one direction (along the length of the construction areas) will be the likely sequence. The final actual proofrolling sequence will be dependent on the findings of the test strips. In addition, it is recommended that, during the proofrolling operations, a 20% overlap of the compaction equipment be used for adjacent strips.

Where proofrolling operations can be performed, and site and subsurface conditions at the time of the proofrolling operations permit, it is recommended that the proofrolled subgrades be moisture conditioned and compacted to at least 95% of the materials' modified Proctor (ASTM D1557) maximum dry densities. This proofrolling and compaction process, where possible, will help provide a stable base for the compaction of new structural fill, and will provide suitable subgrade support for sidewalk construction. Following the completion of any vibratory proofrolling and compaction operations performed, exposed subgrades at finished elevations should then be rerolled with the vibratory mechanism for the compaction equipment turned off. The purpose of



the additional rolling is to densify the upper approximately 6 to 12 inches of surficial sands which tend to remain loose because of over-vibration. Similar procedures should be used for all final subgrades where vibratory compaction equipment is used.

Upon completion of grading, care should be taken to maintain the subgrade moisture contents prior to subsequent construction. Construction traffic over completed subgrades, in areas of subsequent construction, should be avoided to the extent practical. The site should also be graded to prevent ponding of surface water on the prepared subgrades or in excavations. If the subgrade(s) should become frozen, desiccated, saturated, or disturbed, the affected materials should be removed or these materials should be scarified, moisture conditioned, and recompacted prior to any subsequent construction.

4.5.5 Fill Placement

The recommended criteria for soil fill characteristics (both on-site and imported materials) and compaction procedures are listed in a subsequent section. The project design documents should include the following recommendations to address proper placement and compaction of project fill materials. Earthwork operations should not begin until representative fill and/or native soil samples are collected and tested (allow 3 to 4 days for sampling and testing) to determine maximum dry density and optimum moisture values.

4.5.6 Earth Fill Materials

Engineered fill should meet the following material properties.

- Imported fill and on-site material satisfactory for structural fill should include clean soil material with USCS classifications of SW, SP, and SP-SM. The fill material should have a modified Proctor (ASTM D1557) maximum dry density of at least 100 pcf, contain less than 10 percent passing the No. 200 sieve, and be non-plastic (NP).
- Organic content or other foreign matter (debris) should be no greater than 3 percent by weight, and no large roots (greater than ¼ inch in diameter) should be allowed.
- Material utilized as fill should not contain rocks greater than 3 inches in diameter or greater than 30 percent retained on the ¾-inch sieve.

4.5.7 Compaction Recommendations

The following recommendations are presented for fill placement and compaction. The recommendations are also applicable for the compaction of existing soil materials on the project site.

- Maximum loose lift thicknesses – 8 to 12 inches for general mass fill (if any); 4 to 6 inches in pipe trenches and other confined spaces where hand operated equipment is used.
- Compaction requirements – 95 percent of the maximum dry density, as determined by the modified Proctor (ASTM D 1557) compaction test, for cohesionless soils underneath structures and pavements.
- Soil moisture content at time of compaction – within ±3 percent of the optimum moisture content.



4.5.8 Test Criteria to Evaluate Fill and Compaction

The following minimum criteria for the evaluation of fill materials, and the placement and compaction of the fill materials, are recommended. The recommendations are also applicable for the evaluation and compaction of existing soil materials on the project site.

- One Modified Proctor compaction test and one No. 200 sieve analysis test for each soil type that will either be compacted in-place and/or used as project fill.
- Trench excavations underneath pavements – One density test for every 50 linear feet of trench excavation for each lift or two tests per lift, whichever is greater.
- Pavement/sidewalk areas – One density test for every 1,000 to 2,000 square feet of area for each lift or two tests for each lift, whichever is greater.

4.6 CONSTRUCTION RELATED SERVICES

We recommend that UES be retained to perform construction materials testing and observations on this project. Field testing and observations will include: verification of fill placement and construction subgrade soils; the performance of in-place density testing to verify compaction of native soil subgrades or fill soils; and testing for sidewalk concrete materials and placement. We can also provide pavement materials testing and asphalt placement monitoring and testing for the proposed asphalt pavement construction, as well as other general construction observation and testing services.

The geotechnical engineering design does not end with the advertisement of the construction documents. The design is an on-going process throughout construction. Because of our familiarity with the site conditions and the intent of the engineering design, we are most qualified to address problems that might arise during construction in a timely and cost-effective manner.

4.6.1 Excavation and Safety

In Federal Register, Volume 54, No. 209 (October 1989), the United States Department of Labor, Occupational Safety and Health Administration (OSHA) amended its “Construction Standards for Excavations, 29 CFR, Part 1926, Subpart P”. This document was issued to better allow for the safety of workers entering trenches or excavations. It is mandated by this federal regulation that excavations, whether they be utility trenches, basement excavations or footing excavations, be constructed in accordance with the new OSHA guidelines. It is our understanding that these regulations are being strictly enforced and if they are not closely followed, the owner and the Contractor could be liable for substantial penalties.

The Contractor is solely responsible for designing and constructing stable, temporary excavations and should shore, slope, or bench the sides of the excavations as required to maintain stability of both the excavation sides and bottom. The Contractor’s “responsible person”, as defined in 29 CFR Part 1926, should evaluate the soil exposed in the excavations as part of the Contractor’s safety procedures. In no case should slope height, slope inclination, or excavation depth, including utility trench excavation depth, exceed those specified in all local, state, and federal safety regulations.

We are providing this information solely as a service to our client. UES does not assume responsibility for construction site safety or the Contractor’s or other parties’ compliance with local, state, and federal safety or other regulations.



5.0 LIMITATIONS

This report has been prepared for the exclusive use of **Kenneth Horne and Associates, Inc.**, and other designated members of their design/construction team associated with the proposed construction for the specific project discussed in this report. No other site or project facilities should be designed using the soil information contained in this report. As such, Universal Engineering Sciences, Inc. (UES) will not be responsible for the performance of any other site improvement designed using the data in this report.

This report should not be relied upon for final design recommendations or professional opinions by unauthorized third parties without the expressed written consent of UES. Unauthorized third parties that rely upon the information contained herein without the expressed written consent of UES, assume all risk and liability for such reliance.

The recommendations submitted in this report are based upon the data obtained from the soil borings performed at the locations indicated on the Boring Logs, and from other information as referenced. This report does not reflect any variations which may occur between the boring locations. The nature and extent of such variations may not become evident until the course of construction. If variations become evident, it will then be necessary for a re-evaluation of the recommendations of this report after performing on-site observations during the construction period, and noting the characteristics of the variations.

Borings for a typical geotechnical report are widely spaced and generally not sufficient for reliably detecting the presence of isolated, anomalous surface or subsurface conditions, or reliably estimating unsuitable or suitable material quantities. Accordingly, UES does not recommend relying on our boring information for estimation of material quantities unless our contracted services specifically include sufficient exploration for such purpose(s), and within the report we so state that the level of exploration provided should be sufficient to detect anomalous conditions or estimate such quantities. Therefore, UES will not be responsible for any extrapolation or use of our data by others beyond the purpose(s) for which it is applicable or intended.

All users of this report are cautioned that there was no requirement for UES to attempt to locate any man-made buried objects or identify any other potentially hazardous conditions that may exist at the site during the course of this exploration. Therefore no attempt was made by UES to locate or identify such concerns. UES cannot be responsible for any buried man-made objects or environmental hazards which may be subsequently encountered during construction that are not discussed within the text of this report. We can provide this service if requested.

During the early stages of most construction projects, geotechnical issues not addressed in this report may arise. Because of the natural limitations inherent in working with the subsurface, it is not possible for a geotechnical engineer to predict and address all possible problems. A Geotechnical Business Council (GBC), "Important Information About Your Geotechnical Engineering Report" appears in Appendix D, and will help explain the nature of geotechnical issues. Further, we include a document in Appendix D, entitled **Constraints & Restrictions**, to bring to your attention the potential concerns and the basic limitations of a typical geotechnical report.

* * * * *



APPENDIX A





EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

NAVARRE, SANTA ROSA COUNTY, FLORIDA

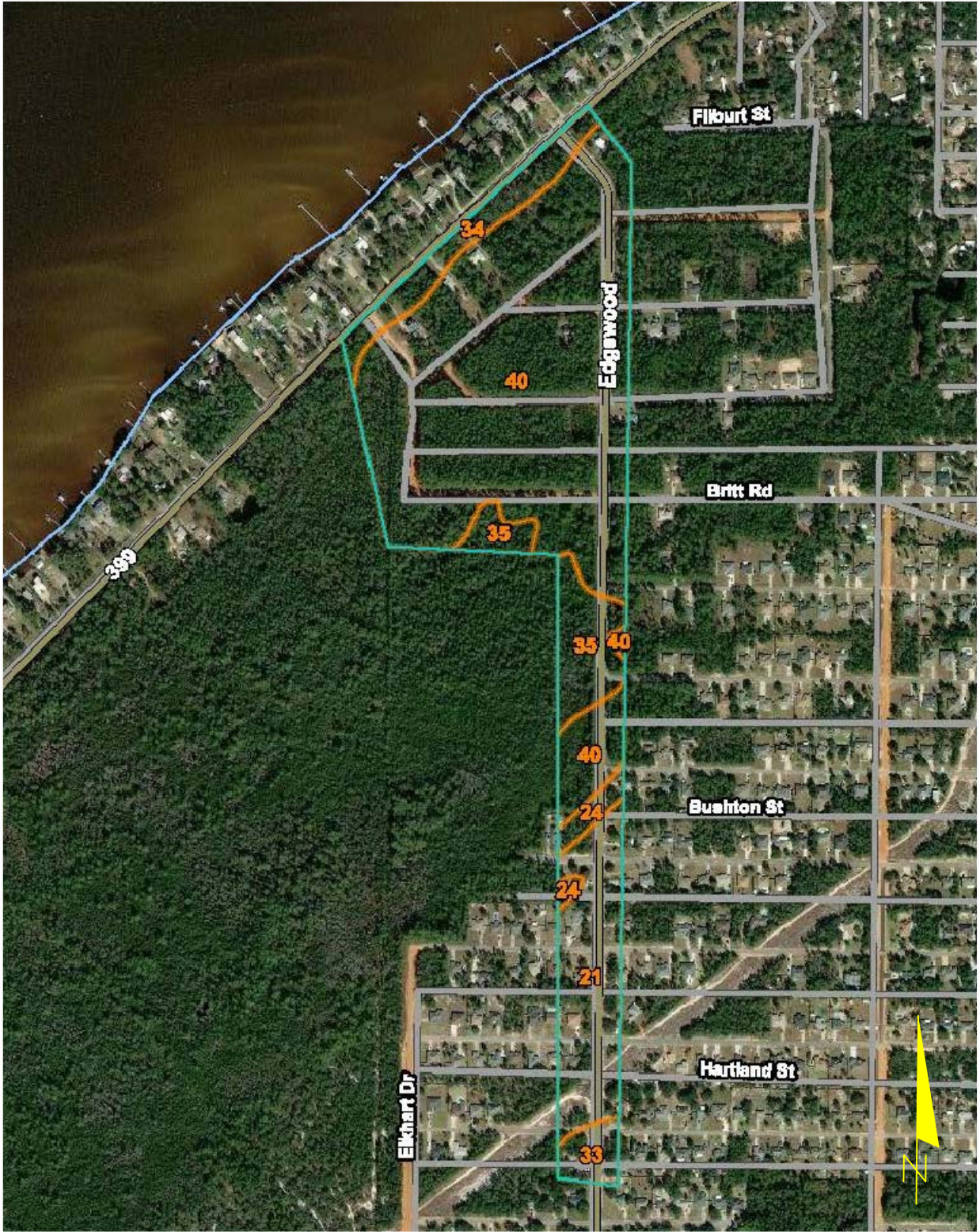
SITE LOCATION MAP



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ENGINEERING SCIENCES

DRAWN BY:	KD	DATE:	10/11/19	CHECKED BY:	MJ	DATE:	10/11/19
SCALE:	NTS	PROJECT NO:	1730.1900052.0000	REPORT NO:	1721098	PAGE NO:	A - 1

1730.1900052-A



EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

NAVARRE, SANTA ROSA COUNTY, FLORIDA

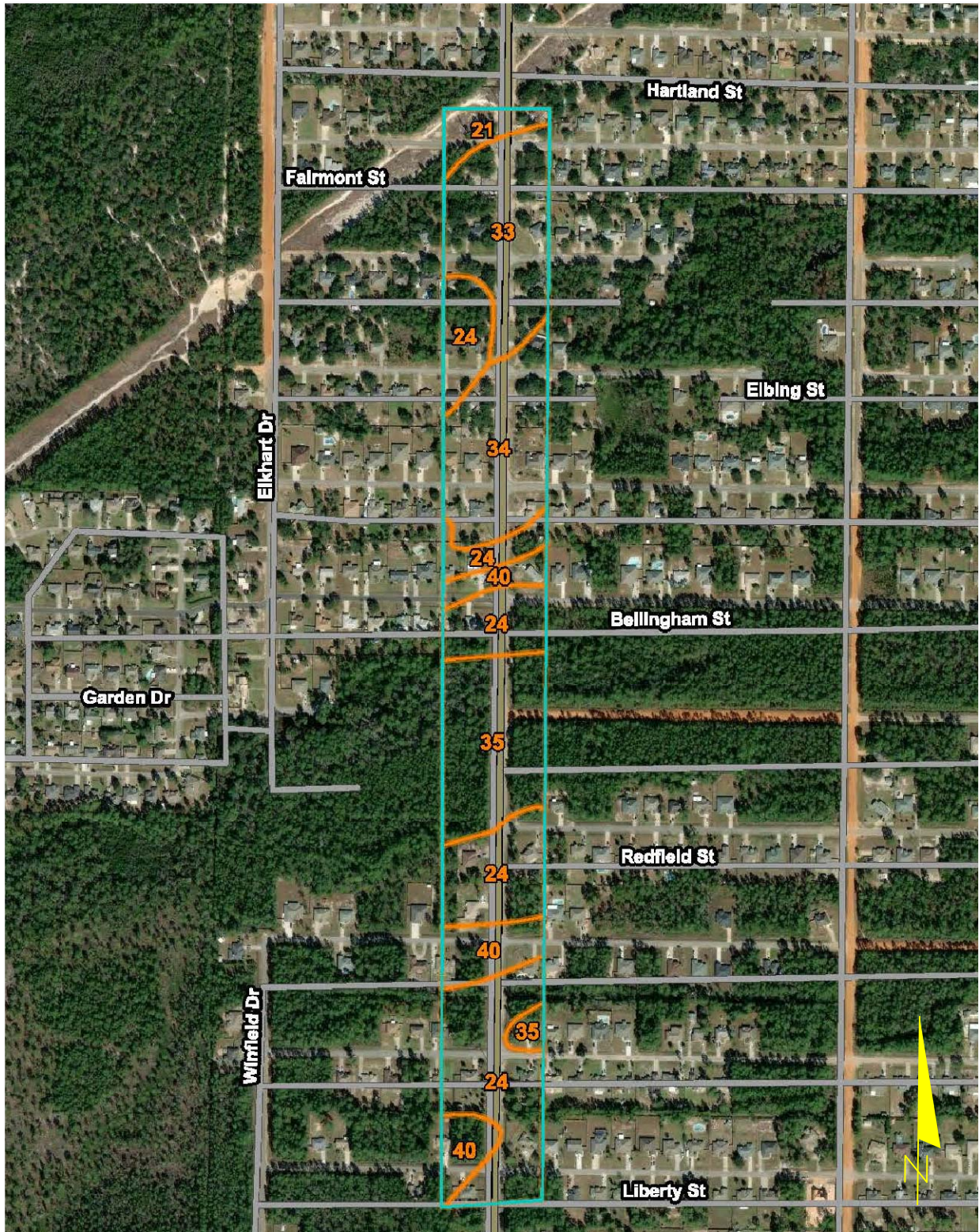
USDA SOIL SURVEY MAP



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SCALE:	NTS	PROJECT NO:	1730.1900052.0000	REPORT NO:	1721098	PAGE NO:	A - 2

1730.1900052-A



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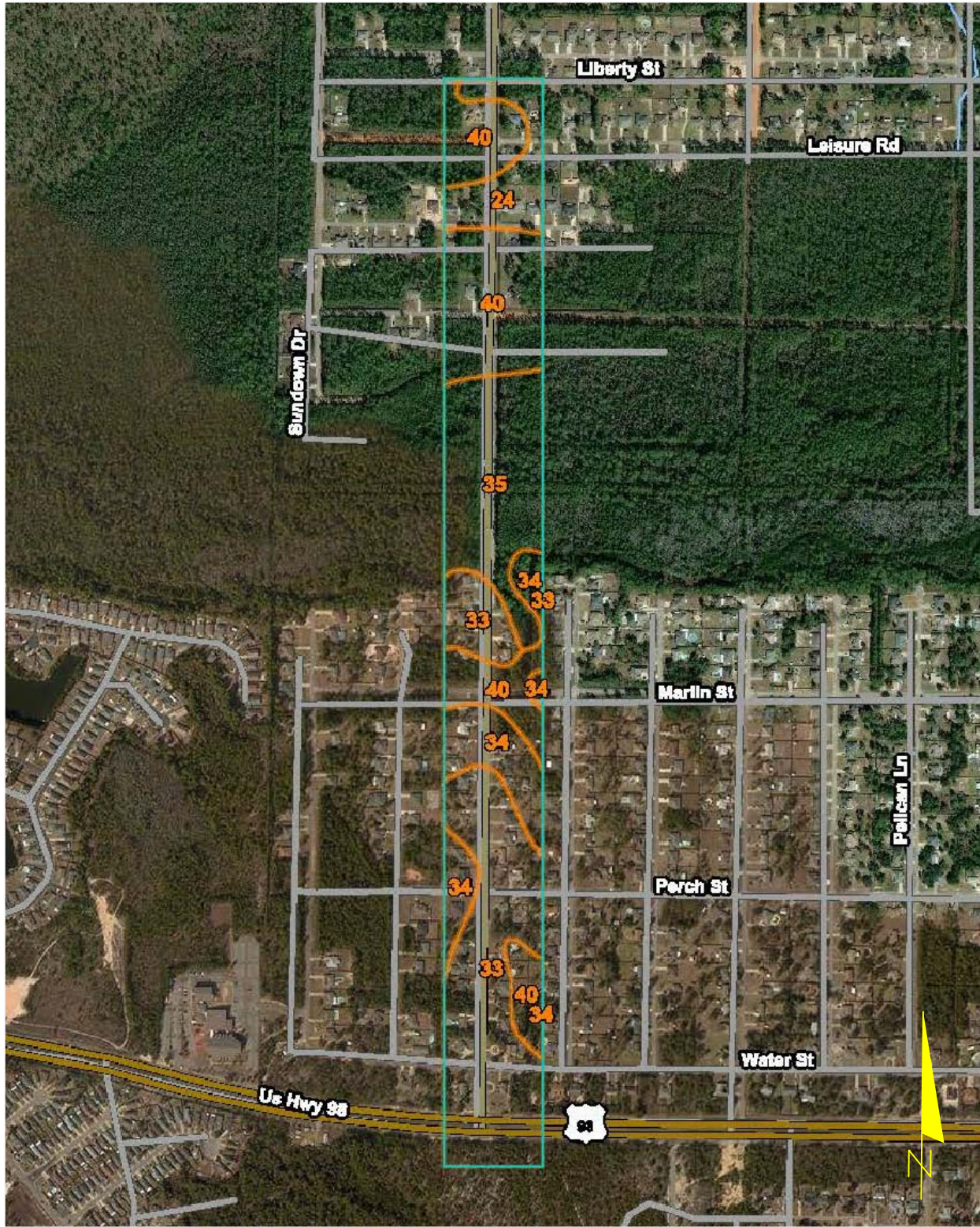
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EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

NAVARRE, SANTA ROSA COUNTY, FLORIDA

USDA SOIL SURVEY MAP

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EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

NAVARRE, SANTA ROSA COUNTY, FLORIDA

USDA SOIL SURVEY MAP



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SCALE: NTS	PROJECT NO: 1730.1900052.0000	REPORT NO: 1721098	PAGE NO: A - 4

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APPENDIX B





UNIVERSAL ENGINEERING SCIENCES BORING LOG

PROJECT NO.: 1730.1900052.0000

REPORT NO.: 1721098

PAGE: B-1

PROJECT: EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

BORING NO: **AB-1**

SHEET: **1 of 1**

NAVARRE, SANTA ROSA COUNTY, FLORIDA

SECTION:

TOWNSHIP:

RANGE:

CLIENT: KENNETH HORNE AND ASSOCIATES, INC.

GS ELEVATION(ft): 39*

DATE STARTED: 9/19/19

LOCATION: STATION 15+00, 8' EAST OF EAST EDGE OF PAVEMENT

WATER TABLE (ft): NE

DATE FINISHED: 9/19/19

REMARKS: *ESTIMATED FROM CONSTRUCTION DOCUMENTS

DATE OF READING: 9/19/19

DRILLED BY: UES / B.B.

AUGER-HAND HELD BARREL

EST. WSWT (ft): 3.5

TYPE OF SAMPLING: ASTM D1452

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N VALUE	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT/DAY)	ORG CONT. (%)
									LL	PI		
0						Dark brown sandy Topsoil, with trace amounts of small roots and small organics						
1						Dark brown SAND [SP], with trace amounts of small roots and small organics		4				
2						Brown SAND [SP]						
3						Light brown SAND [SP]						
4				▽		Tan SAND [SP]						
5						Boring Terminated at 5'						



UNIVERSAL ENGINEERING SCIENCES BORING LOG

PROJECT NO.: 1730.1900052.0000

REPORT NO.: 1721098

PAGE: B-2

PROJECT: EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

BORING NO: **AB-2**

SHEET: **1 of 1**

NAVARRE, SANTA ROSA COUNTY, FLORIDA

SECTION:

TOWNSHIP:

RANGE:

CLIENT: KENNETH HORNE AND ASSOCIATES, INC.

GS ELEVATION(ft): 40*

DATE STARTED: 9/19/19

LOCATION: STATION 20+00, 6' WEST OF WEST EDGE OF PAVEMENT

WATER TABLE (ft): 4.9

DATE FINISHED: 9/19/19

REMARKS: *ESTIMATED FROM CONSTRUCTION DOCUMENTS

DATE OF READING: 9/19/19

DRILLED BY: UES / B.B.

AUGER-HAND HELD BARREL

EST. WSWT (ft): 3

TYPE OF SAMPLING: ASTM D1452

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N VALUE	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT/DAY)	ORG CONT. (%)
									LL	PI		
0						Dark brown sandy Topsoil, with few amounts of small roots and small organics	6	2				
1					Dark brown SAND [SP]							
2					Brown SAND [SP]							
3					Light brown SAND [SP]							
4					White SAND [SP]							
5						Boring Terminated at 5'						



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PROJECT: EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

BORING NO: **AB-3**

SHEET: **1 of 1**

NAVARRE, SANTA ROSA COUNTY, FLORIDA

SECTION:

TOWNSHIP:

RANGE:

CLIENT: KENNETH HORNE AND ASSOCIATES, INC.

GS ELEVATION(ft): 41*

DATE STARTED: 9/19/19

LOCATION: STATION 24+75, 6' EAST OF EAST EDGE OF PAVEMENT

WATER TABLE (ft): NE

DATE FINISHED: 9/19/19

REMARKS: *ESTIMATED FROM CONSTRUCTION DOCUMENTS

DATE OF READING: 9/19/19

DRILLED BY: UES / B.B.

AUGER-HAND HELD BARREL

EST. WSWT (ft): 3.5

TYPE OF SAMPLING: ASTM D1452

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N VALUE	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT/DAY)	ORG CONT. (%)
									LL	PI		
0						Red, orange, brown SAND, with silt [SP-SM] (Fill)						
1						Brown SAND [SP]						
						Light brown SAND [SP]						
2						Tan SAND [SP]		3				
3				▽		White, light brown, tan SAND [SP]						
4						White, light brown, tan SAND [SP]						
5						Boring Terminated at 5'						



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PROJECT NO.: 1730.1900052.0000

REPORT NO.: 1721098

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PROJECT: EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

BORING NO: **AB-4**

SHEET: **1 of 1**

NAVARRE, SANTA ROSA COUNTY, FLORIDA

SECTION:

TOWNSHIP:

RANGE:

CLIENT: KENNETH HORNE AND ASSOCIATES, INC.

GS ELEVATION(ft): 40*

DATE STARTED: 9/19/19

LOCATION: STATION 30+00, 5' WEST OF WEST EDGE OF PAVEMENT

WATER TABLE (ft): NE

DATE FINISHED: 9/19/19

REMARKS: *ESTIMATED FROM CONSTRUCTION DOCUMENTS

DATE OF READING: 9/19/19

DRILLED BY: UES / B.B.

AUGER-HAND HELD BARREL

EST. WSWT (ft): 3

TYPE OF SAMPLING: ASTM D1452

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N VALUE	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT/DAY)	ORG CONT. (%)
									LL	PI		
0						Dark brown sandy Topsoil, with few amounts of small roots and small organics						
1						Red, orange, brown SAND [SP], with trace amounts of small roots and small organics (Fill)						
2						Brown SAND [SP]	2	2				
3				▽		Light brown, tan SAND [SP]						
4						White SAND [SP]						
5						Boring Terminated at 5'						



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PROJECT NO.: 1730.1900052.0000

REPORT NO.: 1721098

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PROJECT: EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

BORING NO: **AB-5**

SHEET: **1 of 1**

NAVARRE, SANTA ROSA COUNTY, FLORIDA

SECTION:

TOWNSHIP:

RANGE:

CLIENT: KENNETH HORNE AND ASSOCIATES, INC.

GS ELEVATION(ft): 39*

DATE STARTED: 9/19/19

LOCATION: STATION 35+00, 5' EAST OF EAST EDGE OF PAVEMENT

WATER TABLE (ft): 4.6

DATE FINISHED: 9/19/19

REMARKS: *ESTIMATED FROM CONSTRUCTION DOCUMENTS

DATE OF READING: 9/19/19

DRILLED BY: UES / B.B.

AUGER-HAND HELD BARREL

EST. WSWT (ft): 2.5

TYPE OF SAMPLING: ASTM D1452

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N VALUE	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT/DAY)	ORG CONT. (%)
									LL	PI		
0												
1					▽	Brown SAND [SP], with lumps of orange, brown silty sand and trace amounts of fine to small roots and fine to small organics (Fill)		2				
2						Brown SAND [SP]						
3												
4					▽	Light gray, brown SAND [SP]						
5						Boring Terminated at 5'						



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PROJECT NO.: 1730.1900052.0000

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PROJECT: EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

BORING NO: **AB-6**SHEET: **1 of 1**

NAVARRE, SANTA ROSA COUNTY, FLORIDA

SECTION:

TOWNSHIP:

RANGE:

CLIENT: KENNETH HORNE AND ASSOCIATES, INC.

GS ELEVATION(ft): 36*

DATE STARTED: 9/19/19

LOCATION: STATION 40+00, 6' WEST OF WEST EDGE OF PAVEMENT

WATER TABLE (ft): 4

DATE FINISHED: 9/19/19

REMARKS: *ESTIMATED FROM CONSTRUCTION DOCUMENTS

DATE OF READING: 9/19/19

DRILLED BY: UES / B.B.

AUGER-HAND HELD BARREL

EST. WSWT (ft): 2

TYPE OF SAMPLING: ASTM D1452

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N VALUE	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT/ DAY)	ORG CONT. (%)	
									LL	PI			
0						Dark brown to brown SAND [SP], with lumps of orange, brown silty sand and trace amounts of small roots and small organics (Fill)		2					
1													
2				▽		Dark brown, dark gray SAND [SP]							
3						Dark brown organic stained SAND, with silt [SP-SM]							
4				▼		Light gray to gray, brown SAND [SP]							
5						Boring Terminated at 5'							



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PROJECT: EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

BORING NO: **AB-7**

SHEET: **1 of 1**

NAVARRE, SANTA ROSA COUNTY, FLORIDA

SECTION:

TOWNSHIP:

RANGE:

CLIENT: KENNETH HORNE AND ASSOCIATES, INC.

GS ELEVATION(ft): 33*

DATE STARTED: 9/19/19

LOCATION: STATION 45+00, 6' EAST OF EAST EDGE OF PAVEMENT

WATER TABLE (ft): NE

DATE FINISHED: 9/19/19

REMARKS: *ESTIMATED FROM CONSTRUCTION DOCUMENTS

DATE OF READING: 9/19/19

DRILLED BY: UES / B.B.

AUGER-HAND HELD BARREL

EST. WSWT (ft): 1

TYPE OF SAMPLING: ASTM D1452

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N VALUE	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT/DAY)	ORG CONT. (%)
									LL	PI		
0						Dark brown, red SAND, with silt [SP-SM] (Fill)						
1				▽		Black organic stained SAND, with silt [SP-SM]						
2						Black organic stained silty SAND [SM], with some wood fragments						
3												
4												
5						Boring Terminated at 5'		27				6



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PROJECT: EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

BORING NO: **AB-8**

SHEET: **1 of 1**

NAVARRE, SANTA ROSA COUNTY, FLORIDA

SECTION:

TOWNSHIP:

RANGE:

CLIENT: KENNETH HORNE AND ASSOCIATES, INC.

GS ELEVATION(ft): 33*

DATE STARTED: 9/19/19

LOCATION: STATION 50+00, 5' WEST OF WEST EDGE OF PAVEMENT

WATER TABLE (ft): NE

DATE FINISHED: 9/19/19

REMARKS: *ESTIMATED FROM CONSTRUCTION DOCUMENTS

DATE OF READING: 9/19/19

DRILLED BY: UES / B.B.

AUGER-HAND HELD BARREL

EST. WSWT (ft): 1

TYPE OF SAMPLING: ASTM D1452

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N VALUE	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT/DAY)	ORG CONT. (%)
									LL	PI		
0						Dark brown sandy Topsoil, with trace amounts of fine roots and fine organics						
1						Dark brown organic stained SAND, with silt [SP-SM], with trace amounts of small roots, small organics and wood fragments						
2						Dark brown organic stained SAND, with silt [SP-SM], with trace amounts of small roots, small organics and wood fragments						
3						Black organic stained silty SAND [SM], with trace amounts of small roots, small organics and wood fragments		19				
4						Black organic stained silty SAND [SM], with trace amounts of small roots, small organics and wood fragments						
5						Boring Terminated at 5'						



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PROJECT: EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

BORING NO: **AB-9**

SHEET: **1 of 1**

NAVARRE, SANTA ROSA COUNTY, FLORIDA

SECTION:

TOWNSHIP:

RANGE:

CLIENT: KENNETH HORNE AND ASSOCIATES, INC.

GS ELEVATION(ft): 33*

DATE STARTED: 9/19/19

LOCATION: STATION 56+00, 6' EAST OF EAST EDGE OF PAVEMENT

WATER TABLE (ft): NE

DATE FINISHED: 9/19/19

REMARKS: *ESTIMATED FROM CONSTRUCTION DOCUMENTS

DATE OF READING: 9/19/19

DRILLED BY: UES / B.B.

AUGER-HAND HELD BARREL

EST. WSWT (ft): 2

TYPE OF SAMPLING: ASTM D1452

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N VALUE	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT/DAY)	ORG CONT. (%)
									LL	PI		
0						Dark brown, orange SAND, with silt [SP-SM], with trace amounts of small roots and small organics (Fill)						
1						Dark gray, black organic stained SAND [SP]						
2				▽		Dark brown organic stained SAND, with silt [SP-SM]	3	8				
3						Dark brown, gray SAND, with silt [SP-SM]						
4						Brown, gray SAND [SP]						
5						Boring Terminated at 5'						



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PROJECT: EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

BORING NO: **AB-10**

SHEET: **1 of 1**

NAVARRE, SANTA ROSA COUNTY, FLORIDA

SECTION:

TOWNSHIP:

RANGE:

CLIENT: KENNETH HORNE AND ASSOCIATES, INC.

GS ELEVATION(ft): 32*

DATE STARTED: 9/24/19

LOCATION: STATION 61+00, 10' WEST OF WEST EDGE OF PAVEMENT

WATER TABLE (ft): NE

DATE FINISHED: 9/24/19

REMARKS: *ESTIMATED FROM CONSTRUCTION DOCUMENTS

DATE OF READING: 9/24/19

DRILLED BY: UES / T.M.

AUGER-HAND HELD BARREL

EST. WSWT (ft): 2.5

TYPE OF SAMPLING: ASTM D1452

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N VALUE	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT/DAY)	ORG CONT. (%)
									LL	PI		
0						Brown, orange SAND, with silt [SP-SM] (Fill)	10	2				
1												
2				▽	Dark brown organic stained SAND, with silt [SP-SM], with trace amounts of fine roots and fine organics							
3						Gray, brown SAND [SP]						
4												
5						Boring Terminated at 5'						



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PROJECT: EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

BORING NO: **AB-11**

SHEET: **1 of 1**

NAVARRE, SANTA ROSA COUNTY, FLORIDA

SECTION:

TOWNSHIP:

RANGE:

CLIENT: KENNETH HORNE AND ASSOCIATES, INC.

GS ELEVATION(ft): 32*

DATE STARTED: 9/24/19

LOCATION: STATION 65+00, 5' EAST OF EAST EDGE OF PAVEMENT

WATER TABLE (ft): NE

DATE FINISHED: 9/24/19

REMARKS: *ESTIMATED FROM CONSTRUCTION DOCUMENTS

DATE OF READING: 9/24/19

DRILLED BY: UES / T.M.

AUGER-HAND HELD BARREL

EST. WSWT (ft): 2

TYPE OF SAMPLING: ASTM D1452

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N VALUE	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT/DAY)	ORG CONT. (%)
									LL	PI		
0						Dark brown SAND, with silt [SP-SM], with trace amounts of fine roots, fine organics and fine gravel (Fill)						
1						Dark brown, dark gray organic stained SAND, with silt [SP-SM], with trace amounts of fine roots and fine organics		12				
2												
3												
4												
5						Boring Terminated at 5'						



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PROJECT: EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

BORING NO: **AB-12**

SHEET: **1 of 1**

NAVARRE, SANTA ROSA COUNTY, FLORIDA

SECTION:

TOWNSHIP:

RANGE:

CLIENT: KENNETH HORNE AND ASSOCIATES, INC.

GS ELEVATION(ft): 32*

DATE STARTED: 9/24/19

LOCATION: STATION 70+00, 10' WEST OF WEST EDGE OF PAVEMENT

WATER TABLE (ft): NE

DATE FINISHED: 9/24/19

REMARKS: *ESTIMATED FROM CONSTRUCTION DOCUMENTS
AUGER-HAND HELD BARREL

DATE OF READING: 9/24/19

DRILLED BY: UES / T.M.

EST. WSWT (ft): 2.5

TYPE OF SAMPLING: ASTM D1452

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N VALUE	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT/ DAY)	ORG CONT. (%)
									LL	PI		
0						Dark brown SAND, with silt [SP-SM], with trace amounts of small roots and small organics (Fill)		2				2
1												
2				▽		Brown, orange SAND, with silt [SP-SM] (Fill)						
3						Dark gray, organic stained SAND, with silt [SP-SM]						
4						Dark brown organic stained SAND, with silt [SP-SM]						
5						Boring Terminated at 5'						



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PROJECT: EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

BORING NO: **AB-13**

SHEET: **1 of 1**

NAVARRE, SANTA ROSA COUNTY, FLORIDA

SECTION:

TOWNSHIP:

RANGE:

CLIENT: KENNETH HORNE AND ASSOCIATES, INC.

GS ELEVATION(ft): 31*

DATE STARTED: 9/24/19

LOCATION: STATION 75+00, 12' EAST OF EAST EDGE OF PAVEMENT

WATER TABLE (ft): NE

DATE FINISHED: 9/24/19

REMARKS: *ESTIMATED FROM CONSTRUCTION DOCUMENTS

DATE OF READING: 9/24/19

DRILLED BY: UES / T.M.

AUGER-HAND HELD BARREL

EST. WSWT (ft): 2

TYPE OF SAMPLING: ASTM D1452

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N VALUE	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT/DAY)	ORG CONT. (%)
									LL	PI		
0						Brown, orange SAND, with silt [SP-SM] (Fill)						
1						Dark brown, dark gray organic stained SAND, with silt [SP-SM] (Possible Fill)						
2				▽		Dark brown, black organic stained silty SAND [SM], with trace amounts of fine roots and fine organics	20	11				2
3						Dark brown, black organic stained clayey SAND [SC], with trace amounts of small roots and small organics	26	25				
4						Dark brown, dark gray organic stained clayey SAND [SC], with trace amounts of fine roots and fine organics						
5						Boring Terminated at 5'						



**UNIVERSAL ENGINEERING SCIENCES
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PROJECT: EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

BORING NO: **AB-14**

SHEET: **1 of 1**

NAVARRE, SANTA ROSA COUNTY, FLORIDA

SECTION:

TOWNSHIP:

RANGE:

CLIENT: KENNETH HORNE AND ASSOCIATES, INC.

GS ELEVATION(ft): 31*

DATE STARTED: 9/24/19

LOCATION: STATION 80+00, 10' WEST OF WEST EDGE OF PAVEMENT

WATER TABLE (ft): NE

DATE FINISHED: 9/24/19

REMARKS: *ESTIMATED FROM CONSTRUCTION DOCUMENTS

DATE OF READING: 9/24/19

DRILLED BY: UES / T.M.

AUGER-HAND HELD BARREL

EST. WSWT (ft): 2

TYPE OF SAMPLING: ASTM D1452

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N VALUE	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT/DAY)	ORG CONT. (%)
									LL	PI		
0					▬	Brown, gray SAND [SP] (Fill)		2				
1					▬	Dark brown SAND, with silt [SP-SM], with some organic stain						
2				▽	▬	Dark brown organic stained SAND, with silt [SP-SM], with lumps of partially cemented silty sand						
3					▬	Brown SAND [SP]						
4					▬	Gray, brown SAND, with silt [SP-SM]						
5						Boring Terminated at 5'						



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PROJECT: EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

BORING NO: **AB-15**

SHEET: **1 of 1**

NAVARRE, SANTA ROSA COUNTY, FLORIDA

SECTION:

TOWNSHIP:

RANGE:

CLIENT: KENNETH HORNE AND ASSOCIATES, INC.

GS ELEVATION(ft): 30*

DATE STARTED: 9/24/19

LOCATION: STATION 85+00, 12' EAST OF EAST EDGE OF PAVEMENT

WATER TABLE (ft): NE

DATE FINISHED: 9/24/19

REMARKS: *ESTIMATED FROM CONSTRUCTION DOCUMENTS

DATE OF READING: 9/24/19

DRILLED BY: UES / T.M.

AUGER-HAND HELD BARREL

EST. WSWT (ft): 1

TYPE OF SAMPLING: ASTM D1452

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N VALUE	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT/DAY)	ORG CONT. (%)
									LL	PI		
0												
1				▽		Dark brown organic stained SAND, with silt [SP-SM],with trace amounts of small roots and small organics		8				
2					Dark brown, dark gray organic stained SAND, with silt [SP-SM]							
3					Dark brown, black organic stained silty SAND [SM]							
4					Dark brown, black organic stained silty clayey SAND [SC-SM]							
5						Boring Terminated at 5'						



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PROJECT: EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

BORING NO: **AB-16**

SHEET: **1 of 1**

NAVARRE, SANTA ROSA COUNTY, FLORIDA

SECTION:

TOWNSHIP:

RANGE:

CLIENT: KENNETH HORNE AND ASSOCIATES, INC.

GS ELEVATION(ft): 30*

DATE STARTED: 9/24/19

LOCATION: STATION 90+00, 12' WEST OF WEST EDGE OF PAVEMENT

WATER TABLE (ft): NE

DATE FINISHED: 9/24/19

REMARKS: *ESTIMATED FROM CONSTRUCTION DOCUMENTS

DATE OF READING: 9/24/19

DRILLED BY: UES / T.M.

AUGER-HAND HELD BARREL

EST. WSWT (ft): 2

TYPE OF SAMPLING: ASTM D1452

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N VALUE	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT/DAY)	ORG CONT. (%)
									LL	PI		
0						Brown SAND, with silt [SP-SM] (Fill)		2				
1												
2				▽		Dark brown, dark gray organic stained SAND, with silt [SP-SM]						
3						Dark brown, black organic stained SAND, with silt [SP-SM]						
4												
5						Boring Terminated at 5'						



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PROJECT: EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

BORING NO: **AB-17**

SHEET: **1 of 1**

NAVARRE, SANTA ROSA COUNTY, FLORIDA

SECTION:

TOWNSHIP:

RANGE:

CLIENT: KENNETH HORNE AND ASSOCIATES, INC.

GS ELEVATION(ft): 32*

DATE STARTED: 10/7/19

LOCATION: STATION 95+00, 9' EAST OF EAST EDGE OF PAVEMENT

WATER TABLE (ft): NE

DATE FINISHED: 10/7/19

REMARKS: *ESTIMATED FROM CONSTRUCTION DOCUMENTS




DATE OF READING: 10/7/19

DRILLED BY: UES / J.O.

AUGER-HAND HELD BARREL

EST. WSWT (ft): 2

TYPE OF SAMPLING: ASTM D1452

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N VALUE	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT/DAY)	ORG CONT. (%)
									LL	PI		
0						Dark brown sandy Topsoil, with trace amounts of fine roots and fine organics	4	1				
1					Brown SAND [SP]							
2					Light brown SAND [SP]							
3												
4												
5						Boring Terminated at 5'						



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PROJECT: EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

BORING NO: **AB-18**

SHEET: **1 of 1**

NAVARRE, SANTA ROSA COUNTY, FLORIDA

SECTION:

TOWNSHIP:

RANGE:

CLIENT: KENNETH HORNE AND ASSOCIATES, INC.

GS ELEVATION(ft): 32*

DATE STARTED: 10/8/19

LOCATION: STATION 100+00, 13' WEST OF WEST EDGE OF PAVEMENT

WATER TABLE (ft): NE

DATE FINISHED: 10/8/19

REMARKS: *ESTIMATED FROM CONSTRUCTION DOCUMENTS

DATE OF READING: 10/8/19

DRILLED BY: UES / J.O.

AUGER-HAND HELD BARREL

EST. WSWT (ft): 2.5

TYPE OF SAMPLING: ASTM D1452

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N VALUE	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT/DAY)	ORG CONT. (%)
									LL	PI		
0						Dark brown SAND [SP]		7				
1						Brown, orange SAND, with silt [SP-SM] (Possible Fill)						
2				▽								
3												
4												
5						Boring Terminated at 5'						



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PROJECT: EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

BORING NO: **AB-19**

SHEET: **1 of 1**

NAVARRE, SANTA ROSA COUNTY, FLORIDA

SECTION:

TOWNSHIP:

RANGE:

CLIENT: KENNETH HORNE AND ASSOCIATES, INC.

GS ELEVATION(ft): 32*

DATE STARTED: 10/4/19

LOCATION: STATION 105+00, 3' EAST OF EAST EDGE OF PAVEMENT

WATER TABLE (ft): NE

DATE FINISHED: 10/4/19

REMARKS: *ESTIMATED FROM CONSTRUCTION DOCUMENTS


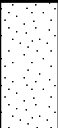
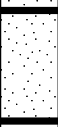
DATE OF READING: 10/4/19

DRILLED BY: UES / J.O.

AUGER-HAND HELD BARREL

EST. WSWT (ft): 3.5

TYPE OF SAMPLING: ASTM D1452

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N VALUE	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT/DAY)	ORG CONT. (%)
									LL	PI		
0						Dark brown sandy Topsoil, with trace amounts of small roots and small organics						
1						Light brown SAND [SP]						
2												
3				▽		White, tan SAND [SP]	2	5				
4												
5						Boring Terminated at 5'						



UNIVERSAL ENGINEERING SCIENCES BORING LOG

PROJECT NO.: 1730.1900052.0000

REPORT NO.: 1721098

PAGE: B-20

PROJECT: EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

BORING NO: **AB-20**

SHEET: **1 of 1**

NAVARRE, SANTA ROSA COUNTY, FLORIDA

SECTION:

TOWNSHIP:

RANGE:

CLIENT: KENNETH HORNE AND ASSOCIATES, INC.

GS ELEVATION(ft): 30*

DATE STARTED: 10/4/19

LOCATION: STATION 110+00, 17' WEST OF WEST EDGE OF PAVEMENT

WATER TABLE (ft): NE

DATE FINISHED: 10/4/19

REMARKS: *ESTIMATED FROM CONSTRUCTION DOCUMENTS

DATE OF READING: 10/4/19

DRILLED BY: UES / J.O.

AUGER-HAND HELD BARREL

EST. WSWT (ft): 3.5

TYPE OF SAMPLING: ASTM D1452

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N VALUE	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT/DAY)	ORG CONT. (%)
									LL	PI		
0						Dark brown sandy Topsoil, with trace amounts of fine roots and fine organics		1				
1						Brown SAND [SP]						
2						Light brown SAND, with silt [SP-SM]						
3				▽								
4												
5						Boring Terminated at 5'						



UNIVERSAL ENGINEERING SCIENCES BORING LOG

PROJECT NO.: 1730.1900052.0000

REPORT NO.: 1721098

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PROJECT: EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

BORING NO: **AB-21**

SHEET: **1 of 1**

NAVARRE, SANTA ROSA COUNTY, FLORIDA

SECTION:

TOWNSHIP:

RANGE:

CLIENT: KENNETH HORNE AND ASSOCIATES, INC.

GS ELEVATION(ft): 30*

DATE STARTED: 10/4/19

LOCATION: STATION 114+75, 6' EAST OF EAST EDGE OF PAVEMENT

WATER TABLE (ft): NE

DATE FINISHED: 10/4/19

REMARKS: *ESTIMATED FROM CONSTRUCTION DOCUMENTS

DATE OF READING: 10/4/19

DRILLED BY: UES / J.O.

AUGER-HAND HELD BARREL

EST. WSWT (ft): >6

TYPE OF SAMPLING: ASTM D1452

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N VALUE	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT/DAY)	ORG CONT. (%)
									LL	PI		
0					[Symbol: Dotted pattern]	Brown SAND [SP], with trace amounts of fine roots, fine organics and small shell fragments from 0' to 0.5' Light brown SAND [SP]		0				
1					[Symbol: Dotted pattern]							
2					[Symbol: Dotted pattern]							
3					[Symbol: Dotted pattern]							
4					[Symbol: Dotted pattern]							
5					[Symbol: Dotted pattern]	Boring Terminated at 5'						



UNIVERSAL ENGINEERING SCIENCES BORING LOG

PROJECT NO.: 1730.1900052.0000

REPORT NO.: 1721098

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PROJECT: EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

BORING NO: **AB-22**SHEET: **1 of 1**

NAVARRE, SANTA ROSA COUNTY, FLORIDA

SECTION:

TOWNSHIP:

RANGE:

CLIENT: KENNETH HORNE AND ASSOCIATES, INC.

GS ELEVATION(ft): 29*

DATE STARTED: 10/4/19

LOCATION: STATION 119+85, 18' WEST OF WEST EDGE OF PAVEMENT

WATER TABLE (ft): NE

DATE FINISHED: 10/4/19

REMARKS: *ESTIMATED FROM CONSTRUCTION DOCUMENTS

DATE OF READING: 10/4/19

DRILLED BY: UES / J.O.

AUGER-HAND HELD BARREL

EST. WSWT (ft): >6

TYPE OF SAMPLING: ASTM D1452

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N VALUE	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT/ DAY)	ORG CONT. (%)
									LL	PI		
0					•••••	Brown SAND [SP], with trace amounts of fine roots and fine organics from 0' to 0.5'						
1					•••••							
2					•••••							
3					•••••							
4					•••••							
5					•••••	Boring Terminated at 5'						



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PROJECT: EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

BORING NO: **AB-23**

SHEET: **1 of 1**

NAVARRE, SANTA ROSA COUNTY, FLORIDA

SECTION:

TOWNSHIP:

RANGE:

CLIENT: KENNETH HORNE AND ASSOCIATES, INC.

GS ELEVATION(ft): 22*

DATE STARTED: 10/4/19

LOCATION: STATION 125+25, 3' EAST OF EAST EDGE OF PAVEMENT

WATER TABLE (ft): NE

DATE FINISHED: 10/4/19

REMARKS: *ESTIMATED FROM CONSTRUCTION DOCUMENTS




DATE OF READING: 10/4/19

DRILLED BY: UES / J.O.

AUGER-HAND HELD BARREL

EST. WSWT (ft): >6

TYPE OF SAMPLING: ASTM D1452

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N VALUE	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT/ DAY)	ORG CONT. (%)
									LL	PI		
0						Dark brown sandy Topsoil, with trace amounts of fine roots and fine organics						
1						Orange, brown SAND, with silt [SP-SM] (Fill)	8	2				
2						Brown SAND, with silt [SP-SM]						
3												
4												
5						Boring Terminated at 5'						



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PROJECT NO.: 1730.1900052.0000

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PROJECT: EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

BORING NO: **AB-24**

SHEET: 1 of 1

NAVARRE, SANTA ROSA COUNTY, FLORIDA

SECTION:

TOWNSHIP:

RANGE:

CLIENT: KENNETH HORNE AND ASSOCIATES, INC.

GS ELEVATION(ft): 17*

DATE STARTED: 10/4/19

LOCATION: STATION 130+00, 6' WEST OF WEST EDGE OF PAVEMENT

WATER TABLE (ft): 4.5

DATE FINISHED: 10/4/19

REMARKS: *ESTIMATED FROM CONSTRUCTION DOCUMENTS

DATE OF READING: 10/4/19

DRILLED BY: UES / J.O.

AUGER-HAND HELD BARREL

EST. WSWT (ft): 2

TYPE OF SAMPLING: ASTM D1452

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N VALUE	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT/DAY)	ORG CONT. (%)
									LL	PI		
0						Dark brown sandy Topsoil, with few amounts of small roots and small organics						
1						Dark brown organic stained SAND [SP]	2	12				
2				▽		Dark brown, dark gray organic stained SAND, with silt [SP-SM]						
3												
4				▼								
5						Boring Terminated at 5'						



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PROJECT NO.: 1730.1900052.0000

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PROJECT: EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

BORING NO: **AB-25**

SHEET: 1 of 1

NAVARRE, SANTA ROSA COUNTY, FLORIDA

SECTION:

TOWNSHIP:

RANGE:

CLIENT: KENNETH HORNE AND ASSOCIATES, INC.

GS ELEVATION(ft): 16*

DATE STARTED: 10/3/19

LOCATION: STATION 135+00, 6' EAST OF EAST EDGE OF PAVEMENT

WATER TABLE (ft): 4.5

DATE FINISHED: 10/3/19

REMARKS: *ESTIMATED FROM CONSTRUCTION DOCUMENTS

DATE OF READING: 10/3/19

DRILLED BY: UES / J.O.

AUGER-HAND HELD BARREL

EST. WSWT (ft): 2

TYPE OF SAMPLING: ASTM D1452

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N VALUE	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT/DAY)	ORG CONT. (%)
									LL	PI		
0						Dark brown organic stained SAND, with silt [SP-SM]						
1						Dark brown, dark gray organic stained SAND, with silt [SP-SM]						
2				▽		Dark brown, black organic stained SAND, with silt [SP-SM]						
3												
4				▼								
5						Boring Terminated at 5'						



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PROJECT: EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

BORING NO: **AB-26**SHEET: **1 of 1**

NAVARRE, SANTA ROSA COUNTY, FLORIDA

SECTION:

TOWNSHIP:

RANGE:

CLIENT: KENNETH HORNE AND ASSOCIATES, INC.

GS ELEVATION(ft): 15*

DATE STARTED: 10/3/19

LOCATION: STATION 140+00, 5' WEST OF WEST EDGE OF PAVEMENT

WATER TABLE (ft): NE

DATE FINISHED: 10/3/19

REMARKS: *ESTIMATED FROM CONSTRUCTION DOCUMENTS

DATE OF READING: 10/3/19

DRILLED BY: UES / J.O.

AUGER-HAND HELD BARREL

EST. WSWT (ft): 2

TYPE OF SAMPLING: ASTM D1452

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N VALUE	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT/ DAY)	ORG CONT. (%)
									LL	PI		
0						Dark brown, orange SAND [SP], with trace amounts of fine roots, fine organics, small gravel and lumps of orange, brown silty sand (Fill)		3				
1						Dark brown, black organic stained SAND, with silt [SP-SM]						
2				▽								
3												
4												
5						Boring Terminated at 5'						



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PROJECT: EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

BORING NO: **AB-27**

SHEET: 1 of 1

NAVARRE, SANTA ROSA COUNTY, FLORIDA

SECTION:

TOWNSHIP:

RANGE:

CLIENT: KENNETH HORNE AND ASSOCIATES, INC.

GS ELEVATION(ft): 12*

DATE STARTED: 10/3/19

LOCATION: STATION 145+00, 7' WEST OF WEST EDGE OF PAVEMENT

WATER TABLE (ft): 4.5

DATE FINISHED: 10/3/19

REMARKS: *ESTIMATED FROM CONSTRUCTION DOCUMENTS

DATE OF READING: 10/3/19

DRILLED BY: UES / J.O.

AUGER-HAND HELD BARREL

EST. WSWT (ft): 1.5

TYPE OF SAMPLING: ASTM D1452

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N VALUE	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT/DAY)	ORG CONT. (%)
									LL	PI		
0						Dark brown sandy Topsoil, with few amounts of small roots and small organics						
1				▽		Dark brown organic stained SAND, with silt [SP-SM]						
2						Dark brown, black organic stained silty clayey SAND [SC-SM]						
3												
4				▽								
5						Boring Terminated at 5'	12	24				



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PROJECT: EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

BORING NO: **AB-28**

SHEET: 1 of 1

NAVARRE, SANTA ROSA COUNTY, FLORIDA

SECTION:

TOWNSHIP:

RANGE:

CLIENT: KENNETH HORNE AND ASSOCIATES, INC.

GS ELEVATION(ft): 11*

DATE STARTED: 10/3/19

LOCATION: STATION 150+00, 5' EAST OF EAST EDGE OF PAVEMENT

WATER TABLE (ft): 4.5

DATE FINISHED: 10/3/19

REMARKS: *ESTIMATED FROM CONSTRUCTION DOCUMENTS

DATE OF READING: 10/3/19

DRILLED BY: UES / J.O.

AUGER-HAND HELD BARREL

EST. WSWT (ft): 2

TYPE OF SAMPLING: ASTM D1452

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N VALUE	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT/DAY)	ORG CONT. (%)
									LL	PI		
0						Dark brown sandy Topsoil, with few amounts of small roots and small organics						
1						Brown SAND [SP], with trace amounts of fine roots and fine organics (Possible Fill)						
2				▽		Dark brown organic stained SAND, with silt [SP-SM], with trace amounts of fine roots and fine organics						
3						Dark brown, dark gray organic stained SAND [SP]						
4				▼								
5						Boring Terminated at 5'	4	17				



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PROJECT: EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

BORING NO: **AB-29**

SHEET: **1 of 1**

NAVARRE, SANTA ROSA COUNTY, FLORIDA

SECTION:

TOWNSHIP:

RANGE:

CLIENT: KENNETH HORNE AND ASSOCIATES, INC.

GS ELEVATION(ft): 10*

DATE STARTED: 10/3/19

LOCATION: STATION 155+00, 7' WEST OF WEST EDGE OF PAVEMENT

WATER TABLE (ft): NE

DATE FINISHED: 10/3/19

REMARKS: *ESTIMATED FROM CONSTRUCTION DOCUMENTS

DATE OF READING: 10/3/19

DRILLED BY: UES / J.O.

AUGER-HAND HELD BARREL

EST. WSWT (ft): 2

TYPE OF SAMPLING: ASTM D1452

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N VALUE	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT/DAY)	ORG CONT. (%)
									LL	PI		
0												
1						Brown, orange SAND, with silt [SP-SM], with trace amounts of fine roots and fine organics (Possible Fill)		2				
2				▽		Dark brown SAND, with silt [SP-SM], with organic stain						
3						Dark brown, dark gray SAND, with silt [SP-SM], with organic stain						
4												
5						Boring Terminated at 5'						



UNIVERSAL ENGINEERING SCIENCES BORING LOG

PROJECT NO.: 1730.1900052.0000

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PROJECT: EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

BORING NO: **AB-30**

SHEET: **1 of 1**

NAVARRE, SANTA ROSA COUNTY, FLORIDA

SECTION:

TOWNSHIP:

RANGE:

CLIENT: KENNETH HORNE AND ASSOCIATES, INC.

GS ELEVATION(ft): 8*

DATE STARTED: 10/3/19

LOCATION: STATION 160+00, 5' EAST OF EAST EDGE OF PAVEMENT

WATER TABLE (ft): NE

DATE FINISHED: 10/3/19

REMARKS: *ESTIMATED FROM CONSTRUCTION DOCUMENTS

DATE OF READING: 10/3/19

DRILLED BY: UES / J.O.

AUGER-HAND HELD BARREL

EST. WSWT (ft): 2

TYPE OF SAMPLING: ASTM D1452

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N VALUE	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT/DAY)	ORG CONT. (%)
									LL	PI		
0												
1					▽	Dark brown SAND [SP], with trace amounts of small roots and small organics and small lumps of silty sand (Possible Fill)	4	4				2
2						Dark brown, dark gray SAND, with silt [SP-SM], with organic stain						
3												
4												
5						Boring Terminated at 5'						



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PROJECT NO.: 1730.1900052.0000

REPORT NO.: 1721098

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PROJECT: EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

BORING NO: **C-1**

SHEET: **1 of 1**

NAVARRE, SANTA ROSA COUNTY, FLORIDA

SECTION:

TOWNSHIP:

RANGE:

CLIENT: KENNETH HORNE AND ASSOCIATES, INC.

GS ELEVATION(ft): 30*

DATE STARTED: 9/23/19

LOCATION: STATION 75+68, 20' WEST OF WEST EDGE OF PAVEMENT

WATER TABLE (ft): 3.4

DATE FINISHED: 9/23/19

REMARKS: *ESTIMATED FROM CONSTRUCTION DOCUMENTS

DATE OF READING: 9/23/19

DRILLED BY: C. CARROLL

HOLLOW STEM AUGER

EST. WSWT (ft): 1.5

TYPE OF SAMPLING: ASTM D1586

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N VALUE	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT/DAY)	ORG CONT. (%)
									LL	PI		
0						3" Dark brown sandy Topsoil, with roots and organics						
1				▽		Loose brown SAND, with silt [SP-SM] (Possible Fill)		7				
2		2-3-4-4	7									
3				▽		Medium dense dark brown SAND, with silt [SP-SM], with few amounts of wood fragments and small organic fragments						
4		10-10-11-12	21				5	21				4
5						Medium dense dark brown SAND [SP], with some organic stain and trace amounts of fine roots and fine organics from 4' to 6'						
6		6-7-7-8	14									
7												
8		6-7-9-9	16									
9												
10		6-8-8-7	16				2					
11												
12												
13												
14												
15		5-8-8	16									
16												
17												
18												
19												
20		6-5-7	12			Boring Terminated at 20'						



UNIVERSAL ENGINEERING SCIENCES BORING LOG

PROJECT NO.: 1730.1900052.0000

REPORT NO.: 1721098

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PROJECT: EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

BORING NO: **C-2**

SHEET: **1 of 1**

NAVARRE, SANTA ROSA COUNTY, FLORIDA

SECTION:

TOWNSHIP:

RANGE:

CLIENT: KENNETH HORNE AND ASSOCIATES, INC.

GS ELEVATION(ft): 17*

DATE STARTED: 9/23/19

LOCATION: BUSHTON ST, 11' E OF 24" CMP, 4' N OF N EDGE OF PAVEMENT

WATER TABLE (ft): 3.5

DATE FINISHED: 9/23/19

REMARKS: *ESTIMATED FROM CONSTRUCTION DOCUMENTS

DATE OF READING: 9/23/19

DRILLED BY: C. CARROLL

HOLLOW STEM AUGER

EST. WSWT (ft): 1.5

TYPE OF SAMPLING: ASTM D1586

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N VALUE	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT/DAY)	ORG CONT. (%)
									LL	PI		
0						3" Dark brown sandy Topsoil, with roots and organics						
1		7-11-8-9	19	▽		Medium dense red, orange SAND, with silt [SP-SM], with thin layer of gravel at 1.5' (Fill)						
2						Medium dense orange, brown SAND, with silt [SP-SM] (Fill)						
3												
4		4-6-6-7	12	▽		Brown SAND [SP] (Possible Fill)		12				
5						Loose dark brown SAND [SP], with some organic stain						
6		4-3-3-2	6			Very loose dark brown, dark gray SAND [SP]	3	20				
7												
8		1-1-1-1	2									
9												
10		2-3-3-4	6			Loose light gray, brown, white SAND [SP]						
11												
12												
13												
14						Medium dense brown, gray SAND [SP]						
15		5-7-7	14									
16												
17												
18												
19												
20		6-6-5	11			Boring Terminated at 20'						



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PROJECT: EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

BORING NO: **C-3**

SHEET: **1 of 1**

NAVARRE, SANTA ROSA COUNTY, FLORIDA

SECTION:

TOWNSHIP:

RANGE:

CLIENT: KENNETH HORNE AND ASSOCIATES, INC.

GS ELEVATION(ft): 14*

DATE STARTED: 9/23/19

LOCATION: BRITT ST, 11' E OF 24" RCP, 6' N OF N EDGE OF PAVEMENT

WATER TABLE (ft): 2.7

DATE FINISHED: 9/23/19

REMARKS: *ESTIMATED FROM CONSTRUCTION DOCUMENTS

DATE OF READING: 9/23/19

DRILLED BY: C. CARROLL

HOLLOW STEM AUGER

EST. WSWT (ft): 0.5

TYPE OF SAMPLING: ASTM D1586

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N VALUE	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT/DAY)	ORG CONT. (%)
									LL	PI		
0					▽	2" Dark brown sandy Topsoil, with roots and organics						
1						Red, brown silty SAND [SM], with small asphalt fragments (Fill)		4				
2		3-5-7-7	12			Medium dense dark brown SAND, with silt [SP-SM], with some organic stain and trace amounts of fine roots, fine organics and fine gravel (Fill)						
3					▽							
4		4-5-7-6	12			Medium dense to loose dark brown organic stained SAND [SP], with lumps of dark brown silty sand and trace amounts of fine roots and fine organics (Possible Fill)						
5												
6		4-3-3-3	6			Loose dark brown organic stained SAND, with silt [SP-SM]	3					2
7												
8		5-4-4-4	8			Medium dense dark brown SAND, with silt [SP-SM], with some organic stain						
9												
10		6-7-5-5	12									
11												
12												
13						Medium dense brown SAND [SP], with some organic stain						
14												
15		5-7-7	14									
16												
17												
18												
19												
20		6-9-8	17			Boring Terminated at 20'						



UNIVERSAL ENGINEERING SCIENCES BORING LOG

PROJECT NO.: 1730.1900052.0000

REPORT NO.: 1721098

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PROJECT: EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

BORING NO: **C-4**

SHEET: **1 of 1**

NAVARRE, SANTA ROSA COUNTY, FLORIDA

SECTION:

TOWNSHIP:

RANGE:

CLIENT: KENNETH HORNE AND ASSOCIATES, INC.

GS ELEVATION(ft): 9*

DATE STARTED: 9/23/19

LOCATION: STATION 307+92, KOPPEL DR, BETWEEN 2-36" CMP, 12' E OF W END OF PIPES

WATER TABLE (ft): 3

DATE FINISHED: 9/23/19

REMARKS: *ESTIMATED FROM CONSTRUCTION DOCUMENTS

DATE OF READING: 9/23/19

DRILLED BY: C. CARROLL

HOLLOW STEM AUGER

EST. WSWT (ft): 1

TYPE OF SAMPLING: ASTM D1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N VALUE	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT/DAY)	ORG CONT. (%)
									LL	PI		
0						2" Dark brown sandy Topsoil, with roots and organics						
1					▽	Loose orange, brown SAND, with silt [SP-SM] (Fill)		4				
2		4-3-3-2	6									
3					▼	Loose dark brown organic stained SAND, with silt [SP-SM], with lumps of black silty sand and few amounts of small roots, small organics and small wood fragments						
4		3-3-2-2	5									
5						Loose dark brown organic stained SAND [SP], with trace amounts of fine roots and fine organics						
6		3-4-4-5	8			Medium dense dark brown organic stained SAND [SP]	2	22				1
7												
8		4-5-7-9	12									
9												
10		6-8-7-7	15									
11												
12												
13												
14						Medium dense dark brown organic stained SAND, with silt [SP-SM], with thin seams of black silty sand and wood fragments						
15		8-10-14	24									
16												
17												
18												
19						Medium dense dark brown organic stained SAND [SP], with organic type of odor						
20		7-8-7	15			Boring Terminated at 20'						



UNIVERSAL ENGINEERING SCIENCES BORING LOG

PROJECT NO.: 1730.1900052.0000

REPORT NO.: 1721098

PAGE: B-35

PROJECT: EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

BORING NO: **P-1**

SHEET: **1 of 1**

NAVARRE, SANTA ROSA COUNTY, FLORIDA

SECTION:

TOWNSHIP:

RANGE:

CLIENT: KENNETH HORNE AND ASSOCIATES, INC.

GS ELEVATION(ft): 39*

DATE STARTED: 10/7/19

LOCATION: STATION 10+95, 13' WEST OF WEST EDGE OF PAVEMENT

WATER TABLE (ft): NE

DATE FINISHED: 10/7/19

REMARKS: *ESTIMATED FROM CONSTRUCTION DOCUMENTS

DATE OF READING: 10/7/19

DRILLED BY: UES / T.M.

AUGER-HAND HELD BARREL

EST. WSWT (ft): 4

TYPE OF SAMPLING: ASTM D1452

DEPTH (FT.)	S A M P L E	DCP** BLOWS PER INCREMENT	DCP** VALUE	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT./ DAY)	ORG. CONT. (%)
									LL	PI		
0		20-23-25+	25+		▨	Dark brown to brown SAND, with silt [SP-SM], with trace amounts of fine roots, fine organics and fine gravel						
1												
2		20-25-25+	25+		▨	Brown to light brown SAND [SP]		3				
3		13-13-15	14		▨							
4		7-9-11	10	▽	▨		2	3				
5					▨	Boring Terminated at 5' ** DYNAMIC CONE PENETROMETER						



UNIVERSAL ENGINEERING SCIENCES BORING LOG

PROJECT NO.: 1730.1900052.0000

REPORT NO.: 1721098

PAGE: B-36

PROJECT: EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

BORING NO: **P-2**

SHEET: **1 of 1**

NAVARRE, SANTA ROSA COUNTY, FLORIDA

SECTION:

TOWNSHIP:

RANGE:

CLIENT: KENNETH HORNE AND ASSOCIATES, INC.

GS ELEVATION(ft): 39'

DATE STARTED: 10/7/19

LOCATION: STATION 11+68, 13' WEST OF WEST EDGE OF PAVEMENT

WATER TABLE (ft): NE

DATE FINISHED: 10/7/19

REMARKS: *ESTIMATED FROM CONSTRUCTION DOCUMENTS

DATE OF READING: 10/7/19

DRILLED BY: UES / T.M.

AUGER-HAND HELD BARREL






EST. WSWT (ft): 4.5

TYPE OF SAMPLING: ASTM D1452

DEPTH (FT.)	S A M P L E	DCP** BLOWS PER INCREMENT	DCP** VALUE	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT./ DAY)	ORG. CONT. (%)		
									LL	PI				
0		25+	25+		▽	Brown to dark brown SAND [SP], with trace amounts of small roots, small organics and asphalt fragments (Fill)	3	1						
1														
2		14-18-20	19			Brown to light brown SAND [SP]				1				
3		14-14-16	15							1				
4		8-10-10	10											
5						Boring Terminated at 5' ** DYNAMIC CONE PENETROMETER								



SYMBOLS AND ABBREVIATIONS

<u>SYMBOL</u>	<u>DESCRIPTION</u>
N-Value	No. of Blows of a 140-lb. Weight Falling 30 Inches Required to Drive a Standard Spoon 1 Foot
WOR	Weight of Drill Rods
WOH	Weight of Drill Rods and Hammer
	Sample from Auger Cuttings
	Standard Penetration Test Sample
	Thin-wall Shelby Tube Sample (Undisturbed Sampler Used)
RQD	Rock Quality Designation
	Stabilized Groundwater Level
	Seasonal High Groundwater Level (also referred to as the W.S.W.T.)
NE	Not Encountered
GNE	Groundwater Not Encountered
BT	Boring Terminated
-200 (%)	Fines Content or % Passing No. 200 Sieve
MC (%)	Moisture Content
LL	Liquid Limit (Atterberg Limits Test)
PI	Plasticity Index (Atterberg Limits Test)
NP	Non-Plastic (Atterberg Limits Test)
K	Coefficient of Permeability
Org. Cont.	Organic Content
G.S. Elevation	Ground Surface Elevation

UNIFIED SOIL CLASSIFICATION SYSTEM

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE GRAINED SOILS More than 50% retained on the No. 200 sieve*	GRAVELS 50% or more of coarse fraction retained on No. 4 sieve	CLEAN GRAVELS	GW	Well-graded gravels and gravel-sand mixtures, little or no fines
			GP	Poorly graded gravels and gravel-sand mixtures, little or no fines
		GRAVELS WITH FINES	GM	Silty gravels and gravel-sand-silt mixtures
			GC	Clayey gravels and gravel-sand-clay mixtures
	SANDS More than 50% of coarse fraction passes No. 4 sieve	CLEAN SANDS 5% or less passing No. 200 sieve	SW**	Well-graded sands and gravelly sands, little or no fines
			SP**	Poorly graded sands and gravelly sands, little or no fines
SANDS with 12% or more passing No. 200 sieve		SM**	Silty sands, sand-silt mixtures	
		SC**	Clayey sands, sand-clay mixtures	
FINE-GRAINED SOILS 50% or more passes the No. 200 sieve*	SILTS AND CLAYS Liquid limit 50% or less		ML	Inorganic silts, very fine sands, rock flour, silty or clayey fine sands
			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, lean clays
			OL	Organic silts and organic silty clays of low plasticity
	SILTS AND CLAYS Liquid limit greater than 50%		MH	Inorganic silts, micaceous or diamicaceous fine sands or silts, elastic silts
			CH	Inorganic clays or clays of high plasticity, fat clays
			OH	Organic clays of medium to high plasticity
			PT	Peat, muck and other highly organic soils

*Based on the material passing the 3-inch (75 mm) sieve
 ** Use dual symbol (such as SP-SM and SP-SC) for soils with more than 5% but less than 12% passing the No. 200 sieve

RELATIVE DENSITY
(Sands and Gravels)

Very loose – Less than 4 Blow/Foot
 Loose – 4 to 10 Blows/Foot
 Medium Dense – 11 to 30 Blows/Foot
 Dense – 31 to 50 Blows/Foot
 Very Dense – More than 50 Blows/Foot

CONSISTENCY
(Sils and Clays)

Very Soft – Less than 2 Blows/Foot
 Soft – 2 to 4 Blows/Foot
 Firm – 5 to 8 Blows/Foot
 Stiff – 9 to 15 Blows/Foot
 Very Stiff – 16 to 30 Blows/Foot
 Hard – More than 30 Blows/Foot

RELATIVE HARDNESS
(Limestone)

Soft – 100 Blows for more than 2 Inches
 Hard – 100 Blows for less than 2 Inches

MODIFIERS

These modifiers Provide Our Estimate of the Amount of Minor Constituents (Silt or Clay Size Particles) in the Soil Sample

Trace – 5% or less
 With Silt or With Clay – 6% to 11%
 Silty or Clayey – 12% to 30%
 Very Silty or Very Clayey – 31% to 50%

These Modifiers Provide Our Estimate of the Amount of Organic Components in the Soil Sample

Trace – Less than 3%
 Few – 3% to 4%
 Some – 5% to 8%
 Many – Greater than 8%

These Modifiers Provide Our Estimate of the Amount of Other Components (Shell, Gravel, Etc.) in the Soil Sample

Trace – 5% or less
 Few – 6% to 12%
 Some – 13% to 30%
 Many – 31% to 50%

FIELD PROCEDURES

Standard Penetration Test Borings (Hollow Stem Auger Advanced)

To aid in evaluating the subsurface conditions present on the site, we located and drilled one or more Standard Penetration Test (SPT) borings to the depths indicated on the attached Boring Logs. In this procedure, the borings were advanced by mechanically turning continuous flight hollow stem augers in to the soils. At intervals of 2 to 5 feet in the borings, a split-barrel sampler was inserted to the bottom of the borings and then driven 18 to 24-inches into the soil using a manual safety hammer with a 140-pound hammer falling an average 30 inches per hammer blow. The blow counts for each 6-inch interval of driving were recorded; the sum of the hammer blow counts for the second and third 6-inch intervals of driving is termed the standard penetration resistance or N value. The N value, when properly evaluated, is an index of several in-place geotechnical properties of the material tested such as relative density and Young's Modulus.

After driving the sampler 18 to 24 inches (or less if in extremely dense/hard materials), the sampler was retrieved from the boring and a representative sample of the material within the split-barrel sampler was placed in a labeled plastic container and sealed. After completing the drilling operations, the samples obtained from the boring were transported to our laboratory where they were examined by a member of our geotechnical staff. This procedure was performed in general accordance with the latest revision of ASTM D1586 entitled "Standard Test Method for Standard Penetration Test (SPT) and Split-Barrel Sampling of Soils".

Auger Borings (Hand-Held Barrel)

To aid in evaluating the subsurface conditions present on the site, we located and drilled one or more hand-held barrel type auger borings to the depths indicated on the attached Boring Logs. In the hand-held barrel auger procedure, the boring was advanced by manually rotating a hand-held barrel type auger until the receiving end of the auger filled with soil. Once the bucket was filled, the auger assembly was removed from the boring, and the sample was retrieved from the bucket. A representative sample of the soils recovered from each strata observed in the borings was placed in a labeled plastic container, and sealed.

After completing the auger borings, the samples obtained were transported to our laboratory where they were examined by a member of our geotechnical staff. This procedure was performed in general accordance with the latest revision of ASTM D1452 entitled "Standard Practice for Soil Exploration and Sampling by Auger Borings".

Dynamic Cone Penetrometer Testing

In order to evaluate the relative density of the in-situ soils, we performed Dynamic Cone Penetrometer (DCP) testing at regular depths in some of the hand-held barrel auger borings. The DCP testing was performed according to the procedures developed by Professor George F. Sowers and Charles S. Hedges (ASCE, 1966), and outlined in ASTM STP 399. The test procedure involves first seating the conical point of the penetrometer two inches into the soils in the bottom of the borings at the desired testing depth. The conical point is then driven two additional 1¾-inch increments using a 15-pound weight falling 20 inches. The penetrometer reading is the average number of blows required to drive the conical point two 1¾-inch increments. Correlations have been developed using the penetrometer results to evaluate the level of relative density/consistency of the soils, and to estimate the allowable net soil bearing capacity.

APPENDIX C



LABORATORY PROCEDURES

Natural Moisture Content Test

Some of the soil samples recovered from the field exploration were selected for natural moisture content testing. In this test, the soil sample is placed into a metal pan of known weight, weighed, dried for a minimum of 12 hours in a $110 \pm 5^{\circ}\text{C}$ oven, and then weighed again to record the weight of water released during drying. The natural moisture content of the soil is termed the ratio of "pore" or "free" water in a given mass of material to the mass of solid material particles. This test was conducted in general accordance with ASTM D2216 entitled "Standard Test Methods for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass".

Percent -200 Soil Fines Content Test

Some of the soil samples recovered from the field exploration were selected to determine the percentage of silt and clay fines present in the individual samples. In this test, the Natural Moisture Content test (ASTM D2216) was performed and the sample was then washed over a Number 200 mesh sieve. The materials present in the sample that did not pass through the No. 200 sieve were then placed back in the original pan and dried until the water retained from the wet-sieve process was totally evaporated. Once dried, the sample was weighed again to determine the weight of fines removed during the wet-sieve process. The percent of soil by weight passing the No. 200 sieve is termed the percentage of fines or portion of the sample in the silt and clay size range. This test was conducted in general accordance with ASTM D1140 entitled "Standard Test Methods for Determining the Amount of Material in Soils Finer Than the No. 200 (75- μm) Sieve by Washing".

Organic Content Test

Some of the soil samples recovered from the field exploration were selected to determine the organic contents of the individual samples. The organic content test involves performing the Natural Moisture Content test (ASTM D2216) and then placing 10 to 40 grams of the mixed and dried soil sample into a porcelain crucible of known weight. The crucible (with sample) was then placed into a Barnstead|Thermolyne Model 1400 Muffle Furnace and ignited at a temperature of $455 \pm 10^{\circ}\text{C}$ for 6 hours. After six hours, the crucible was then allowed to cool in a desiccator to prevent moisture entry from the lab's atmosphere. Once cool to the touch, the crucible was removed from the desiccator and then weighed to determine the mass of organic materials disintegrated during the ignition process. The organic content of the soil is defined as the percentage of combustible organic materials present in a given amount of the dried soil sample. This test was conducted in general accordance with AASHTO T 267 entitled "Standard Method of Test for Determination of Organic Content in Soils by Loss on Ignition".

APPENDIX D



Important Information about This

Geotechnical-Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

Geotechnical Services Are Performed for Specific Purposes, Persons, and Projects

Geotechnical engineers structure their services to meet the specific needs of their clients. A geotechnical-engineering study conducted for a civil engineer may not fulfill the needs of a constructor — a construction contractor — or even another civil engineer. Because each geotechnical-engineering study is unique, each geotechnical-engineering report is unique, prepared *solely* for the client. No one except you should rely on this geotechnical-engineering report without first conferring with the geotechnical engineer who prepared it. *And no one — not even you — should apply this report for any purpose or project except the one originally contemplated.*

Read the Full Report

Serious problems have occurred because those relying on a geotechnical-engineering report did not read it all. Do not rely on an executive summary. Do not read selected elements only.

Geotechnical Engineers Base Each Report on a Unique Set of Project-Specific Factors

Geotechnical engineers consider many unique, project-specific factors when establishing the scope of a study. Typical factors include: the client's goals, objectives, and risk-management preferences; the general nature of the structure involved, its size, and configuration; the location of the structure on the site; and other planned or existing site improvements, such as access roads, parking lots, and underground utilities. Unless the geotechnical engineer who conducted the study specifically indicates otherwise, do not rely on a geotechnical-engineering report that was:

- not prepared for you;
- not prepared for your project;
- not prepared for the specific site explored; or
- completed before important project changes were made.

Typical changes that can erode the reliability of an existing geotechnical-engineering report include those that affect:

- the function of the proposed structure, as when it's changed from a parking garage to an office building, or from a light-industrial plant to a refrigerated warehouse;
- the elevation, configuration, location, orientation, or weight of the proposed structure;
- the composition of the design team; or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project changes—even minor ones—and request an

assessment of their impact. *Geotechnical engineers cannot accept responsibility or liability for problems that occur because their reports do not consider developments of which they were not informed.*

Subsurface Conditions Can Change

A geotechnical-engineering report is based on conditions that existed at the time the geotechnical engineer performed the study. *Do not rely on a geotechnical-engineering report whose adequacy may have been affected by:* the passage of time; man-made events, such as construction on or adjacent to the site; or natural events, such as floods, droughts, earthquakes, or groundwater fluctuations. *Contact the geotechnical engineer before applying this report to determine if it is still reliable.* A minor amount of additional testing or analysis could prevent major problems.

Most Geotechnical Findings Are Professional Opinions

Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. Geotechnical engineers review field and laboratory data and then apply their professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ — sometimes significantly — from those indicated in your report. Retaining the geotechnical engineer who developed your report to provide geotechnical-construction observation is the most effective method of managing the risks associated with unanticipated conditions.

A Report's Recommendations Are Not Final

Do not overrely on the confirmation-dependent recommendations included in your report. *Confirmation-dependent recommendations are not final*, because geotechnical engineers develop them principally from judgment and opinion. Geotechnical engineers can finalize their recommendations *only* by observing actual subsurface conditions revealed during construction. *The geotechnical engineer who developed your report cannot assume responsibility or liability for the report's confirmation-dependent recommendations if that engineer does not perform the geotechnical-construction observation required to confirm the recommendations' applicability.*

A Geotechnical-Engineering Report Is Subject to Misinterpretation

Other design-team members' misinterpretation of geotechnical-engineering reports has resulted in costly

problems. Confront that risk by having your geotechnical engineer confer with appropriate members of the design team after submitting the report. Also retain your geotechnical engineer to review pertinent elements of the design team's plans and specifications. Constructors can also misinterpret a geotechnical-engineering report. Confront that risk by having your geotechnical engineer participate in prebid and preconstruction conferences, and by providing geotechnical construction observation.

Do Not Redraw the Engineer's Logs

Geotechnical engineers prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in a geotechnical-engineering report should *never* be redrawn for inclusion in architectural or other design drawings. Only photographic or electronic reproduction is acceptable, *but recognize that separating logs from the report can elevate risk.*

Give Constructors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can make constructors liable for unanticipated subsurface conditions by limiting what they provide for bid preparation. To help prevent costly problems, give constructors the complete geotechnical-engineering report, *but* preface it with a clearly written letter of transmittal. In that letter, advise constructors that the report was not prepared for purposes of bid development and that the report's accuracy is limited; encourage them to confer with the geotechnical engineer who prepared the report (a modest fee may be required) and/or to conduct additional study to obtain the specific types of information they need or prefer. A prebid conference can also be valuable. *Be sure constructors have sufficient time* to perform additional study. Only then might you be in a position to give constructors the best information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions.

Read Responsibility Provisions Closely

Some clients, design professionals, and constructors fail to recognize that geotechnical engineering is far less exact than other engineering disciplines. This lack of understanding has created unrealistic expectations that have led to disappointments, claims, and disputes. To help reduce the risk of such outcomes, geotechnical engineers commonly include a variety of explanatory provisions in their reports. Sometimes labeled "limitations," many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help

others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Environmental Concerns Are Not Covered

The equipment, techniques, and personnel used to perform an *environmental* study differ significantly from those used to perform a *geotechnical* study. For that reason, a geotechnical-engineering report does not usually relate any environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated environmental problems have led to numerous project failures.* If you have not yet obtained your own environmental information, ask your geotechnical consultant for risk-management guidance. *Do not rely on an environmental report prepared for someone else.*

Obtain Professional Assistance To Deal with Mold

Diverse strategies can be applied during building design, construction, operation, and maintenance to prevent significant amounts of mold from growing on indoor surfaces. To be effective, all such strategies should be devised for the *express purpose* of mold prevention, integrated into a comprehensive plan, and executed with diligent oversight by a professional mold-prevention consultant. Because just a small amount of water or moisture can lead to the development of severe mold infestations, many mold-prevention strategies focus on keeping building surfaces dry. While groundwater, water infiltration, and similar issues may have been addressed as part of the geotechnical-engineering study whose findings are conveyed in this report, the geotechnical engineer in charge of this project is not a mold prevention consultant; *none of the services performed in connection with the geotechnical engineer's study were designed or conducted for the purpose of mold prevention. Proper implementation of the recommendations conveyed in this report will not of itself be sufficient to prevent mold from growing in or on the structure involved.*

Rely, on Your GBC-Member Geotechnical Engineer for Additional Assistance

Membership in the Geotechnical Business Council of the Geoprofessional Business Association exposes geotechnical engineers to a wide array of risk-confrontation techniques that can be of genuine benefit for everyone involved with a construction project. Confer with your GBC-Member geotechnical engineer for more information.



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CONSTRAINTS & RESTRICTIONS

The intent of this document is to bring to your attention the potential concerns and the basic limitations of a typical geotechnical report.

WARRANTY

Universal Engineering Sciences has prepared this report for our client for his exclusive use, in accordance with generally accepted soil and foundation engineering practices, and makes no other warranty either expressed or implied as to the professional advice provided in the report.

UNANTICIPATED SOIL CONDITIONS

The analysis and recommendations submitted in this report are based upon the data obtained from soil borings performed at the locations indicated on the Boring Location Plan. This report does not reflect any variations which may occur between these borings.

The nature and extent of variations between borings may not become known until excavation begins. If variations appear, we may have to re-evaluate our recommendations after performing on-site observations and noting the characteristics of any variations.

CHANGED CONDITIONS

We recommend that the specifications for the project require that the contractor immediately notify Universal Engineering Sciences, as well as the owner, when subsurface conditions are encountered that are different from those present in this report.

No claim by the contractor for any conditions differing from those anticipated in the plans, specifications, and those found in this report, should be allowed unless the contractor notifies the owner and Universal Engineering Sciences of such changed conditions. Further, we recommend that all foundation work and site improvements be observed by a representative of Universal Engineering Sciences to monitor field conditions and changes, to verify design assumptions and to evaluate and recommend any appropriate modifications to this report.

MISINTERPRETATION OF SOIL ENGINEERING REPORT

Universal Engineering Sciences is responsible for the conclusions and opinions contained within this report based upon the data relating only to the specific project and location discussed herein. If the conclusions or recommendations based upon the data presented are made by others, those conclusions or recommendations are not the responsibility of Universal Engineering Sciences.

CHANGED STRUCTURE OR LOCATION

This report was prepared in order to aid in the evaluation of this project and to assist the architect or engineer in the design of this project. If any changes in the design or location of the structure as outlined in this report are planned, or if any structures are included or added that are not discussed in the report, the conclusions and recommendations contained in this report shall not be considered valid unless the changes are reviewed and the conclusions modified or approved by Universal Engineering Sciences.

USE OF REPORT BY BIDDERS

Bidders who are examining the report prior to submission of a bid are cautioned that this report was prepared as an aid to the designers of the project and it may affect actual construction operations.

Bidders are urged to make their own soil borings, test pits, test caissons or other investigations to determine those conditions that may affect construction operations. Universal Engineering Sciences cannot be responsible for any interpretations made from this report or the attached boring logs with regard to their adequacy in reflecting subsurface conditions which will affect construction operations.

STRATA CHANGES

Strata changes are indicated by a definite line on the boring logs which accompany this report. However, the actual change in the ground may be more gradual. Where changes occur between soil samples, the location of the change must necessarily be estimated using all available information and may not be shown at the exact depth.

OBSERVATIONS DURING DRILLING

Attempts are made to detect and/or identify occurrences during drilling and sampling, such as: water level, boulders, zones of lost circulation, relative ease or resistance to drilling progress, unusual sample recovery, variation of driving resistance, obstructions, etc.; however, lack of mention does not preclude their presence.

WATER LEVELS

Water level readings have been made in the drill holes during drilling and they indicate normally occurring conditions. Water levels may not have been stabilized at the last reading. This data has been reviewed and interpretations made in this report. However, it must be noted that fluctuations in the level of the groundwater may occur due to variations in rainfall, temperature, tides, and other factors not evident at the time measurements were made and reported. Since the probability of such variations is anticipated, design drawings and specifications should accommodate such possibilities and construction planning should be based upon such assumptions of variations.

LOCATION OF BURIED OBJECTS

All users of this report are cautioned that there was no requirement for Universal Engineering Sciences to attempt to locate any man-made buried objects during the course of this exploration and that no attempt was made by Universal Engineering Sciences to locate any such buried objects. Universal Engineering Sciences cannot be responsible for any buried man-made objects which are subsequently encountered during construction that are not discussed within the text of this report.

TIME

This report reflects the soil conditions at the time of exploration. If the report is not used in a reasonable amount of time, significant changes to the site may occur and additional reviews may be required.



To be completed by DOT	
Drainage Connection Permit No. <u>2020-D-395-00006</u>	Date <u>1/21/2020</u>
Received By <u>One-Stop Permitting System</u>	Maintenance Unit <u>395 -Milton Operation Center</u>
State Road No. <u>30</u>	Work Program Project No. _____
Section No. <u>030</u>	Construction Project No. _____
Milepost <u>9.2</u>	Station _____

Instructions for Drainage Connection Permit

Pursuant to 14-86.004(6), F.A.C. “The Drainage Connection Permit form serves as the application. Once approved by the Department, the form and supporting documents become the Drainage Connection Permit.”

The applicant shall submit four completed permit packages with original signatures. Each package shall include all required attachments. All required signed and sealed plans and supporting documentation shall be submitted on no larger than (11” X 17”) multipurpose paper, unless larger plan sheets are requested by the reviewer. The package will include the following items. If an item does not apply to your project, indicate “Not Applicable” or “N/A.”

Included	Part	Title	Completed by:	Special Instructions
✓	1	Permit Information Sheet	Applicant	
✓	2	Certification by a Licensed Professional	Licensed Professional	Signed and Sealed
✓	3	Certification	Applicant	Signature
	4	Owner’s Authorization of a Representative	Owner	Signature
	5	Affidavit of Ownership or Control and Statement of Contiguous Interest	Owner	Signature
✓	6	Permit General Conditions	FDOT	
✓	7	Permit Special Conditions	FDOT	
	8	As-Built Certification	Licensed Professional	Signed and Sealed – Submit within 15 working days of completion of construction
✓	Attachment	Legal Description		
✓	Attachment	Photographs of Existing Conditions		
✓	Attachment	Location Map		
✓	Attachment	Grading Plan	Licensed Professional	Signed and Sealed
✓	Attachment	Soil Borings		
	Attachment	Water Table / Percolation		
	Attachment	Calculations		
	Attachment	CD with Electronic Files of all Submittal Items		Scanned Images in pdf format

Note: Different Licensed Professionals may complete parts of the permit package. For example the Licensed Professional signing and sealing the as-built certification may be different from the Licensed Professional who signed and sealed the calculations for the permit package.

EXCEPTIONS: Activities that qualify for an Exception are listed in Rule 14-86, F.A.C. A permit application to the Department is NOT required. However, if you desire verification whether the work qualifies for an exception, send a completed copy of this permit package with its requested information to the applicable FDOT District Office.

Approved
 2020-D-395-00006
 David Wilks
 3/4/2020

PART 1 – Permit Information Sheet

Select one: Permit Exception

Pursuant to 14-86.002(2), F.A.C. "Applicant means the owner of the adjacent property or the owner's authorized representative."

Applicant

Select one: Property Owner Owner's Representative (Complete Part 4)

Name: ROBERT KRASNOSKY

Title and Company: Project Engineer

Address: 7201 N. 9th Avenue Suite 6

City: Pensacola State: Florida Zip: 32504

Telephone: (850) 471-9005 ext. _____ FAX: (850) 471-0093 ext. _____ Email: charlie@kh-a.com

Property Owner (If not applicant)

Name: Michael Schmidt

Title and Company: Assistant County Engineer, Santa Rosa County

Address: 6051 Old Bagdad Highway, Suite 300

City: Milton State: Florida Zip: 32583

Telephone: (850) 981-7100 ext. _____ FAX: (850) 983-2161 ext. _____ Email: michaels@santarosa.fl.gov

Applicant's Licensed Professional

Name: Robert Krasnosky Florida License Number: 49949

Title and Company: Vice-President, Kenneth Horne and Associates, Inc.

Address: 7201 N. 9th Avenue, Suite 6

City: Pensacola State: Florida Zip: 32504

Telephone: (850) 471-9005 ext. _____ FAX: (850) 471-0093 ext. _____ Email: charlie@kh-a.com

Project Information:

Project Name: New Turn Lane on Edgewood Drive to Hwy 98 Navarre

Location: SR 30

STREET	SR. NO.	US HWY NO.	CITY
<u>Santa Rosa</u>	<u>030</u>		

COUNTY	SECTION(S)	TOWNSHIP(S)	RANGE(S)
<u>Santa Rosa</u>	<u>030</u>		

*Geographic Coordinates: Latitude (DMS.SSS): 30.4022768283186 Longitude (DMS.SSS): -86.9481631775553

Horizontal Datum: (NAD 83 / _____ Adj.)

* State Plane Coordinates: Northing 0 Easting: 0

Projection Zone: Florida North Florida East Florida West

Coordinate shall be the center of the driveway intersection with FDOT R/W, or, if there is no driveway connection, near the center of the property line nearest the state highway.

*Check with the FDOT Office for requirement.

Approved
 2020-D-395-00006
 David Wilks
 3/4/2020

Brief description of facility and proposed connection:

New turn lane with bike lanes at intersection of Edgewood Drive and SR30.

Briefly describe why this activity requires a Drainage Connection Permit (Include where the stormwater will discharge to FDOT right of way):

Exception

Approved
2020-D-395-00006
David Wilks
3/4/2020

PART 2 – Certification by a Licensed Professional

In accordance with Rule 14-86, Florida Administrative Code (F.A.C.), I hereby certify that the following requirements are and/or will be met.

This project has been designed in compliance with all applicable water quality design standards as required by state governmental agencies.

14-86.004(3)(f) (F.A.C.): Certification by a Licensed Professional that the complete set of plans and computations complies with one of the following Rules Sections:

14-86.003(2)(a) (F.A.C.), or 14-86.003(2)(b) (F.A.C). (check one)

I further certify that a National Pollutant Discharge Elimination System (NPDES) permit for stormwater discharges associated with industrial activity from construction sites

is required is not required. (check one)

I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment.

This certification shall remain valid for any subsequent revision or submittal of plans, computation or other project documents by me.

Name of Licensed Professional: Robert C. Krasnosky

Florida License Number: 49949

Company Name (if applicable): Kenneth Horne and Associates, Inc.

Certificate of Authorization Number (if applicable): 8268

Address: 7201 N. 9th Avenue, Suite 6

City: Pensacola State: FL Zip: 32504

Telephone: 850-471-9005 Fax: 850-471-0093 Email: charlie@kh-a.com

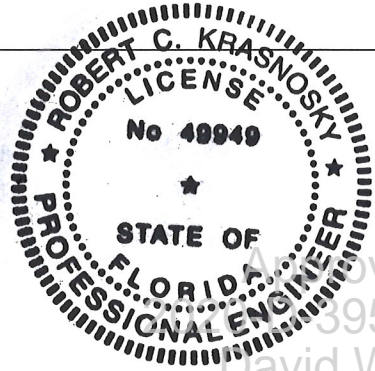
Robert Krasnosky

Signature of Licensed Professional

1/17/2020

Date

(Affix Seal)



Approved
395-00006
David Wilks
3/4/2020

PART 3 – Certification by Applicant

I hereby certify that the information in this submittal is complete and accurate to the best of my knowledge.

Applicant's Signature: Robert Krasnosky Date: 1/21/2020
Name (Printed): Robert Krasnosky
Title and Company: Vice-President, Kenneth Horne and Associates, Inc.
Address: 7201 N. 9th Avenue, Suite 6 Pensacola, Florida 32504
Phone Number: (850) 471-9005 ext. _____ E-mail address: charlie@kh-a.com

PART 4 – Owner's Authorization of a Representative

I (we), the owner, MICHAEL SCHMIDT, do hereby authorize the following person, or entity, as my representative:

Name (Printed): Robert Krasnosky
Title and Company: Vice-President, Kenneth Horne and Associates, Inc.
Address: 7201 N. 9th Avenue, Suite 6 Pensacola, Florida 32504
Phone Number: (850) 471-9005 ext. _____ E-mail address: charlie@kh-a.com

Part 5 – Affidavit of Property Ownership or Control and Statement of Contiguous Interest

I, MICHAEL SCHMIDT, certify that I own or lawfully control the following described property:
Edgewood Right-of-Way at SR 30

Does the property owner own or have any interests in any adjacent property?

No Yes If yes, please describe. _____

Owner's Signature required for Parts 4 and/or 5

We will not begin on the drainage connection until I receive the Permit and I understand all the conditions of the Permit. When work begins on the connection, I am accepting all conditions listed in the Permit.

Name (Printed): Michael Schmidt
Address: 6051 Old Bagdad Highway, Suite 300 Milton, Florida 32583
Phone Number: (850) 981-7100 ext. _____
Signature: Michael Schmidt Date: 1/21/2020

Approved
2020-D-395-00006
David Wilks
3/4/2020

PART 6 – Permit General Conditions

1. This permit is a license for permissive use only and does not convey any property rights either in real estate or material, or any exclusive privilege and it does not authorize any injury to private property or invasion of private rights, or any infringement of Federal, State or local laws, rules or regulations; nor does it obviate the necessity of obtaining any required state or local approvals.
2. The drainage connection as authorized herein shall be constructed and thereafter maintained in accordance with the documents attached hereto and incorporated by reference herein. All work performed in the Department's right of way shall be done in accordance with the most current Department standards, specifications and the permit provisions. Such construction shall be subject to the inspection and approval of the Department, and the Department may at any time make such inspections as it deems necessary to assure that the drainage connection is in compliance with this permit.
3. The entire expense of construction within the Department right of way, including replacement of existing pavement or other existing features, shall be borne by the permittee.
4. The permittee shall maintain that portion of the drainage connection authorized herein located on permittee's property in good condition. The Department shall maintain that portion of the drainage connection authorized herein located within its right of way.
5. If the drainage connection is not constructed, operated or maintained in accordance with this permit, the permit may be suspended or revoked. In this event modification or removal of any portion of the drainage connection from the Department's right of way shall be at the permittee's expense.
6. The Department reserves the right to modify or remove the drainage connection to prevent damage or in conjunction with road improvements.
7. It is understood and agreed that the rights and privileges herein set out are granted only to the extent of the Department's right, title, and interest in the land to be entered upon and used by the permittee, and the permittee will, at all times, assume all risk of and indemnify, defend and save harmless the Department from and against any and all loss, damage, cost or expense arising in any manner on account of the exercise or attempted exercises by said permittee of these rights and privileges, regardless of the respective degrees of fault of the parties.
8. Utilities, including gas lines, may exist within the right of way. Prior to beginning work the permittee shall contact Sunshine State One Call of Florida, Inc at 811 or 800-432-4770, who will notify all utility owners near the scheduled project. The utility owners have two (2) full business days to provide locations of their respective facilities. The permittee shall be solely responsible for any damage to or conflicts with gas lines, utilities and/or third persons.
9. The permittee shall notify the Department of Transportation Maintenance Office located at Milton Operations Center Phone (850) 981-3000 ext. _____ 48 hours in advance of starting any work on the drainage connection authorized by this permit and also 24 hours prior to any work within the Department's right of way. Construction of any work on the right of way shall be completed within 90 days after such notification. If such construction is not completed within 180 days after such notification, the permittee shall notify the Department of the anticipated completion date.
10. This permit shall expire if construction on the drainage connection is not begun within one year from the date of approval and if construction on the drainage connection is not completed by (Date) 3/4/2021.
11. A permittee may request an extension of the Drainage Connection Permit expiration date by filing a written request for a permit time extension. All requests for time extensions must be received by the Department 15 working days prior to the expiration date.
12. All the provisions of this permit shall be binding on any assignee or successor in interest of the permittee.

Approved
2020-D-395-00006
David Wilks
3/4/2020

PART 7 – Permit Special Conditions – To be completed by FDOT

The above request has been reviewed and has been found to meet the regulations as prescribed in Rule 14-86, F.A.C., and is hereby approved, subject to the following special conditions:

See attached Drainage Connection Permit flyer

Department of Transportation:

Signature David Wilks

Title MAINTENANCE PROGRAM MANAGER Date 3/4/2020

Approved
2020-D-395-00006
David Wilks
3/4/2020

PART 8 – As-Built Certification

Within 15 working days of completion of construction, you must send this certification to the Department office in which you filed your DOT Drainage Permit.

1. STORM WATER FACILITY INFORMATION

Permit No.: _____

Source (Project) Name: _____

Source Location: Street _____

City: _____ County: _____

Source Owner: _____

Owner Address: _____

2. AS-BUILT CERTIFICATION

I hereby certify that this storm water facility has been built substantially in accordance with the certified design plans, and that any substantial deviations (noted below) will not prevent the facility from functioning in compliance with the requirements of Chapter 14-86 F.A.C. when properly maintained and operated. These determinations have been based upon on-site observation of construction, scheduled and conducted by me or by a project representative under my direct supervision.

Name of Licensed Professional: _____

Florida License Number: _____

Company Name (if applicable): _____

Certificate of Authorization Number (if applicable): _____

Address: _____

City: _____ State: _____ Zip: _____

Telephone: _____ Fax: _____ Email: _____

Signature of Licensed Professional

Date

(Affix Seal)

Substantial deviations from the approved plans and specifications (attach additional sheets if required).

Approved
2020-D-395-00006
David Wilks
3/4/2020

14-86 Exception Questionnaire

Applicant:	Project Name:
------------	---------------

Does the project need a Drainage Connection Permit?

First, the project must be regulated by Rule 14-86 F.A.C. to require a permit. If regulated, and the project does not qualify for an exception, you will need a drainage connection permit. The following questions will help determine if the project is regulated and if it qualifies for an exception under the rule.

Is the project regulated? *Note: Only stormwater flows are regulated under 14-86, not dewatering or groundwater flows.*

1	Are you proposing to make changes to the property or have changes already occurred since November 12, 1986?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
2	Does the property share a boundary with FDOT rights of way?	Yes <input type="checkbox"/>	No <input type="checkbox"/>

If “Yes” to questions 1 and 2, the project is regulated and it will either qualify for an exception or require a drainage connection permit.

Does the project qualify for an exception? There are four (4) categories of exceptions. Please indicate below which categories you believe are appropriate. You may need to answer several of the following questions to determine the appropriate category and then return here to note it.

3	14-86.003(3)(a): Improvements to property that does not drain, either directly or indirectly, to the Department’s right of way.	<input type="checkbox"/>
	14-86.003(3)(b): Single family residential improvements.	<input type="checkbox"/>
	14-86.003(3)(c): Agricultural and Silvicultural improvements.	<input type="checkbox"/>
	14-86.003(3)(d): Minor improvements.	<input type="checkbox"/>

14-86.003(3)(a): Improvements to property that does not drain, either directly or indirectly, to the Department’s right of way.

4	In the pre-improvement condition, does the entire site drain away from FDOT?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
5	In the post-improvement condition, will the entire site drain away from FDOT?	Yes <input type="checkbox"/>	No <input type="checkbox"/>

If “Yes” to questions 4 and 5, the project qualifies for an exception; but if the project does not qualify for an exception under another category, the Department would like to verify the exception under this category and requests you provide assurances by submitting a complete permit application package.

14-86.003(3)(b): Single family residential improvements.

6	Is the improvement a single family residence that is not part of a larger common plan of improvement or a larger common plan of sale?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
---	---	---------------------------------	--------------------------------

If “Yes” to question 6, the improvement qualifies for an exception.

14-86 Exception Questionnaire

Applicant:	Project Name:
------------	---------------

14-86.003(3)(c): Agricultural and Silvicultural improvements.

7	Is the project an agricultural or silvicultural improvement subject to regulation by the Florida Department of Environmental Protection or a regional Water Management District?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
8	Is the project an agricultural or silvicultural improvement that is exempt under the provisions of Section 373.406?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
9	Is the project an agricultural or silvicultural improvement that will implement applicable best management practices adopted by the Florida Department of Agriculture and Consumer Services in Rule 5M, F.A.C., or Rule Chapter 51-6, F.A.C.?	Yes <input type="checkbox"/>	No <input type="checkbox"/>

If “Yes” to any one of questions 7, 8, or 9, the project qualifies for an exception.

14-86.003(3)(d): Minor improvements.

These projects are felt to be small enough that they will not have a substantial impact to the Department’s facilities and would not create an unreasonable burden on lower property owners.

10	Does the post-improvement condition have a total impervious area (new impervious and existing to remain) less than 5000 square feet?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
11	Is the post-improvement total impervious area (existing to remain and new impervious) less than 40% of that portion of the property that drains to the Department’s right of way in the pre-developed condition?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
12	Will the improvement keep any existing drainage connection as it exists, i.e. not alter or modify existing drainage connections?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
13	Will the stormwater flow patterns from the improvement to the Department’s right of way remain unchanged?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
14	Will the surface area draining to the Department’s right of way remain unchanged or be reduced?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
15	Does the property drain to a Department stormwater facility that has a positive outlet?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
16	Does the improvement represent the entire improvement for the site, i.e. it is not part of a larger common plan of improvement or sale?	Yes <input type="checkbox"/>	No <input type="checkbox"/>

If “Yes” to all questions 10 through 16, the project qualifies for an exception.

Signature: *	Date:
--------------	-------

*Signature shall be a licensed professional except for a small project that would otherwise not require a licensed professional. In this case, the applicant’s signature with local building permit application information provided will be sufficient.

An exception shall not apply if the drainage connection threatens the safety and integrity of the Department’s facilities, creates an unreasonable burden on lower property owners, or causes violations of water quality standards [14-86.003(4)].

Approved
2020-D-395-00006
David Wilks
3/4/2020



Kenneth Horne & Associates, Inc.
CIVIL ENGINEERS

December 3, 2019

Gulf Power Company
One Energy Place
Pensacola, Florida 32520
Attn: Engineering Department

Re: Edgewood Drive Turn Lane at Hwy 98
Utility Notification
KH&A Reference No. 2018-41


To Whom It May Concern:

We are submitting plans for a proposed Edgewood Drive Turn Lane at Hwy 98. The project will require the installation of a new right turn lane with two 6' wide asphalt bike lanes and a 5' wide concrete sidewalk. Should you foresee any conflicts or have any questions, please feel free to call me.

I have attached a copy of the applicable proposed construction plan sheets.

Very truly yours,

KENNETH HORNE & ASSOCIATES, INC.


Charlie Krasnosky, PE
Project Manager



Kenneth Horne & Associates, Inc.
CIVIL ENGINEERS

December 3, 2019

City of Gulf Breeze
1070 Shoreline Dr
Gulf Breeze, Florida 32561
Attn: Engineering Department

Re: Edgewood Drive Turn Lane at Hwy 98
Utility Notification
KH&A Reference No. 2018-41

To Whom It May Concern:

We are submitting plans for a proposed Edgewood Drive Turn Lane at Hwy 98. The project will require the installation of a new right turn lane with two 6' wide asphalt bike lanes and a 5' wide concrete sidewalk. Should you foresee any conflicts or have any questions, please feel free to call me.

I have attached a copy of the applicable proposed construction plan sheets.

Very truly yours,

KENNETH HORNE & ASSOCIATES, INC.

A handwritten signature in blue ink that reads "Charlie Krasnosky". The signature is written in a cursive, flowing style.

Charlie Krasnosky, PE
Project Manager

Approved
2020-D-395-00006
David Wilks
3/4/2020



Kenneth Horne & Associates, Inc.
CIVIL ENGINEERS

December 3, 2019

AT&T
6689 Magnolia Street
Milton, Florida 32570
Attn: Engineering Department

Re: Edgewood Drive Turn Lane at Hwy 98
Utility Notification
KH&A Reference No. 2018-41

To Whom It May Concern:

We are submitting plans for a proposed Edgewood Drive Turn Lane at Hwy 98. The project will require the installation of a new right turn lane with two 6' wide asphalt bike lanes and a 5' wide concrete sidewalk. Should you foresee any conflicts or have any questions, please feel free to call me.

I have attached a copy of the applicable proposed construction plan sheets.

Very truly yours,

KENNETH HORNE & ASSOCIATES, INC.

A handwritten signature in blue ink that reads "Charlie Krasnosky". The signature is written in a cursive, flowing style.

Charlie Krasnosky, PE
Project Manager

Approved
2020-D-395-00006
David Wilks
3/4/2020



Kenneth Horne & Associates, Inc.
CIVIL ENGINEERS

December 3, 2019

Mediacom
1613 Nantahala Beach Rd
Gulf Breeze, Florida 32561
Attn: Engineering Department

Re: Edgewood Drive Turn Lane at Hwy 98
Utility Notification
KH&A Reference No. 2018-41

To Whom It May Concern:

We are submitting plans for a proposed Edgewood Drive Turn Lane at Hwy 98. The project will require the installation of a new right turn lane with two 6' wide asphalt bike lanes and a 5' wide concrete sidewalk. Should you foresee any conflicts or have any questions, please feel free to call me.

I have attached a copy of the applicable proposed construction plan sheets.

Very truly yours,

KENNETH HORNE & ASSOCIATES, INC.

A handwritten signature in blue ink that reads "Charlie Krasnosky". The signature is written in a cursive, flowing style.

Charlie Krasnosky, PE
Project Manager

Approved
2020-D-395-00006
David Wilks
3/4/2020



Kenneth Horne & Associates, Inc.
CIVIL ENGINEERS

December 3, 2019

Holley-Navarre Water Systems
8574 Turkey Bluff Rd
Navarre, FL 32566 Attn: Engineering Department

Re: Edgewood Drive Turn Lane at Hwy 98
Utility Notification
KH&A Reference No. 2018-41

To Whom It May Concern:

We are submitting plans for a proposed Edgewood Drive Turn Lane at Hwy 98. The project will require the installation of a new right turn lane with two 6' wide asphalt bike lanes and a 5' wide concrete sidewalk. Should you foresee any conflicts or have any questions, please feel free to call me.

I have attached a copy of the applicable proposed construction plan sheets.

Very truly yours,

KENNETH HORNE & ASSOCIATES, INC.

A handwritten signature in blue ink that reads "Charlie Krasnosky". The signature is fluid and cursive, written over the printed name.

Charlie Krasnosky, PE
Project Manager



Kenneth Horne & Associates, Inc.
CIVIL ENGINEERS

December 3, 2019

Midway Water System
4971 Gulf Breeze Pkwy
Gulf Breeze, FL 32563
Attn: Engineering Department

Re: Edgewood Drive Turn Lane at Hwy 98
Utility Notification
KH&A Reference No. 2018-41

To Whom It May Concern:

We are submitting plans for a proposed Edgewood Drive Turn Lane at Hwy 98. The project will require the installation of a new right turn lane with two 6' wide asphalt bike lanes and a 5' wide concrete sidewalk. Should you foresee any conflicts or have any questions, please feel free to call me.

I have attached a copy of the applicable proposed construction plan sheets.

Very truly yours,

KENNETH HORNE & ASSOCIATES, INC.

Charlie Krasnosky, PE
Project Manager

SR 30 at Edgewood Drive
Looking East



Google Earth

© 2020 Google
© 2019 Google

Approved
2020-D-395-00006
David Wilks
3/4/2020

7.55 ft

SR 30 at Edgewood Drive
Looking West



Google Earth

© 2020 Google
© 2019 Google

Approved
2020-D-395-00006
David Wilks
3/4/2020
8.65 ft



UNIVERSAL

ENGINEERING SCIENCES

REPORT OF GEOTECHNICAL EXPLORATION

EDGEWOOD DRIVE DRAINAGE AND
ROADWAY IMPROVEMENTS

NAVARRE, SANTA ROSA COUNTY, FLORIDA

UES PROJECT NUMBER 1730.1900052.0000
UES DOCS REPORT NUMBER 1721098

OCTOBER 28, 2019

Prepared For:

Kenneth Horne and Associates, Inc.
7201 North 9th Avenue, Suite 6
Pensacola, Florida 32504

Prepared By:

Universal Engineering Sciences, Inc.
1985 Cope Lane
Pensacola, Florida 32526
(850) 944-5555

Consultants in: Geotechnical Engineering • Environmental Sciences • Construction Materials Testing • Threshold Inspection
Offices in: Orlando • Daytona Beach • Fort Myers • Gainesville • Jacksonville • Ocala • Palm Coast • Rockledge • Sarasota • Miami
St. Augustine • Pensacola • Panama City • Fort Pierce • Leesburg • Tampa • West Palm Beach • Atlanta, GA • Titon

Approved

2020-D-395-00006

David Wilks

3/4/2020



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- Miami
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- Palm Coast
- Panama City
- Pensacola
- Rockledge
- Sarasota
- Tampa
- West Palm Beach

October 28, 2019

Kenneth Horne and Associates, Inc.
7201 North 9th Avenue, Suite 6
Pensacola, Florida 32504

Attention: Mr. Charlie Krasnosky, P.E.
charlie@kh-a.com

Reference: Report of Geotechnical Exploration
EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS
Navarre, Santa Rosa County, Florida
UES Project Number 1730.1900052.0000
UES Report Number 1721098

Mr. Krasnosky:

Universal Engineering Sciences, Inc. (UES) has completed the authorized geotechnical exploration for the above referenced project in Navarre, Santa Rosa County, Florida. The scope of our exploration was performed in general accordance with the scope of services presented in the UES Proposal Number 1596955 dated August 19, 2018. This exploration was performed in accordance with generally accepted geotechnical engineering practices. No other warranty, express or implied, is made.

The following report presents the results of our field exploration and laboratory testing services, and presents a geotechnical engineering interpretation of the results with respect to the project characteristics provided to us. We have included our estimates of the seasonal high groundwater level at our boring locations, and geotechnical recommendations for pavement design, site preparation, and construction related services.

We appreciate the opportunity to have worked with you on this project and look forward to our continued association. Please contact us if you have any questions, or if we may be of further assistance.

Respectfully Submitted,
UNIVERSAL ENGINEERING SCIENCES, INC.
Certificate of Authorization No. 549

Michael A. Johnson, P.E.
Senior Geotechnical Engineer
Florida P.E. No. 35974

Guy H. Rabens, M.S., P.E.
Principal Engineer
Florida P.E. No. 60917

Approved
2020-D-395-00006
David Wilks
3/4/2020

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Approved
2020-D-395-00006
David Wilks
3/4/2020

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Approved
2020-D-395-00006
David Wilks
3/4/2020

1.0 INTRODUCTION

1.1 GENERAL

In this report, we present the results of the geotechnical exploration of the site for the proposed project. We have divided this report into the following sections:

- SCOPE OF SERVICES - Defines what we did
- FINDINGS - Describes what we encountered
- RECOMMENDATIONS - Describes what we encourage you to do
- LIMITATIONS - Describes the restrictions inherent in this report
- APPENDICES - Presents support materials referenced in this report

2.0 SCOPE OF SERVICES

2.1 PROJECT DESCRIPTION

Project information was provided to us via email correspondence from Mr. Charlie Krasnosky, P.E. on September 3, 2019. Included in this email was a link to access and download the 95 percent submittal entitled "Site Construction Documents for Edgewood Drive Drainage and Roadway Improvements" dated August 22, 2019. These documents/drawings were used for planning of the field exploration services, and is the primary source of information relative to our understanding of the proposed project.

Edgewood Drive is approximately 2.9 miles in length, and runs from Navarre Parkway/U.S. Highway 98 north to East Bay Boulevard in Navarre, Santa Rosa County, Florida. The roadway improvements and associated information for which field exploration services were performed include the following.

- On both sides and running the full length of Edgewood Drive, it is proposed to construct asphalt paved bike paths/lanes. The paths/lanes will be 5 feet in width, and will abut to even saw cut edges on both sides of the existing pavement for Edgewood Drive.
- At the south end of Edgewood Drive, at the intersection with Navarre Parkway/U.S. Highway 98, a right hand turn lane will be constructed west of and immediately adjacent to the new bike path/lane. The turn lane will be approximately 210 feet in length (including a tapered length of 50 feet), with a width of 10 feet (for an overall width of 15 feet for the bike path/lane and turning lane).
- The proposed pavement section for the bike paths/lanes and turning lane will consist of 1-½ inches of FDOT SP-12.5, overlying 6 inches of graded aggregate base compacted to at least 100 percent of the modified Proctor (ASTM D1557) maximum dry weight, overlying 12 inches of stabilized subgrade (minimum LBR of 40) compacted to at least 98 percent of the ASTM D1557 maximum dry weight. No curbing is proposed for the bike path/lane and turning lane pavements.
- A concrete sidewalk will be constructed along the full length of Edgewood Drive. From Navarre Parkway north approximately 5,400 feet to the south side of Leisure Street, the sidewalk will be located on the east side of Edgewood Drive. From the north side of Leisure Street to East Bay Boulevard, the sidewalk will be located on the west side of Edgewood Drive. The sidewalk will be 5 feet in width, will be separated from the bike path/lane by 2



feet, will be 4 inches thick, and soil subgrade supported. The concrete for the sidewalk construction will be a minimum 3,000 psi compressive strength mix with fibermesh reinforcement.

The proposed drainage improvements for the project will entail the removal and replacement of existing drainage pipes/culverts crossing Edgewood Drive and associated side roads/streets. The drainage pipe/culvert crossings for which field exploration services were performed include the following.

- Culvert/pipe crossing on Edgewood Drive at approximate station number 75+68 - Remove existing 18 inch RCP and install three 19 inch by 30 inch ERCP with an approximate invert elevation of 28.5 feet.
- Culvert/pipe crossing on Bushton Street – Remove existing 18 inch RCP and install two 19 inch by 30 inch ERCP with an approximate invert elevation of 14 feet.
- Culvert/pipe crossing on Britt Street – Remove existing 24 inch RCP and install two 24 inch RCP with an approximate invert elevation of 10 feet.
- Culvert/pipe crossing on Koppel Drive at approximate station number 307+92 - Remove existing 36 inch CMP and install two 36 inch RCP with an approximate invert elevation of 5.7 feet.

For the pipe/culvert crossings, the construction documents show the following:

- From the bottom of the trench to the springline of the pipes, the pipes will sit in “pipe bedding compacted class A-3 sand or granular material”:
- From the springline to one foot over the top of the pipe, the “initial” fill in the trench will be placed in maximum lifts of 6 inches, and compacted to at least 98 percent of the ASTM D1557 maximum dry density; and
- From one foot over the top of the pipe to the bottom of the graded aggregate base for the replacement pavement section, the “subsequent” fill in the trench will be placed in maximum lifts of 12 inches, and compacted to at least 98 percent of the standard Proctor (ASTM D698) maximum dry density.

It should be noted that the general “PIPE BEDDING DETAIL” in the construction documents show the “subsequent” fill to be compacted to at least 98 percent of the modified Proctor (ASTM D1557) maximum dry density. This discrepancy was discussed with the client, and the client indicated that the modified Proctor (ASTM D1557) criterion, and not the standard Proctor (ASTM D698) criterion, was to be used.

It is our understanding that finished elevations for the pavement and sidewalk areas will coincide with or be within approximately 1 foot of existing site and/or pavement elevations. Therefore, fill and excavation depths of less than approximately 1 to 2 feet are anticipated for the proposed asphalt pavement and sidewalk construction. Based on our review of the provided construction documents, it is estimated that excavation depths associated with the installation of the proposed pipe/culvert crossings will range from approximately 4 to 6 feet below existing road elevations.



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Our recommendations are based upon the previously discussed supplied information. If any of this information is incorrect or changes, please inform Universal Engineering Sciences, Inc. (UES) so that we may review our recommendations. Without such a review, the recommendations herein may not be valid. No other site or project facilities should be designed using the soil information contained herein. As such, UES will not be responsible for the performance of any other site improvement designed using the data in this report.

2.2 PURPOSES

The purposes of the exploration program were:

- To explore the general subsurface conditions in the proposed bike path/turn lane pavement areas, the proposed sidewalk areas, and the proposed pipe/culvert crossing areas;
- To interpret and review the subsurface conditions with respect to the proposed construction;
- To perform a series of laboratory tests on selected subsurface soil samples to assist with engineering soil classification, and to establish relevant soil engineering characteristics; and
- To provide geotechnical engineering recommendations for groundwater control, pavement construction, and site preparation

This report presents an evaluation of site conditions on the basis of traditional geotechnical procedures for site characterization. The recovered samples were not examined, either visually or analytically, for chemical composition or environmental hazards. UES would be pleased to perform these services, if you desire.

Our exploration was confined to the zone of soil likely to be impacted by the proposed construction. Our work did not address the potential for surface expression of deep geological conditions. This evaluation requires a more extensive range of field services than performed in this study. We will be pleased to provide a proposal for an exploration to evaluate the probable effect of the regional geology upon the proposed construction, if you desire.

2.3 GEOTECHNICAL EXPLORATION

The field exploration program was initiated on September 19, 2019, and completed on October 8, 2019. In lieu of a boring location plan that would typically be used, the approximate location for each individual boring is shown on the attached Boring Logs in Appendix B.

The approximate boring locations for the exploration were determined in the field by our personnel using the site plans provided to us, existing field reference points on the site, and a tape measure and measuring wheel. As such, the locations presented on the attached Boring Logs should be considered accurate only to the degree implied by the method of measurement used.

Approximate ground surface elevations at the boring locations are presented on the attached Boring Logs, and were estimated by interpolation between elevation contours shown on the site topographic plans provided to us. As such, the presented elevations on the Boring Logs should be considered approximate.



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During the testing and/or sampling in each boring, recovered soil samples were placed in labeled plastic containers, sealed, and transported to our laboratory where they were classified by a member of our geotechnical staff. Some of the recovered soil samples were then selected for specific laboratory tests. The soil samples recovered from the field exploration will be held in our laboratory for your inspection for 60 days following the issue date of this report, and then discarded unless we are notified and other arrangements are made.

2.3.1 Field Procedures

The field exploration for this project consisted of the following:

- Performing 30 auger borings, each boring to a depth of 5 feet below existing grade (BEG), in the proposed bike path and sidewalk areas along the length of Edgewood Drive;
- Performing two auger borings with dynamic cone penetrometer (DCP) testing, each boring to a depth of 5 feet BEG, in the proposed turn lane area; and
- Performing four Standard Penetration Test (SPT) borings, each boring to a depth of 20 feet BEG, and one boring at each of the four pipe/culvert crossing locations.

The auger borings were performed by manually twisting a hand-held barrel into the soils to boring termination depth. The SPT borings were performed by mechanically twisting hollow stem augers into the soils to boring termination depth. Reference the Field Procedures attachment in Appendix B for more detailed discussions of the drilling procedures used. In addition, logs for the borings are presented in Appendix B.

2.4 LABORATORY TESTING PROGRAM

2.4.1 Visual Classification

The soil samples collected from the exploration were visually classified in general accordance with the USCS Soil Classification System (ASTM D2487). A summary of the resulting soil descriptions are shown on the Boring Logs presented in Appendix B.

2.4.2 Laboratory Index Testing

Laboratory soil tests were performed on selected soil samples obtained from the borings to aid in the classification of the soils, and to help in the evaluation of pertinent engineering characteristics of the soils. The classifications and laboratory testing completed for this project consisted of performing the following procedures/tests in general accordance with the methods listed.

- Soil Classification per the Unified Soil Classification System – ASTM D 2487
- Natural Moisture Content Tests – ASTM D 2216
- Percent -200 Soil Fines Content Tests – ASTM D 1140
- Organic Content Tests – AASHTO T 257

Detailed explanations of these test procedures are presented in Appendix C. The results of the tests are summarized on the boring logs presented in Appendix B.



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3.0 FINDINGS

3.1 REGIONAL GEOLOGY

Santa Rosa County is located in the Coastal Lowlands physiographic province of the Florida Panhandle region. The general geology of the Coastal Lowlands province consists of unconsolidated sands, limestones, silts, and clays ranging in age from Cretaceous to recent (Pratt, *et al*, 1966). The Sand and Gravel Aquifer, which ranges in thickness from approximately 250 feet to 500 feet, is the most important water-bearing zone in Santa Rosa County. The aquifer is comprised of three major zones: the surficial zone, the intermediate low permeability zone, and the main producing zone (Pratt, *et. al.*, 1966). The Sand and Gravel aquifer is recharged by infiltration of local rainfall and, due to the high permeability of local soils, the entire area of the aquifer is considered a recharge area.

The surficial zone (which contains the unconfined water table surface) generally averages less than 100 feet in thickness and is composed primarily of inter-bedded fines sands, silts, and clays (Pratt, *et al*, 1966). Underlying the surficial zone is an intermediate zone of low permeability that averages approximately 50 to 100 feet in thickness (Pratt, *et al*, 1966). The intermediate zone acts as a leaky confining layer that separates the water table aquifer from the more productive main producing zone of the Sand and Gravel Aquifer.

The Floridian aquifer is also present in Santa Rosa County, and underlies the Sand and Gravel Aquifer. However, water from the Floridian in this region is highly mineralized and is not considered a source of potable water in Santa Rosa County (Pratt, *et. al*, 1966).

3.2 USDA NRCS SOIL SURVEY

Based on the Web Soil Survey for Santa Rosa County, Florida, as prepared by the USDA NRCS, the predominant, pre-development soil types at the site are identified as; 21 – Lakeland sand, 0 to 5 percent slopes; 24 – Leon sand, 0 to 2 percent slopes; 33 – Ortega sand, 0 to 5 percent slopes; 34 – Pactolus loamy sand, 0 to 5 percent slopes; 35 – Pickney loamy sand; and 40 – Rutlege loamy sand. A summary of the characteristics of this soil series was obtained from the Soil Survey and is included in Table 1. **Please note the soils presented in the following table are the pre-development soils, and may have been altered during any past development of the site.**

Table 1 – Summary of USDA Soil Survey Information								
Soil Type	Constituents	Internal Drainage	Hydrologic Soil Group	Soil Permeability		Seasonal High Water Table (ft)	Corrosion Potential	
				Depth (in)	Perm (in/hr)		Steel	Concrete
21 – Lakeland sand, 0 to 5% slopes	SP, SP-SM	Excessively Drained	A	0-62	>20	> 6	Low	Moderate
				62-83	>20			
24 – Leon sand, 0-2% slopes	SP-SM, SP, SM	Poorly Drained	A/D	0-16	6.0-20.0	0-1.0	High	High
				16-32	0.6-6.0			
				32-80	>20			



Table 1 – Summary of USDA Soil Survey Information								
Soil Type	Constituents	Internal Drainage	Hydrologic Soil Group	Soil Permeability		Seasonal High Water Table (ft)	Corrosion Potential	
				Depth (in)	Perm (in/hr)		Steel	Concrete
33 – Ortega sand, 0 to 5% slopes	SP, SP-SM	Moderately Well Drained	A	0-88	6.0-20.0	3.5-5	Low	High
34 – Pactolus loamy sand, 0 to 5% slopes	SM, SP-SM	Moderately Well Drained	A/D	0-52 52-80	6.0-20 6.0-20	1.5-2.5	High	High
35 – Pickney loamy sand	SP-SM, SM, SP	Very Poorly Drained	A/D	0-35 35-70	6.0-20 6.0-20	0-1.0	High	High
40 – Rutlege loamy sand	SP-SM, SM, SP	Very Poorly Drained	A/D	0-21 21-61	6.0-20 6.0-20	0-1.0	High	High

3.3 SURFACE CONDITIONS

UES personnel visited the project site during the performance of the field exploration. At the time of the field exploration, the project site generally consisted of cleared and reasonably maintained right-of-ways for Edgewood Drive and associated side streets/roads.

3.4 SUBSURFACE CONDITIONS

The general subsurface conditions encountered during the field exploration are described in Table 2. For more detailed soil descriptions and stratifications at the boring locations, the Boring Logs presented in the Appendix should be reviewed. Also, see the attachment entitled **KEY TO BORING LOGS**, presented in Appendix B, for further explanation of the symbols and placement of data on the Boring Logs. The Boring Logs represent our interpretation of the subsurface conditions based on a review of the field logs, an engineering examination of the recovered soil samples, and a limited number of laboratory tests. The horizontal stratification lines designating the interface between various strata represent approximate boundaries. Transition between different strata in the field may be gradual in both the horizontal and vertical directions. Groundwater, or lack thereof, encountered in the borings, and noted on the attached Boring Logs, represents conditions only at the time of the exploration. The following Table 2 summarizes the soil conditions found.

Table 2 – General Soil Profile				
Stratum No.	Typical depths (ft)		Soil Descriptions	Range of SPT “N” Blow Counts
	From	To		
1	0	1.5	Approximately 2 to 6 inches of sandy topsoil overlying fill materials generally comprised of sand and sand with silt [SP and SP-SM]	N/A
2	1.5	20	Very Loose to medium dense relatively clean SANDS, [SP and SP-SM]	2 to 24

* Termination depth of the deepest boring

[] Brackets indicate Unified Soil Classification System (ASTM D 2487)



Some notable exceptions to the general profile conditions presented in Table 2 are:

- At the locations of Borings AB-7, AB-8, AB-13 to AB-15, and AB-27, The native soils encountered in the borings to an approximate termination depth of 5 feet were generally comprised of silty and/or clayey sands [SM, SC, and SC-SM]; and
- At the locations of the SPT borings performed for the pipe/culvert crossings (C-1 to C-4), depths of fill and possible fill materials ranged from 2 to 6 feet below existing grades (the greater depths of fill are likely associated with the installation of the existing drainage pipes/culverts in the immediate vicinity of each boring).

At the time of our field exploration, groundwater levels measured at or shortly after the time of boring completion ranged from 2.7 feet to 4.9 feet below existing grade (BEG) at seven auger boring locations and all four SPT boring locations. Groundwater was not present in the remaining auger boring locations, at an approximate termination depth of 5 feet BEG, immediately following completion of the borings. **With the exception of Borings AB-21 to AB-23 (approximate stations 114+75 to 125+25 along Edgewood Drive), the USDA Soil Survey identifies the potential for a seasonal high groundwater table to form from 0 to 5 feet BEG.**

4.0 RECOMMENDATIONS

4.1 GEOTECHNICAL ASSESSMENT

In this section of the report, we present recommendations for pavement design/construction, site preparation, and construction related services. The following geotechnical design recommendations have been developed on the basis of the previously described project characteristics, and the subsurface conditions encountered by the exploration. If there are any changes in these project criteria, a review should be made by UES to determine if modifications to the recommendations are warranted.

Once final design plans and specifications are available, a general review by UES is recommended as a means to check that the evaluations made in preparation of this report are correct, and that recommendations are properly interpreted and implemented.

4.2 GROUNDWATER CONSIDERATIONS

The groundwater table will fluctuate seasonally depending upon local rainfall. The typical wet season groundwater level is defined as the highest groundwater level sustained for a period of two to four weeks during the "wet" season of the year, for existing site conditions, in a year with average normal rainfall amounts. Based on historical data, the rainy season in Northwest Florida is typically between June and September of any given year.

At the time of our field exploration, groundwater levels measured at or shortly after the time of boring completion ranged from 2.7 feet to 4.9 feet below existing grade (BEG) at seven auger boring locations and all four SPT boring locations. Groundwater was not present in the remaining auger boring locations, at an approximate termination depth of 5 feet BEG, immediately following boring completion. With the exception of Borings AB-21 to AB-23 (approximate stations 114+75 to 125+25 along Edgewood Drive), our best estimate for the stabilized, seasonal high groundwater table could be on the order of 0.5 to 4.5 feet BEG at the boring locations. This estimate is based upon our review of U.S.G.S. data, Escambia County Soils Survey, and regional



hydrogeology, Please see the boring logs in **Appendix B** for individual estimated wet seasonal water table depths.

The estimated seasonal high groundwater depths should be considered accurate to about ½ foot +/- . Please note that groundwater levels could temporarily be higher than these estimated levels during any given year in the future. Should impediments to surface water drainage exist on the site, or should rainfall intensity, rainfall duration, and/or total rainfall quantities exceed the normally anticipated climatic and/or rainfall quantities, groundwater levels may be higher than our previously discussed estimates.

We recommend positive drainage be established and maintained on the site during construction. We further recommend permanent measures be constructed to maintain positive drainage throughout the life of the project. **All site improvement designs should incorporate the seasonal high groundwater levels as appropriate.**

4.2.1 Temporary Groundwater Control

If encountered during construction, we recommend that the groundwater table be lowered and maintained at a depth of at least 2 feet below bearing levels and excavation bottoms. Dewatering may consist of ditching, well points, or other means. However, groundwater control means and methods are the sole responsibility of the contractor. Furthermore, we recommend that the contractor determine the actual groundwater levels at the time of construction to determine the groundwater impact on the construction procedures. If groundwater is encountered during trenching or pavement installation, UES should be notified so that we can determine whether there is a need for pavement section drainage, perimeter drains, or other recommendations for dewatering.

4.3 ASPHALT (FLEXIBLE) PAVEMENT

Based on experience with similar projects, and in the absence of any traffic loading information for the proposed pavement areas (of particular note is the turn lane), the flexible pavement section presented in the provided Construction Documents is anticipated to be a reasonable design for the proposed turn lane and bike paths/lanes. The proposed pavement section will consist of 1-½ inches of FDOT SP-12.5, overlying 6 inches of graded aggregate base compacted to at least 100 percent of the modified Proctor (ASTM D1557) maximum dry weight, overlying 12 inches of stabilized subgrade (minimum LBR of 40) compacted to at least 98 percent of the ASTM D1557 maximum dry weight. No curbing is proposed for the bike path/lane and turning lane pavements. Our recommendations for each of the components of the pavement section, along with other aspects of the pavement construction, are presented in the subsequent sections.

4.3.1 Stabilized Subgrade

The stabilized subgrade is the top surface of a roadbed upon which the pavement structure and shoulders are constructed. The primary function of the stabilized subgrade is to provide a stable and firm platform for construction of the pavement without undue deflection that would impact the pavement's performance. In addition, the stabilized subgrade enhances the overall strength of the pavement section.

Beneath all base course materials, we recommend a stabilized subgrade having a minimum Limerock Bearing Ratio (LBR) (FM 5-515) of 40 percent and a minimum compacted thickness of 12 inches as specified by the latest version of the Florida Department of Transportation (FDOT) "Standard Specifications for Road and Bridge Construction" (SSRBC) for Type B Stabilized



Subgrade, Section 160 and Section 914. The stabilized subgrade material should be compacted to at least 98 percent of the modified Proctor maximum dry density (ASTM D 1557) at a moisture content within ± 2 percent of the modified Proctor optimum moisture content.

Based on experience, it is anticipated that most of the on-site surficial soils will not be capable of meeting the minimum LBR requirement for a stabilized subgrade. For soils not meeting the LBR requirement, stabilized subgrade can be constructed by blending the soils with a stabilizing agent such as limerock or soil fines. If a blend is proposed, we recommend that the Contractor perform a mix design to determine the optimum mix proportions. The need for a stabilizing agent to be mixed with either on-site native soils or proposed imported fill soils to meet the required LBR of 40 percent for the stabilized subgrade should be verified by the Contractor before bidding and construction.

Some owners/contractors opt to forgo using a stabilized subgrade and instead prefer to use additional pavement base material for time savings, although typically at a materially higher cost. For this project, we would recommend substituting the 12 inches of stabilized subgrade (LBR 40) with 6 inches of base material (LBR 100). The proposed base course thickness previously discussed still applies. Therefore, for the proposed pavement section, the alternate section would consist of 1.5 inches of asphalt, 6 inches of base (LBR 100), and an additional 6 inches of base (LBR 100) in lieu of the 12 inches of stabilized subgrade (LBR 40). The additional base course material used in lieu of the stabilized subgrade should comply with the recommendations presented in the following Section 4.3.2.

4.3.2 Base Course

The base course is a layer or layers of select or specified material of designed thickness placed on a subbase or stabilized subgrade to provide uniform and stable support for binder and surface courses. The base course typically provides a significant portion of the structural capacity in a flexible pavement system.

For this project, we recommend the base course consist of graded aggregate base (GAB) complying with Section 204 of the latest edition of the FDOT SSRBC. A minimum LBR of 100 should be used for GAB courses. The base course should be compacted to 100 percent of the modified Proctor maximum dry density at a moisture content within ± 2 percent of the modified Proctor optimum moisture content.

4.3.3 Surface Course

The surface course is one or more layers of a pavement structure designed to accommodate traffic loading, the top layer of which resists skidding, traffic abrasion, and the disintegrating effects of climate. Additionally, the surface course provides a significant fraction of the overall structural capacity of the pavement.

The surface course should consist of FDOT SuperPave (SP fine) asphaltic concrete having a minimum field density of 93.5% of the laboratory maximum density (G_{mm}). Specific requirements for the SuperPave asphaltic concrete structural course are outlined in the current edition of the FDOT SSRBC, Section 334.

After placement and field compaction, the asphaltic concrete should be cored to evaluate material thickness and to perform laboratory densities. Cores should be obtained at frequencies of at least one core per 2,000 square feet of placed pavement, or a minimum of two cores per day's production, whichever is greater.



4.3.4 Effects of Groundwater

One of the most critical factors influencing pavement performance in Northwest Florida is the relationship between the pavement subgrade and the groundwater level. Roadways and parking areas have been damaged as a result of deterioration of the base conditions and/or the base/surface course bond. We would normally recommend that the seasonal high groundwater table and the bottom of the flexible pavement base course be separated by at least 24 inches. Based on the turn lane borings (P-1 and P-2), it is anticipated that compliance with this recommendation will be possible.

Considering the traffic loading conditions anticipated for the bike paths/lanes (primarily bicycles with an occasional motor vehicle), it is anticipated that reducing the separation between the base and seasonal high groundwater table from 24 inches to 6 inches will be acceptable. However, based on the boring data obtained and the finished elevations of the proposed construction, it is anticipated that compliance with the reduced separation dimension may still be a problem in some areas of the proposed bike paths/lanes. Where separation is a problem, it is often recommended to raise finished elevations sufficiently to provide for the separation (likely not an option for this project) or to incorporate underdrains into the design. In areas where the separation is not obtained and suitable measures are not implemented, isolated pavement areas requiring more frequent repair and maintenance can be anticipated.

4.3.5 Curbing

As noted previously, we understand that no curbing is proposed for the bike path/lane and turning lane pavements. However, if curbing should be required and/or used, then the following recommendations are made.

Typical curbing is extruded and placed atop the pavement surface. This type of curbing does not act as a horizontal cutoff for lateral migration of storm and irrigation water into the base material. As a result of this, it is not uncommon for base and subgrade materials adjacent to these areas to become saturated, promoting subsequent localized pavement deterioration. Consequently, we recommend that all pavements abutting irrigated landscape areas be equipped with an underdrain system that penetrates a minimum depth equal to the bottom of stabilized subgrade to intercept trapped shallow water and discharge it into a closed system or other acceptable discharge point.

Alternatively, curbing around any landscaped sections adjacent to parking lots and driveways could be constructed with full-depth curb sections to reduce horizontal water migration. However, underdrains may still be required dependent upon the soil type and spatial relationships. UES should review final grading plans to evaluate the need and placement of pavement and landscape underdrains.

4.3.6 Construction Traffic

Incomplete pavement sections will not perform satisfactorily under construction traffic loadings. We recommend that construction traffic (e.g., construction equipment, concrete trucks, sod trucks, dump trucks, etc.) be rerouted away from these pavements during construction. Alternatively, the pavement section can be only partially completed until the need for most of the construction traffic has gone away. For instance, allow construction traffic to drive over the compacted base course, and then repair the base course locally as needed, and install the pavement section after the need for the majority of the construction traffic has gone away.



4.4 PIPE/CULVERT CROSSINGS

Regarding the proposed pipe/culvert crossings, the following evaluations and recommendations are presented based on the boring and laboratory test data obtained from the exploration, our experience with similar site and subsurface conditions in the area of the project site, and our understanding of the proposed construction.

- Based on proposed approximate invert elevations and groundwater levels encountered in the borings at the time of the field exploration, it is estimated that bottoms of the trench excavations would be from approximately 1 foot above to approximately 2 feet below groundwater levels. During periods of seasonal high groundwater conditions, it is estimated that all of the trench bottoms will be at or below groundwater levels. Therefore, it is anticipated that temporary dewatering of the pipe/culvert excavations will be required.
- It appears that the excavation bottom subgrade conditions will generally consist of loose to very loose native relatively clean sands [SP and SP-SM] that, with suitable dewatering measures and compaction operations, will likely be suitable for support of the proposed pipe/culvert construction.
- It would appear that the soils to be excavated will generally consist of existing fill soils comprised of sand with silt [SP-SM] and silty sand [SM]. The moisture contents for these soils, above groundwater, were relatively dry (approximately 4 to 7 percent by dry weight) at the time of the field exploration. However, our experience with similar soils indicate that the soils will be extremely sensitive to changes in moisture content. Therefore, as a minimum, it is anticipated that at least some moisture conditioning of the excavated soil materials will be required to facilitate reuse for trench backfill. During periods of extremely wet weather and seasonal high groundwater conditions, it is anticipated that reuse of the soils would be difficult at best, and, in some instances, would prove to be impractical. The excavated soils would then have to be removed from the site, and suitable fill materials be imported for backfilling of the trenches. As such, provide a fee proposal would be prudent to include a contingency line item in the bid documents for the project addressing the possible removal and replacement of soils materials excavated from the trenches.
- It is recommended that measures be taken to evaluate the effects of buoyant forces on the pipes/culverts when empty and submerged beneath groundwater. If proper measures are not taken to counteract these forces, then the pipes/culverts could exert uplift forces on overlying structures (i.e. pavements) or could even “float” out of the trenches. Measures to counteract hydrostatic uplift forces could include the addition of dead weight to the pipes/culverts or the use of some form of anchoring system around or attached to the pipes/culverts. At your request, we would be pleased to provide a fee proposal to assist you with the evaluation uplift protection requirements.

4.5 SITE PREPARATION AND EARTHWORK

We recommend only normal, good practice site earthwork construction procedures. These procedures may include: stripping proposed construction areas of existing topsoil, organics, and pavement materials (including base materials); the performance of safe excavations for pipe installation; and the placement of engineered to desired finished grades. An expanded and more detailed synopsis of this work is provided in the following sections.



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4.5.1 Temporary Groundwater Control

As previously discussed, groundwater was present at approximate depths of 2.7 to 4.9 feet BEG in some of the proposed construction areas, on the dates the borings were drilled. During periods of seasonal high groundwater conditions, groundwater levels on the order of 0.5 to 4.5 feet BEG could be prevalent in most of the proposed construction areas. Therefore, it is anticipated that temporary groundwater control may be required during earthwork operations. Groundwater control means and methods are the sole responsibility of the contractor.

To minimize problems with elevated groundwater conditions, it would be prudent to schedule, as much as is practical, all site work, grading, and construction operations during extended periods of dry weather. If such operations are performed during extended periods of wet weather, such as may be encountered during the late summer and early fall months of hurricane season, then possible problems with elevated groundwater conditions could occur.

4.5.2 Nearby Structures and Vibrations

Care should be exercised to avoid damaging any nearby structures while the earthwork operations are underway. Prior to commencing site work operations in areas that will be constructed near adjacent structures and/or developments, we recommend that occupants of adjacent structures be notified, and the existing conditions of the structures be documented with photographs and survey. Compaction should cease if deemed detrimental to adjacent structures.

Pre-construction building surveys of all off-site adjacent structures are also recommended, but absent these surveys, we recommend that the vibratory function of the compaction equipment be turned off when operating within 50 feet of any adjacent structures. UES can provide vibration monitoring services to help document and evaluate the effects of the surface compaction operations on existing structures.

4.5.3 Existing Underground Utilities

The location of any existing underground utility lines within the proposed construction areas should be established prior to initiating construction. Where possible, provisions should be made to relocate or abandon interfering utilities. It should be noted that if underground pipes are not properly removed or plugged, they might serve as conduits for subsurface erosion, which may subsequently lead to excessive settlement of overlying pavements and structures.

If relocation and/or abandonment are not options, then, as a minimum, it is recommended that: the trench and excavation fill materials for existing utilities be excavated to undisturbed native soils; the exposed utilities be evaluated for any deterioration or damage (pressure testing being recommended for any water bearing utilities); any damage or deterioration discerned be properly repaired; and the utility trenches be backfilled to finished elevations in accordance with recommendations presented in subsequent sections of this report. Based on the boring data obtained, it is anticipated that the materials excavated will likely be suitable for backfilling the trenches. However, some preparation of the excavated materials (likely in the form of wetting or drying) may be required to facilitate reuse and compaction.

4.5.4 Site Preparation and Grading

Strip the proposed construction limits of all deleterious materials including topsoil vegetation, and pavement section materials (including asphalt and base materials). In grassed, landscaped and undeveloped construction areas, expect typical approximate depths of stripping of 6 to 12 inches.



During general construction operations, loose sandy soils will likely be encountered at the stripped subgrade level. As a result, unstable subgrade conditions may be anticipated during general construction operations. The use of light construction equipment would aid in reducing subgrade disturbance. The use of remotely operated equipment, such as a backhoe, would be beneficial to perform cuts and reduce subgrade disturbance.

Following completion of the initial stripping operations, and after rough grade has been established in areas at or below finished subgrade elevations, a visit should be made to the site(s) by a UES Geotechnical Engineer or his representative. If possible, the engineer will observe vibratory or static proofrolling of the exposed soil subgrades. The purposes of the proofrolling will be to densify loose surficial soils, and identify pockets of unsuitable material which may require densification in-place or undercutting and replacement. Ideally, vibratory proofrolling would be most suitable for the prevalent soil materials (relatively clean sands). However, because of relatively shallow groundwater conditions indicated by at least some of the borings, vibratory proofrolling of the exposed subgrades may result in liquefaction and stability/failure problems within the sands. Static proofrolling with a loaded dump truck or other pneumatic tired construction vehicle of similar size and weight may be performed in lieu of vibratory proofrolling in areas where shallow groundwater may preclude the performance of vibratory proofrolling operations.

It is imperative to the success of the site and subgrade preparation operations that a UES Geotechnical Engineer or his representative be on the site immediately prior to, and during the performance of any proofrolling operations on the project site. The engineer will be able to observe site conditions at the time of the proofrolling operations, and be immediately available to make recommendations regarding subgrade preparation or assist in developing appropriate stabilization procedures based on the observed conditions encountered during construction. Engineering observation and involvement is especially critical due to the presence of relatively shallow groundwater conditions.

The number of passes required during proofrolling operations to evaluate subgrade conditions and densify the upper zone of sands will be a function of the following: the applied dynamic force of the compaction equipment; the prevalent moisture content of the sands; the prevalent weather and groundwater conditions at the time of the proofrolling operations; and the quantity of fines present in the sands. The specific number of passes required to achieve the density criterion discussed in a subsequent section of this report is best determined by performing test strips prior to or during the initial phases of the site preparation activities with the actual compaction equipment to be used. Based on experience with similar soil conditions and suitable compaction equipment, it is anticipated that a typical proofrolling sequence required to evaluate subgrade conditions would entail a minimum of two passes of the compaction equipment in each of two perpendicular directions. However, due to the limited widths of the proposed construction areas (typically approximately 15 feet or less), proofrolling in only one direction (along the length of the construction areas) will be the likely sequence. The final actual proofrolling sequence will be dependent on the findings of the test strips. In addition, it is recommended that, during the proofrolling operations, a 20% overlap of the compaction equipment be used for adjacent strips.

Where proofrolling operations can be performed, and site and subsurface conditions at the time of the proofrolling operations permit, it is recommended that the proofrolled subgrades be moisture conditioned and compacted to at least 95% of the materials' modified Proctor (ASTM D1557) maximum dry densities. This proofrolling and compaction process, where possible, will help provide a stable base for the compaction of new structural fill, and will provide suitable subgrade support for sidewalk construction. Following the completion of any vibratory proofrolling and compaction operations performed, exposed subgrades at finished elevations should then be rerolled with the vibratory mechanism for the compaction equipment turned off. The purpose of



the additional rolling is to densify the upper approximately 6 to 12 inches of surficial sands which tend to remain loose because of over-vibration. Similar procedures should be used for all final subgrades where vibratory compaction equipment is used.

Upon completion of grading, care should be taken to maintain the subgrade moisture contents prior to subsequent construction. Construction traffic over completed subgrades, in areas of subsequent construction, should be avoided to the extent practical. The site should also be graded to prevent ponding of surface water on the prepared subgrades or in excavations. If the subgrade(s) should become frozen, desiccated, saturated, or disturbed, the affected materials should be removed or these materials should be scarified, moisture conditioned, and recompacted prior to any subsequent construction.

4.5.5 Fill Placement

The recommended criteria for soil fill characteristics (both on-site and imported materials) and compaction procedures are listed in a subsequent section. The project design documents should include the following recommendations to address proper placement and compaction of project fill materials. Earthwork operations should not begin until representative fill and/or native soil samples are collected and tested (allow 3 to 4 days for sampling and testing) to determine maximum dry density and optimum moisture values.

4.5.6 Earth Fill Materials

Engineered fill should meet the following material properties.

- Imported fill and on-site material satisfactory for structural fill should include clean soil material with USCS classifications of SW, SP, and SP-SM. The fill material should have a modified Proctor (ASTM D1557) maximum dry density of at least 100 pcf, contain less than 10 percent passing the No. 200 sieve, and be non-plastic (NP).
- Organic content or other foreign matter (debris) should be no greater than 3 percent by weight, and no large roots (greater than ¼ inch in diameter) should be allowed.
- Material utilized as fill should not contain rocks greater than 3 inches in diameter or greater than 30 percent retained on the ¾-inch sieve.

4.5.7 Compaction Recommendations

The following recommendations are presented for fill placement and compaction. The recommendations are also applicable for the compaction of existing soil materials on the project site.

- Maximum loose lift thicknesses – 8 to 12 inches for general mass fill (if any); 4 to 6 inches in pipe trenches and other confined spaces where hand operated equipment is used.
- Compaction requirements – 95 percent of the maximum dry density, as determined by the modified Proctor (ASTM D 1557) compaction test, for cohesionless soils underneath structures and pavements.
- Soil moisture content at time of compaction – within ±3 percent of the optimum moisture content.



4.5.8 Test Criteria to Evaluate Fill and Compaction

The following minimum criteria for the evaluation of fill materials, and the placement and compaction of the fill materials, are recommended. The recommendations are also applicable for the evaluation and compaction of existing soil materials on the project site.

- One Modified Proctor compaction test and one No. 200 sieve analysis test for each soil type that will either be compacted in-place and/or used as project fill.
- Trench excavations underneath pavements – One density test for every 50 linear feet of trench excavation for each lift or two tests per lift, whichever is greater.
- Pavement/sidewalk areas – One density test for every 1,000 to 2,000 square feet of area for each lift or two tests for each lift, whichever is greater.

4.6 CONSTRUCTION RELATED SERVICES

We recommend that UES be retained to perform construction materials testing and observations on this project. Field testing and observations will include: verification of fill placement and construction subgrade soils; the performance of in-place density testing to verify compaction of native soil subgrades or fill soils; and testing for sidewalk concrete materials and placement. We can also provide pavement materials testing and asphalt placement monitoring and testing for the proposed asphalt pavement construction, as well as other general construction observation and testing services.

The geotechnical engineering design does not end with the advertisement of the construction documents. The design is an on-going process throughout construction. Because of our familiarity with the site conditions and the intent of the engineering design, we are most qualified to address problems that might arise during construction in a timely and cost-effective manner.

4.6.1 Excavation and Safety

In Federal Register, Volume 54, No. 209 (October 1989), the United States Department of Labor, Occupational Safety and Health Administration (OSHA) amended its “Construction Standards for Excavations, 29 CFR, Part 1926, Subpart P”. This document was issued to better allow for the safety of workers entering trenches or excavations. It is mandated by this federal regulation that excavations, whether they be utility trenches, basement excavations or footing excavations, be constructed in accordance with the new OSHA guidelines. It is our understanding that these regulations are being strictly enforced and if they are not closely followed, the owner and the Contractor could be liable for substantial penalties.

The Contractor is solely responsible for designing and constructing stable, temporary excavations and should shore, slope, or bench the sides of the excavations as required to maintain stability of both the excavation sides and bottom. The Contractor’s “responsible person”, as defined in 29 CFR Part 1926, should evaluate the soil exposed in the excavations as part of the Contractor’s safety procedures. In no case should slope height, slope inclination, or excavation depth, including utility trench excavation depth, exceed those specified in all local, state, and federal safety regulations.

We are providing this information solely as a service to our client. UES does not assume responsibility for construction site safety or the Contractor’s or other parties’ compliance with local, state, and federal safety or other regulations.



5.0 LIMITATIONS

This report has been prepared for the exclusive use of **Kenneth Horne and Associates, Inc.**, and other designated members of their design/construction team associated with the proposed construction for the specific project discussed in this report. No other site or project facilities should be designed using the soil information contained in this report. As such, Universal Engineering Sciences, Inc. (UES) will not be responsible for the performance of any other site improvement designed using the data in this report.

This report should not be relied upon for final design recommendations or professional opinions by unauthorized third parties without the expressed written consent of UES. Unauthorized third parties that rely upon the information contained herein without the expressed written consent of UES, assume all risk and liability for such reliance.

The recommendations submitted in this report are based upon the data obtained from the soil borings performed at the locations indicated on the Boring Logs, and from other information as referenced. This report does not reflect any variations which may occur between the boring locations. The nature and extent of such variations may not become evident until the course of construction. If variations become evident, it will then be necessary for a re-evaluation of the recommendations of this report after performing on-site observations during the construction period, and noting the characteristics of the variations.

Borings for a typical geotechnical report are widely spaced and generally not sufficient for reliably detecting the presence of isolated, anomalous surface or subsurface conditions, or reliably estimating unsuitable or suitable material quantities. Accordingly, UES does not recommend relying on our boring information for estimation of material quantities unless our contracted services specifically include sufficient exploration for such purpose(s), and within the report we so state that the level of exploration provided should be sufficient to detect anomalous conditions or estimate such quantities. Therefore, UES will not be responsible for any extrapolation or use of our data by others beyond the purpose(s) for which it is applicable or intended.

All users of this report are cautioned that there was no requirement for UES to attempt to locate any man-made buried objects or identify any other potentially hazardous conditions that may exist at the site during the course of this exploration. Therefore no attempt was made by UES to locate or identify such concerns. UES cannot be responsible for any buried man-made objects or environmental hazards which may be subsequently encountered during construction that are not discussed within the text of this report. We can provide this service if requested.

During the early stages of most construction projects, geotechnical issues not addressed in this report may arise. Because of the natural limitations inherent in working with the subsurface, it is not possible for a geotechnical engineer to predict and address all possible problems. A Geotechnical Business Council (GBC), "Important Information About Your Geotechnical Engineering Report" appears in Appendix D, and will help explain the nature of geotechnical issues. Further, we include a document in Appendix D, entitled **Constraints & Restrictions**, to bring to your attention the potential concerns and the basic limitations of a typical geotechnical report.

* * * * *



Approved
2020-D-395-00006
David Wilks
3/4/2020 ¹⁶

APPENDIX A



Approved
2020-D-395-00006
David Wilks
3/4/2020



EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

NAVARRE, SANTA ROSA COUNTY, FLORIDA

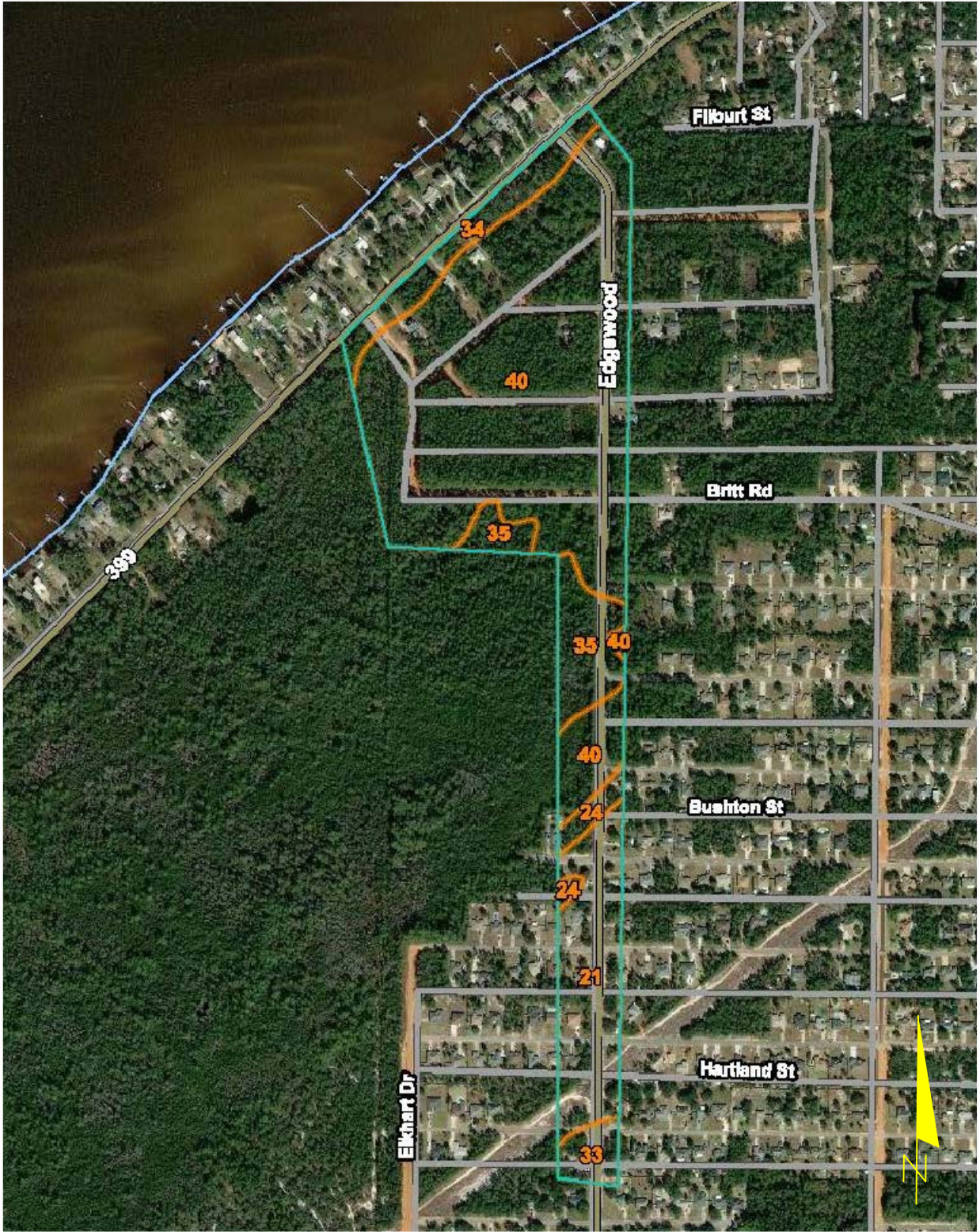
SITE LOCATION MAP



DRAWN BY: KD	DATE: 10/11/19	CHECKED BY: MJ	DATE: 10/11/19
SCALE: NTS	PROJECT NO:1730.1900052.0000	REPORT NO: 1721098	PAGE NO: A - 1

Approved
2020-D-395-00006
David Wilks
3/4/2020

1730.1900052-A



EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

NAVARRE, SANTA ROSA COUNTY, FLORIDA

USDA SOIL SURVEY MAP

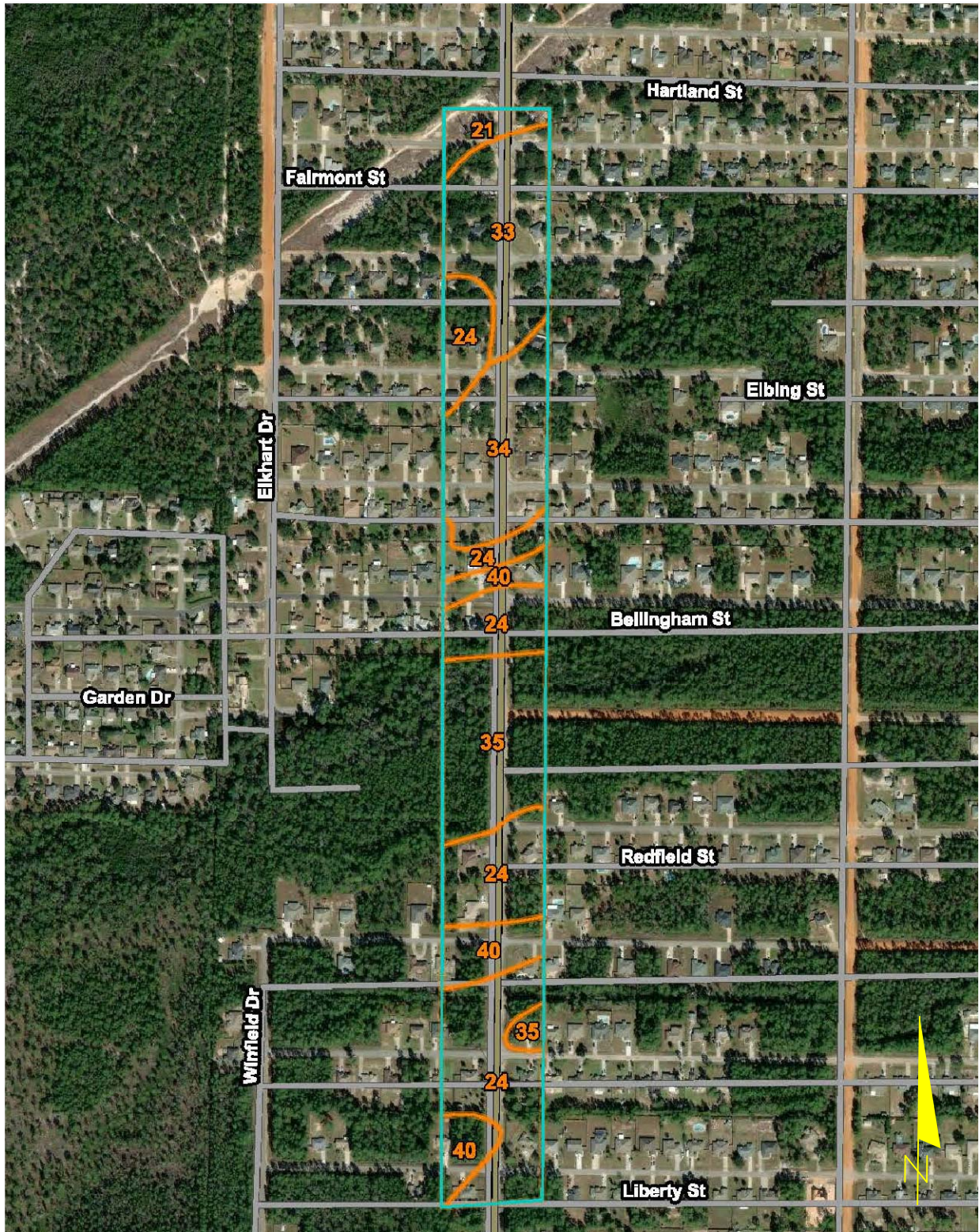


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DRAWN BY: KD	DATE: 10/11/19	CHECKED BY: MJ	DATE: 10/11/19
SCALE: NTS	PROJECT NO: 1730.1900052.0000	REPORT NO: 1721098	PAGE NO: A-2

Approved
2020-D-395-00006
David Wilks
3/4/2020

1730.1900052-A



1730.1900052-A



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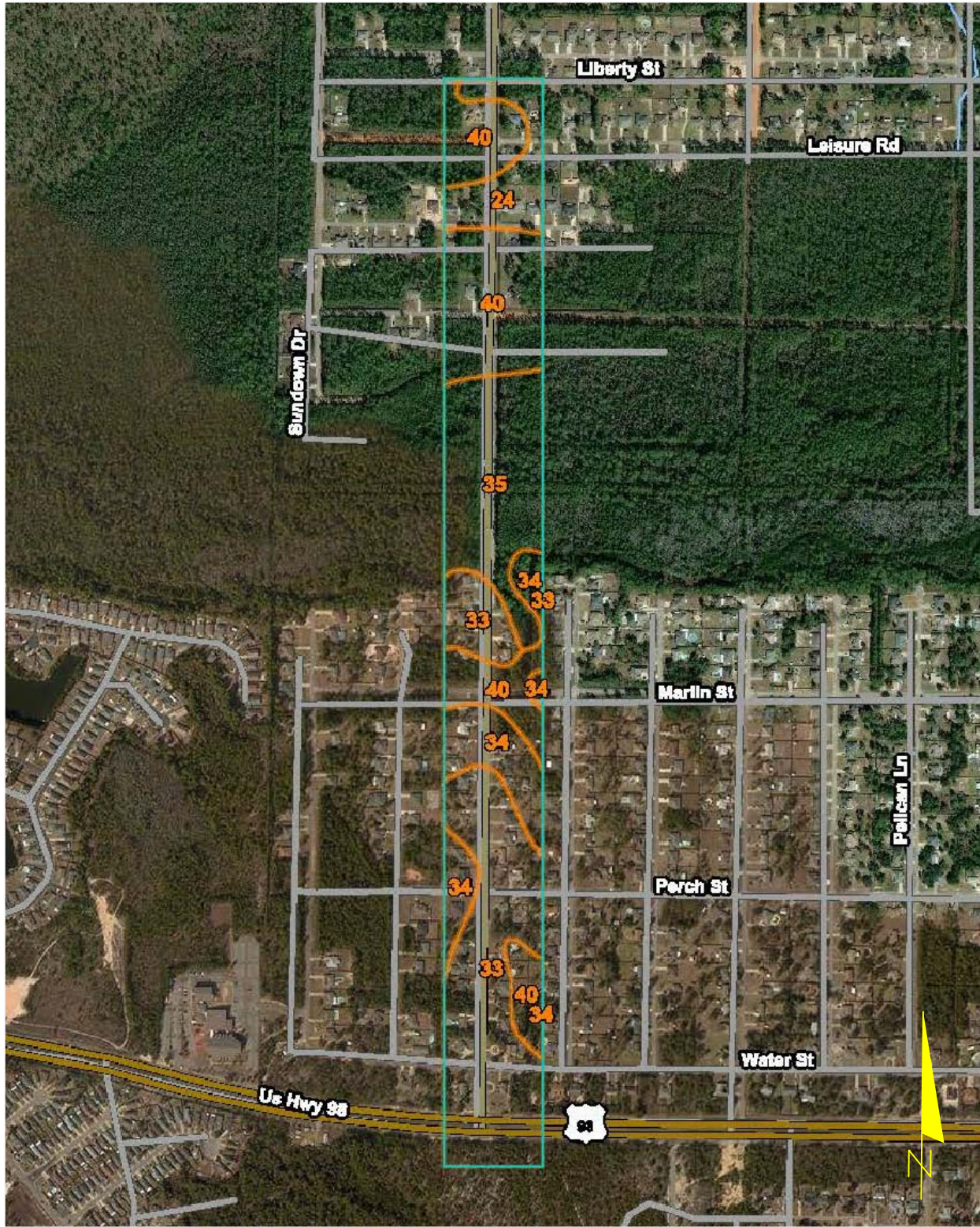
EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

NAVARRE, SANTA ROSA COUNTY, FLORIDA

USDA SOIL SURVEY MAP

DRAWN BY:	KD	DATE:	10/11/19	CHECKED BY:	MJ	DATE:	10/11/19
SCALE:	NTS	PROJECT NO:	1730.1900052.0000	REPORT NO:	1721098	PAGE NO:	A-3

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2020-D-395-00006
David Wilks
3/4/2020



1730.1900052-A



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EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

NAVARRE, SANTA ROSA COUNTY, FLORIDA

USDA SOIL SURVEY MAP

DRAWN BY: KD	DATE: 10/11/19	CHECKED BY: MJ	DATE: 10/11/19
SCALE: NTS	PROJECT NO: 1730.1900052.0000	REPORT NO: 1721098	PAGE NO: A - 4

Approved
2020-D-395-00006
David Wilks
3/4/2020

APPENDIX B



Approved
2020-D-395-00006
David Wilks
3/4/2020



**UNIVERSAL ENGINEERING SCIENCES
BORING LOG**

PROJECT NO.: 1730.1900052.0000

REPORT NO.: 1721098

PAGE: B-1

PROJECT: EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

BORING NO: **AB-1**

SHEET: **1 of 1**

NAVARRE, SANTA ROSA COUNTY, FLORIDA

SECTION:

TOWNSHIP:

RANGE:

CLIENT: KENNETH HORNE AND ASSOCIATES, INC.

GS ELEVATION(ft): 39*

DATE STARTED: 9/19/19

LOCATION: STATION 15+00, 8' EAST OF EAST EDGE OF PAVEMENT

WATER TABLE (ft): NE

DATE FINISHED: 9/19/19

REMARKS: *ESTIMATED FROM CONSTRUCTION DOCUMENTS

DATE OF READING: 9/19/19

DRILLED BY: UES / B.B.

AUGER-HAND HELD BARREL

EST. WSWT (ft): 3.5

TYPE OF SAMPLING: ASTM D1452

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N VALUE	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT/DAY)	ORG CONT. (%)
									LL	PI		
0						Dark brown sandy Topsoil, with trace amounts of small roots and small organics						
1						Dark brown SAND [SP], with trace amounts of small roots and small organics		4				
2						Brown SAND [SP]						
3						Light brown SAND [SP]						
4				▽		Tan SAND [SP]						
5						Boring Terminated at 5'						

Approved
2020-D-395-00006
David Wilks
3/4/2020



UNIVERSAL ENGINEERING SCIENCES BORING LOG

PROJECT NO.: 1730.1900052.0000

REPORT NO.: 1721098

PAGE: B-2

PROJECT: EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

BORING NO: **AB-2**

SHEET: **1 of 1**

NAVARRE, SANTA ROSA COUNTY, FLORIDA

SECTION:

TOWNSHIP:

RANGE:

CLIENT: KENNETH HORNE AND ASSOCIATES, INC.

GS ELEVATION(ft): 40*

DATE STARTED: 9/19/19

LOCATION: STATION 20+00, 6' WEST OF WEST EDGE OF PAVEMENT

WATER TABLE (ft): 4.9

DATE FINISHED: 9/19/19

REMARKS: *ESTIMATED FROM CONSTRUCTION DOCUMENTS

DATE OF READING: 9/19/19

DRILLED BY: UES / B.B.

AUGER-HAND HELD BARREL

EST. WSWT (ft): 3

TYPE OF SAMPLING: ASTM D1452

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N VALUE	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT/DAY)	ORG CONT. (%)
									LL	PI		
0						Dark brown sandy Topsoil, with few amounts of small roots and small organics	6	2				
1					Dark brown SAND [SP]							
2					Brown SAND [SP]							
3					Light brown SAND [SP]							
4					White SAND [SP]							
5						Boring Terminated at 5'						

Approved
2020-D-395-00006
David Wilks
3/4/2020



UNIVERSAL ENGINEERING SCIENCES BORING LOG

PROJECT NO.: 1730.1900052.0000

REPORT NO.: 1721098

PAGE: B-3

PROJECT: EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

BORING NO: **AB-3**

SHEET: **1 of 1**

NAVARRE, SANTA ROSA COUNTY, FLORIDA

SECTION:

TOWNSHIP:

RANGE:

CLIENT: KENNETH HORNE AND ASSOCIATES, INC.

GS ELEVATION(ft): 41*

DATE STARTED: 9/19/19

LOCATION: STATION 24+75, 6' EAST OF EAST EDGE OF PAVEMENT

WATER TABLE (ft): NE

DATE FINISHED: 9/19/19

REMARKS: *ESTIMATED FROM CONSTRUCTION DOCUMENTS

DATE OF READING: 9/19/19

DRILLED BY: UES / B.B.

AUGER-HAND HELD BARREL

EST. WSWT (ft): 3.5

TYPE OF SAMPLING: ASTM D1452

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N VALUE	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT/DAY)	ORG CONT. (%)
									LL	PI		
0						Red, orange, brown SAND, with silt [SP-SM] (Fill)						
1						Brown SAND [SP]						
						Light brown SAND [SP]						
2												
3				▽		Tan SAND [SP]		3				
4						White, light brown, tan SAND [SP]						
5						Boring Terminated at 5'						

Approved
2020-D-395-00006
David Wilks
3/4/2020



UNIVERSAL ENGINEERING SCIENCES BORING LOG

PROJECT NO.: 1730.1900052.0000

REPORT NO.: 1721098

PAGE: B-4

PROJECT: EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

BORING NO: **AB-4**

SHEET: **1 of 1**

NAVARRE, SANTA ROSA COUNTY, FLORIDA

SECTION:

TOWNSHIP:

RANGE:

CLIENT: KENNETH HORNE AND ASSOCIATES, INC.

GS ELEVATION(ft): 40*

DATE STARTED: 9/19/19

LOCATION: STATION 30+00, 5' WEST OF WEST EDGE OF PAVEMENT

WATER TABLE (ft): NE

DATE FINISHED: 9/19/19

REMARKS: *ESTIMATED FROM CONSTRUCTION DOCUMENTS

DATE OF READING: 9/19/19

DRILLED BY: UES / B.B.

AUGER-HAND HELD BARREL

EST. WSWT (ft): 3

TYPE OF SAMPLING: ASTM D1452

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N VALUE	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT/DAY)	ORG CONT. (%)
									LL	PI		
0						Dark brown sandy Topsoil, with few amounts of small roots and small organics						
1						Red, orange, brown SAND [SP], with trace amounts of small roots and small organics (Fill)						
2						Brown SAND [SP]	2	2				
3				▽		Light brown, tan SAND [SP]						
4						White SAND [SP]						
5						Boring Terminated at 5'						

Approved
2020-D-395-00006
David Wilks
3/4/2020



**UNIVERSAL ENGINEERING SCIENCES
BORING LOG**

PROJECT NO.: 1730.1900052.0000

REPORT NO.: 1721098

PAGE: B-5

PROJECT: EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

BORING NO: **AB-5**

SHEET: **1 of 1**

NAVARRE, SANTA ROSA COUNTY, FLORIDA

SECTION:

TOWNSHIP:

RANGE:

CLIENT: KENNETH HORNE AND ASSOCIATES, INC.

GS ELEVATION(ft): 39*

DATE STARTED: 9/19/19

LOCATION: STATION 35+00, 5' EAST OF EAST EDGE OF PAVEMENT

WATER TABLE (ft): 4.6

DATE FINISHED: 9/19/19

REMARKS: *ESTIMATED FROM CONSTRUCTION DOCUMENTS

DATE OF READING: 9/19/19

DRILLED BY: UES / B.B.

AUGER-HAND HELD BARREL

EST. WSWT (ft): 2.5

TYPE OF SAMPLING: ASTM D1452

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N VALUE	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT/DAY)	ORG CONT. (%)
									LL	PI		
0												
1						Brown SAND [SP], with lumps of orange, brown silty sand and trace amounts of fine to small roots and fine to small organics (Fill)		2				
2						Brown SAND [SP]						
3				▽								
4						Light gray, brown SAND [SP]						
5				▼		Boring Terminated at 5'						

Approved
2020-D-395-00006
David Wilks
3/4/2020



**UNIVERSAL ENGINEERING SCIENCES
BORING LOG**

PROJECT NO.: 1730.1900052.0000

REPORT NO.: 1721098

PAGE: B-6

PROJECT: EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

BORING NO: **AB-6**

SHEET: **1 of 1**

NAVARRE, SANTA ROSA COUNTY, FLORIDA

SECTION:

TOWNSHIP:

RANGE:

CLIENT: KENNETH HORNE AND ASSOCIATES, INC.

GS ELEVATION(ft): 36*

DATE STARTED: 9/19/19

LOCATION: STATION 40+00, 6' WEST OF WEST EDGE OF PAVEMENT

WATER TABLE (ft): 4

DATE FINISHED: 9/19/19

REMARKS: *ESTIMATED FROM CONSTRUCTION DOCUMENTS

DATE OF READING: 9/19/19

DRILLED BY: UES / B.B.

AUGER-HAND HELD BARREL

EST. WSWT (ft): 2

TYPE OF SAMPLING: ASTM D1452

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N VALUE	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT/DAY)	ORG CONT. (%)
									LL	PI		
0						Dark brown to brown SAND [SP], with lumps of orange, brown silty sand and trace amounts of small roots and small organics (Fill)		2				
1						Dark brown, dark gray SAND [SP]						
2				▽		Dark brown organic stained SAND, with silt [SP-SM]						
3						Light gray to gray, brown SAND [SP]						
4				▼								
5						Boring Terminated at 5'						

Approved
2020-D-395-00006
David Wilks
3/4/2020



UNIVERSAL ENGINEERING SCIENCES BORING LOG

PROJECT NO.: 1730.1900052.0000

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PROJECT: EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

BORING NO: **AB-7**

SHEET: **1 of 1**

NAVARRE, SANTA ROSA COUNTY, FLORIDA

SECTION:

TOWNSHIP:

RANGE:

CLIENT: KENNETH HORNE AND ASSOCIATES, INC.

GS ELEVATION(ft): 33*

DATE STARTED: 9/19/19

LOCATION: STATION 45+00, 6' EAST OF EAST EDGE OF PAVEMENT

WATER TABLE (ft): NE

DATE FINISHED: 9/19/19

REMARKS: *ESTIMATED FROM CONSTRUCTION DOCUMENTS

DATE OF READING: 9/19/19

DRILLED BY: UES / B.B.

AUGER-HAND HELD BARREL

EST. WSWT (ft): 1

TYPE OF SAMPLING: ASTM D1452

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N VALUE	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT/DAY)	ORG CONT. (%)
									LL	PI		
0						Dark brown, red SAND, with silt [SP-SM] (Fill)						
1				▽		Black organic stained SAND, with silt [SP-SM]						
2						Black organic stained silty SAND [SM], with some wood fragments						
3												
4												
5						Boring Terminated at 5'		27				6

Approved
2020-D-395-00006
David Wilks
3/4/2020



**UNIVERSAL ENGINEERING SCIENCES
BORING LOG**

PROJECT NO.: 1730.1900052.0000

REPORT NO.: 1721098

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PROJECT: EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

BORING NO: **AB-8**

SHEET: **1 of 1**

NAVARRE, SANTA ROSA COUNTY, FLORIDA

SECTION:

TOWNSHIP:

RANGE:

CLIENT: KENNETH HORNE AND ASSOCIATES, INC.

GS ELEVATION(ft): 33*

DATE STARTED: 9/19/19

LOCATION: STATION 50+00, 5' WEST OF WEST EDGE OF PAVEMENT

WATER TABLE (ft): NE

DATE FINISHED: 9/19/19

REMARKS: *ESTIMATED FROM CONSTRUCTION DOCUMENTS

DATE OF READING: 9/19/19

DRILLED BY: UES / B.B.

AUGER-HAND HELD BARREL

EST. WSWT (ft): 1

TYPE OF SAMPLING: ASTM D1452

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N VALUE	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT/DAY)	ORG CONT. (%)
									LL	PI		
0						Dark brown sandy Topsoil, with trace amounts of fine roots and fine organics						
1						Dark brown organic stained SAND, with silt [SP-SM], with trace amounts of small roots, small organics and wood fragments						
2						Dark brown organic stained SAND, with silt [SP-SM], with trace amounts of small roots, small organics and wood fragments						
3						Black organic stained silty SAND [SM], with trace amounts of small roots, small organics and wood fragments		19				
4						Black organic stained silty SAND [SM], with trace amounts of small roots, small organics and wood fragments						
5						Boring Terminated at 5'						

Approved
2020-D-395-00006
David Wilks
3/4/2020



**UNIVERSAL ENGINEERING SCIENCES
BORING LOG**

PROJECT NO.: 1730.1900052.0000

REPORT NO.: 1721098

PAGE: B-9

PROJECT: EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

BORING NO: **AB-9**

SHEET: **1 of 1**

NAVARRE, SANTA ROSA COUNTY, FLORIDA

SECTION:

TOWNSHIP:

RANGE:

CLIENT: KENNETH HORNE AND ASSOCIATES, INC.

GS ELEVATION(ft): 33*

DATE STARTED: 9/19/19

LOCATION: STATION 56+00, 6' EAST OF EAST EDGE OF PAVEMENT

WATER TABLE (ft): NE

DATE FINISHED: 9/19/19

REMARKS: *ESTIMATED FROM CONSTRUCTION DOCUMENTS

DATE OF READING: 9/19/19

DRILLED BY: UES / B.B.

AUGER-HAND HELD BARREL

EST. WSWT (ft): 2

TYPE OF SAMPLING: ASTM D1452

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N VALUE	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT/DAY)	ORG CONT. (%)
									LL	PI		
0						Dark brown, orange SAND, with silt [SP-SM], with trace amounts of small roots and small organics (Fill)						
1						Dark gray, black organic stained SAND [SP]						
2				▽		Dark brown organic stained SAND, with silt [SP-SM]	3	8				
3						Dark brown, gray SAND, with silt [SP-SM]						
4						Brown, gray SAND [SP]						
5						Boring Terminated at 5'						

Approved
2020-D-395-00006
David Wilks
3/4/2020



**UNIVERSAL ENGINEERING SCIENCES
BORING LOG**

PROJECT NO.: 1730.1900052.0000

REPORT NO.: 1721098

PAGE: B-10

PROJECT: EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

BORING NO: **AB-10**

SHEET: **1 of 1**

NAVARRE, SANTA ROSA COUNTY, FLORIDA

SECTION:

TOWNSHIP:

RANGE:

CLIENT: KENNETH HORNE AND ASSOCIATES, INC.

GS ELEVATION(ft): 32*

DATE STARTED: 9/24/19

LOCATION: STATION 61+00, 10' WEST OF WEST EDGE OF PAVEMENT

WATER TABLE (ft): NE

DATE FINISHED: 9/24/19

REMARKS: *ESTIMATED FROM CONSTRUCTION DOCUMENTS

DATE OF READING: 9/24/19

DRILLED BY: UES / T.M.

AUGER-HAND HELD BARREL

EST. WSWT (ft): 2.5

TYPE OF SAMPLING: ASTM D1452

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N VALUE	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT/DAY)	ORG CONT. (%)
									LL	PI		
0						Brown, orange SAND, with silt [SP-SM] (Fill)	10	2				
1												
2				▽	Dark brown organic stained SAND, with silt [SP-SM], with trace amounts of fine roots and fine organics							
3						Gray, brown SAND [SP]						
4												
5						Boring Terminated at 5'						

Approved
2020-D-395-00006
David Wilks
3/4/2020



**UNIVERSAL ENGINEERING SCIENCES
BORING LOG**

PROJECT NO.: 1730.1900052.0000
REPORT NO.: 1721098
PAGE: B-11

PROJECT: EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

BORING NO: **AB-11**

SHEET: **1 of 1**

NAVARRE, SANTA ROSA COUNTY, FLORIDA

SECTION:

TOWNSHIP:

RANGE:

CLIENT: KENNETH HORNE AND ASSOCIATES, INC.

GS ELEVATION(ft): 32*

DATE STARTED: 9/24/19

LOCATION: STATION 65+00, 5' EAST OF EAST EDGE OF PAVEMENT

WATER TABLE (ft): NE

DATE FINISHED: 9/24/19

REMARKS: *ESTIMATED FROM CONSTRUCTION DOCUMENTS

DATE OF READING: 9/24/19

DRILLED BY: UES / T.M.

AUGER-HAND HELD BARREL

EST. WSWT (ft): 2

TYPE OF SAMPLING: ASTM D1452

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N VALUE	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT/DAY)	ORG CONT. (%)
									LL	PI		
0						Dark brown SAND, with silt [SP-SM], with trace amounts of fine roots, fine organics and fine gravel (Fill)						
1				▽		Dark brown, dark gray organic stained SAND, with silt [SP-SM], with trace amounts of fine roots and fine organics		12				
2												
3												
4												
5						Boring Terminated at 5'						

Approved
2020-D-395-00006
David Wilks
3/4/2020



**UNIVERSAL ENGINEERING SCIENCES
BORING LOG**

PROJECT NO.: 1730.1900052.0000

REPORT NO.: 1721098

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PROJECT: EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

BORING NO: **AB-12**

SHEET: **1 of 1**

NAVARRE, SANTA ROSA COUNTY, FLORIDA

SECTION:

TOWNSHIP:

RANGE:

CLIENT: KENNETH HORNE AND ASSOCIATES, INC.

GS ELEVATION(ft): 32*

DATE STARTED: 9/24/19

LOCATION: STATION 70+00, 10' WEST OF WEST EDGE OF PAVEMENT

WATER TABLE (ft): NE

DATE FINISHED: 9/24/19

REMARKS: *ESTIMATED FROM CONSTRUCTION DOCUMENTS

DATE OF READING: 9/24/19

DRILLED BY: UES / T.M.

AUGER-HAND HELD BARREL

EST. WSWT (ft): 2.5

TYPE OF SAMPLING: ASTM D1452

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N VALUE	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT/DAY)	ORG CONT. (%)
									LL	PI		
0						Dark brown SAND, with silt [SP-SM], with trace amounts of small roots and small organics (Fill)		2				2
1												
2				▽		Brown, orange SAND, with silt [SP-SM] (Fill)						
3						Dark gray, organic stained SAND, with silt [SP-SM]						
4						Dark brown organic stained SAND, with silt [SP-SM]						
5						Boring Terminated at 5'						

Approved
2020-D-395-00006
David Wilks
3/4/2020



UNIVERSAL ENGINEERING SCIENCES BORING LOG

PROJECT NO.: 1730.1900052.0000

REPORT NO.: 1721098

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PROJECT: EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

BORING NO: **AB-13**

SHEET: **1 of 1**

NAVARRE, SANTA ROSA COUNTY, FLORIDA

SECTION:

TOWNSHIP:

RANGE:

CLIENT: KENNETH HORNE AND ASSOCIATES, INC.

GS ELEVATION(ft): 31*

DATE STARTED: 9/24/19

LOCATION: STATION 75+00, 12' EAST OF EAST EDGE OF PAVEMENT

WATER TABLE (ft): NE

DATE FINISHED: 9/24/19

REMARKS: *ESTIMATED FROM CONSTRUCTION DOCUMENTS

DATE OF READING: 9/24/19

DRILLED BY: UES / T.M.

AUGER-HAND HELD BARREL

EST. WSWT (ft): 2

TYPE OF SAMPLING: ASTM D1452

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N VALUE	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT/DAY)	ORG CONT. (%)
									LL	PI		
0						Brown, orange SAND, with silt [SP-SM] (Fill)						
1						Dark brown, dark gray organic stained SAND, with silt [SP-SM] (Possible Fill)						
2				▽		Dark brown, black organic stained silty SAND [SM], with trace amounts of fine roots and fine organics	20	11				2
3						Dark brown, black organic stained clayey SAND [SC], with trace amounts of small roots and small organics	26	25				
4						Dark brown, dark gray organic stained clayey SAND [SC], with trace amounts of fine roots and fine organics						
5						Boring Terminated at 5'						

Approved
2020-D-395-00006
David Wilks
3/4/2020



UNIVERSAL ENGINEERING SCIENCES BORING LOG

PROJECT NO.: 1730.1900052.0000

REPORT NO.: 1721098

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PROJECT: EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

BORING NO: **AB-14**

SHEET: **1 of 1**

NAVARRE, SANTA ROSA COUNTY, FLORIDA

SECTION:

TOWNSHIP:

RANGE:

CLIENT: KENNETH HORNE AND ASSOCIATES, INC.

GS ELEVATION(ft): 31*

DATE STARTED: 9/24/19

LOCATION: STATION 80+00, 10' WEST OF WEST EDGE OF PAVEMENT

WATER TABLE (ft): NE

DATE FINISHED: 9/24/19

REMARKS: *ESTIMATED FROM CONSTRUCTION DOCUMENTS

DATE OF READING: 9/24/19

DRILLED BY: UES / T.M.

AUGER-HAND HELD BARREL

EST. WSWT (ft): 2

TYPE OF SAMPLING: ASTM D1452

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N VALUE	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT/DAY)	ORG CONT. (%)
									LL	PI		
0					[Stippled Pattern]	Brown, gray SAND [SP] (Fill)		2				
1					[Vertical Lines Pattern]	Dark brown SAND, with silt [SP-SM], with some organic stain						
2				▽	[Vertical Lines Pattern]	Dark brown organic stained SAND, with silt [SP-SM], with lumps of partially cemented silty sand						
3					[Vertical Lines Pattern]	Brown SAND [SP]						
4					[Vertical Lines Pattern]	Gray, brown SAND, with silt [SP-SM]						
5						Boring Terminated at 5'						

Approved
 2020-D-395-00006
 David Wilks
 3/4/2020



**UNIVERSAL ENGINEERING SCIENCES
BORING LOG**

PROJECT NO.: 1730.1900052.0000

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PROJECT: EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

BORING NO: **AB-15**

SHEET: **1 of 1**

NAVARRE, SANTA ROSA COUNTY, FLORIDA

SECTION:

TOWNSHIP:

RANGE:

CLIENT: KENNETH HORNE AND ASSOCIATES, INC.

GS ELEVATION(ft): 30*

DATE STARTED: 9/24/19

LOCATION: STATION 85+00, 12' EAST OF EAST EDGE OF PAVEMENT

WATER TABLE (ft): NE

DATE FINISHED: 9/24/19

REMARKS: *ESTIMATED FROM CONSTRUCTION DOCUMENTS

DATE OF READING: 9/24/19

DRILLED BY: UES / T.M.

AUGER-HAND HELD BARREL

EST. WSWT (ft): 1

TYPE OF SAMPLING: ASTM D1452

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N VALUE	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT/DAY)	ORG CONT. (%)
									LL	PI		
0												
1					▽	Dark brown organic stained SAND, with silt [SP-SM], with trace amounts of small roots and small organics		8				
2					Dark brown, dark gray organic stained SAND, with silt [SP-SM]							
3					Dark brown, black organic stained silty SAND [SM]							
4					Dark brown, black organic stained silty clayey SAND [SC-SM]							
5						Boring Terminated at 5'						

Approved
2020-D-395-00006
David Wilks
3/4/2020



UNIVERSAL ENGINEERING SCIENCES BORING LOG

PROJECT NO.: 1730.1900052.0000

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PROJECT: EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

BORING NO: **AB-16**SHEET: **1 of 1**

NAVARRE, SANTA ROSA COUNTY, FLORIDA

SECTION:

TOWNSHIP:

RANGE:

CLIENT: KENNETH HORNE AND ASSOCIATES, INC.

GS ELEVATION(ft): 30*

DATE STARTED: 9/24/19

LOCATION: STATION 90+00, 12' WEST OF WEST EDGE OF PAVEMENT

WATER TABLE (ft): NE

DATE FINISHED: 9/24/19

REMARKS: *ESTIMATED FROM CONSTRUCTION DOCUMENTS

DATE OF READING: 9/24/19

DRILLED BY: UES / T.M.

AUGER-HAND HELD BARREL

EST. WSWT (ft): 2

TYPE OF SAMPLING: ASTM D1452

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N VALUE	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT/ DAY)	ORG CONT. (%)	
									LL	PI			
0						Brown SAND, with silt [SP-SM] (Fill)		2					
1													
2				▽		Dark brown, dark gray organic stained SAND, with silt [SP-SM]							
3						Dark brown, black organic stained SAND, with silt [SP-SM]							
4													
5						Boring Terminated at 5'							

Approved
2020-D-395-00006
David Wilks
3/4/2020



UNIVERSAL ENGINEERING SCIENCES BORING LOG

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PROJECT: EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

BORING NO: **AB-17**

SHEET: **1 of 1**

NAVARRE, SANTA ROSA COUNTY, FLORIDA

SECTION:

TOWNSHIP:

RANGE:

CLIENT: KENNETH HORNE AND ASSOCIATES, INC.

GS ELEVATION(ft): 32*

DATE STARTED: 10/7/19

LOCATION: STATION 95+00, 9' EAST OF EAST EDGE OF PAVEMENT

WATER TABLE (ft): NE

DATE FINISHED: 10/7/19

REMARKS: *ESTIMATED FROM CONSTRUCTION DOCUMENTS



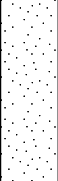
DATE OF READING: 10/7/19

DRILLED BY: UES / J.O.

AUGER-HAND HELD BARREL

EST. WSWT (ft): 2

TYPE OF SAMPLING: ASTM D1452

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N VALUE	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT/DAY)	ORG CONT. (%)
									LL	PI		
0						Dark brown sandy Topsoil, with trace amounts of fine roots and fine organics						
1						Brown SAND [SP]	4	1				
2				∇		Light brown SAND [SP]						
3												
4												
5						Boring Terminated at 5'						

Approved
2020-D-395-00006
David Wilks
3/4/2020



UNIVERSAL ENGINEERING SCIENCES BORING LOG

PROJECT NO.: 1730.1900052.0000

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PROJECT: EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

BORING NO: **AB-18**

SHEET: **1 of 1**

NAVARRE, SANTA ROSA COUNTY, FLORIDA

SECTION:

TOWNSHIP:

RANGE:

CLIENT: KENNETH HORNE AND ASSOCIATES, INC.

GS ELEVATION(ft): 32*

DATE STARTED: 10/8/19

LOCATION: STATION 100+00, 13' WEST OF WEST EDGE OF PAVEMENT

WATER TABLE (ft): NE

DATE FINISHED: 10/8/19

REMARKS: *ESTIMATED FROM CONSTRUCTION DOCUMENTS

DATE OF READING: 10/8/19

DRILLED BY: UES / J.O.

AUGER-HAND HELD BARREL

EST. WSWT (ft): 2.5

TYPE OF SAMPLING: ASTM D1452

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N VALUE	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT/DAY)	ORG CONT. (%)
									LL	PI		
0						Dark brown SAND [SP]		7				
1						Brown, orange SAND, with silt [SP-SM] (Possible Fill)						
2				▽								
3												
4												
5						Boring Terminated at 5'						

Approved
 2020-D-395-00006
 David Wilks
 3/4/2020



UNIVERSAL ENGINEERING SCIENCES BORING LOG

PROJECT NO.: 1730.1900052.0000

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PROJECT: EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

BORING NO: **AB-19**

SHEET: **1 of 1**

NAVARRE, SANTA ROSA COUNTY, FLORIDA

SECTION:

TOWNSHIP:

RANGE:

CLIENT: KENNETH HORNE AND ASSOCIATES, INC.

GS ELEVATION(ft): 32*

DATE STARTED: 10/4/19

LOCATION: STATION 105+00, 3' EAST OF EAST EDGE OF PAVEMENT

WATER TABLE (ft): NE

DATE FINISHED: 10/4/19

REMARKS: *ESTIMATED FROM CONSTRUCTION DOCUMENTS


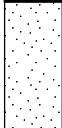
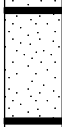
DATE OF READING: 10/4/19

DRILLED BY: UES / J.O.

AUGER-HAND HELD BARREL

EST. WSWT (ft): 3.5

TYPE OF SAMPLING: ASTM D1452

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N VALUE	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT/DAY)	ORG CONT. (%)
									LL	PI		
0						Dark brown sandy Topsoil, with trace amounts of small roots and small organics						
1						Light brown SAND [SP]						
2												
3				▽		White, tan SAND [SP]	2	5				
4												
5						Boring Terminated at 5'						

Approved
2020-D-395-00006
David Wilks
3/4/2020



**UNIVERSAL ENGINEERING SCIENCES
BORING LOG**

PROJECT NO.: 1730.1900052.0000

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PROJECT: EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

BORING NO: **AB-20**

SHEET: **1 of 1**

NAVARRE, SANTA ROSA COUNTY, FLORIDA

SECTION:

TOWNSHIP:

RANGE:

CLIENT: KENNETH HORNE AND ASSOCIATES, INC.

GS ELEVATION(ft): 30*

DATE STARTED: 10/4/19

LOCATION: STATION 110+00, 17' WEST OF WEST EDGE OF PAVEMENT

WATER TABLE (ft): NE

DATE FINISHED: 10/4/19

REMARKS: *ESTIMATED FROM CONSTRUCTION DOCUMENTS




DATE OF READING: 10/4/19

DRILLED BY: UES / J.O.

AUGER-HAND HELD BARREL

EST. WSWT (ft): 3.5

TYPE OF SAMPLING: ASTM D1452

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N VALUE	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT/DAY)	ORG CONT. (%)
									LL	PI		
0						Dark brown sandy Topsoil, with trace amounts of fine roots and fine organics		1				
1						Brown SAND [SP]						
2						Light brown SAND, with silt [SP-SM]						
3				▽								
4												
5						Boring Terminated at 5'						

Approved
2020-D-395-00006
David Wilks
3/4/2020



**UNIVERSAL ENGINEERING SCIENCES
BORING LOG**

PROJECT NO.: 1730.1900052.0000

REPORT NO.: 1721098

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PROJECT: EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

BORING NO: **AB-21**

SHEET: **1 of 1**

NAVARRE, SANTA ROSA COUNTY, FLORIDA

SECTION:

TOWNSHIP:

RANGE:

CLIENT: KENNETH HORNE AND ASSOCIATES, INC.

GS ELEVATION(ft): 30*

DATE STARTED: 10/4/19

LOCATION: STATION 114+75, 6' EAST OF EAST EDGE OF PAVEMENT

WATER TABLE (ft): NE

DATE FINISHED: 10/4/19

REMARKS: *ESTIMATED FROM CONSTRUCTION DOCUMENTS

DATE OF READING: 10/4/19

DRILLED BY: UES / J.O.

AUGER-HAND HELD BARREL

EST. WSWT (ft): >6

TYPE OF SAMPLING: ASTM D1452

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N VALUE	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT/DAY)	ORG CONT. (%)
									LL	PI		
0												
1					[Symbol: Brown SAND [SP], with trace amounts of fine roots, fine organics and small shell fragments from 0' to 0.5']			0				
2					[Symbol: Light brown SAND [SP]]							
3												
4												
5						Boring Terminated at 5'						

Approved
2020-D-395-00006
David Wilks
3/4/2020



UNIVERSAL ENGINEERING SCIENCES BORING LOG

PROJECT NO.: 1730.1900052.0000

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PROJECT: EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

BORING NO: **AB-22**

SHEET: 1 of 1

NAVARRE, SANTA ROSA COUNTY, FLORIDA

SECTION:

TOWNSHIP:

RANGE:

CLIENT: KENNETH HORNE AND ASSOCIATES, INC.

GS ELEVATION(ft): 29*

DATE STARTED: 10/4/19

LOCATION: STATION 119+85, 18' WEST OF WEST EDGE OF PAVEMENT

WATER TABLE (ft): NE

DATE FINISHED: 10/4/19

REMARKS: *ESTIMATED FROM CONSTRUCTION DOCUMENTS

DATE OF READING: 10/4/19

DRILLED BY: UES / J.O.

AUGER-HAND HELD BARREL

EST. WSWT (ft): >6

TYPE OF SAMPLING: ASTM D1452

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N VALUE	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT/ DAY)	ORG CONT. (%)
									LL	PI		
0					•••••	Brown SAND [SP], with trace amounts of fine roots and fine organics from 0' to 0.5'						
1												
2												
3												
4												
5					•••••	Boring Terminated at 5'						

Approved
2020-D-395-00006
David Wilks
3/4/2020



UNIVERSAL ENGINEERING SCIENCES BORING LOG

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PROJECT: EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

BORING NO: **AB-23**

SHEET: **1 of 1**

NAVARRE, SANTA ROSA COUNTY, FLORIDA

SECTION:

TOWNSHIP:

RANGE:

CLIENT: KENNETH HORNE AND ASSOCIATES, INC.

GS ELEVATION(ft): 22*

DATE STARTED: 10/4/19

LOCATION: STATION 125+25, 3' EAST OF EAST EDGE OF PAVEMENT

WATER TABLE (ft): NE

DATE FINISHED: 10/4/19

REMARKS: *ESTIMATED FROM CONSTRUCTION DOCUMENTS

DATE OF READING: 10/4/19

DRILLED BY: UES / J.O.

AUGER-HAND HELD BARREL

EST. WSWT (ft): >6

TYPE OF SAMPLING: ASTM D1452

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N VALUE	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT/ DAY)	ORG CONT. (%)
									LL	PI		
0						Dark brown sandy Topsoil, with trace amounts of fine roots and fine organics						
1						Orange, brown SAND, with silt [SP-SM] (Fill)	8	2				
2						Brown SAND, with silt [SP-SM]						
3												
4												
5						Boring Terminated at 5'						

Approved
2020-D-395-00006
David Wilks
3/4/2020



UNIVERSAL ENGINEERING SCIENCES BORING LOG

PROJECT NO.: 1730.1900052.0000

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PROJECT: EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

BORING NO: **AB-24**

SHEET: **1 of 1**

NAVARRE, SANTA ROSA COUNTY, FLORIDA

SECTION:

TOWNSHIP:

RANGE:

CLIENT: KENNETH HORNE AND ASSOCIATES, INC.

GS ELEVATION(ft): 17*

DATE STARTED: 10/4/19

LOCATION: STATION 130+00, 6' WEST OF WEST EDGE OF PAVEMENT

WATER TABLE (ft): 4.5

DATE FINISHED: 10/4/19

REMARKS: *ESTIMATED FROM CONSTRUCTION DOCUMENTS

DATE OF READING: 10/4/19

DRILLED BY: UES / J.O.

AUGER-HAND HELD BARREL

EST. WSWT (ft): 2

TYPE OF SAMPLING: ASTM D1452

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N VALUE	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT/DAY)	ORG CONT. (%)
									LL	PI		
0						Dark brown sandy Topsoil, with few amounts of small roots and small organics						
1						Dark brown organic stained SAND [SP]	2	12				
2				▽		Dark brown, dark gray organic stained SAND, with silt [SP-SM]						
3												
4				▼								
5						Boring Terminated at 5'						

Approved
2020-D-395-00006
David Wilks
3/4/2020



UNIVERSAL ENGINEERING SCIENCES BORING LOG

PROJECT NO.: 1730.1900052.0000

REPORT NO.: 1721098

PAGE: B-25

PROJECT: EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

BORING NO: **AB-25**

SHEET: **1 of 1**

NAVARRE, SANTA ROSA COUNTY, FLORIDA

SECTION:

TOWNSHIP:

RANGE:

CLIENT: KENNETH HORNE AND ASSOCIATES, INC.

GS ELEVATION(ft): 16*

DATE STARTED: 10/3/19

LOCATION: STATION 135+00, 6' EAST OF EAST EDGE OF PAVEMENT

WATER TABLE (ft): 4.5

DATE FINISHED: 10/3/19

REMARKS: *ESTIMATED FROM CONSTRUCTION DOCUMENTS

DATE OF READING: 10/3/19

DRILLED BY: UES / J.O.

AUGER-HAND HELD BARREL

EST. WSWT (ft): 2

TYPE OF SAMPLING: ASTM D1452

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N VALUE	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT/DAY)	ORG CONT. (%)
									LL	PI		
0						Dark brown organic stained SAND, with silt [SP-SM]						
1						Dark brown, dark gray organic stained SAND, with silt [SP-SM]						
2				▽		Dark brown, black organic stained SAND, with silt [SP-SM]						
3												
4				▽								
5						Boring Terminated at 5'						

Approved
2020-D-395-00006
David Wilks
3/4/2020



**UNIVERSAL ENGINEERING SCIENCES
BORING LOG**

PROJECT NO.: 1730.1900052.0000

REPORT NO.: 1721098

PAGE: B-26

PROJECT: EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

BORING NO: **AB-26**

SHEET: **1 of 1**

NAVARRE, SANTA ROSA COUNTY, FLORIDA

SECTION:

TOWNSHIP:

RANGE:

CLIENT: KENNETH HORNE AND ASSOCIATES, INC.

GS ELEVATION(ft): 15*

DATE STARTED: 10/3/19

LOCATION: STATION 140+00, 5' WEST OF WEST EDGE OF PAVEMENT

WATER TABLE (ft): NE

DATE FINISHED: 10/3/19

REMARKS: *ESTIMATED FROM CONSTRUCTION DOCUMENTS

DATE OF READING: 10/3/19

DRILLED BY: UES / J.O.

AUGER-HAND HELD BARREL

EST. WSWT (ft): 2

TYPE OF SAMPLING: ASTM D1452

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N VALUE	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT/DAY)	ORG CONT. (%)
									LL	PI		
0												
1						Dark brown, orange SAND [SP], with trace amounts of fine roots, fine organics, small gravel and lumps of orange, brown silty sand (Fill)		3				
2				▽		Dark brown, black organic stained SAND, with silt [SP-SM]						
3												
4												
5						Boring Terminated at 5'						

Approved
2020-D-395-00006
David Wilks
3/4/2020



UNIVERSAL ENGINEERING SCIENCES BORING LOG

PROJECT NO.: 1730.1900052.0000

REPORT NO.: 1721098

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PROJECT: EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

BORING NO: **AB-27**

SHEET: **1 of 1**

NAVARRE, SANTA ROSA COUNTY, FLORIDA

SECTION:

TOWNSHIP:

RANGE:

CLIENT: KENNETH HORNE AND ASSOCIATES, INC.

GS ELEVATION(ft): 12*

DATE STARTED: 10/3/19

LOCATION: STATION 145+00, 7' WEST OF WEST EDGE OF PAVEMENT

WATER TABLE (ft): 4.5

DATE FINISHED: 10/3/19

REMARKS: *ESTIMATED FROM CONSTRUCTION DOCUMENTS

DATE OF READING: 10/3/19

DRILLED BY: UES / J.O.

AUGER-HAND HELD BARREL

EST. WSWT (ft): 1.5

TYPE OF SAMPLING: ASTM D1452

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N VALUE	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT/DAY)	ORG CONT. (%)
									LL	PI		
0						Dark brown sandy Topsoil, with few amounts of small roots and small organics						
1				▽		Dark brown organic stained SAND, with silt [SP-SM]						
2						Dark brown, black organic stained silty clayey SAND [SC-SM]						
3												
4				▼								
5						Boring Terminated at 5'	12	24				

Approved
2020-D-395-00006
David Wilks
3/4/2020



UNIVERSAL ENGINEERING SCIENCES BORING LOG

PROJECT NO.: 1730.1900052.0000

REPORT NO.: 1721098

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PROJECT: EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

BORING NO: **AB-28**

SHEET: **1 of 1**

NAVARRE, SANTA ROSA COUNTY, FLORIDA

SECTION:

TOWNSHIP:

RANGE:

CLIENT: KENNETH HORNE AND ASSOCIATES, INC.

GS ELEVATION(ft): 11*

DATE STARTED: 10/3/19

LOCATION: STATION 150+00, 5' EAST OF EAST EDGE OF PAVEMENT

WATER TABLE (ft): 4.5

DATE FINISHED: 10/3/19

REMARKS: *ESTIMATED FROM CONSTRUCTION DOCUMENTS

DATE OF READING: 10/3/19

DRILLED BY: UES / J.O.

AUGER-HAND HELD BARREL

EST. WSWT (ft): 2

TYPE OF SAMPLING: ASTM D1452

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N VALUE	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT/DAY)	ORG CONT. (%)
									LL	PI		
0						Dark brown sandy Topsoil, with few amounts of small roots and small organics						
1						Brown SAND [SP], with trace amounts of fine roots and fine organics (Possible Fill)						
2				▽		Dark brown organic stained SAND, with silt [SP-SM], with trace amounts of fine roots and fine organics						
3						Dark brown, dark gray organic stained SAND [SP]						
4				▽								
5						Boring Terminated at 5'	4	17				

Approved
2020-D-395-00006
David Wilks
3/4/2020



**UNIVERSAL ENGINEERING SCIENCES
BORING LOG**

PROJECT NO.: 1730.1900052.0000

REPORT NO.: 1721098

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PROJECT: EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

BORING NO: **AB-29**

SHEET: **1 of 1**

NAVARRE, SANTA ROSA COUNTY, FLORIDA

SECTION:

TOWNSHIP:

RANGE:

CLIENT: KENNETH HORNE AND ASSOCIATES, INC.

GS ELEVATION(ft): 10*

DATE STARTED: 10/3/19

LOCATION: STATION 155+00, 7' WEST OF WEST EDGE OF PAVEMENT

WATER TABLE (ft): NE

DATE FINISHED: 10/3/19

REMARKS: *ESTIMATED FROM CONSTRUCTION DOCUMENTS

DATE OF READING: 10/3/19

DRILLED BY: UES / J.O.

AUGER-HAND HELD BARREL

EST. WSWT (ft): 2

TYPE OF SAMPLING: ASTM D1452

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N VALUE	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT/DAY)	ORG CONT. (%)
									LL	PI		
0												
1						Brown, orange SAND, with silt [SP-SM], with trace amounts of fine roots and fine organics (Possible Fill)		2				
2				▽		Dark brown SAND, with silt [SP-SM], with organic stain						
3						Dark brown, dark gray SAND, with silt [SP-SM], with organic stain						
4												
5						Boring Terminated at 5'						

Approved
2020-D-395-00006
David Wilks
3/4/2020



UNIVERSAL ENGINEERING SCIENCES BORING LOG

PROJECT NO.: 1730.1900052.0000

REPORT NO.: 1721098

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PROJECT: EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

BORING NO: **AB-30**

SHEET: **1 of 1**

NAVARRE, SANTA ROSA COUNTY, FLORIDA

SECTION:

TOWNSHIP:

RANGE:

CLIENT: KENNETH HORNE AND ASSOCIATES, INC.

GS ELEVATION(ft): 8*

DATE STARTED: 10/3/19

LOCATION: STATION 160+00, 5' EAST OF EAST EDGE OF PAVEMENT

WATER TABLE (ft): NE

DATE FINISHED: 10/3/19

REMARKS: *ESTIMATED FROM CONSTRUCTION DOCUMENTS

DATE OF READING: 10/3/19

DRILLED BY: UES / J.O.

AUGER-HAND HELD BARREL

EST. WSWT (ft): 2

TYPE OF SAMPLING: ASTM D1452

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N VALUE	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT/DAY)	ORG CONT. (%)
									LL	PI		
0												
1					▽	Dark brown SAND [SP], with trace amounts of small roots and small organics and small lumps of silty sand (Possible Fill)	4	4				2
2						Dark brown, dark gray SAND, with silt [SP-SM], with organic stain						
3												
4												
5						Boring Terminated at 5'						

Approved
2020-D-395-00006
David Wilks
3/4/2020



UNIVERSAL ENGINEERING SCIENCES BORING LOG

PROJECT NO.: 1730.1900052.0000

REPORT NO.: 1721098

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PROJECT: EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

BORING NO: **C-1**

SHEET: **1 of 1**

NAVARRE, SANTA ROSA COUNTY, FLORIDA

SECTION:

TOWNSHIP:

RANGE:

CLIENT: KENNETH HORNE AND ASSOCIATES, INC.

GS ELEVATION(ft): 30*

DATE STARTED: 9/23/19

LOCATION: STATION 75+68, 20' WEST OF WEST EDGE OF PAVEMENT

WATER TABLE (ft): 3.4

DATE FINISHED: 9/23/19

REMARKS: *ESTIMATED FROM CONSTRUCTION DOCUMENTS
HOLLOW STEM AUGER

DATE OF READING: 9/23/19

DRILLED BY: C. CARROLL

EST. WSWT (ft): 1.5

TYPE OF SAMPLING: ASTM D1586

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N VALUE	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT/DAY)	ORG CONT. (%)
									LL	PI		
0						3" Dark brown sandy Topsoil, with roots and organics						
1				▽		Loose brown SAND, with silt [SP-SM] (Possible Fill)		7				
2		2-3-4-4	7									
3				▽		Medium dense dark brown SAND, with silt [SP-SM], with few amounts of wood fragments and small organic fragments						
4		10-10-11-12	21				5	21				4
5						Medium dense dark brown SAND [SP], with some organic stain and trace amounts of fine roots and fine organics from 4' to 6'						
6		6-7-7-8	14									
7												
8		6-7-9-9	16									
9												
10		6-8-8-7	16				2					
11												
12												
13												
14												
15		5-8-8	16									
16												
17												
18												
19												
20		6-5-7	12			Boring Terminated at 20'						

Approved
2020-D-395-00006
David Wilks
3/4/2020



UNIVERSAL ENGINEERING SCIENCES BORING LOG

PROJECT NO.: 1730.1900052.0000

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PROJECT: EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

BORING NO: **C-2**

SHEET: **1 of 1**

NAVARRE, SANTA ROSA COUNTY, FLORIDA

SECTION:

TOWNSHIP:

RANGE:

CLIENT: KENNETH HORNE AND ASSOCIATES, INC.

GS ELEVATION(ft): 17*

DATE STARTED: 9/23/19

LOCATION: BUSHTON ST, 11' E OF 24" CMP, 4' N OF N EDGE OF PAVEMENT

WATER TABLE (ft): 3.5

DATE FINISHED: 9/23/19

REMARKS: *ESTIMATED FROM CONSTRUCTION DOCUMENTS

DATE OF READING: 9/23/19

DRILLED BY: C. CARROLL

HOLLOW STEM AUGER

EST. WSWT (ft): 1.5

TYPE OF SAMPLING: ASTM D1586

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N VALUE	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT/DAY)	ORG CONT. (%)
									LL	PI		
0						3" Dark brown sandy Topsoil, with roots and organics						
1		7-11-8-9	19	▽		Medium dense red, orange SAND, with silt [SP-SM], with thin layer of gravel at 1.5' (Fill)						
2						Medium dense orange, brown SAND, with silt [SP-SM] (Fill)						
3												
4		4-6-6-7	12	▽		Brown SAND [SP] (Possible Fill)		12				
5						Loose dark brown SAND [SP], with some organic stain						
6		4-3-3-2	6			Very loose dark brown, dark gray SAND [SP]	3	20				
7												
8		1-1-1-1	2									
9												
10		2-3-3-4	6			Loose light gray, brown, white SAND [SP]						
11												
12												
13												
14						Medium dense brown, gray SAND [SP]						
15		5-7-7	14									
16												
17												
18												
19												
20		6-6-5	11			Boring Terminated at 20'						

Approved
2020-D-395-00006
David Wilks
3/4/2020



UNIVERSAL ENGINEERING SCIENCES BORING LOG

PROJECT NO.: 1730.1900052.0000

REPORT NO.: 1721098

PAGE: B-33

PROJECT: EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

BORING NO: **C-3**

SHEET: **1 of 1**

NAVARRE, SANTA ROSA COUNTY, FLORIDA

SECTION:

TOWNSHIP:

RANGE:

CLIENT: KENNETH HORNE AND ASSOCIATES, INC.

GS ELEVATION(ft): 14*

DATE STARTED: 9/23/19

LOCATION: BRITT ST, 11' E OF 24" RCP, 6' N OF N EDGE OF PAVEMENT

WATER TABLE (ft): 2.7

DATE FINISHED: 9/23/19

REMARKS: *ESTIMATED FROM CONSTRUCTION DOCUMENTS

DATE OF READING: 9/23/19

DRILLED BY: C. CARROLL

HOLLOW STEM AUGER

EST. WSWT (ft): 0.5

TYPE OF SAMPLING: ASTM D1586

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N VALUE	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT/DAY)	ORG CONT. (%)
									LL	PI		
0					▽	2" Dark brown sandy Topsoil, with roots and organics						
1					▬	Red, brown silty SAND [SM], with small asphalt fragments (Fill)		4				
2		3-5-7-7	12		▬	Medium dense dark brown SAND, with silt [SP-SM], with some organic stain and trace amounts of fine roots, fine organics and fine gravel (Fill)						
3					▽							
4		4-5-7-6	12		▬	Medium dense to loose dark brown organic stained SAND [SP], with lumps of dark brown silty sand and trace amounts of fine roots and fine organics (Possible Fill)						
5					▬							
6		4-3-3-3	6		▬	Loose dark brown organic stained SAND, with silt [SP-SM]	3					2
7					▬							
8		5-4-4-4	8		▬	Medium dense dark brown SAND, with silt [SP-SM], with some organic stain						
9					▬							
10		6-7-5-5	12		▬							
11					▬							
12					▬							
13					▬	Medium dense brown SAND [SP], with some organic stain						
14					▬							
15		5-7-7	14		▬							
16					▬							
17					▬							
18					▬							
19					▬							
20		6-9-8	17		▬	Boring Terminated at 20'						

Approved
2020-D-395-00006
David Wilks
3/4/2020



UNIVERSAL ENGINEERING SCIENCES BORING LOG

PROJECT NO.: 1730.1900052.0000

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PROJECT: EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

BORING NO: **C-4**

SHEET: **1 of 1**

NAVARRE, SANTA ROSA COUNTY, FLORIDA

SECTION:

TOWNSHIP:

RANGE:

CLIENT: KENNETH HORNE AND ASSOCIATES, INC.

GS ELEVATION(ft): 9*

DATE STARTED: 9/23/19

LOCATION: STATION 307+92, KOPPEL DR, BETWEEN 2-36" CMP, 12' E OF W END OF PIPES

WATER TABLE (ft): 3

DATE FINISHED: 9/23/19

REMARKS: *ESTIMATED FROM CONSTRUCTION DOCUMENTS

DATE OF READING: 9/23/19

DRILLED BY: C. CARROLL

HOLLOW STEM AUGER

EST. WSWT (ft): 1

TYPE OF SAMPLING: ASTM D1586

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N VALUE	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT/DAY)	ORG CONT. (%)
									LL	PI		
0						2" Dark brown sandy Topsoil, with roots and organics						
1				▽		Loose orange, brown SAND, with silt [SP-SM] (Fill)		4				
2		4-3-3-2	6									
3				▼		Loose dark brown organic stained SAND, with silt [SP-SM], with lumps of black silty sand and few amounts of small roots, small organics and small wood fragments						
4		3-3-2-2	5									
5						Loose dark brown organic stained SAND [SP], with trace amounts of fine roots and fine organics						
6		3-4-4-5	8			Medium dense dark brown organic stained SAND [SP]	2	22				1
7												
8		4-5-7-9	12									
9												
10		6-8-7-7	15									
11												
12												
13												
14						Medium dense dark brown organic stained SAND, with silt [SP-SM], with thin seams of black silty sand and wood fragments						
15		8-10-14	24									
16												
17												
18												
19						Medium dense dark brown organic stained SAND [SP], with organic type of odor						
20		7-8-7	15			Boring Terminated at 20'						

Approved
2020-D-395-00006
David Wilks
3/4/2020



UNIVERSAL ENGINEERING SCIENCES BORING LOG

PROJECT NO.: 1730.1900052.0000

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PAGE: B-35

PROJECT: EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

BORING NO: **P-1**

SHEET: **1 of 1**

NAVARRE, SANTA ROSA COUNTY, FLORIDA

SECTION:

TOWNSHIP:

RANGE:

CLIENT: KENNETH HORNE AND ASSOCIATES, INC.

GS ELEVATION(ft): 39*

DATE STARTED: 10/7/19

LOCATION: STATION 10+95, 13' WEST OF WEST EDGE OF PAVEMENT

WATER TABLE (ft): NE

DATE FINISHED: 10/7/19

REMARKS: *ESTIMATED FROM CONSTRUCTION DOCUMENTS

DATE OF READING: 10/7/19

DRILLED BY: UES / T.M.

AUGER-HAND HELD BARREL

EST. WSWT (ft): 4

TYPE OF SAMPLING: ASTM D1452

DEPTH (FT.)	S A M P L E	DCP** BLOWS PER INCREMENT	DCP** VALUE	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT./DAY)	ORG. CONT. (%)
									LL	PI		
0		20-23-25+	25+			Dark brown to brown SAND, with silt [SP-SM], with trace amounts of fine roots, fine organics and fine gravel						
1												
2		20-25-25+	25+			Brown to light brown SAND [SP]		3				
3		13-13-15	14									
4		7-9-11	10	▽			2	3				
5						Boring Terminated at 5' ** DYNAMIC CONE PENETROMETER						

Approved
2020-D-395-00006
David Wilks
3/4/2020



UNIVERSAL ENGINEERING SCIENCES BORING LOG

PROJECT NO.: 1730.1900052.0000

REPORT NO.: 1721098

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PROJECT: EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

BORING NO: **P-2**

SHEET: **1 of 1**

NAVARRE, SANTA ROSA COUNTY, FLORIDA

SECTION:

TOWNSHIP:

RANGE:

CLIENT: KENNETH HORNE AND ASSOCIATES, INC.

GS ELEVATION(ft): 39'

DATE STARTED: 10/7/19

LOCATION: STATION 11+68, 13' WEST OF WEST EDGE OF PAVEMENT

WATER TABLE (ft): NE

DATE FINISHED: 10/7/19

REMARKS: *ESTIMATED FROM CONSTRUCTION DOCUMENTS

DATE OF READING: 10/7/19

DRILLED BY: UES / T.M.

AUGER-HAND HELD BARREL

EST. WSWT (ft): 4.5






TYPE OF SAMPLING: ASTM D1452

DEPTH (FT.)	S A M P L E	DCP** BLOWS PER INCREMENT	DCP** VALUE	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT./ DAY)	ORG. CONT. (%)
									LL	PI		
0		25+	25+		▽	Brown to dark brown SAND [SP], with trace amounts of small roots, small organics and asphalt fragments (Fill)	3	1				
1												
2		14-18-20	19									
3		14-14-16	15			Brown to light brown SAND [SP]		1				
4		8-10-10	10									
5						Boring Terminated at 5' ** DYNAMIC CONE PENETROMETER						

Approved
2020-D-395-00006
David Wilks
3/4/2020



SYMBOLS AND ABBREVIATIONS

<u>SYMBOL</u>	<u>DESCRIPTION</u>
N-Value	No. of Blows of a 140-lb. Weight Falling 30 Inches Required to Drive a Standard Spoon 1 Foot
WOR	Weight of Drill Rods
WOH	Weight of Drill Rods and Hammer
	Sample from Auger Cuttings
	Standard Penetration Test Sample
	Thin-wall Shelby Tube Sample (Undisturbed Sampler Used)
RQD	Rock Quality Designation
	Stabilized Groundwater Level
	Seasonal High Groundwater Level (also referred to as the W.S.W.T.)
NE	Not Encountered
GNE	Groundwater Not Encountered
BT	Boring Terminated
-200 (%)	Fines Content or % Passing No. 200 Sieve
MC (%)	Moisture Content
LL	Liquid Limit (Atterberg Limits Test)
PI	Plasticity Index (Atterberg Limits Test)
NP	Non-Plastic (Atterberg Limits Test)
K	Coefficient of Permeability
Org. Cont.	Organic Content
G.S. Elevation	Ground Surface Elevation

UNIFIED SOIL CLASSIFICATION SYSTEM

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES	
COARSE GRAINED SOILS More than 50% retained on the No. 200 sieve*	GRAVELS 50% or more of coarse fraction retained on No. 4 sieve	CLEAN GRAVELS	GW	Well-graded gravels and gravel-sand mixtures, little or no fines	
			GP	Poorly graded gravels and gravel-sand mixtures, little or no fines	
		GRAVELS WITH FINES		GM	Silty gravels and gravel-sand-silt mixtures
				GC	Clayey gravels and gravel-sand-clay mixtures
	SANDS More than 50% of coarse fraction passes No. 4 sieve	CLEAN SANDS 5% or less passing No. 200 sieve		SW**	Well-graded sands and gravelly sands, little or no fines
				SP**	Poorly graded sands and gravelly sands, little or no fines
SANDS with 12% or more passing No. 200 sieve			SM**	Silty sands, sand-silt mixtures	
			SC**	Clayey sands, sand-clay mixtures	
FINE-GRAINED SOILS 50% or more passes the No. 200 sieve*	SILTS AND CLAYS Liquid limit 50% or less		ML	Inorganic silts, very fine sands, rock flour, silty or clayey fine sands	
			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, lean clays	
			OL	Organic silts and organic silty clays of low plasticity	
	SILTS AND CLAYS Liquid limit greater than 50%		MH	Inorganic silts, micaceous or diamicaceous fine sands or silts, elastic silts	
			CH	Inorganic clays or clays of high plasticity, fat clays	
			OH	Organic clays of medium to high plasticity	
			PT	Peat, muck and other highly organic soils	

*Based on the material passing the 3-inch (75 mm) sieve
 ** Use dual symbol (such as SP-SM and SP-SC) for soils with more than 5% but less than 12% passing the No. 200 sieve

RELATIVE DENSITY
(Sands and Gravels)

- Very loose – Less than 4 Blow/Foot
- Loose – 4 to 10 Blows/Foot
- Medium Dense – 11 to 30 Blows/Foot
- Dense – 31 to 50 Blows/Foot
- Very Dense – More than 50 Blows/Foot

CONSISTENCY
(Sils and Clays)

- Very Soft – Less than 2 Blows/Foot
- Soft – 2 to 4 Blows/Foot
- Firm – 5 to 8 Blows/Foot
- Stiff – 9 to 15 Blows/Foot
- Very Stiff – 16 to 30 Blows/Foot
- Hard – More than 30 Blows/Foot

RELATIVE HARDNESS
(Limestone)

- Soft – 100 Blows for more than 2 Inches
- Hard – 100 Blows for less than 2 Inches

MODIFIERS

These modifiers Provide Our Estimate of the Amount of Minor Constituents (Silt or Clay Size Particles) in the Soil Sample

- Trace – 5% or less
- With Silt or With Clay – 6% to 11%
- Silty or Clayey – 12% to 30%
- Very Silty or Very Clayey – 31% to 50%

These Modifiers Provide Our Estimate of the Amount of Organic Components in the Soil Sample

- Trace – Less than 3%
- Few – 3% to 4%
- Some – 5% to 8%
- Many – Greater than 8%

These Modifiers Provide Our Estimate of the Amount of Other Components (Shell, Gravel, Etc.) in the Soil Sample

- Trace – 5% or less
- Few – 6% to 12%
- Some – 13% to 30%
- Many – 31% to 50%

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 2017-00006
 David Wilks
 3/4/2020

FIELD PROCEDURES

Standard Penetration Test Borings (Hollow Stem Auger Advanced)

To aid in evaluating the subsurface conditions present on the site, we located and drilled one or more Standard Penetration Test (SPT) borings to the depths indicated on the attached Boring Logs. In this procedure, the borings were advanced by mechanically turning continuous flight hollow stem augers in to the soils. At intervals of 2 to 5 feet in the borings, a split-barrel sampler was inserted to the bottom of the borings and then driven 18 to 24-inches into the soil using a manual safety hammer with a 140-pound hammer falling an average 30 inches per hammer blow. The blow counts for each 6-inch interval of driving were recorded; the sum of the hammer blow counts for the second and third 6-inch intervals of driving is termed the standard penetration resistance or N value. The N value, when properly evaluated, is an index of several in-place geotechnical properties of the material tested such as relative density and Young's Modulus.

After driving the sampler 18 to 24 inches (or less if in extremely dense/hard materials), the sampler was retrieved from the boring and a representative sample of the material within the split-barrel sampler was placed in a labeled plastic container and sealed. After completing the drilling operations, the samples obtained from the boring were transported to our laboratory where they were examined by a member of our geotechnical staff. This procedure was performed in general accordance with the latest revision of ASTM D1586 entitled "Standard Test Method for Standard Penetration Test (SPT) and Split-Barrel Sampling of Soils".

Auger Borings (Hand-Held Barrel)

To aid in evaluating the subsurface conditions present on the site, we located and drilled one or more hand-held barrel type auger borings to the depths indicated on the attached Boring Logs. In the hand-held barrel auger procedure, the boring was advanced by manually rotating a hand-held barrel type auger until the receiving end of the auger filled with soil. Once the bucket was filled, the auger assembly was removed from the boring, and the sample was retrieved from the bucket. A representative sample of the soils recovered from each strata observed in the borings was placed in a labeled plastic container, and sealed.

After completing the auger borings, the samples obtained were transported to our laboratory where they were examined by a member of our geotechnical staff. This procedure was performed in general accordance with the latest revision of ASTM D1452 entitled "Standard Practice for Soil Exploration and Sampling by Auger Borings".

Dynamic Cone Penetrometer Testing

In order to evaluate the relative density of the in-situ soils, we performed Dynamic Cone Penetrometer (DCP) testing at regular depths in some of the hand-held barrel auger borings. The DCP testing was performed according to the procedures developed by Professor George F. Sowers and Charles S. Hedges (ASCE, 1966), and outlined in ASTM STP 399. The test procedure involves first seating the conical point of the penetrometer two inches into the soils in the bottom of the borings at the desired testing depth. The conical point is then driven two additional 1¾-inch increments using a 15-pound weight falling 20 inches. The penetrometer reading is the average number of blows required to drive the conical point two 1¾-inch increments. Correlations have been developed using the penetrometer results to evaluate the level of relative density/consistency of the soils, and to estimate the allowable net soil bearing capacity.

APPENDIX C



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LABORATORY PROCEDURES

Natural Moisture Content Test

Some of the soil samples recovered from the field exploration were selected for natural moisture content testing. In this test, the soil sample is placed into a metal pan of known weight, weighed, dried for a minimum of 12 hours in a $110 \pm 5^\circ\text{C}$ oven, and then weighed again to record the weight of water released during drying. The natural moisture content of the soil is termed the ratio of "pore" or "free" water in a given mass of material to the mass of solid material particles. This test was conducted in general accordance with ASTM D2216 entitled "Standard Test Methods for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass".

Percent -200 Soil Fines Content Test

Some of the soil samples recovered from the field exploration were selected to determine the percentage of silt and clay fines present in the individual samples. In this test, the Natural Moisture Content test (ASTM D2216) was performed and the sample was then washed over a Number 200 mesh sieve. The materials present in the sample that did not pass through the No. 200 sieve were then placed back in the original pan and dried until the water retained from the wet-sieve process was totally evaporated. Once dried, the sample was weighed again to determine the weight of fines removed during the wet-sieve process. The percent of soil by weight passing the No. 200 sieve is termed the percentage of fines or portion of the sample in the silt and clay size range. This test was conducted in general accordance with ASTM D1140 entitled "Standard Test Methods for Determining the Amount of Material in Soils Finer Than the No. 200 (75- μm) Sieve by Washing".

Organic Content Test

Some of the soil samples recovered from the field exploration were selected to determine the organic contents of the individual samples. The organic content test involves performing the Natural Moisture Content test (ASTM D2216) and then placing 10 to 40 grams of the mixed and dried soil sample into a porcelain crucible of known weight. The crucible (with sample) was then placed into a Barnstead|Thermolyne Model 1400 Muffle Furnace and ignited at a temperature of $455 \pm 10^\circ\text{C}$ for 6 hours. After six hours, the crucible was then allowed to cool in a desiccator to prevent moisture entry from the lab's atmosphere. Once cool to the touch, the crucible was removed from the desiccator and then weighed to determine the mass of organic materials disintegrated during the ignition process. The organic content of the soil is defined as the percentage of combustible organic materials present in a given amount of the dried soil sample. This test was conducted in general accordance with AASHTO T 267 entitled "Standard Method of Test for Determination of Organic Content in Soils by Loss on Ignition".

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APPENDIX D



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Important Information about This

Geotechnical-Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

Geotechnical Services Are Performed for Specific Purposes, Persons, and Projects

Geotechnical engineers structure their services to meet the specific needs of their clients. A geotechnical-engineering study conducted for a civil engineer may not fulfill the needs of a constructor — a construction contractor — or even another civil engineer. Because each geotechnical-engineering study is unique, each geotechnical-engineering report is unique, prepared *solely* for the client. No one except you should rely on this geotechnical-engineering report without first conferring with the geotechnical engineer who prepared it. *And no one — not even you — should apply this report for any purpose or project except the one originally contemplated.*

Read the Full Report

Serious problems have occurred because those relying on a geotechnical-engineering report did not read it all. Do not rely on an executive summary. Do not read selected elements only.

Geotechnical Engineers Base Each Report on a Unique Set of Project-Specific Factors

Geotechnical engineers consider many unique, project-specific factors when establishing the scope of a study. Typical factors include: the client's goals, objectives, and risk-management preferences; the general nature of the structure involved, its size, and configuration; the location of the structure on the site; and other planned or existing site improvements, such as access roads, parking lots, and underground utilities. Unless the geotechnical engineer who conducted the study specifically indicates otherwise, do not rely on a geotechnical-engineering report that was:

- not prepared for you;
- not prepared for your project;
- not prepared for the specific site explored; or
- completed before important project changes were made.

Typical changes that can erode the reliability of an existing geotechnical-engineering report include those that affect:

- the function of the proposed structure, as when it's changed from a parking garage to an office building, or from a light-industrial plant to a refrigerated warehouse;
- the elevation, configuration, location, orientation, or weight of the proposed structure;
- the composition of the design team; or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project changes—even minor ones—and request an

assessment of their impact. *Geotechnical engineers cannot accept responsibility or liability for problems that occur because their reports do not consider developments of which they were not informed.*

Subsurface Conditions Can Change

A geotechnical-engineering report is based on conditions that existed at the time the geotechnical engineer performed the study. *Do not rely on a geotechnical-engineering report whose adequacy may have been affected by:* the passage of time; man-made events, such as construction on or adjacent to the site; or natural events, such as floods, droughts, earthquakes, or groundwater fluctuations. *Contact the geotechnical engineer before applying this report to determine if it is still reliable.* A minor amount of additional testing or analysis could prevent major problems.

Most Geotechnical Findings Are Professional Opinions

Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. Geotechnical engineers review field and laboratory data and then apply their professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ — sometimes significantly — from those indicated in your report. Retaining the geotechnical engineer who developed your report to provide geotechnical-construction observation is the most effective method of managing the risks associated with unanticipated conditions.

A Report's Recommendations Are Not Final

Do not overrely on the confirmation-dependent recommendations included in your report. *Confirmation-dependent recommendations are not final*, because geotechnical engineers develop them principally from judgment and opinion. Geotechnical engineers can finalize their recommendations *only* by observing actual subsurface conditions revealed during construction. *The geotechnical engineer who developed your report cannot assume responsibility or liability for the report's confirmation-dependent recommendations if that engineer does not perform the geotechnical-construction observation required to confirm the recommendations' applicability.*

A Geotechnical-Engineering Report Is Subject to Misinterpretation

Other design-team members' misinterpretation of geotechnical-engineering reports has resulted in costly

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problems. Confront that risk by having your geotechnical engineer confer with appropriate members of the design team after submitting the report. Also retain your geotechnical engineer to review pertinent elements of the design team's plans and specifications. Constructors can also misinterpret a geotechnical-engineering report. Confront that risk by having your geotechnical engineer participate in prebid and preconstruction conferences, and by providing geotechnical construction observation.

Do Not Redraw the Engineer's Logs

Geotechnical engineers prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in a geotechnical-engineering report should *never* be redrawn for inclusion in architectural or other design drawings. Only photographic or electronic reproduction is acceptable, *but recognize that separating logs from the report can elevate risk.*

Give Constructors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can make constructors liable for unanticipated subsurface conditions by limiting what they provide for bid preparation. To help prevent costly problems, give constructors the complete geotechnical-engineering report, *but* preface it with a clearly written letter of transmittal. In that letter, advise constructors that the report was not prepared for purposes of bid development and that the report's accuracy is limited; encourage them to confer with the geotechnical engineer who prepared the report (a modest fee may be required) and/or to conduct additional study to obtain the specific types of information they need or prefer. A prebid conference can also be valuable. *Be sure constructors have sufficient time* to perform additional study. Only then might you be in a position to give constructors the best information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions.

Read Responsibility Provisions Closely

Some clients, design professionals, and constructors fail to recognize that geotechnical engineering is far less exact than other engineering disciplines. This lack of understanding has created unrealistic expectations that have led to disappointments, claims, and disputes. To help reduce the risk of such outcomes, geotechnical engineers commonly include a variety of explanatory provisions in their reports. Sometimes labeled "limitations," many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help

others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Environmental Concerns Are Not Covered

The equipment, techniques, and personnel used to perform an *environmental* study differ significantly from those used to perform a *geotechnical* study. For that reason, a geotechnical-engineering report does not usually relate any environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated environmental problems have led to numerous project failures.* If you have not yet obtained your own environmental information, ask your geotechnical consultant for risk-management guidance. *Do not rely on an environmental report prepared for someone else.*

Obtain Professional Assistance To Deal with Mold

Diverse strategies can be applied during building design, construction, operation, and maintenance to prevent significant amounts of mold from growing on indoor surfaces. To be effective, all such strategies should be devised for the *express purpose* of mold prevention, integrated into a comprehensive plan, and executed with diligent oversight by a professional mold-prevention consultant. Because just a small amount of water or moisture can lead to the development of severe mold infestations, many mold-prevention strategies focus on keeping building surfaces dry. While groundwater, water infiltration, and similar issues may have been addressed as part of the geotechnical-engineering study whose findings are conveyed in this report, the geotechnical engineer in charge of this project is not a mold prevention consultant; *none of the services performed in connection with the geotechnical engineer's study were designed or conducted for the purpose of mold prevention. Proper implementation of the recommendations conveyed in this report will not of itself be sufficient to prevent mold from growing in or on the structure involved.*

Rely, on Your GBC-Member Geotechnical Engineer for Additional Assistance

Membership in the Geotechnical Business Council of the Geoprofessional Business Association exposes geotechnical engineers to a wide array of risk-confrontation techniques that can be of genuine benefit for everyone involved with a construction project. Confer with you GBC-Member geotechnical engineer for more information.



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3/4/2020
David Wilks
3/4/2020

CONSTRAINTS & RESTRICTIONS

The intent of this document is to bring to your attention the potential concerns and the basic limitations of a typical geotechnical report.

WARRANTY

Universal Engineering Sciences has prepared this report for our client for his exclusive use, in accordance with generally accepted soil and foundation engineering practices, and makes no other warranty either expressed or implied as to the professional advice provided in the report.

UNANTICIPATED SOIL CONDITIONS

The analysis and recommendations submitted in this report are based upon the data obtained from soil borings performed at the locations indicated on the Boring Location Plan. This report does not reflect any variations which may occur between these borings.

The nature and extent of variations between borings may not become known until excavation begins. If variations appear, we may have to re-evaluate our recommendations after performing on-site observations and noting the characteristics of any variations.

CHANGED CONDITIONS

We recommend that the specifications for the project require that the contractor immediately notify Universal Engineering Sciences, as well as the owner, when subsurface conditions are encountered that are different from those present in this report.

No claim by the contractor for any conditions differing from those anticipated in the plans, specifications, and those found in this report, should be allowed unless the contractor notifies the owner and Universal Engineering Sciences of such changed conditions. Further, we recommend that all foundation work and site improvements be observed by a representative of Universal Engineering Sciences to monitor field conditions and changes, to verify design assumptions and to evaluate and recommend any appropriate modifications to this report.

MISINTERPRETATION OF SOIL ENGINEERING REPORT

Universal Engineering Sciences is responsible for the conclusions and opinions contained within this report based upon the data relating only to the specific project and location discussed herein. If the conclusions or recommendations based upon the data presented are made by others, those conclusions or recommendations are not the responsibility of Universal Engineering Sciences.

CHANGED STRUCTURE OR LOCATION

This report was prepared in order to aid in the evaluation of this project and to assist the architect or engineer in the design of this project. If any changes in the design or location of the structure as outlined in this report are planned, or if any structures are included or added that are not discussed in the report, the conclusions and recommendations contained in this report shall not be considered valid unless the changes are reviewed and the conclusions modified or approved by Universal Engineering Sciences.

USE OF REPORT BY BIDDERS

Bidders who are examining the report prior to submission of a bid are cautioned that this report was prepared as an aid to the designers of the project and it may affect actual construction operations.

Bidders are urged to make their own soil borings, test pits, test caissons or other investigations to determine those conditions that may affect construction operations. Universal Engineering Sciences cannot be responsible for any interpretations made from this report or the attached boring logs with regard to their adequacy in reflecting subsurface conditions which will affect construction operations.

STRATA CHANGES

Strata changes are indicated by a definite line on the boring logs which accompany this report. However, the actual change in the ground may be more gradual. Where changes occur between soil samples, the location of the change must necessarily be estimated using all available information and may not be shown at the exact depth.

OBSERVATIONS DURING DRILLING

Attempts are made to detect and/or identify occurrences during drilling and sampling, such as: water level, boulders, zones of lost circulation, relative ease or resistance to drilling progress, unusual sample recovery, variation of driving resistance, obstructions, etc.; however, lack of mention does not preclude their presence.

WATER LEVELS

Water level readings have been made in the drill holes during drilling and they indicate normally occurring conditions. Water levels may not have been stabilized at the last reading. This data has been reviewed and interpretations made in this report. However, it must be noted that fluctuations in the level of the groundwater may occur due to variations in rainfall, temperature, tides, and other factors not evident at the time measurements were made and reported. Since the probability of such variations is anticipated, design drawings and specifications should accommodate such possibilities and construction planning should be based upon such assumptions of variations.

LOCATION OF BURIED OBJECTS

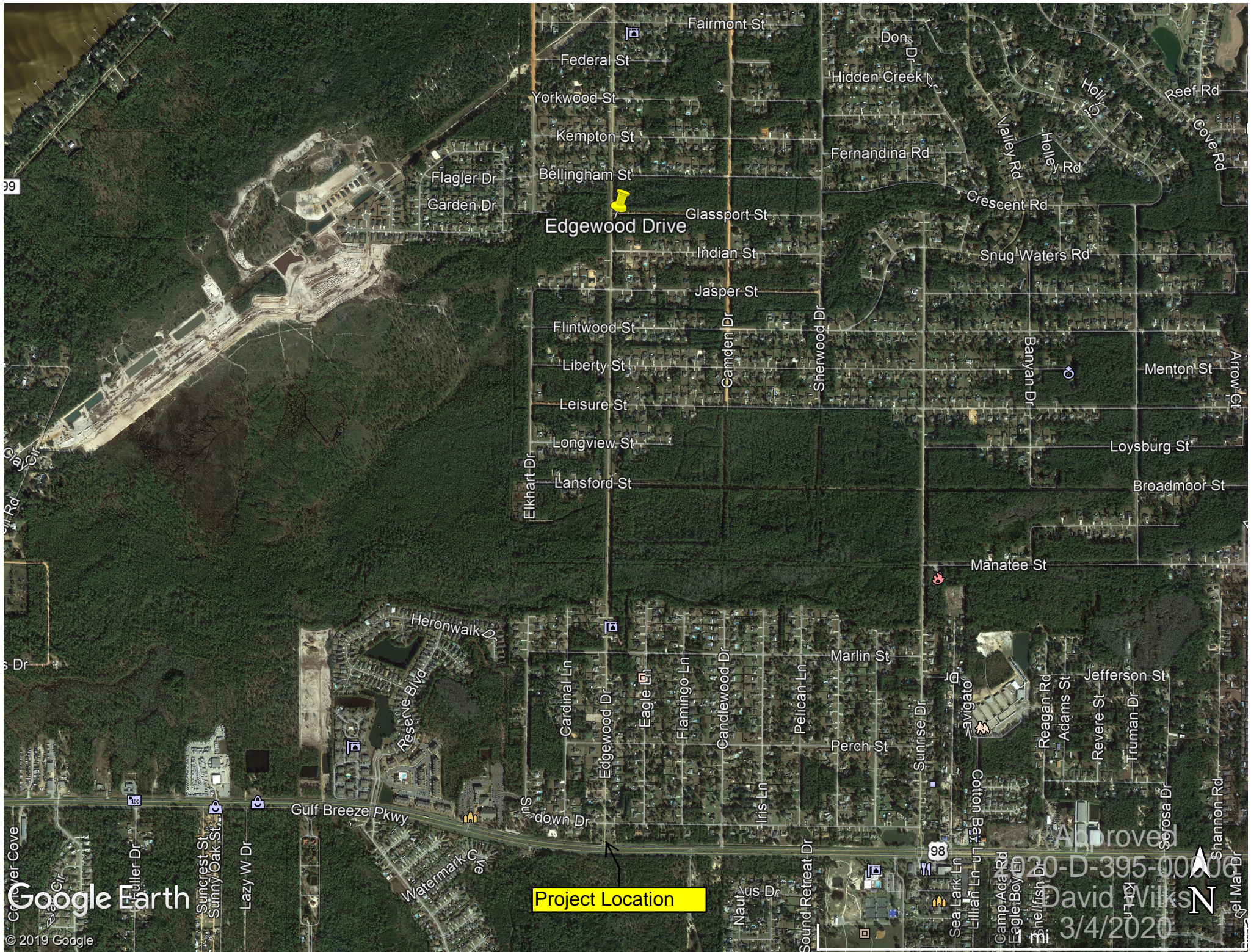
All users of this report are cautioned that there was no requirement for Universal Engineering Sciences to attempt to locate any man-made buried objects during the course of this exploration and that no attempt was made by Universal Engineering Sciences to locate any such buried objects. Universal Engineering Sciences cannot be responsible for any buried man-made objects which are subsequently encountered during construction that are not discussed within the text of this report.

TIME

This report reflects the soil conditions at the time of exploration. If the report is not used in a reasonable amount of time, significant changes to the site may occur and additional reviews may be required.



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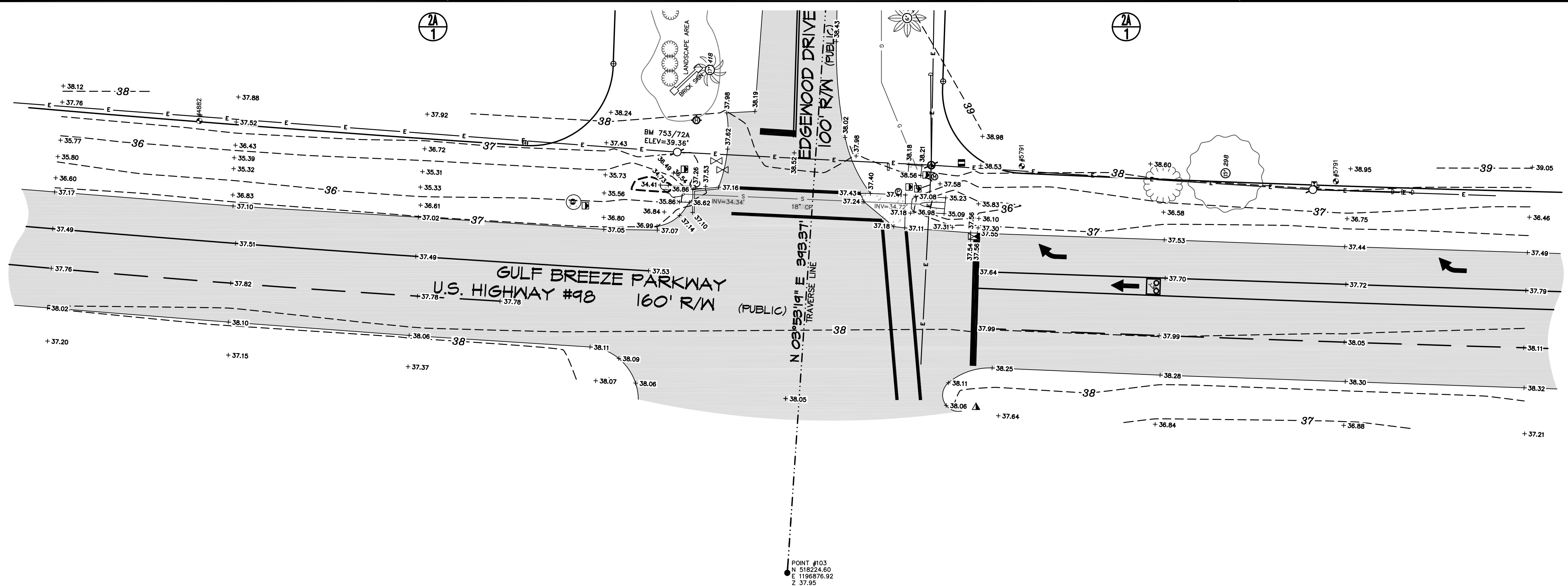


Project Location

Google Earth

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- BENCHMARKS:**
- 59-09-D05V - A Florida Department of Transportation concrete monument located on the south right of way of U.S. Highway #98 and 600 +/- east of the centerline of Lighthouse Drive.
Elevation = 34.74'
 - T53/T2A - An 'X' in the north bonnet bolt of a fire hydrant located at the northwest corner of the intersection of U.S. Highway #98 and Edgewood Drive.
Elevation = 34.36'
 - T53/T2B - An 'X' in the north bonnet bolt of a fire hydrant located at the south right of way of Sundown Drive and 55 +/- west of centerline of Edgewood Drive.
Elevation = 40.24'
 - T53/T5A - An 'X' in the west bonnet bolt of a fire hydrant located at the southeast corner of the intersection of Edgewood Drive and Ferch Street.
Elevation = 41.86'
 - T53/T3B - An 'X' in the north bonnet bolt of a fire hydrant located at the southeast corner of the intersection of Edgewood Drive and Marlin Street.
Elevation = 40.30'
 - T53/T3C - An 'X' in the north bonnet bolt of a fire hydrant located at the southeast corner of the intersection of Edgewood Drive and Lansford Street.
Elevation = 35.78'
 - T53/T4A - An 'X' in the northwest bonnet bolt of a fire hydrant located at the southeast corner of the intersection of Edgewood Drive and Longview Street.
Elevation = 34.72'
 - T53/T4B - An 'X' in the northwest bonnet bolt of a fire hydrant located at the northeast corner of the intersection of Edgewood Drive and Leisure Street.
Elevation = 34.74'
 - T53/T4C - A 60d nail in the west side of a power pole located at the northeast corner of the intersection of Edgewood Drive and Liberty Street.
Elevation = 31.88'
 - T53/T4D - A 60d nail in the west side of a power pole located at the northeast corner of the intersection of Edgewood Drive and Flintwood Street.
Elevation = 31.52'
 - T53/T4E - A 60d nail in the west side of a power pole located at the southeast corner of the intersection of Edgewood Drive and Redfield Street.
Elevation = 32.37'
 - T53/T5A - A 60d nail in the west side of a power pole located at the northeast corner of the intersection of Edgewood Drive and Indian Street.
Elevation = 30.77'
 - T53/T5B - A 60d nail in the west side of a power pole located at the southeast corner of the intersection of Edgewood Drive and Glassport Street.
Elevation = 29.94'
 - T53/T5C - An 'X' in the north bonnet bolt of a fire hydrant located at the southwest corner of the intersection of Edgewood Drive and Bellingham Street. (fire hydrant leans to the east)
Elevation = 33.21'
 - T53/T5D - A cotton gin spike in the west side of a power pole located at the northeast corner of the intersection of Edgewood Drive and Kempton Street.
Elevation = 33.30'
 - T53/T5E - A cotton gin spike in the west side of a power pole located at the northeast corner of the intersection of Edgewood Drive and Fern Street.
Elevation = 32.34'
 - T53/T5F - An 'X' in the northwest bonnet bolt of a fire hydrant located at the northeast corner of the intersection of Edgewood Drive and Federal Street.
Elevation = 33.83'
 - T53/T6A - A cotton gin spike in the west side of a power pole located at the northeast corner of the intersection of Edgewood Drive and Fairmont Street.
Elevation = 30.33'
 - T53/T6B - A cotton gin spike in the west side of a power pole located at the southeast corner of the intersection of Edgewood Drive and Hartland Street.
Elevation = 30.35'
 - T53/T6C - A 60d nail in the east side of a power pole located at the southwest corner of the intersection of Edgewood Drive and Codell Street.
Elevation = 29.34'
 - T53/T6D - An 'X' in the northwest bonnet bolt of a fire hydrant located at the southeast corner of the intersection of Edgewood Drive and Castlewood Street.
Elevation = 23.74'
 - T53/T6E - A 60d nail in the east side of a power pole located at the west right of way of Edgewood Drive across from Bushton Street.
Elevation = 17.03'
 - T53/T6F - A 60d nail in the east side of a power pole located at the west right of way of Edgewood Drive across from Bryant Street.
Elevation = 15.35'

- T53/T6G - An 'X' in the north bonnet bolt of a fire hydrant located at the southeast corner of the intersection of Edgewood Drive and Britt Street.
Elevation = 17.30'
- T53/T7A - A 60d nail in the east side of a power pole located at the northwest corner of the intersection of Edgewood Drive and Admiral Street - Koppel Drive.
Elevation = 13.01'
- T53/T7B - An 'X' in the northwest bonnet bolt of a fire hydrant located at the southeast corner of the intersection of Edgewood Drive and DeSoto Street.
Elevation = 14.31'
- T53/T7C - A 60d nail in the east side of a power pole located at the northwest corner of the intersection of Edgewood Drive and Bluefish Road.
Elevation = 10.81'
- T53/T7D - An 'X' in the north bonnet bolt of a fire hydrant located at the northeast corner of the intersection of Edgewood Drive and Angle Road.
Elevation = 11.21'
- T53/T7E - A 60d nail in the north side of a power pole located at the southwest corner of the intersection of Edgewood Drive and East Bay Boulevard.
Elevation = 6.94'
- T53/T8A - An 'X' in the south bonnet bolt of a fire hydrant located at the northeast corner of the intersection of Koppel Drive (Elkhart Drive) and Arch Road.
Elevation = 41.6'
- T53/T8B - A railroad spike in the east side of a 14' pine tree located at the northwest corner of the intersection of Castlewood Street and Camden Drive.
Elevation = 31.33'
- T53/T8C - An 'X' in the west end of a concrete headwall located at the southwest corner of the intersection of East Bay Boulevard and Koppel Drive.
Elevation = 6.70'

SURVEYOR'S NOTES:

1. The underground utilities shown have been located from field survey information and existing drawings. The surveyor has not physically located the underground utilities. The surveyor does not certify that the underground utilities shown comprise all such utilities or that they are the exact size, material, or location as indicated.
2. This survey does not reflect or determine ownership.
3. This survey is subject to any facts that may be disclosed by a full and accurate title search.
4. This survey is subject to setbacks, easements, and restrictions of record.
5. To assure the contractor is on the same vertical and horizontal datum as this survey, it is strongly recommended that vertical checks be made between two benchmarks and that horizontal checks be made between three control points or property corners.
6. Sub-surface improvements, if any, not located.
7. Due to current safety regulations, we are unable to access any sewer manholes and/or structures in order to verify pipe size or material. Pipe size and material has been shown as per plans or by approximate measurements. It is strongly recommended that size and material are verified before any design work begins.
8. Coordinates shown are State Plane Coordinates referenced to N.A.D. 83 datum, 2011 adjustment, Florida North Zone and expressed in U.S. survey feet.
9. Coordinates are derived by using the Trimble and Florida Department of Transportation continuously operating reference station (CORS) network.

- LEGEND:**
- N Northing
 - E Easting
 - Z Elevation
 - R/W Right of way
 - P.C. Point of curvature
 - P.T. Point of tangency
 - P.I. Point of intersection
 - P.C.C. Point of compound curvature
 - P.R.C. Point of reverse curvature
 - BM Benchmark
 - ELEV Elevation
 - FFE Finished floor elevation
 - INV Invert
 - FL Flow line
 - CP Concrete pipe
 - CPP Corrugated plastic pipe
 - CMP Corrugated metal pipe
 - PVC Polyvinyl chloride pipe
 - MF Metal pipe
 - 1" Iron pipe found
 - 1/2" Iron rod found
 - 1/2" Capped iron rod set #T073
 - 1/2" Capped iron rod found #noted
 - Crimped iron pipe found
 - 4"x4" Concrete monument found #noted
 - 4"x4" D.O.T. Concrete monument found
 - Nail and disk found #noted
 - Permanent control point found #noted
 - Nail and flag set
 - Fire hydrant
 - Gas valve
 - Gas meter
 - Water valve
 - Water meter
 - Telephone equipment
 - Electric equipment
 - Cable equipment
 - Sprinkler control valve
 - Light pole
 - Light pole with base
 - Traffic light pole
 - Guy wire
 - Power pole
 - Power pole with underground cable
 - Power pole with underground electric
 - Power pole with underground telephone
 - Mailbox
 - Reflector
 - Storm grate
 - Road sign
 - Guard post
 - Underground gas marker
 - Underground telephone marker
 - Pedestrian crossing pole
 - Meter pole
 - Water stub-out

- Wood/metal post
- Traffic signal control box
- +23.45 Spot elevation
- 23 Contour line
- x Chain link fence
- o Point of curvature
- o Wood fence
- H Wire fence
- v Steel cable fence
- Approximate limits of wood line
- Anchor line
- Cable line
- Electric line
- Gas line
- Storm sewer line
- Telephone line
- Water line
- Asphalt
- Brick
- Concrete
- Dirt road
- Gravel/rip rap
- Ornamental tree
- Pine tree
- Oak tree
- Holly tree
- Dogwood tree
- Crape myrtle tree
- Falm tree
- Maple tree
- Magnolia tree
- Cedar tree
- Popcorn tree
- Century plant
- Mimosa tree
- Mulberry tree
- Sago palm
- Miscellaneous tree

PITTMAN, PILAZE AND ASSOCIATES, INC.
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 Email: ppsurvey@bellsouth.net

I hereby certify that this survey was made under my responsible charge and meets the Standards of Practice as set forth by the Florida Board of Professional Surveyors & Mappers in Chapter 5J-17.050, 5J-17.051 and 5J-17.052, pursuant to Section 472.027 Florida Statutes.

This item has been digitally signed and sealed with a secure key. Printed copies of this document are not valid. Please verify the digital signature and seal.

David D. Glaze
 P.S.M. #5605

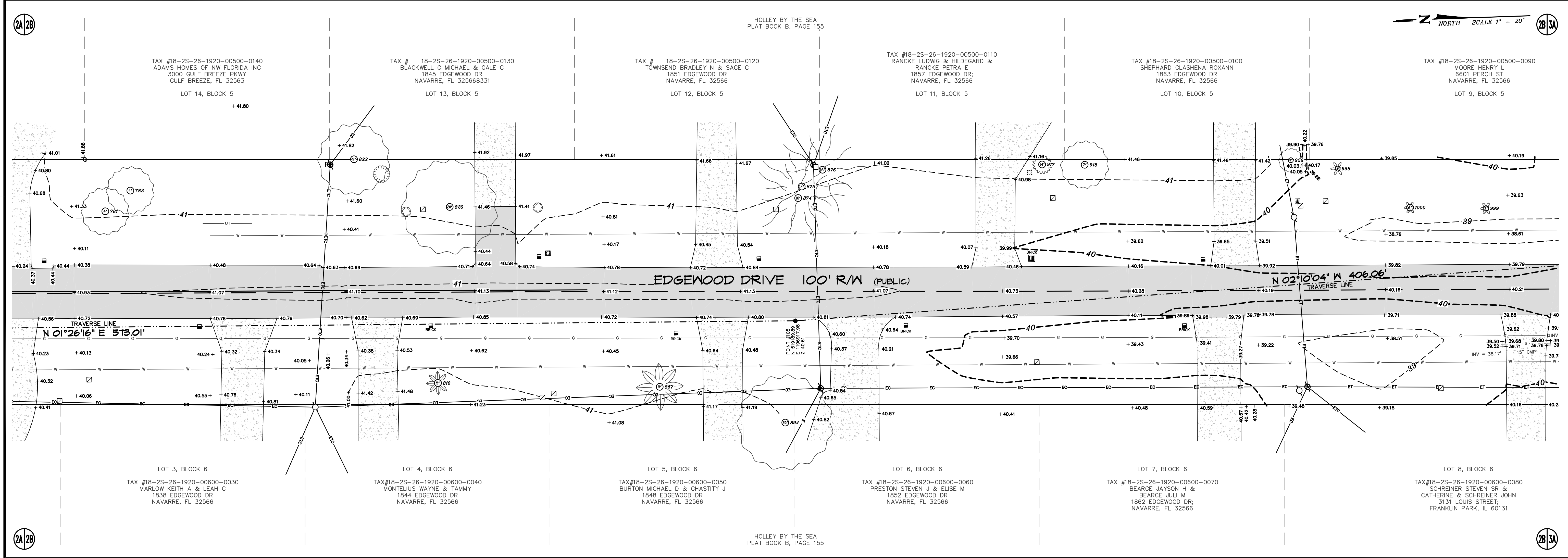
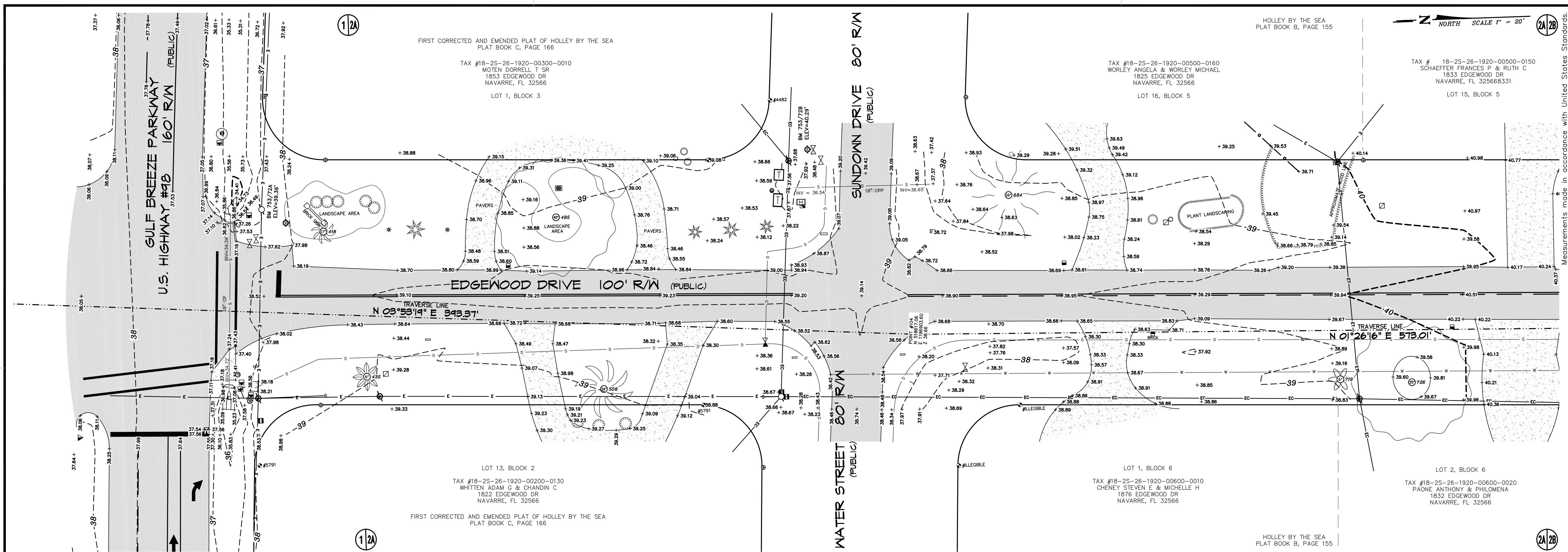
Walter J. Glaze
 P.S.M. #6190

This survey is void if it contains the digital seal and original signature of the signing surveyor.

SHEET 1 OF 17

File No. **C-2047**
 Job No. **98024-18**
 Scale **1" = 20'**
 Date of Survey **2-7-2019**
 Date of Plot **2-8-2019**
 FB **160** PG **12-18**
 FB **160** PG **10-17**
 FB **160** PG **9-8**
 Drawn by **FMJ**
 Checked by **MLG**

Bearing Reference **NORTH** BASED ON THE STATE PLANE COORDINATE SYSTEM (SP12 NORTH)
 Ordered By **MR. CHARLIE KEASNOBKY** Elevation Reference **NAVD 88**
 Encroachments **N/A**
 Source of Information **PUBLIC RECORDS, RECORDED PLATS, HOLLEY BY THE SEA (PE B, P 195), FIRST CORRECTED AND AMENDED PLAT OF HOLLEY BY THE SEA (PE C, P 166); SURVEYS BY THIS FIRM.**
A TOPOGRAPHIC SURVEY, LOCATION OF IMPROVEMENTS, AND TREE LOCATION OF A PORTION OF SECTION 10, T-2-S, R-27-W



Measurements made in accordance with United States Standards (SP12 NORTH)
 Bearing Reference NORTH BASED ON THE STATE PLANE COORDINATE SYSTEM (SP12 NORTH)
 Ordered By: MR. CHARLIE KRASNOSEKY, Elevation Reference NAVD 83
 Encroachments: N/A
 Source of Information: PUBLIC RECORDS, RECORDED PLATS, HOLLEY BY THE SEA (P.B.P. 155), FIRST CORRECTED AND AMENDED PLAT OF HOLLEY BY THE SEA (P.B.C.P. 166); SURVEYS BY THIS FIRM.
 A TOPOGRAPHIC SURVEY, LOCATION OF A IMPROVEMENTS, AND TREE LOCATION OF A PORTION OF SECTION 10, T-2-S, R-27-W, 30S-00000

PITTMAN, PILAZE AND ASSOCIATES, INC.
LAND SURVEYORS
 500 N. LAKE HURON BLVD. SUITE 100
 PENSACOLA, FL 32503
 Phone (850) 434-6666 Fax (850) 434-6661
 Email: pitmsurvey@bellsouth.net

PG&A
 GRAPHIC SCALE - 1" = 20'
 LEG. No. 7073

I hereby certify that this survey was made under my responsible charge and meets the Standards of Practice as set forth by the Florida Board of Professional Surveyors & Mappers in Chapter 5J-17.050, 5J-17.051 and 5J-17.052, pursuant to Section 472.027 Florida Statutes.
 This item has been digitally signed and sealed with a secure key. Printed copies of this document are not valid unless they are accompanied by the original signature and seal.
 Signature: **Walter J. Glaze**
 License No. **PSM #6190**
 Signature: **David D. Glaze**
 License No. **PSM #3603**

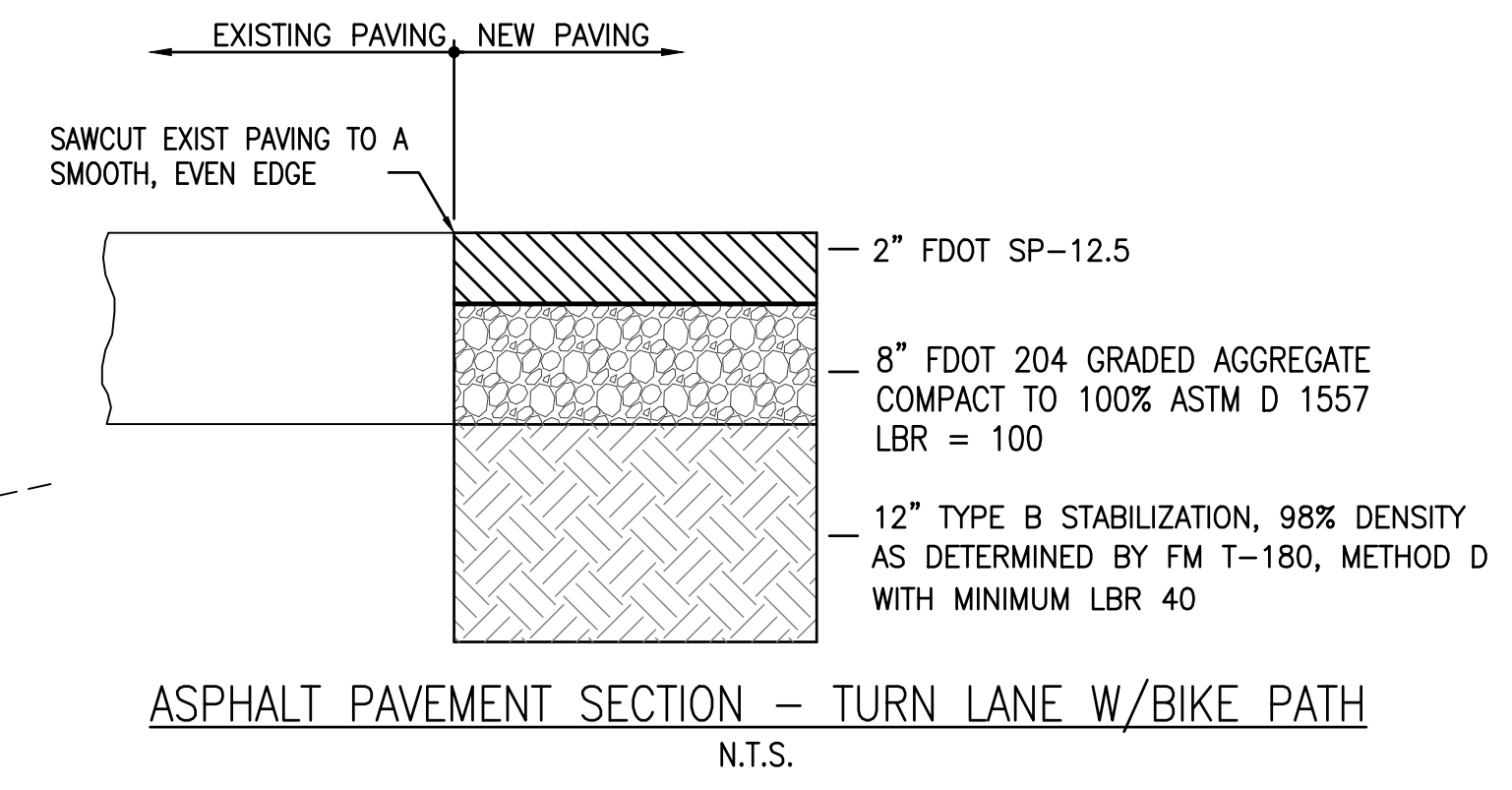
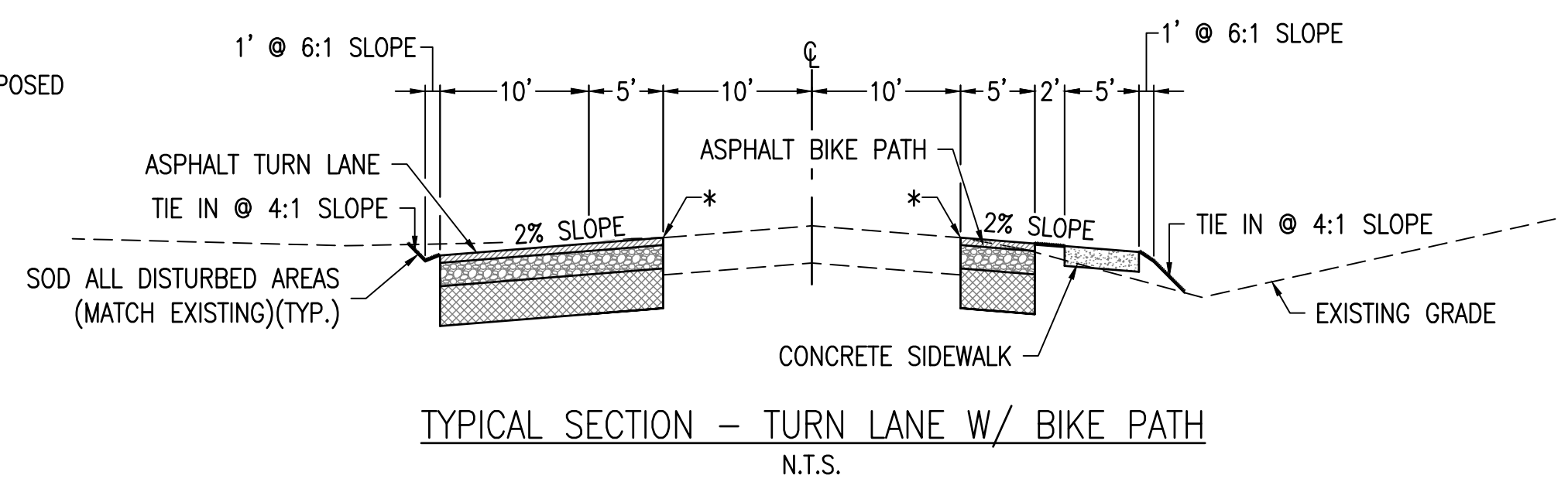
WALTER J. GLAZE
 No. 6190
 STATE OF FLORIDA
 PROFESSIONAL SURVEYOR

DAVID D. GLAZE
 No. 3603
 STATE OF FLORIDA
 PROFESSIONAL SURVEYOR

SHEET **2** OF **17**

File No. **C-2047**
 Job No. **98024-18**
 Scale: **1" = 20'**
 Date of Survey: **2-7-2019**
 Date of Plat: **2-8-2019**
 FB: **159** PG: **12-18**
 FB: **160** PG: **10-17**
 FB: **162** PG: **9-8**
 Drawn by: **FMJ**
 Checked by: **WJG**

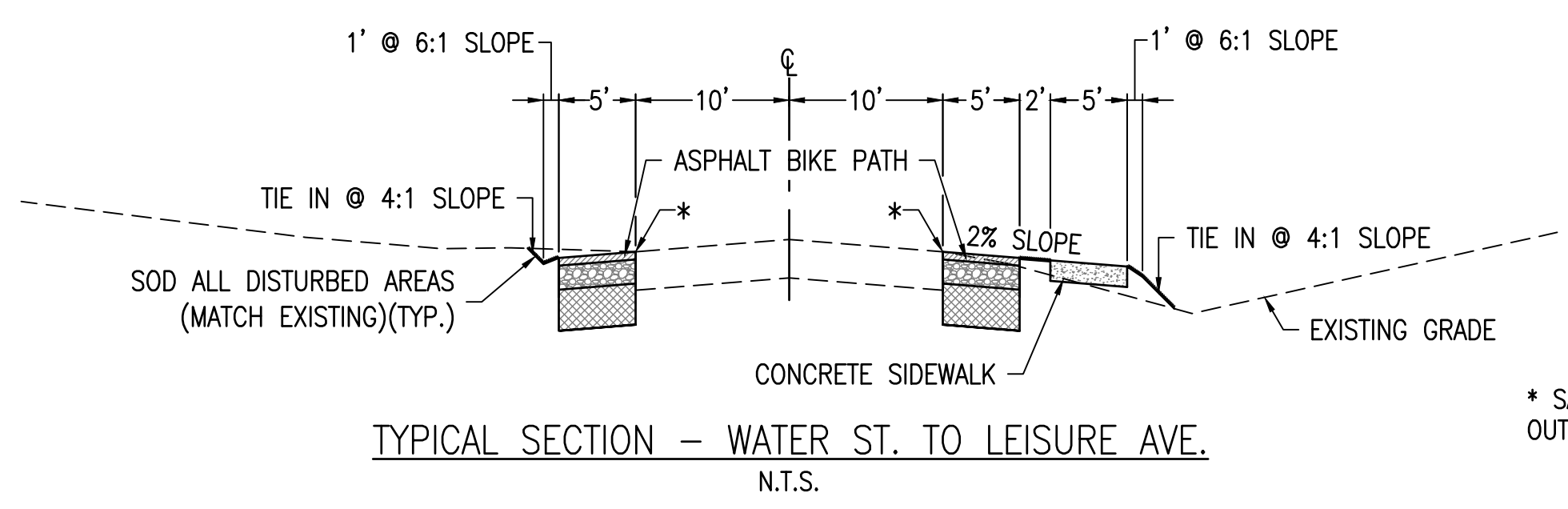
- 1 SEE DETAIL FOR PROPOSED ASPHALT PAVEMENT, INCLUDING; BIKE PATH AND INTERSECTION TURNOUTS
- 2 SEE DETAIL FOR PROPOSED CONCRETE SIDEWALK
- 3 SEE DETAIL FOR PROPOSED CONCRETE DRIVEWAYS



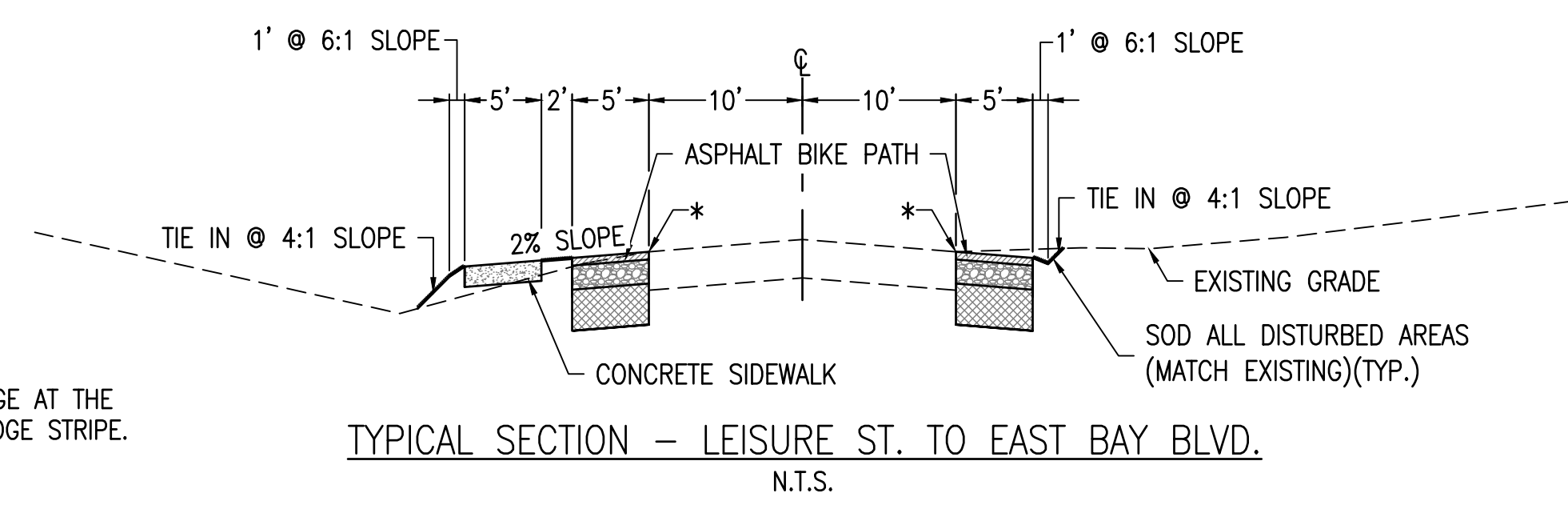
ADDITIVE ALTERNATE BID NO. 1
1" FDOT SP 9.5 ASPHALT OVERLAY FROM HWY 98 TO EAST BAY BLVD, OVERLAY TO INCLUDE ALL SIDE STREET TURNOUTS (NEW AND EXISTING) TO THE TANGENT AND THE NEW BIKE LANES.

SEE CRITICAL CROSS SECTION SHEETS FOR ALL CULVERT CROSSINGS AND DRIVEWAYS

- 4 SEE DETAIL FOR PROPOSED ADDITIVE ALTERNATE ASPHALT OVERLAY



* SAW-CUT A CLEAN STRAIGHT EDGE AT THE OUTSIDE EDGE OF THE EXISTING EDGE STRIPE.



- BENCHMARKS:**
- 58-09-D03V - A Florida Department of Transportation concrete monument located on the south right of way of U.S. Highway #98 and 600'+/- east of the centerline of Lighthouse Drive.
Elevation = 39.74'
 - 753/72A - An "X" in the north bonnet bolt of a fire hydrant located at the northwest corner of the intersection of U.S. Highway #98 and Edgewood Drive.
Elevation = 39.36'
 - 753/72B - An "X" in the north bonnet bolt of a fire hydrant located at the south right of way of Sundown Drive and 55'+/- west of centerline of Edgewood Drive.
Elevation = 40.29'
 - 753/73A - An "X" in the west bonnet bolt of a fire hydrant located at the southeast corner of the intersection of Edgewood Drive and Perch Street.
Elevation = 41.86'
 - 753/73B - An "X" in the north bonnet bolt of a fire hydrant located at the southeast corner of the intersection of Edgewood Drive and Marlin Street.
Elevation = 40.30'
 - 753/73C - An "X" in the north bonnet bolt of a fire hydrant located at the southeast corner of the intersection of Edgewood Drive and Lansford Street.
Elevation = 35.78'
 - 753/74A - An "X" in the northwest bonnet bolt of a fire hydrant located at the southeast corner of the intersection of Edgewood Drive and Longview Street.
Elevation = 34.72'
 - 753/74B - An "X" in the northwest bonnet bolt of a fire hydrant located at the northeast corner of the intersection of Edgewood Drive and Leisure Street.
Elevation = 34.74'
 - 753/74C - A 60d nail in the west side of a power pole located at the northeast corner of the intersection of Edgewood Drive and Liberty Street.
Elevation = 31.83'
 - 753/74D - A 60d nail in the west side of a power pole located at the northeast corner of the intersection of Edgewood Drive and Flintwood Street.
Elevation = 31.52'
 - 753/74E - A 60d nail in the west side of a power pole located at the southeast corner of the intersection of Edgewood Drive and Redfield Street.
Elevation = 32.37'
 - 753/75A - A 60d nail in the west side of a power pole located at the northeast corner of the intersection of Edgewood Drive and Indian Street.
Elevation = 30.77'
 - 753/75B - A 60d nail in the west side of a power pole located at the southeast corner of the intersection of Edgewood Drive and Glassport Street.
Elevation = 28.94'
 - 753/75C - An "X" in the north bonnet bolt of a fire hydrant located at the southwest corner of the intersection of Edgewood Drive and Bellingham Street. (fire hydrant leans to the east)
Elevation = 33.21'
 - 753/75D - A cotton gin spike in the west side of a power pole located at the northeast corner of the intersection of Edgewood Drive and Kempton Street.
Elevation = 33.30'
 - 753/75E - A cotton gin spike in the west side of a power pole located at the northeast corner of the intersection of Edgewood Drive and Fern Street.
Elevation = 32.39'
 - 753/75F - An "X" in the northwest bonnet bolt of a fire hydrant located at the northeast corner of the intersection of Edgewood Drive and Federal Street.
Elevation = 33.83'
 - 753/76A - A cotton gin spike in the west side of a power pole located at the northeast corner of the intersection of Edgewood Drive and Fairmont Street.
Elevation = 30.33'
 - 753/76B - A cotton gin spike in the west side of a power pole located at the southeast corner of the intersection of Edgewood Drive and Hartland Street.
Elevation = 30.35'
 - 753/76C - A 60d nail in the east side of a power pole located at the southwest corner of the intersection of Edgewood Drive and Codell Street.
Elevation = 29.34'
 - 753/76D - An "X" in the northwest bonnet bolt of a fire hydrant located at the southeast corner of the intersection of Edgewood Drive and Castlenwood Street.
Elevation = 29.79'

- Elevation = 29.79'
- 753/76E - A 60d nail in the east side of a power pole located at the west right of way of Edgewood Drive across from Bushton Street.
Elevation = 17.03'
- 753/76F - A 60d nail in the east side of a power pole located at the west right of way of Edgewood Drive across from Bryant Street.
Elevation = 15.35'
- 753/76G - An "X" in the north bonnet bolt of a fire hydrant located at the southeast corner of the intersection of Edgewood Drive and Britt Street.
Elevation = 17.30'
- 753/77A - A 60d nail in the east side of a power pole located at the northwest corner of the intersection of Edgewood Drive and Admiral Street -Koppel Drive.
Elevation = 13.01'
- 753/77B - An "X" in the northwest bonnet bolt of a fire hydrant located at the southeast corner of the intersection of Edgewood Drive and DeSoto Street.
Elevation = 14.31'
- 753/77C - A 60d nail in the east side of a power pole located at the northwest corner of the intersection of Edgewood Drive and Bluefish Road.
Elevation = 10.91'
- 753/77D - An "X" in the north bonnet bolt of a fire hydrant located at the northeast corner of the intersection of Edgewood Drive and Arch Road.
Elevation = 11.21'
- 753/77E - A 60d nail in the north side of a power pole located at the southwest corner of the intersection of Edgewood Drive and East Bay Boulevard.
Elevation = 6.94'
- 753/78A - An "X" in the south bonnet bolt of a fire hydrant located at the northeast corner of the intersection of Koppel Drive (Elkhart Drive) and Arch Road.
Elevation = 4.16'
- 753/78B - A railroad spike in the east side of a 14" pine tree located at the northwest corner of the intersection of Castlenwood Street and Camden Drive.
Elevation = 31.33'
- 753/78C - An "X" in the west end of a concrete headwall located at the southwest corner of the intersection of East bay Boulevard and Koppel Drive.
Elevation = 6.70'

SURVEYOR'S NOTES:

- The underground utilities shown have been located from field survey information and existing drawings. The surveyor has not physically located the underground utilities. The surveyor does not certify that the underground utilities shown comprise all such utilities or that they are the exact size, material, or location as indicated.
- This survey does not reflect or determine ownership.
- This survey is subject to any facts that may be disclosed by a full and accurate title search.
- This survey is subject to setbacks, easements, and restrictions of record.
- To assure the contractor is on the same vertical and horizontal datum as this survey, it is strongly recommended that vertical checks be made between two benchmarks and that horizontal checks be made between three control points or property corners.
- Sub-surface improvements, if any, not located.
- Due to current safety regulations, we are unable to access any sewer manholes and/or structures in order to verify pipe size or material. Pipe size and material has been shown as per plans or by approximate measurements. It is strongly recommended that size and material are verified before any design work begins.
- Coordinates shown are State Plane Coordinates referenced to N.A.D. 83 datum, 2011 adjustment, Florida North Zone and expressed in U.S. survey feet.
- Coordinates are derived by using the Trimble and Florida Department of Transportation continuously operating reference station (CORS) network.

- SURVEY LEGEND:**
- N Northing
 - E Easting
 - Z Elevation
 - R/W Right of way
 - P.C. Point of curvature
 - P.T. Point of tangency
 - P.I. Point of intersection
 - P.C.C. Point of compound curvature
 - P.R.C. Point of reverse curvature
 - BM Benchmark
 - ELEV Elevation
 - FFE Finished floor elevation
 - INV Invert
 - FL Flow line
 - CP Concrete pipe
 - CPP Corrugated plastic pipe
 - CMP Corrugated metal pipe
 - FVC Polyvinyl chloride pipe
 - MP Metal pipe
 - o 1" Iron pipe found
 - o 1/2" Iron rod found
 - o 1/2" Capped iron rod set #T073
 - o 1/2" Capped iron rod found #noted
 - o Crimped iron pipe found
 - o 4"x4" Concrete monument found #noted
 - o 4"x4" D.O.T. Concrete monument found
 - o Nail and disk found #noted
 - o Permanent control point found #noted
 - o Nail and flag set
 - o Guy wire
 - o Power pole
 - o Power pole with underground cable
 - o Power pole with underground electric
 - o Power pole with underground telephone
 - o Mailbox
 - o Reflector
 - o Storm grate
 - o Road sign
 - o Guard post
 - o Underground gas marker
 - o Underground telephone marker
 - o Pedestrian crossing pole
 - o Meter pole
 - o Water stub-out

- Wood/metal post
- Traffic signal control box
- Spot elevation
- Contour line
- Chain link fence
- Wood fence
- Wire fence
- Steel cable fence
- Approximate limits of wood line
- Anchor line
- Cable line
- Electric line
- Gas line
- Storm sewer line
- Telephone line
- Water line
- Asphalt
- Brick
- Concrete
- Dirt road
- Gravel/rip rap
- Ornamental tree
- Pine tree
- Oak tree
- Holly tree
- Dogwood tree
- Crape myrtle tree
- Palm tree
- Maple tree
- Magnolia tree
- Cedar tree
- Papcorn tree
- Century plant
- Mimosa tree
- Mulberry tree
- Sago palm
- Miscellaneous tree

REVISIONS

NO.	DATE	DESCRIPTION

Kenneth Horne & Associates, Inc.
 CIVIL ENGINEERS
 PO BOX 10669, PENSACOLA, FLORIDA 32524
 7201 N. 9TH AVENUE, SUITE 6, PENSACOLA, FLORIDA 32504
 (850) 471-9005 info@kh-a.com FAX (850) 471-0093
 FL. CERTIFICATE OF AUTHORIZATION NO. 9288

SRCO EDGEWOOD DRIVE
DRAINAGE AND ROADWAY IMPROVEMENTS
 TYPICAL SECTIONS, SURVEY NOTES AND LEGEND

PROJECT NO: 2018-41
 SHEET: 20 OF 32

DATE: 1/10/2020
 SCALE: N.T.S.
 BY: NOT

APPROVED: David Wilks
 3/4/2020

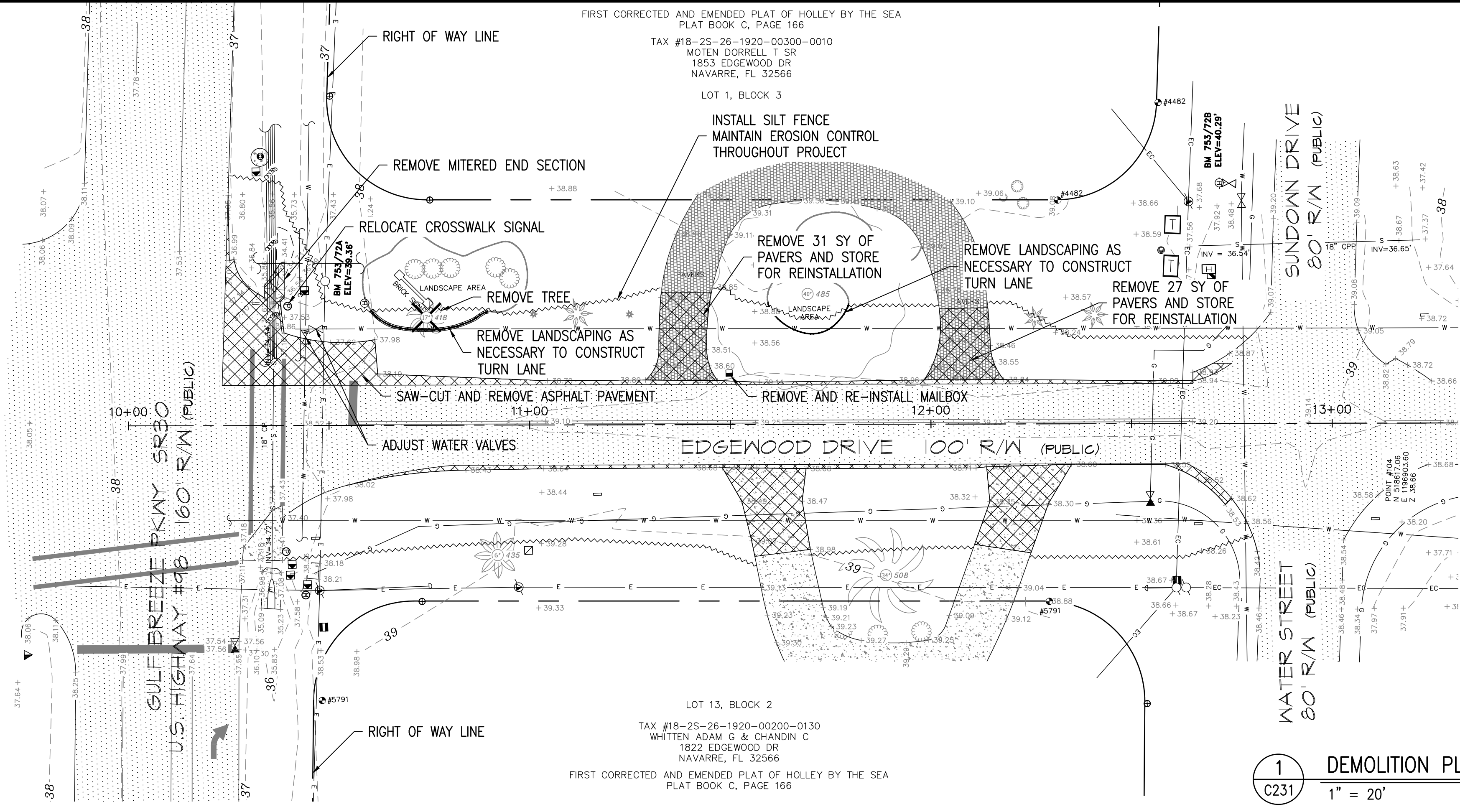
S:\2018 Projects\2018-41 SRCO Edgewood Drive\DWGS\CIVIL\2018-41_C2X1_FDOT.dwg, Jan 21, 2020 - 11:20:41AM, priscilla

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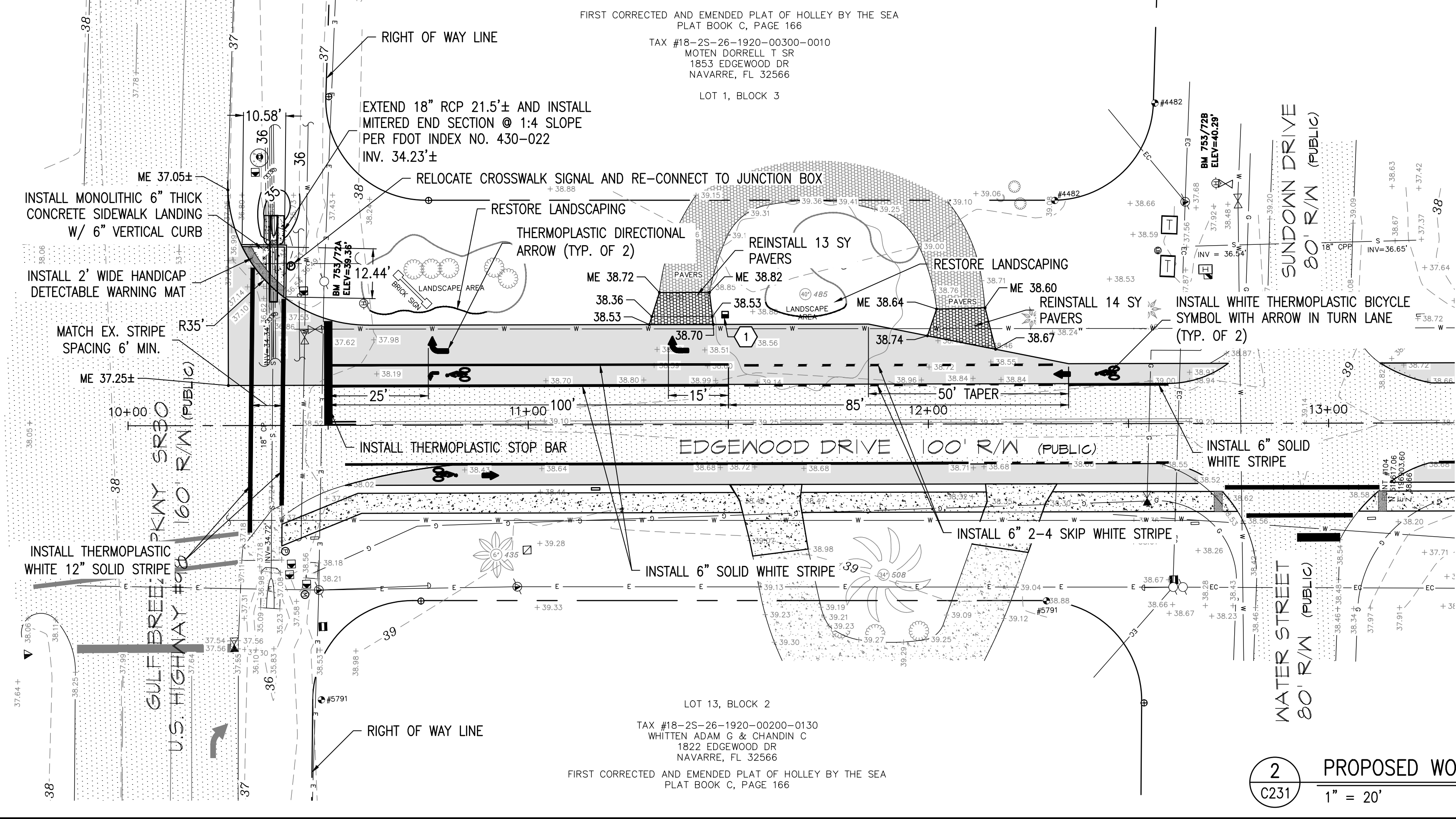
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6



1 DEMOLITION PLAN - TURN LANE
C231 1" = 20'



2 PROPOSED WORK - TURN LANE
C231 1" = 20'

NO.	DATE	REVISIONS

THIS DRAWING IS THE PROPERTY OF
KENNETH HORNE & ASSOCIATES, INC. AND IS NOT TO BE
REPRODUCED IN WHOLE OR IN PART. IT IS NOT TO BE USED ON
ANY OTHER PROJECT AND IS TO BE RETURNED UPON REQUEST.

ROBERT C. KRASNOSKY
FL. PE. 49949

Kenneth Horne & Associates, Inc.
CIVIL ENGINEERS

PO BOX 10669, PENSACOLA, FLORIDA 32524
7201 N. 9TH AVENUE, SUITE 6, PENSACOLA, FLORIDA 32504
(850) 471-9005 info@kh-a.com FAX (850) 471-0093

FL. CERTIFICATE OF AUTHORIZATION NO. 8288

SRCO EDGEWOOD DRIVE
DRAINAGE AND ROADWAY IMPROVEMENTS
TURN LANE PLAN
FLORIDA
SANTA ROSA

DRAWN BY: PLC	PROJECT NO: 2018-41
DESIGNED BY: RCK	C231
CHECKED BY: RCK	DATE: 1/10/2020
SCALE: 1" = 20'	SHEET: 2018-41-362-10006
BY: DATE:	David Wilks 3/4/2020

FLORIDA DEPARTMENT OF TRANSPORTATION
STORMWATER POLLUTION PREVENTION



The Law

The Federal Clean Water Act was established in 1972 to protect our waterways. This legislation was passed in response to growing public concerns for serious and widespread water pollution. As a result, the National Pollution Discharge Elimination System (NPDES) was developed. The Florida Department of Environmental Protection (FDEP) administers the NPDES program for Municipal Separate Storm Sewer Systems (MS4) and Construction Activities.

Construction Activity

- Are you regulated?
 - Yes, if your construction activity will disturb one acre or more and has the potential to contribute stormwater discharges to surface waters of the State or into an MS4. Disturbance includes clearing, grubbing, and excavation.
- What are you required to do?
 - Submit a Notice of Intent (NOI) to FDEP and the MS4;
 - Prepare a Stormwater Pollution Prevention Plan (SWPPP); and
 - Submit to FDEP and the MS4, a Notice of Termination (NOT) to discontinue permit coverage once the site meets the eligibility requirements for termination.
- Other permits?
 - An Environmental Resource Permit (ERP) from the applicable Water Management District may be required prior to the start of construction.

Contact FDEP for more information at (850) 245-7522 or on the web at www.dep.state.fl.us/water/stormwater/index.htm

For ERP information, please contact the appropriate WMD on the web at:

Suwannee River Water Management District (SRWMD): www.mysuwanneeriver.com

Northwest Florida Water Management District (NWFWM): www.nwfwater.com

HOW CAN YOU HELP?

- **Do Not** pour oil or any chemicals down any storm drain or in the street.
- **Recycle** used oil and dispose of chemicals properly.
 - Recycle used oil at your local automotive parts store.
 - Contact FDEP at (407) 894-7555 for information on the proper disposal of chemicals.

Report any polluting material being discharged into a street, alley, or storm drain.

FDOT Local Operations Centers

- | | |
|-------------------------------|----------------|
| - District Maintenance Office | (850) 638-0250 |
| - Marianna Operations | (850) 718-3800 |
| - Midway Operations | (850) 922-7900 |
| - Milton Operations | (850) 981-3000 |
| - Panama City Operations | (850) 767-4990 |
| - Ponce De Leon Operations | (850) 836-5700 |

- State Warning Point Spill Hotline (25 gallons or more) (800) 320-0519

For more information or answers to your stormwater questions, please contact:

- | | |
|---|----------------|
| - Suwannee River Water Management District | (386) 362-1001 |
| - Northwest Florida Water Management District | (800) 913-1518 |

Approved
2020-D-395-00006
David Wilks
3/4/2020

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION
**DRIVEWAY CONNECTION PERMIT
 FOR ALL CATEGORIES**

PART 1: PERMIT INFORMATION

APPLICATION NUMBER: 2019-A-395-00136

Permit Category: J - Government Entity Access Classification: 5

Project: Edgewood Right Turn Lane

Permittee: Michael Schmidt

Section/Mile Post: 030 / 9.2 State Road: 30

Section/Mile Post: / State Road: _____

PART 2: PERMITTEE INFORMATION

Permittee Name: Michael Schmidt

Permittee Mailing Address: 6051 Old Bagdad Highway, Suite 300

City, State, Zip: Milton, Florida 32583

Telephone: (850) 981-7100 ext. _____

Engineer/Consultant/or Project Manager: Charlie Krasnoski

Engineer responsible for construction inspection: _____
NAME P.E. #

Mailing Address: _____

City, State, Zip: _____

Telephone: _____ FAX, Mobile Phone, etc. Fax: / Mobile: _____

PART 3: PERMIT APPROVAL

The above application has been reviewed and is hereby approved subject to all Provisions as attached.

Permit Number: 2019-A-395-00136
Department of Transportation

Signature: David Wilks Title: MAINTENANCE PROGRAM MANAGER

Department Representative's Printed Name David Wilks

Temporary Permit YES NO (If temporary, this permit is only valid for 6 months)

Special provisions attached YES NO

Date of Issuance: 3/18/2020

If this is a normal (non-temporary) permit it authorizes construction for one year from the date of issuance. This can only be extended by the Department as specified in 14-96.007(6).

See following pages for General and Special Provisions

Approved
 2019-A-395-00136
 David Wilks
 3/18/2020

PART 4: GENERAL PROVISIONS

1. Notify the Department of Transportation Maintenance Office at least 48 hours in advance of starting proposed work.
Phone: 8509812703 , Attention: Maria Townsend
2. A copy of the approved permit must be displayed in a prominent location in the immediate vicinity of the connection construction.
3. Comply with Rule 14-96.008(1), F.A.C., Disruption of Traffic.
4. Comply with Rule 14-96.008(7), F.A.C., on Utility Notification Requirements.
5. All work performed in the Department's right of way shall be done in accordance with the most current Department standards, specifications and the permit provisions.
6. The permittee shall not commence use of the connection prior to a final inspection and acceptance by the Department.
7. Comply with Rule 14-96.003(3)(a), F.A.C., Cost of Construction.
8. If a Significant Change of the permittee's land use, as defined in Section 335.182, Florida Statutes, occurs, the Permittee must contact the Department.
9. Medians may be added and median openings may be changed by the Department as part of a Construction Project or Safety Project. The provision for a median might change the operation of the connection to be for right turns only.
10. All conditions in NOTICE OF INTENT WILL APPLY unless specifically changed by the Department.
11. All approved connection(s) and turning movements are subject to the Department's continuing authority to modify such connection(s) or turning movements in order to protect safety and traffic operations on the state highway or State Highway System.
12. **Transportation Control Features and Devices in the State Right of Way.** Transportation control features and devices in the Department's right of way, including, but not limited to, traffic signals, medians, median openings, or any other transportation control features or devices in the state right of way, are operational and safety characteristics of the State Highway and are not means of access. The Department may install, remove or modify any present or future transportation control feature or device in the state right of way to make changes to promote safety in the right of way or efficient traffic operations on the highway.
13. The Permittee for him/herself, his/her heirs, his/her assigns and successors in interest, binds and is bound and obligated to save and hold the State of Florida, and the Department, its agents and employees harmless from any and all damages, claims, expense, or injuries arising out of any act, neglect, or omission by the applicant, his/her heirs, assigns and successors in interest that may occur by reason of this facility design, construction, maintenance, or continuing existence of the connection facility, except that the applicant shall not be liable under this provision for damages arising from the sole negligence of the Department.
14. The Permittee shall be responsible for determining and notify all other users of the right of way.
15. Starting work on the State Right of Way means that I am accepting all conditions on the Permit.

Approved
2019-A-395-00136
David Wilks
3/18/2020

PART 5: SPECIAL PROVISIONS

NON-CONFORMING CONNECTIONS: YES NO

If this is a non-conforming connection permit, as defined in Rule Chapters 14-96 and 14-97, then the following shall be a part of this permit.

1. The non-conforming connection(s) described in this permit is (are) not permitted for traffic volumes exceeding the Permit Category on page 1 of this permit, or as specified in "Other Special Provisions" below.
2. All non-conforming connections will be subject to closure or relocation when reasonable access becomes available in the future.

OTHER SPECIAL PROVISIONS:

See attached addendum

PART 6: APPEAL PROCEDURES

You may petition for an administrative hearing pursuant to sections 120.569 and 120.57, Florida Statutes. If you dispute the facts stated in the foregoing Notice of Intended Department Action (hereinafter Notice), you may petition for a formal administrative hearing pursuant to section 120.57 (1), Florida Statutes. If you agree with the facts stated in the Notice, you may petition for an informal administrative hearing pursuant to section 120.57(2), Florida Statutes. You must file the petition with:

Clerk of Agency Proceedings
Department of Transportation
Haydon Burns Building
605 Suwannee Street, M.S. 58
Tallahassee, Florida 32399-0458

The petition for an administrative hearing must conform to the requirements of Rule 28-106.201(2) or Rule 28-106.301(2), Florida Administrative Code, and be filed with the Clerk of Agency Proceedings by 5:00 p.m. no later than 21 days after you received the Notice. The petition must include a copy of the Notice, be legible, on 8 1/2 by 11 inch white paper, and contain:

1. Your name, address, telephone number, any Department of Transportation identifying number on the Notice, if known, the name and identification number of each agency affected, if known, and the name, address, and telephone number of your representative, if any, which shall be the address for service purposes during the course of the proceeding.
2. An explanation of how your substantial interests will be affected by the action described in the Notice;
3. A statement of when and how you received the Notice;
4. A statement of all disputed issues of material fact. If there are none, you must so indicate;
5. A concise statement of the ultimate facts alleged, including the specific facts you contend warrant reversal or modification of the agency's proposed action, as well as an explanation of how the alleged facts relate to the specific rules and statutes you contend require reversal or modification of the agency's proposed action;
6. A statement of the relief sought, stating precisely the desired action you wish the agency to take in respect to the agency's proposed action.

If there are disputed issues of material fact a formal hearing will be held, where you may present evidence and argument on all issues involved and conduct cross-examination. If there are no disputed issues of material fact an informal hearing will be held, where you may present evidence or a written statement for consideration by the Department.

Mediation, pursuant to section 120.573, Florida Statutes, may be available if agreed to by all parties, and on such terms as may be agreed upon by all parties. The right to an administrative hearing is not affected when mediation does not result in a settlement.

Your petition for an administrative hearing shall be dismissed if it is not in substantial compliance with the above requirements of Rule 28-106.201(2) or Rule 28-106.301(2), Florida Administrative Code. If you fail to timely file your petition in accordance with the above requirements, you will have waived your right to have the intended action reviewed pursuant to chapter 120, Florida Statutes, and the action set forth in the Notice shall be conclusive and final.

Approved
100136
David Wilks
3/18/2020

AFFIDAVIT OF OWNERSHIP AND AUTHORIZED AGENT

As owner of the property located at The intersection of Edgewood Drive and SR 30, Santa Rosa County, Florida. I hereby designate Robert C. Krasnosky Jr. PE, Kenneth Horne and Associates for the sole purpose of Florida Department of Transportation (FDOT) Access Management and Drainage Connection permitting and to act on my behalf during the review and processing of said applications for the above referenced property.

This Agent Authorization is granted on this 22 day of October the year of 2019 and is effective until the FDOT has rendered a decision on this request and any appeal period has expired. The owner reserves the right to rescind this Agent Authorization at any time with a written notice to the FDOT.

Michael Schmidt 10/23/19
Signature of Property Owner Date

Michael W. Schmidt, P.E.
Printed Name of Owner

STATE of Florida

COUNTY of Santa Rosa

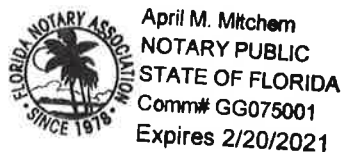
The forgoing instrument was acknowledged before me this 23rd day of October, year of 2019 by Michael W. Schmidt who () did () did not take an oath. He/she is personally known to me, () produced current Florida/Other driver's license, and/or () produced current _____ as identification.

April M Mitchem
Signature of Notary Public Date

April M Mitchem
Printed Name of Notary

2/20/2021
My Commission Expires

GG075001
Commission No. (Notary seal must be affixed)



Approved
2019-A-395-00136
David Wilks
3/18/2020



Kenneth Horne & Associates, Inc.
CIVIL ENGINEERS

December 3, 2019

Gulf Power Company
One Energy Place
Pensacola, Florida 32520
Attn: Engineering Department

Re: Edgewood Drive Turn Lane at Hwy 98
Utility Notification
KH&A Reference No. 2018-41


To Whom It May Concern:

We are submitting plans for a proposed Edgewood Drive Turn Lane at Hwy 98. The project will require the installation of a new right turn lane with two 6' wide asphalt bike lanes and a 5' wide concrete sidewalk. Should you foresee any conflicts or have any questions, please feel free to call me.

I have attached a copy of the applicable proposed construction plan sheets.

Very truly yours,

KENNETH HORNE & ASSOCIATES, INC.


Charlie Krasnosky, PE
Project Manager



Kenneth Horne & Associates, Inc.
CIVIL ENGINEERS

December 3, 2019

City of Gulf Breeze
1070 Shoreline Dr
Gulf Breeze, Florida 32561
Attn: Engineering Department

Re: Edgewood Drive Turn Lane at Hwy 98
Utility Notification
KH&A Reference No. 2018-41

To Whom It May Concern:

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KENNETH HORNE & ASSOCIATES, INC.

A handwritten signature in blue ink that reads "Charlie Krasnosky". The signature is written in a cursive, flowing style.

Charlie Krasnosky, PE
Project Manager

Approved
2019-A-395-00136
David Wilks
3/18/2020



Kenneth Horne & Associates, Inc.
CIVIL ENGINEERS

December 3, 2019

AT&T
6689 Magnolia Street
Milton, Florida 32570
Attn: Engineering Department

Re: Edgewood Drive Turn Lane at Hwy 98
Utility Notification
KH&A Reference No. 2018-41

To Whom It May Concern:

We are submitting plans for a proposed Edgewood Drive Turn Lane at Hwy 98. The project will require the installation of a new right turn lane with two 6' wide asphalt bike lanes and a 5' wide concrete sidewalk. Should you foresee any conflicts or have any questions, please feel free to call me.

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Very truly yours,

KENNETH HORNE & ASSOCIATES, INC.

A handwritten signature in blue ink that reads "Charlie Krasnosky". The signature is written in a cursive, flowing style.

Charlie Krasnosky, PE
Project Manager



Kenneth Horne & Associates, Inc.
CIVIL ENGINEERS

December 3, 2019

Mediacom
1613 Nantahala Beach Rd
Gulf Breeze, Florida 32561
Attn: Engineering Department

Re: Edgewood Drive Turn Lane at Hwy 98
Utility Notification
KH&A Reference No. 2018-41

To Whom It May Concern:

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KENNETH HORNE & ASSOCIATES, INC.

A handwritten signature in blue ink that reads "Charlie Krasnosky". The signature is written in a cursive, flowing style.

Charlie Krasnosky, PE
Project Manager

Approved
2019-A-395-00136
David Wilks
3/18/2020



Kenneth Horne & Associates, Inc.
CIVIL ENGINEERS

December 3, 2019

Holley-Navarre Water Systems
8574 Turkey Bluff Rd
Navarre, FL 32566 Attn: Engineering Department

Re: Edgewood Drive Turn Lane at Hwy 98
Utility Notification
KH&A Reference No. 2018-41

To Whom It May Concern:

We are submitting plans for a proposed Edgewood Drive Turn Lane at Hwy 98. The project will require the installation of a new right turn lane with two 6' wide asphalt bike lanes and a 5' wide concrete sidewalk. Should you foresee any conflicts or have any questions, please feel free to call me.

I have attached a copy of the applicable proposed construction plan sheets.

Very truly yours,

KENNETH HORNE & ASSOCIATES, INC.

A handwritten signature in blue ink that reads "Charlie Krasnosky". The signature is fluid and cursive, written over the printed name.

Charlie Krasnosky, PE
Project Manager



Kenneth Horne & Associates, Inc.
CIVIL ENGINEERS

December 3, 2019

Midway Water System
4971 Gulf Breeze Pkwy
Gulf Breeze, FL 32563
Attn: Engineering Department

Re: Edgewood Drive Turn Lane at Hwy 98
Utility Notification
KH&A Reference No. 2018-41

To Whom It May Concern:

We are submitting plans for a proposed Edgewood Drive Turn Lane at Hwy 98. The project will require the installation of a new right turn lane with two 6' wide asphalt bike lanes and a 5' wide concrete sidewalk. Should you foresee any conflicts or have any questions, please feel free to call me.

I have attached a copy of the applicable proposed construction plan sheets.

Very truly yours,

KENNETH HORNE & ASSOCIATES, INC.

Charlie Krasnosky, PE
Project Manager



Right Turn Lane Analysis Edgewood Drive at SR 30 (US 98) March 11, 2019

An analysis has been conducted to determine the recommended length of a proposed southbound right turn lane on Edgewood Drive at SR 30 (US 98) in Santa Rosa County. The analysis included the collection of an eight-hour turning movement count at the US 98 / Edgewood Drive intersection and a Synchro analysis of the AM, mid-day and PM peak hour volumes to determine anticipated queue lengths, which will be the primary basis for the turn lane length recommendation.

Turning Movement Count

The TMC was conducted on Thursday, February 28, 2019, from 6:00 to 9:00am, 11:00am to 1:00pm, and 3:00 to 6:00pm. Trucks were counted separately. A printout of the TMC is included in **Appendix A**. The peak hours were 7:45-8:45am, 11:45am-12:45pm, and 4:30-5:30pm.

Operational Analysis

The peak hour volumes on SR 30 (US 98) at Edgewood Drive were analyzed using the Highway Capacity Manual (HCM) methodology in Synchro for signal-controlled intersections. The signal runs with protected-permissive phasing for the US 98 eastbound approach and permissive phasing on the Edgewood Drive approach. The current AM, Mid-day and PM peak cycle lengths were used. **Table 1** shows the results of the Level-of-Service (LOS) analysis for each movement with existing cycle lengths and optimized splits.

Southbound Edgewood Drive currently consists of a single lane, but was modeled as having a right turn lane to determine the length of queues. Either a left turning or right turning queue is used to determine the length of the turn lane. The goal is to provide sufficient length to prevent turning vehicles from blocking the other movement.

The intersection operates well with AM intersection signal delay predicted to be 13.9 seconds, Mid-day delay of 13.0 and PM intersection delay is 13.5 seconds. The reports generated by Synchro, showing detailed lane information, are included as Figures 1, 2 and 3.

Table 1: Operational Approach Levels of Service and Turning Queues

Roadway	AM Peak		Mid-day Peak		PM Peak	
	LOS	95% Turning Queue ft.	LOS	95% Turning Queue ft.	Right	95% Turning Queue ft.
US 98 EB	A	75	A	53	A	73
US 98 WB	B	35	B	34	B	72
Edgewood SB	C	101	C	58	C	142

Approved
2019-A-395-00136
David Wilks
3/18/2020

Turn Lane Analysis

Edgewood Drive southbound traffic is heavier during the AM peak and Mid-day time periods. In the AM peak there are 92 left turning vehicles and 76 right turning. Simtraffic predicts with a right turn lane, and optimized signal timing splits, the 95% left turn queue would be 101 feet long and the right turning queue would be 66 feet. The PM southbound turns are less, but the traffic signal timing favors the US 98 traffic movements, allocating less green time to the southbound left turn – thus the queue is longer in the PM.

- FDOT desirable standards would be to install a 285 foot right turn lane which would include a 50 foot taper.
- As a ROW constrained intersection, a 200 foot right turn lane with 50 foot taper would accommodate the 95% predicted queue.

Simtraffic indicates the existing turn lanes on US 98 adequately accommodate traffic volumes.

Recommendation

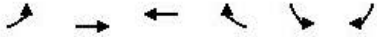
Although turning traffic queues would not often reach the 95% level, a 200 foot right turn lane, which would include a 50 foot taper, should be installed.

Approved
2019-A-395-00136
David Wilks
3/18/2020

Figure 1: Synchro AM Peak Hour Details

US 98 at Edgewood 180
AM Peak

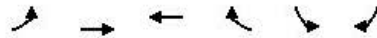
03/11/2019



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↕	↕	↗	↘	↗
Traffic Volume (vph)	53	940	1067	46	92	76
Future Volume (vph)	53	940	1067	46	92	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350			350	0	200
Storage Lanes	1			1	1	1
Taper Length (ft)	25				25	
Satd. Flow (prot)	1770	3539	3539	1583	1770	1583
Flt Permitted	0.117				0.950	
Satd. Flow (perm)	218	3539	3539	1583	1770	1583
Right Turn on Red				Yes		Yes
Satd. Flow (RTO R)				51		93
Link Speed (mph)		55	55		30	
Link Distance (ft)		742	843		647	
Travel Time (s)		9.2	10.5		14.7	
Peak Hour Factor	0.92	0.92	0.90	0.90	0.82	0.82
Shared Lane Traffic (%)						
Lane Group Flow (vph)	58	1022	1186	51	112	93
Turn Type	pm-rt	NA	NA	Perm	Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases	2			6		4
Detector Phase	5	2	6	6	4	4
Switch Phase						
Minimum Initial (s)	5.0	10.0	10.0	10.0	5.0	5.0
Minimum Split (s)	12.5	30.0	30.0	30.0	23.5	23.5
Total Split (s)	20.0	142.0	122.0	122.0	38.0	38.0
Total Split (%)	11.1%	78.9%	67.8%	67.8%	21.1%	21.1%
Yellow Time (s)	5.5	5.5	5.5	5.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.5	7.5	7.5	7.5	5.5	5.5
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	Min	Min	Min	Min	None	None
Act Effct Green (s)	48.5	48.5	33.0	33.0	10.6	10.6
Actuated g/C Ratio	0.67	0.67	0.46	0.46	0.15	0.15
w/c Ratio	0.19	0.43	0.74	0.07	0.43	0.30
Control Delay	5.6	6.2	19.4	3.9	36.3	10.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.6	6.2	19.4	3.9	36.3	10.5
LOS	A	A	B	A	D	B
Approach Delay		6.2	18.8		24.6	
Approach LOS		A	B		C	
Queue Length 50th (ft)	7	91	212	0	45	0
Queue Length 95th (ft)	20	147	330	18	99	33
Internal Link Dist (ft)		662	763		567	
Turn Bay Length (ft)	350			350		200
Base Capacity (vph)	420	3539	3539	1583	815	779
Starvation Cap Reductn	0	0	0	0	0	0

US 98 at Edgewood 180 03/06/2019 AM Peak

Synchro 9 Light Report
Page 1



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.29	0.34	0.03	0.14	0.12

Intersection Summary	
Area Type:	Other
Cycle Length:	180
Actuated Cycle Length:	72.4
Natural Cycle:	70
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.74
Intersection Signal Delay:	13.9
Intersection LOS:	B
Intersection Capacity Utilization:	55.8%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 4: US 98 & Edgewood

 142 s	 38 s
 20 s	 122 s

Intersection: 4: US 98 & Edgewood

Movement	EB	EB	EB	WB	WB	WB	SB	SB
Directions Served	L	T	T	T	T	R	L	R
Maximum Queue (ft)	74	136	121	171	120	25	91	70
Average Queue (ft)	35	91	73	131	74	15	62	35
95th Queue (ft)	75	137	122	183	136	35	101	66
Link Distance (ft)		706	706	811	811		589	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	350			350			200	
Storage Blk Time (%)								
Queuing Penalty (veh)								

Network Summary

Network wide Queuing Penalty: 0

Figure 2: Synchro Mid-day Details

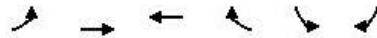
US 98 at Edgewood
Mid Day Peak 185

03/11/2019

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	73	893	974	49	56	53
Future Volume (vph)	73	893	974	49	56	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350			350	0	200
Storage Lanes	1			1	1	1
Taper Length (ft)	25			25		
Satd. Flow (prot)	1770	3539	3539	1583	1770	1583
Fit Permitted	0.147				0.950	
Satd. Flow (perm)	274	3539	3539	1583	1770	1583
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				52		87
Link Speed (mph)		55	55		30	
Link Distance (ft)		742	843		647	
Travel Time (s)		9.2	10.5		14.7	
Peak Hour Factor	0.90	0.90	0.95	0.95	0.61	0.61
Shared Lane Traffic (%)						
Lane Group Flow (vph)	81	992	1025	52	92	87
Turn Type	pm-rpt	NA	NA	Perm	Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases	2			6		4
Detector Phase	5	2	6	6	4	4
Switch Phase						
Minimum Initial (s)	5.0	10.0	10.0	10.0	5.0	5.0
Minimum Split (s)	12.5	30.0	30.0	30.0	23.5	23.5
Total Split (s)	27.0	148.0	121.0	121.0	37.0	37.0
Total Split (%)	14.6%	80.0%	65.4%	65.4%	20.0%	20.0%
Yellow Time (s)	5.5	5.5	5.5	5.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.5	7.5	7.5	7.5	5.5	5.5
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	Min	Min	Min	Min	None	None
Act Effect Green (s)	43.2	43.2	27.0	27.0	9.4	9.4
Actuated g/C Ratio	0.66	0.66	0.41	0.41	0.14	0.14
w/c Ratio	0.22	0.43	0.71	0.08	0.37	0.29
Control Delay	5.5	6.1	19.3	4.3	32.4	10.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.5	6.1	19.3	4.3	32.4	10.3
LOS	A	A	B	A	C	B
Approach Delay		6.0	18.6		21.7	
Approach LOS		A	B		C	
Queue Length 50th (ft)	10	81	169	0	33	0
Queue Length 95th (ft)	24	131	267	18	56	12
Internal Link Dist (ft)		662	763		567	
Turn Bay Length (ft)	350			350		200
Base Capacity (vph)	632	3539	3539	1583	865	818
Starvation Cap Reductn	0	0	0	0	0	0

US 98 at Edgewood 03/06/2019 Mid Day Peak 185

Synchro 9 Light Report
Page 1



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.28	0.29	0.03	0.11	0.11

Intersection Summary	
Area Type:	Other
Cycle Length:	185
Actuated Cycle Length:	65.9
Natural Cycle:	70
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.71
Intersection Signal Delay:	13.0
Intersection LOS:	B
Intersection Capacity Utilization:	52.3%
ICU Level of Service:	A
Analysis Period (min):	15



Intersection: 4:

Movement	EB	EB	EB	WB	WB	WB	SB	SB
Directions Served	L	T	T	T	T	R	L	R
Maximum Queue (ft)	51	94	87	219	153	29	48	23
Average Queue (ft)	26	34	42	139	91	11	29	9
95th Queue (ft)	53	103	96	218	165	34	58	26
Link Distance (ft)		706	706	811	811		589	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	350			350			200	
Storage Blk Time (%)								
Queuing Penalty (veh)								

Network Summary

Network wide Queuing Penalty: 0

Figure 3: Synchro PM Peak Details

US 98 at Edgewood
PM Peak 210

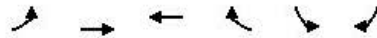
03/11/2019

	↗	→	←	↖	↘	↙
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↗↗	↗↗	↘	↘	↗
Traffic Volume (vph)	136	1058	1065	127	67	32
Future Volume (vph)	136	1058	1065	127	67	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350			350	0	200
Storage Lanes	1			1	1	1
Taper Length (ft)	25			25		
Satd. Flow (prot)	1770	3539	3539	1583	1770	1583
Fit Permitted	0.116				0.950	
Satd. Flow (perm)	216	3539	3539	1583	1770	1583
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				138		38
Link Speed (mph)		55	55		30	
Link Distance (ft)		742	843		647	
Travel Time (s)		9.2	10.5		14.7	
Peak Hour Factor	0.96	0.96	0.92	0.92	0.84	0.84
Shared Lane Traffic (%)						
Lane Group Flow (vph)	142	1102	1158	138	80	38
Turn Type	pm-rpt	NA	NA	Perm	Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases	2			6		4
Detector Phase	5	2	6	6	4	4
Switch Phase						
Minimum Initial (s)	5.0	10.0	10.0	10.0	5.0	5.0
Minimum Split (s)	12.5	30.0	30.0	30.0	23.5	23.5
Total Split (s)	35.0	175.0	140.0	140.0	35.0	35.0
Total Split (%)	16.7%	83.3%	66.7%	66.7%	16.7%	16.7%
Yellow Time (s)	5.5	5.5	5.5	5.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.5	7.5	7.5	7.5	5.5	5.5
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	Min	Min	Min	Min	None	None
Act Effect Green (s)	52.5	52.5	33.0	33.0	9.5	9.5
Actuated g/C Ratio	0.70	0.70	0.44	0.44	0.13	0.13
w/c Ratio	0.36	0.45	0.75	0.18	0.36	0.16
Control Delay	7.3	5.6	21.3	3.2	38.2	14.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.3	5.6	21.3	3.2	38.2	14.0
LOS	A	A	C	A	D	B
Approach Delay		5.8	19.4		30.4	
Approach LOS		A	B		C	
Queue Length 50th (ft)	18	95	223	0	34	0
Queue Length 95th (ft)	47	147	348	30	83	26
Internal Link Dist (ft)		662	763		567	
Turn Bay Length (ft)	350			350		200
Base Capacity (vph)	732	3539	3539	1583	711	658
Starvation Cap Reductn	0	0	0	0	0	0

US 98 at Edgewood 03/06/2019 PM Peak 210

Synchro 9 Light Report

Page 1



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.31	0.33	0.09	0.11	0.06

Intersection Summary	
Area Type:	Other
Cycle Length:	210
Actuated Cycle Length:	75.3
Natural Cycle:	70
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.75
Intersection Signal Delay:	13.5
Intersection LOS:	B
Intersection Capacity Utilization:	58.2%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 4:

Ø2	Ø4
175 s	35 s
Ø5	Ø6
35 s	140 s

Intersection: 4:

Movement	EB	EB	EB	WB	WB	WB	SB	SB
Directions Served	L	T	T	T	T	R	L	R
Maximum Queue (ft)	72	227	161	164	148	74	155	42
Average Queue (ft)	46	75	53	143	118	33	55	20
95th Queue (ft)	73	207	146	173	168	72	142	51
Link Distance (ft)		706	706	811	811		589	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	350			350			200	
Storage Blk Time (%)								
Queuing Penalty (veh)								

Network Summary

Network wide Queuing Penalty: 0

APPENDIX A

Eight-Hour Turning Movement Count

US 98 / Edgewood Drive

Approved
2019-A-395-00136
David Wilks
3/18/2020

HSA CONSULTING GROUP, INC.
 1315 COUNTRY CLUB RD.
 GULF BREEZE, FLA. 32563

ALL VEHICLES

INTERSECTION OF

SR 30 (US 98)

&

Edgewood Drive

COUNT DATE: 28-Feb-19

FILE NAME: US98&Edgewood tmc.xls

Time	Edgewood Dr Southbound			US 98 Westbound			US 98 Eastbound			TOTAL
	Left	Right	RTOR	Thru	Right	RTOR	Left	Thru	RTOR	
6:00	20	8	2	127	1	0	5	137		300
6:15	30	5	2	179	3	0	1	175		395
6:30	32	21	2	204	6	0	5	183		453
6:45	28	19	7	307	7	0	3	167		538
TOTAL	110	53	13	817	17	0	14	662		1686
7:00	24	19	4	251	6	1	12	208		525
7:15	22	22	2	231	5	0	15	247		544
7:30	16	16	2	226	9	0	12	200		481
7:45	23	13	0	300	8	1	13	207		565
TOTAL	85	70	8	1008	28	2	52	862		2115
8:00	28	12	0	272	12	0	10	258		592
8:15	24	25	2	290	14	0	9	236		600
8:30	17	22	2	205	12	0	21	239		518
8:45	21	17	0	234	9	0	17	204		502
TOTAL	90	76	4	1001	47	0	57	937		2212
11:00	21	7	0	245	18	0	15	200		506
11:15	9	5	1	215	10	0	19	239		498
11:30	13	12	2	188	12	2	18	216		463
11:45	11	9	3	237	9	0	18	208		495
TOTAL	54	33	6	885	49	2	70	863		1962
12:00	12	6	2	242	17	2	13	213		507
12:15	22	22	0	235	12	1	18	248		558
12:30	11	11	0	260	7	1	24	224		538
12:45	14	6	0	226	10	0	13	215		484
TOTAL	59	45	2	963	46	4	68	900		2087
15:00	8	11	3	250	19	2	34	259		586
15:15	15	11	1	296	23	0	27	239		612
15:30	10	6	3	273	14	2	25	257		590
15:45	25	12	0	264	26	0	35	245		607
TOTAL	58	40	7	1083	82	4	121	1000		2395
16:00	12	8	2	261	27	3	32	239		584
16:15	16	9	0	252	37	1	34	287		636
16:30	15	8	0	284	34	5	35	247		628
16:45	20	3	0	269	30	0	24	279		625
TOTAL	63	28	2	1066	128	9	125	1052		2473
17:00	14	14	0	232	34	0	33	267		594
17:15	18	7	0	280	24	0	44	265		638
17:30	19	14	0	266	33	0	25	249		606
17:45	19	11	0	249	25	0	29	228		561
TOTAL	70	46	0	1027	116	0	131	1009		2399

Approved
 2019-A-395-00136
 David Wilks
 3/18/2020

PEAK HOUR DATA 6:00 TO 9:00

PEAK HR START TIME 7:45

	Edgewood Dr Southbound			US 98 Westbound			US 98 Eastbound		TOTAL
	Left	Right	RTOR	Thru	Right	RTOR	Left	Thru	
PEAK HR TOTALS	92	72	4	1067	46	1	53	940	2275
% OF APPROACH	54.8%	42.9%	2.4%	95.8%	4.1%	0.1%	5.3%	94.7%	
PEAK HR FACTOR	0.824			0.901			0.926		

PEAK HOUR DATA 11:00 TO 13:00

PEAK HR START TIME 11:45

	Edgewood Dr Southbound			US 98 Westbound			US 98 Eastbound		TOTAL
	Left	Right	RTOR	Thru	Right	RTOR	Left	Thru	
PEAK HR TOTALS	56	48	5	974	45	4	73	893	2098
% OF APPROACH	51.4%	44.0%	4.6%	95.2%	4.4%	0.4%	7.6%	92.4%	
PEAK HR FACTOR	0.619			0.954			0.908		

PEAK HOUR DATA 15:00 TO 18:00

PEAK HR START TIME 16:30

	Edgewood Dr Southbound			US 98 Westbound			US 98 Eastbound		TOTAL
	Left	Right	RTOR	Thru	Right	RTOR	Left	Thru	
PEAK HR TOTALS	67	32	0	1065	122	5	136	1058	2485
% OF APPROACH	67.7%	32.3%	0.0%	89.3%	10.2%	0.4%	11.4%	88.6%	
PEAK HR FACTOR	0.884			0.923			0.966		

Approved
2019-A-395-00136
David Wilks
3/18/2020

HSA CONSULTING GROUP, INC.
 1315 COUNTRY CLUB RD.
 GULF BREEZE, FLA. 32563

TRUCKS ONLY

INTERSECTION OF SR 30 (US 98) & Edgewood Drive

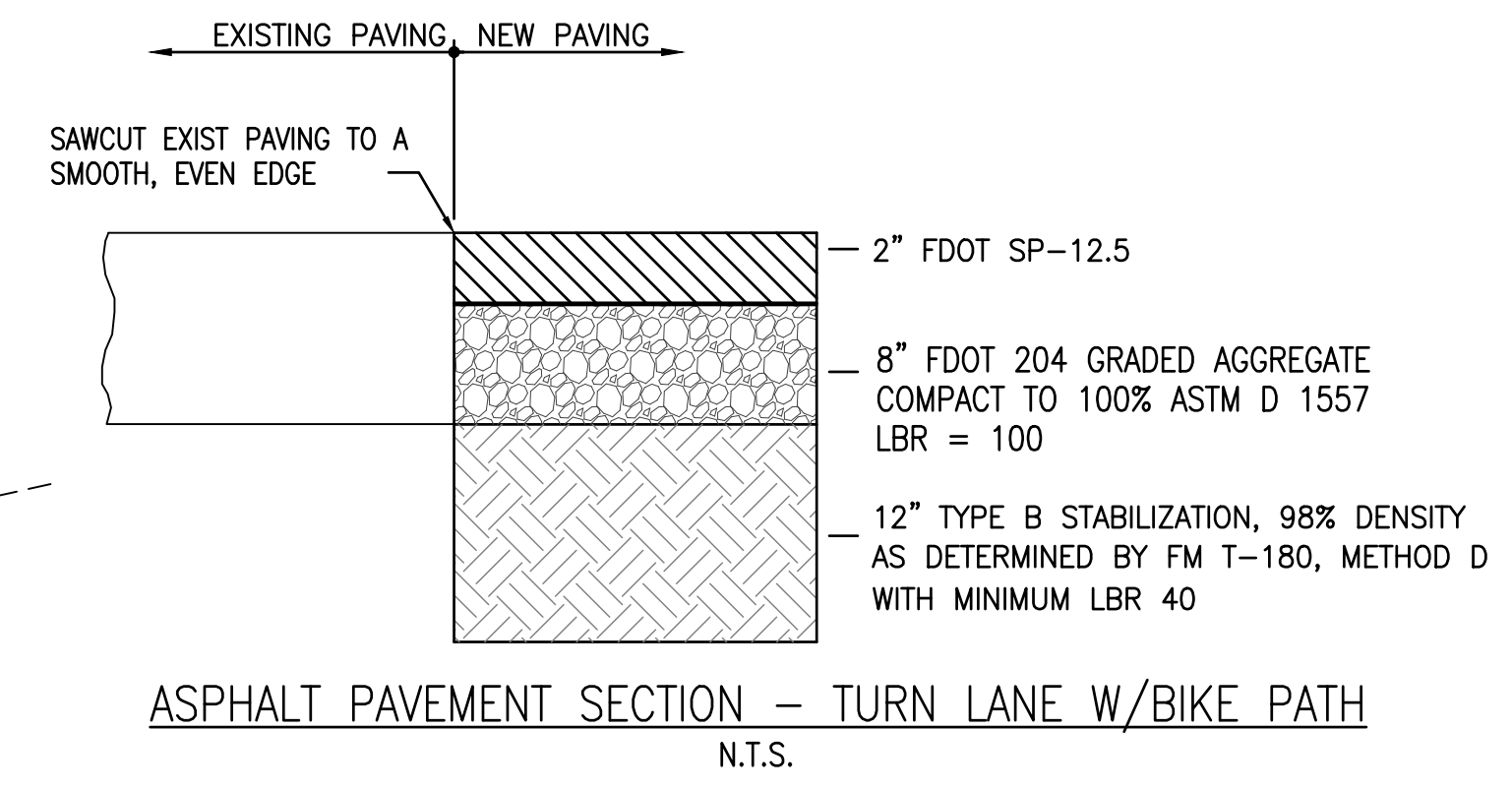
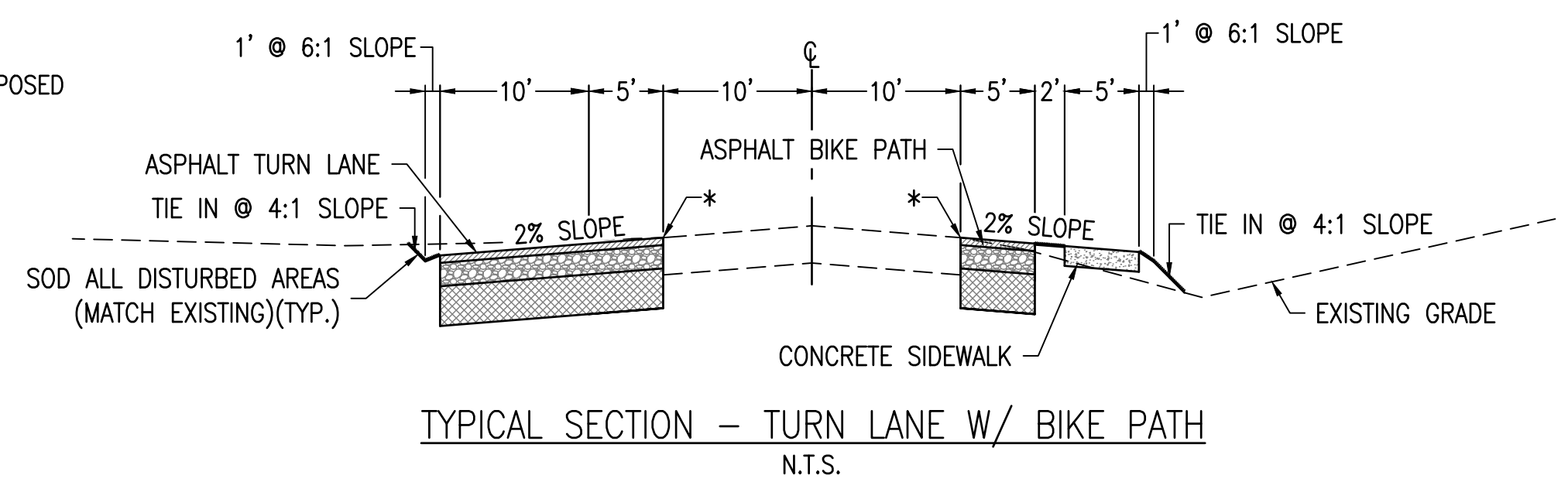
COUNT DATE: 28-Feb-19

FILE NAME: US98&Edgewood tmc.xls

Time	Edgewood Dr Southbound			US 98 Westbound			US 98 Eastbound			TOTAL
	Left	Right	RTOR	Thru	Right	RTOR	Left	Thru	Right	
6:00	1	0	0	6	0	0	0	7		14
6:15	0	0	0	9	0	0	0	8		17
6:30	0	3	1	8	0	0	0	9		21
6:45	0	0	1	8	1	0	0	9		19
TOTAL	1	3	2	31	1	0	0	33		71
7:00	0	1	0	10	1	0	0	12		27
7:15	0	1	0	9	2	0	0	11		24
7:30	0	2	0	5	1	0	0	15		24
7:45	2	0	0	6	0	0	0	16		24
TOTAL	2	4	0	30	4	0	0	54		99
8:00	1	1	0	9	0	0	0	10		22
8:15	1	1	0	15	1	0	0	15		35
8:30	2	0	0	7	0	0	0	17		29
8:45	0	0	0	15	1	0	0	15		37
TOTAL	4	2	0	46	2	0	0	57		123
11:00	1	0	0	17	0	0	0	6		24
11:15	0	0	0	16	0	0	0	14		31
11:30	1	1	1	12	1	0	0	10		27
11:45	1	0	2	13	0	0	0	14		30
TOTAL	3	1	3	58	1	0	0	44		112
12:00	0	0	2	11	1	0	0	7		21
12:15	1	1	0	13	0	0	0	10		25
12:30	0	1	0	15	0	0	0	7		23
12:45	0	0	0	12	0	0	0	10		22
TOTAL	1	2	2	51	1	0	0	34		91
15:00	1	2	2	10	0	0	0	12		27
15:15	2	0	1	13	0	0	0	17		34
15:30	2	0	2	12	0	0	0	12		29
15:45	1	1	0	13	2	0	0	7		25
TOTAL	6	3	5	48	2	0	0	48		115
16:00	0	0	0	12	0	0	0	11		24
16:15	0	1	0	19	0	0	0	2		26
16:30	0	0	0	11	2	0	0	8		21
16:45	1	0	0	11	0	0	0	4		16
TOTAL	1	1	0	53	2	0	0	25		87
17:00	0	2	0	4	0	0	0	3		9
17:15	2	0	0	7	0	0	0	10		19
17:30	0	0	0	11	1	0	0	4		16
17:45	1	0	0	10	0	0	0	3		14
TOTAL	3	2	0	32	1	0	0	20		58

Approved
 2019-A-395-00136
 David Wilks
 3/18/2020

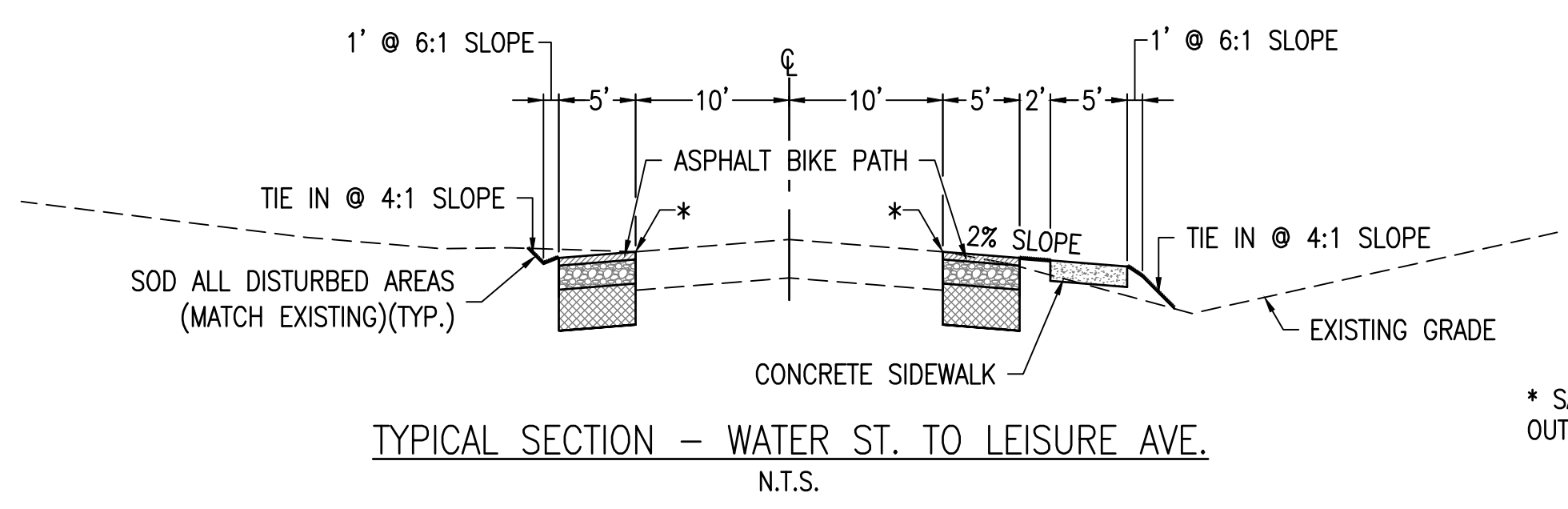
- 1 SEE DETAIL FOR PROPOSED ASPHALT PAVEMENT, INCLUDING; BIKE PATH AND INTERSECTION TURNOUTS
- 2 SEE DETAIL FOR PROPOSED CONCRETE SIDEWALK
- 3 SEE DETAIL FOR PROPOSED CONCRETE DRIVEWAYS



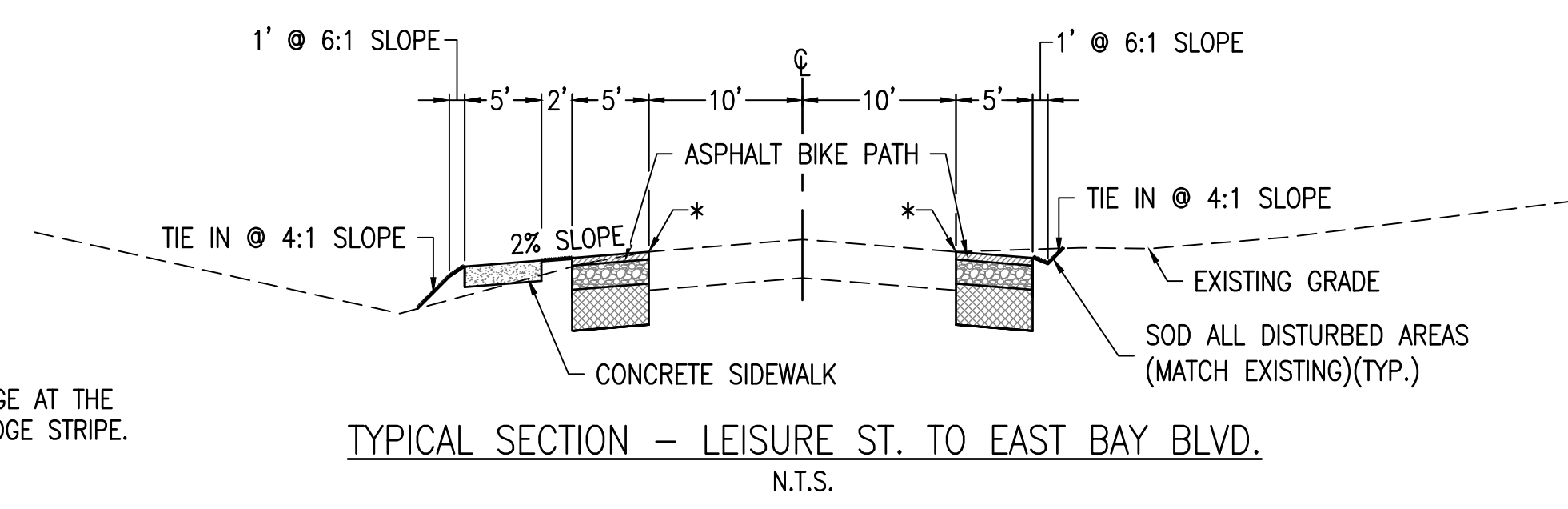
ADDITIONAL ALTERNATE BID NO. 1
 1" FDOT SP 9.5 ASPHALT OVERLAY FROM HWY 98 TO EAST BAY BLVD, OVERLAY TO INCLUDE ALL SIDE STREET TURNOUTS (NEW AND EXISTING) TO THE TANGENT AND THE NEW BIKE LANES.

SEE CRITICAL CROSS SECTION SHEETS FOR ALL CULVERT CROSSINGS AND DRIVEWAYS

- 4 SEE DETAIL FOR PROPOSED ADDITIVE ALTERNATE ASPHALT OVERLAY



* SAW-CUT A CLEAN STRAIGHT EDGE AT THE OUTSIDE EDGE OF THE EXISTING EDGE STRIPE.



- BENCHMARKS:**
- 58-09-D03V - A Florida Department of Transportation concrete monument located on the south right of way of U.S. Highway #98 and 600'+/- east of the centerline of Lighthouse Drive. Elevation = 39.71'
 - 753/72A - An "X" in the north bonnet bolt of a fire hydrant located at the northwest corner of the intersection of U.S. Highway #98 and Edgewood Drive. Elevation = 39.36'
 - 753/72B - An "X" in the north bonnet bolt of a fire hydrant located at the south right of way of Sundown Drive and 55'+/- west of centerline of Edgewood Drive. Elevation = 40.29'
 - 753/73A - An "X" in the west bonnet bolt of a fire hydrant located at the southeast corner of the intersection of Edgewood Drive and Perch Street. Elevation = 41.86'
 - 753/73B - An "X" in the north bonnet bolt of a fire hydrant located at the southeast corner of the intersection of Edgewood Drive and Marlin Street. Elevation = 40.30'
 - 753/73C - An "X" in the north bonnet bolt of a fire hydrant located at the southeast corner of the intersection of Edgewood Drive and Lansford Street. Elevation = 35.78'
 - 753/74A - An "X" in the northwest bonnet bolt of a fire hydrant located at the southeast corner of the intersection of Edgewood Drive and Longview Street. Elevation = 34.72'
 - 753/74B - An "X" in the northwest bonnet bolt of a fire hydrant located at the northeast corner of the intersection of Edgewood Drive and Leisure Street. Elevation = 34.74'
 - 753/74C - A 60d nail in the west side of a power pole located at the northeast corner of the intersection of Edgewood Drive and Liberty Street. Elevation = 31.83'
 - 753/74D - A 60d nail in the west side of a power pole located at the northeast corner of the intersection of Edgewood Drive and Flintwood Street. Elevation = 31.52'
 - 753/74E - A 60d nail in the west side of a power pole located at the southeast corner of the intersection of Edgewood Drive and Redfield Street. Elevation = 32.37'
 - 753/75A - A 60d nail in the west side of a power pole located at the northeast corner of the intersection of Edgewood Drive and Indian Street. Elevation = 30.77'
 - 753/75B - A 60d nail in the west side of a power pole located at the southeast corner of the intersection of Edgewood Drive and Glassport Street. Elevation = 28.94'
 - 753/75C - An "X" in the north bonnet bolt of a fire hydrant located at the southwest corner of the intersection of Edgewood Drive and Bellingham Street. (fire hydrant leans to the east) Elevation = 33.21'
 - 753/75D - A cotton gin spike in the west side of a power pole located at the northeast corner of the intersection of Edgewood Drive and Kempton Street. Elevation = 33.30'
 - 753/75E - A cotton gin spike in the west side of a power pole located at the northeast corner of the intersection of Edgewood Drive and Fern Street. Elevation = 32.39'
 - 753/75F - An "X" in the northwest bonnet bolt of a fire hydrant located at the northeast corner of the intersection of Edgewood Drive and Federal Street. Elevation = 33.83'
 - 753/76A - A cotton gin spike in the west side of a power pole located at the northeast corner of the intersection of Edgewood Drive and Fairmont Street. Elevation = 30.33'
 - 753/76B - A cotton gin spike in the west side of a power pole located at the southeast corner of the intersection of Edgewood Drive and Hartland Street. Elevation = 30.35'
 - 753/76C - A 60d nail in the east side of a power pole located at the southwest corner of the intersection of Edgewood Drive and Codell Street. Elevation = 29.34'
 - 753/76D - An "X" in the northwest bonnet bolt of a fire hydrant located at the southeast corner of the intersection of Edgewood Drive and Castlenood Street. Elevation = 29.79'
 - 753/76E - A 60d nail in the east side of a power pole located at the west right of way of Edgewood Drive across from Bushton Street. Elevation = 17.03'
 - 753/76F - A 60d nail in the east side of a power pole located at the west right of way of Edgewood Drive across from Bryant Street. Elevation = 15.35'
 - 753/76G - An "X" in the north bonnet bolt of a fire hydrant located at the southeast corner of the intersection of Edgewood Drive and Britt Street. Elevation = 17.30'
 - 753/77A - A 60d nail in the east side of a power pole located at the northwest corner of the intersection of Edgewood Drive and Admiral Street -Koppel Drive. Elevation = 13.01'
 - 753/77B - An "X" in the northwest bonnet bolt of a fire hydrant located at the southeast corner of the intersection of Edgewood Drive and DeSoto Street. Elevation = 14.31'
 - 753/77C - A 60d nail in the east side of a power pole located at the northwest corner of the intersection of Edgewood Drive and Bluefish Road. Elevation = 10.91'
 - 753/77D - An "X" in the north bonnet bolt of a fire hydrant located at the northeast corner of the intersection of Edgewood Drive and Arch Road. Elevation = 11.21'
 - 753/77E - A 60d nail in the north side of a power pole located at the southwest corner of the intersection of Edgewood Drive and East Bay Boulevard. Elevation = 6.94'
 - 753/78A - An "X" in the south bonnet bolt of a fire hydrant located at the northeast corner of the intersection of Koppel Drive (Elkhart Drive) and Arch Road. Elevation = 4.16'
 - 753/78B - A railroad spike in the east side of a 14" pine tree located at the northwest corner of the intersection of Castlenood Street and Camden Drive. Elevation = 31.33'
 - 753/78C - An "X" in the west end of a concrete headwall located at the southwest corner of the intersection of East bay Boulevard and Koppel Drive. Elevation = 6.70'

SURVEYOR'S NOTES:

- The underground utilities shown have been located from field survey information and existing drawings. The surveyor has not physically located the underground utilities. The surveyor does not certify that the underground utilities shown comprise all such utilities or that they are the exact size, material, or location as indicated.
- This survey does not reflect or determine ownership.
- This survey is subject to any facts that may be disclosed by a full and accurate title search.
- This survey is subject to setbacks, easements, and restrictions of record.
- To assure the contractor is on the same vertical and horizontal datum as this survey, it is strongly recommended that vertical checks be made between two benchmarks and that horizontal checks be made between three control points or property corners.
- Sub-surface improvements, if any, not located.
- Due to current safety regulations, we are unable to access any sewer manholes and/or structures in order to verify pipe size or material. Pipe size and material has been shown as per plans or by approximate measurements. It is strongly recommended that size and material are verified before any design work begins.
- Coordinates shown are State Plane Coordinates referenced to N.A.D. 83 datum, 2011 adjustment, Florida North Zone and expressed in U.S. survey feet.
- Coordinates are derived by using the Trimble and Florida Department of Transportation continuously operating reference station (CORS) network.

- SURVEY LEGEND:**
- N Northing
 - E Easting
 - Z Elevation
 - R/W Right of way
 - P.C. Point of curvature
 - P.T. Point of tangency
 - P.I. Point of intersection
 - P.C.C. Point of compound curvature
 - P.R.C. Point of reverse curvature
 - BM Benchmark
 - ELEV Elevation
 - FFE Finished floor elevation
 - INV Invert
 - FL Flow line
 - CP Concrete pipe
 - CPP Corrugated plastic pipe
 - CMP Corrugated metal pipe
 - FVC Polyvinyl chloride pipe
 - MP Metal pipe
 - o 1" Iron pipe found
 - o 1/2" Iron rod found
 - o 1/2" Capped iron rod set #T073
 - o 1/2" Capped iron rod found #noted
 - o Crimped iron pipe found
 - o 4"x4" Concrete monument found #noted
 - o 4"x4" D.O.T. Concrete monument found
 - o Nail and disk found #noted
 - o Permanent control point found #noted
 - o Nail and flag set
 - o Guy wire
 - o Power pole
 - o Power pole with underground cable
 - o Power pole with underground electric
 - o Power pole with underground telephone
 - o Mailbox
 - o Reflector
 - o Storm grate
 - o Road sign
 - o Guard post
 - o Underground gas marker
 - o Underground telephone marker
 - o Pedestrian crossing pole
 - o Meter pole
 - o Water stub-out

- Wood/metal post
- Traffic signal control box
- Spot elevation
- Contour line
- Chain link fence
- Wood fence
- Wire fence
- Steel cable fence
- Approximate limits of wood line
- Anchor line
- Cable line
- Electric line
- Gas line
- Storm sewer line
- Telephone line
- Water line
- Asphalt
- Brick
- Concrete
- Dirt road
- Gravel/rip rap
- Ornamental tree
- Pine tree
- Oak tree
- Holly tree
- Dogwood tree
- Crape myrtle tree
- Palm tree
- Maple tree
- Magnolia tree
- Cedar tree
- Papcorn tree
- Century plant
- Mimosa tree
- Mulberry tree
- Sago palm
- Miscellaneous tree

REVISIONS

NO.	DATE	DESCRIPTION

Kenneth Horne & Associates, Inc.
 CIVIL ENGINEERS
 PO BOX 10669, PENSACOLA, FLORIDA 32524
 7201 N. 9TH AVENUE, SUITE 6, PENSACOLA, FLORIDA 32504
 (850) 471-9005 info@kh-a.com FAX (850) 471-0093
 FL. CERTIFICATE OF AUTHORIZATION NO. 9288

SRCO EDGEWOOD DRIVE
 DRAINAGE AND ROADWAY IMPROVEMENTS
 TYPICAL SECTIONS, SURVEY NOTES AND LEGEND

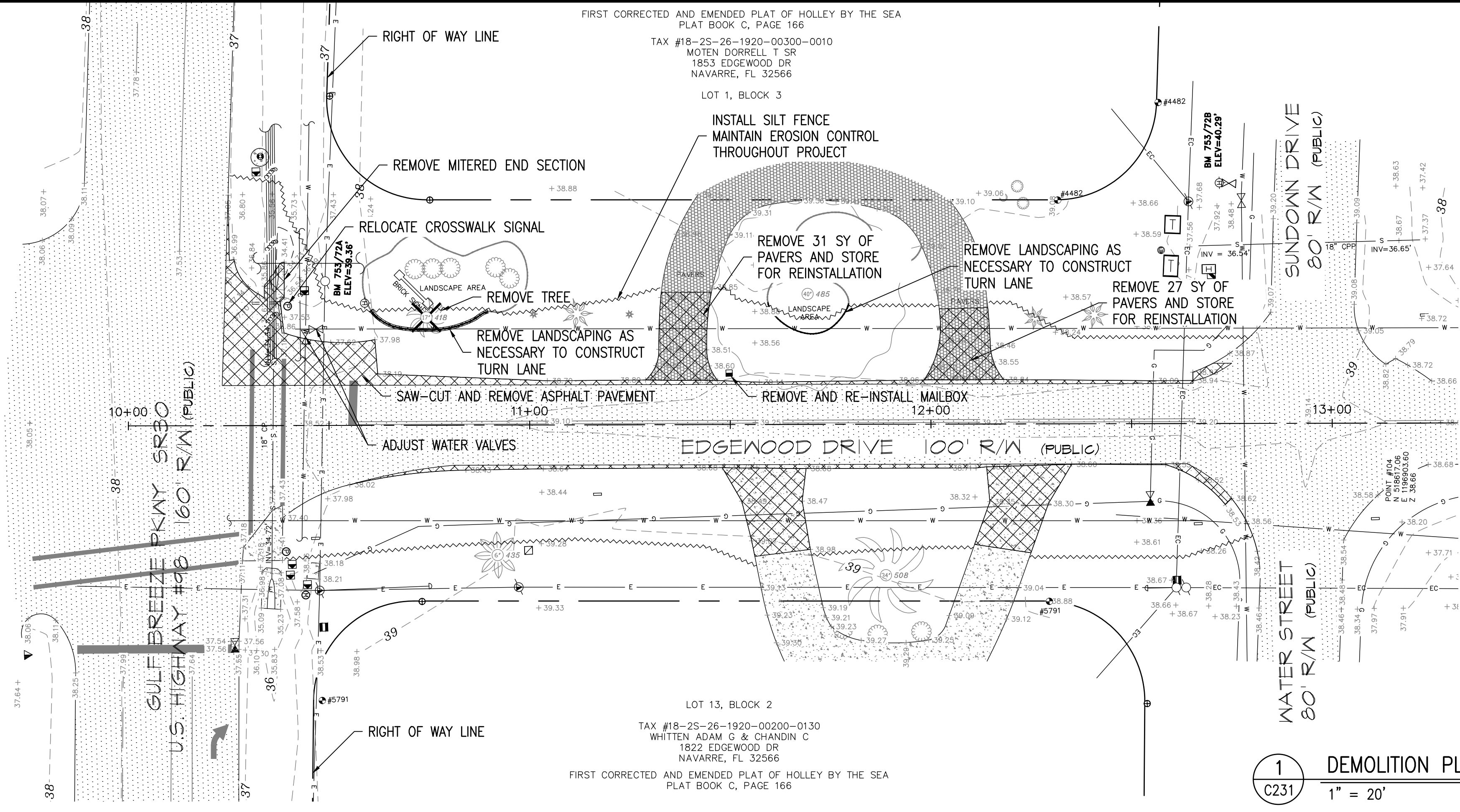
PROJECT NO: 2018-41
 SHEET: 2018-41-3 OF 3
 DATE: 1/10/2020
 SCALE: N.T.S.
 BY: NOT

APPROVED: David Wilks
 3/18/2020

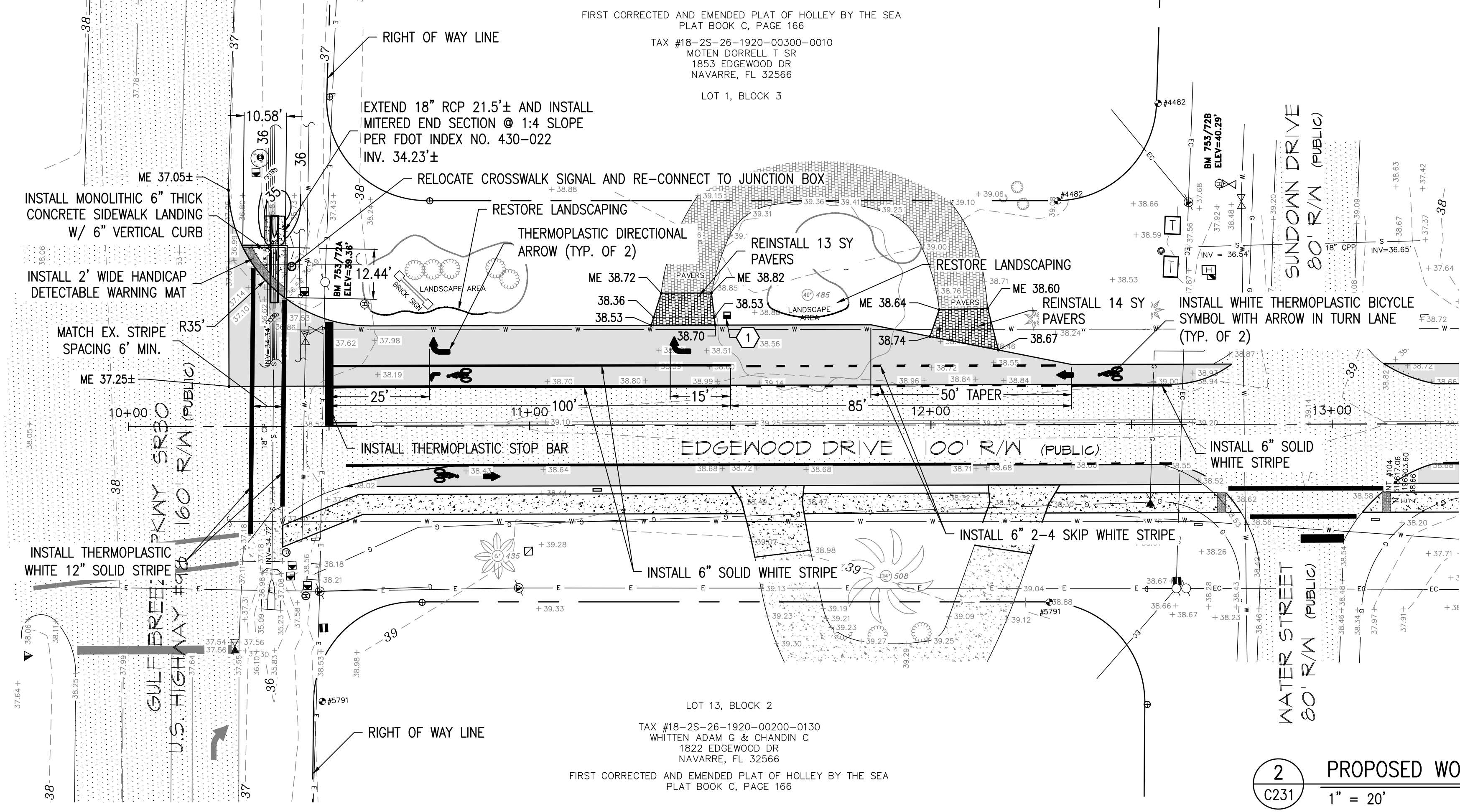
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A B C D E F G H

1
2
3
4
5
6



1 DEMOLITION PLAN - TURN LANE
C231 1" = 20'



2 PROPOSED WORK - TURN LANE
C231 1" = 20'

A B C D E F G H

NO.	DATE	REVISIONS

THIS DRAWING IS THE PROPERTY OF
KENNETH HORNE & ASSOCIATES, INC. AND IS NOT TO BE
REPRODUCED IN WHOLE OR IN PART. IT IS NOT TO BE USED ON
ANY OTHER PROJECT AND IS TO BE RETURNED UPON REQUEST.

ROBERT C. KRASNOSKY
FL. PE. 49949

Kenneth Horne & Associates, Inc.
CIVIL ENGINEERS

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FL. CERTIFICATE OF AUTHORIZATION NO. 8288

SRCO EDGEWOOD DRIVE
DRAINAGE AND ROADWAY IMPROVEMENTS

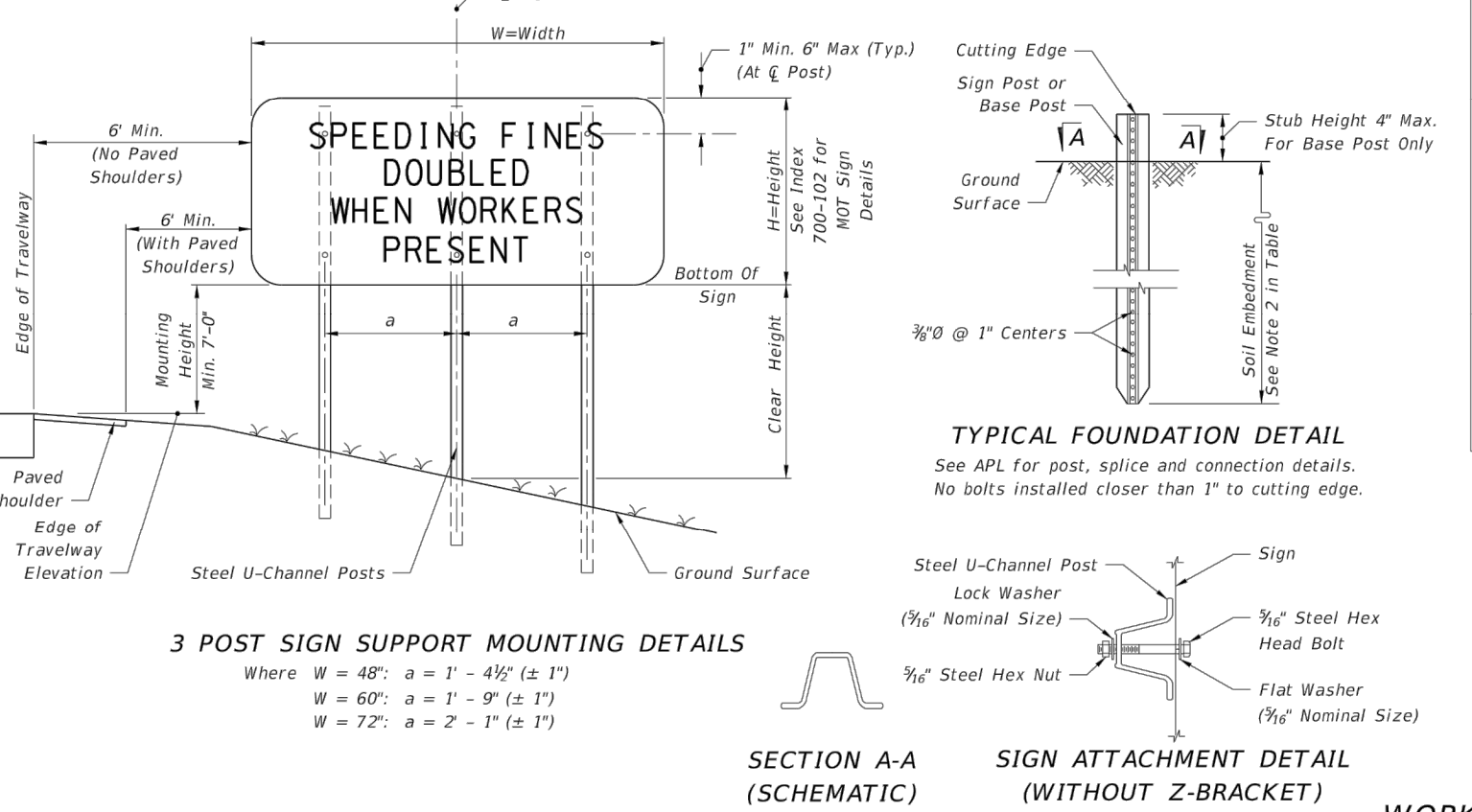
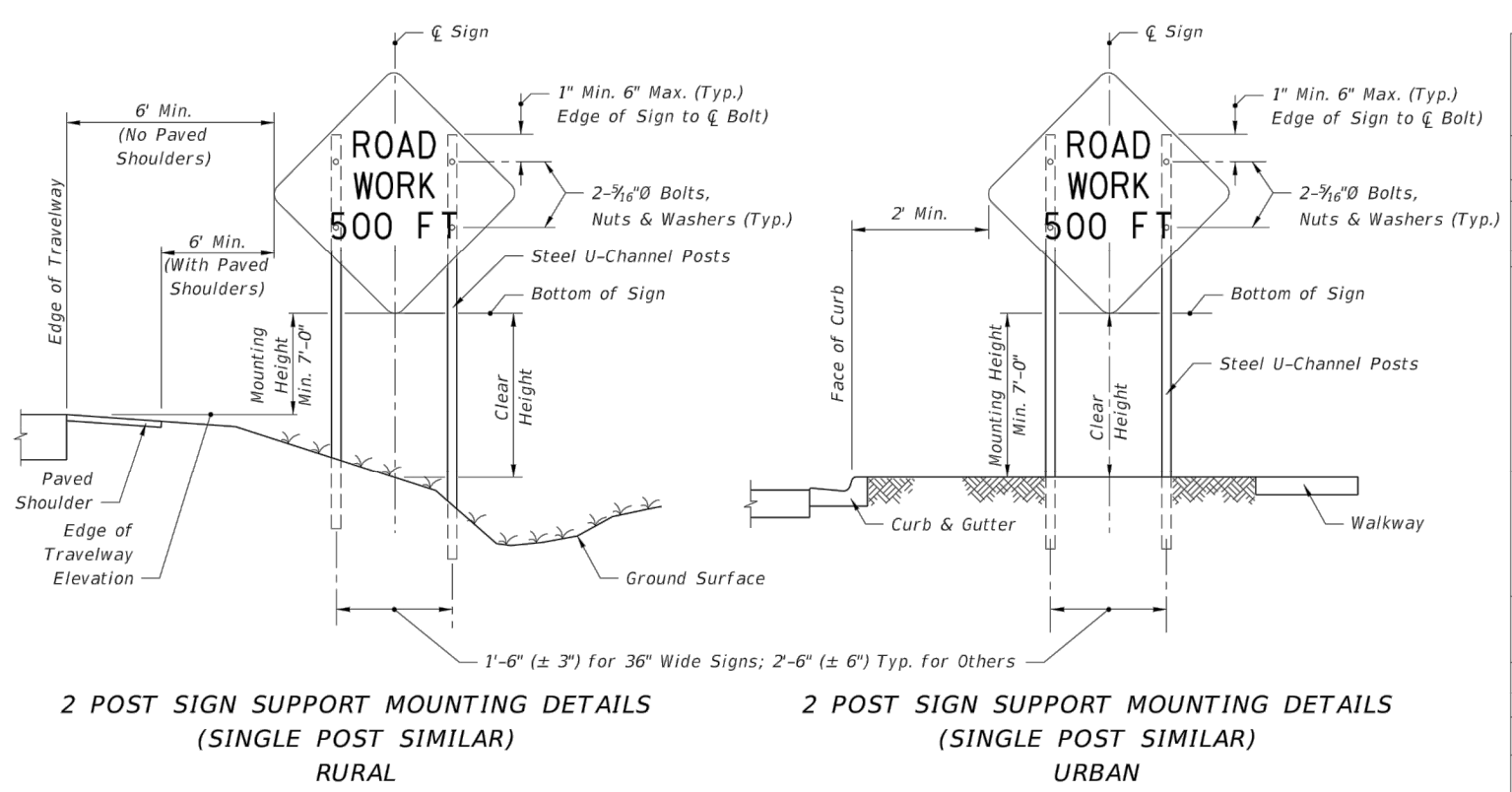
TURN LANE PLAN

SANTA ROSA FLORIDA

DRAWN BY: PLC	PROJECT NO: 2018-41
DESIGNED BY: RCK	C231 approved
CHECKED BY: RCK	SHEET: 2019-07-30-0136
DATE: 1/10/2020	David Wilks
SCALE: 1" = 20'	3/18/2020
BY:	

TEMPORARY SIGN SUPPORT NOTES:

- All signs shall be post mounted when work operations exceed one day except for:
 - Road closure signs mounted in accordance with the vendor drawing for the Type III Barricade shown on the APL.
 - Pedestrian advanced warning or pedestrian regulatory signs mounted on sign supports in accordance with the vendor drawing shown on the APL.
 - Median barrier mounted signs per Index 700-013.
- Unless shielded with barrier or outside of the Clear Zone, signs mounted on temporary supports or barricades, and barricade/sign combination must be crashworthy in accordance with NCHRP 350 requirements and included on the Approved Products List (APL).
- Use only approved systems listed on the Department's Approved Products List (APL).
- Manufacturers seeking approval of U-Channel and steel square tube sign support assemblies for inclusion on the Approved Products List (APL) must submit a APL application, design calculations (for square tube only), and detailed drawings showing the product meets all the requirements of this Index.
- Provide 3 lb/ft Steel U-Channel Posts with a minimum section modulus of 0.43 in³ for 60 ksi steel, a minimum section modulus of 0.37 in³ for 70 ksi steel, or a minimum section modulus of 0.34 in³ for 80 ksi steel.
- Provide 4 lb/ft Steel U-Channel Posts with a minimum section modulus of 0.56 in³ for 60 ksi steel, or a minimum section modulus of 0.47 in³ for 70 ksi or 80 ksi steel.
- U-channel posts shall conform with ASTM A 499, Grade 60, or ASTM A 576, Grade 1080 with a minimum yield strength of 60 ksi. Square tube posts shall conform with ASTM A 653, Grade 50, or ASTM A 1011, Grade 50.
- Sign attachment bolts, washers, nuts, and spacers shall conform with ASTM A307 or A 36.
- For diamond warning signs with supplement plaque (up to 5'x1' in area), use 4 lb/ft posts for up to 10 ft Clear Height (measure to the bottom of diamond warning sign).
- Install 4 lb/ft Steel U-Channel Posts with approved breakaway splice in accordance with the manufacturer's detail shown on the APL.
- The contractor may install 3 lb/ft Steel U-Channel Posts with approved breakaway splice in accordance with the manufacturer's detail shown on the APL.
- Install all posts plumb.
- The contractor may set posts in preformed holes to the specified depth with suitable backfill tamped securely on all sides, or drive 3 lb/ft sign posts and any size base post in accordance with the manufacturer's detail shown on the APL.

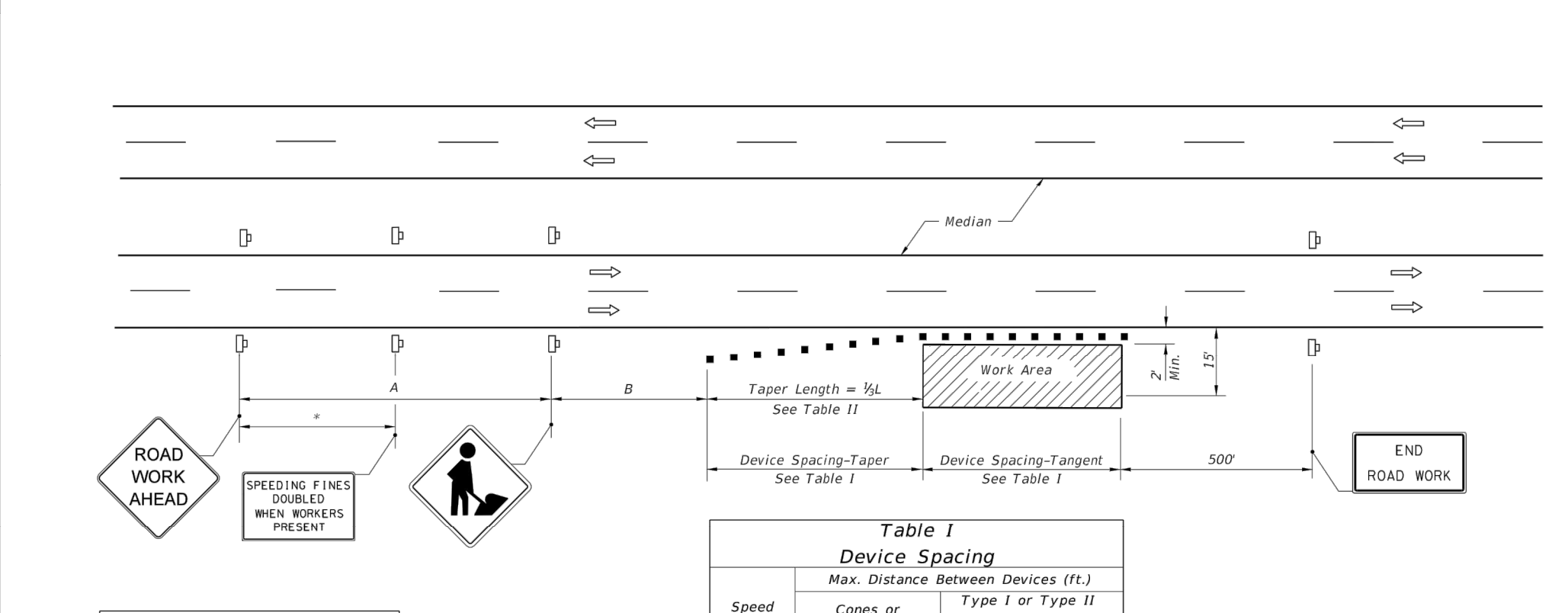


POST AND FOUNDATION TABLE FOR WORK ZONE SIGNS

SIGN SHAPE	SIGN SIZE (Inches)	NUMBER OF STEEL U CHANNEL POSTS
Octagon	30x30	1
Triangle	36x36x36	1
	48x48x48	1
	60x60x60	2
	24x18	1
	24x30	1
Rectangle (W x H)	30x24	1
	36x18	1
	36x24	1
	48x18	1
	48x24	1
	36x48	2
	48x30	2
	48x36	2
	54x36	2
	48x60	3
60x54	3	
Square	120x60	4
	30x30	1
Diamond (See Note 1)	36x36	2
	48x48	2
Circle	360	2

- Notes For Table:**
- Use 3 lb/ft posts for Clear Height up to 10' and 4 lb/ft posts for Clear Height up to 12'.
 - Minimum foundation depth is 4.0' for 3 lb/ft posts and 4.5' for 4 lb/ft posts.
 - For both 3 lb/ft and 4 lb/ft base or sign posts installed in rock, a minimum cumulative depth of 2' of rock layer is required.
 - The soil plate as shown on the APL vendor drawing is not required for base posts or sign posts installed in existing rock (as defined in Note 3), asphalt roadway, shoulder pavement or soil under sidewalk.

LAST REVISION: 11/01/18	DESCRIPTION: GENERAL INFORMATION FOR TRAFFIC CONTROL THROUGH WORK ZONES	FY 2019-20 STANDARD PLANS	INDEX: 102-600	SHEET: 5 of 12
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DISTANCE BETWEEN SIGNS

Speed	Spacing (ft.)
40 mph or less	200
45 mph	350
50 mph or greater	500

Table I Device Spacing

Speed (mph)	Max. Distance Between Devices (ft.)			
	Cones or Tubular Markers	Type I or Type II Barricades or Vertical Panels or Drums	Taper	Tangent
25	25	50	25	30
30 to 45	25	50	30	30
50 to 70	25	50	50	100

Table II Taper Length - Shoulder

Speed (mph)	Shoulder Width (ft.)			Notes
	8'	10'	12'	
25	28	35	42	L = WS ¹ 60
30	40	50	60	
35	55	68	82	L = WS ¹ 60
40	72	90	107	
45	120	150	180	L = WS ¹ 60
50	133	167	200	
55	147	183	220	L = WS ¹ 60
60	160	200	240	
65	173	217	260	L = WS ¹ 60
70	187	233	280	

- GENERAL NOTES:**
- When a high volume of work vehicles are entering and leaving the Work Area at speeds slower than 10 MPH below the posted speed, place an MUT-5-66 sign in the ROAD WORK AHEAD sign location and shift the ROAD WORK AHEAD sign upstream 500 ft.
 - This TCZ plan also applies to work performed in the median more than 2' but less than 15' from the edge of travelway.
 - When work is being performed on a multilane undivided roadway the signs normally mounted in the median (as shown) shall be omitted.
 - WORKERS signs to be removed or fully covered when no work is being performed.
 - SHOULDER WORK sign may be used as an alternate to the WORKER sign.
 - When a side road intersects the highway within the TTC zone, additional TTC devices shall be placed in accordance with other applicable TCZ Indexes.
 - For general TCZ requirements and additional information, refer to Index 102-600.
- DURATION NOTES:**
- Signs and channelizing devices may be omitted if all of the following conditions are met:
 - Work operations are 60 minutes or less.
 - Vehicles in the work area have high-intensity, rotating, flashing, oscillating, or strobe lights operating.

LAST REVISION: 11/01/17	DESCRIPTION: MULTILANE, WORK ON SHOULDER	FY 2019-20 STANDARD PLANS	INDEX: 102-612	SHEET: 1 of 1
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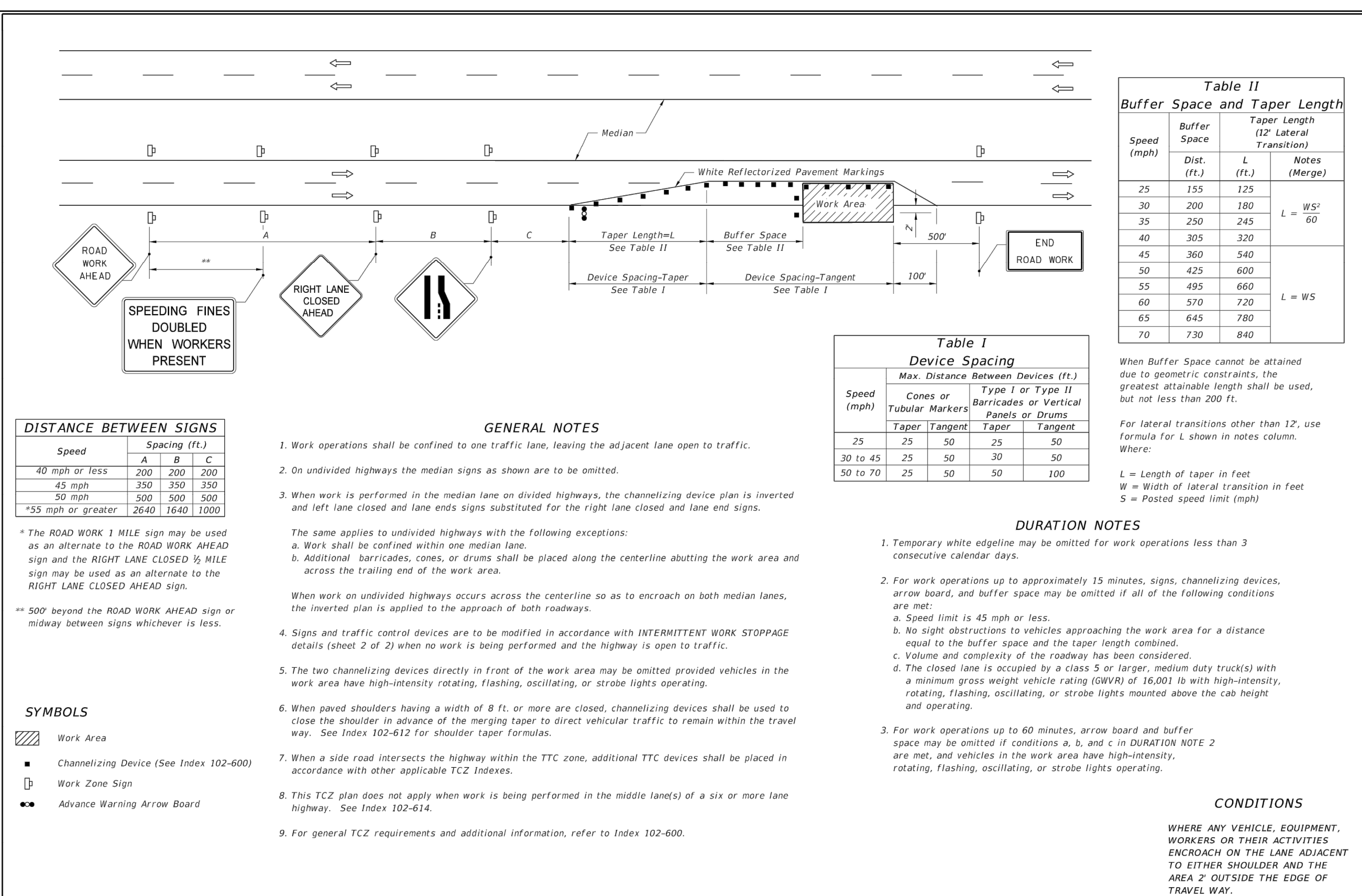


Table II Buffer Space and Taper Length

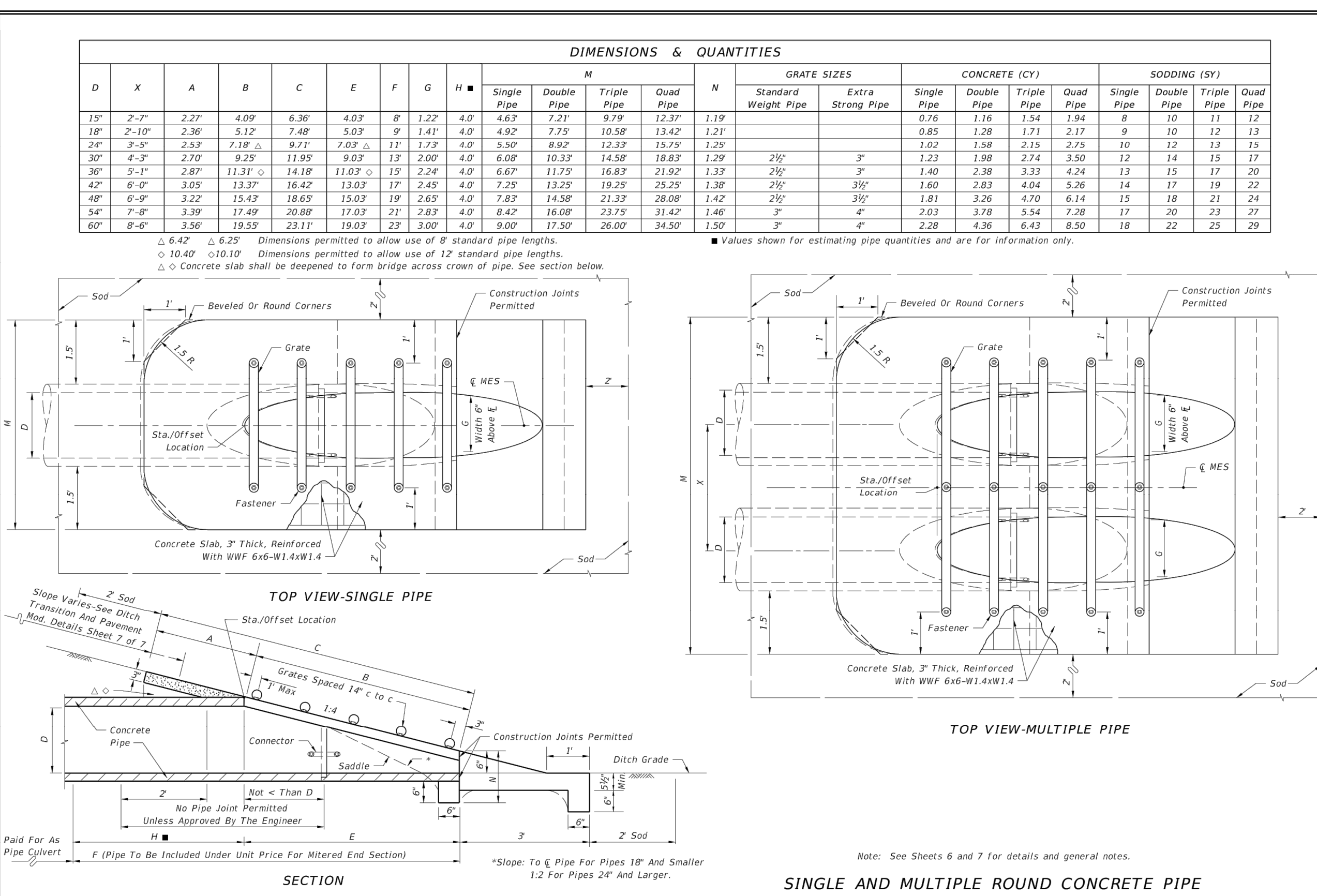
Speed (mph)	Buffer Space (ft.)		Taper Length (ft.)		Notes
	A	B	A	B	
25	155	125	155	125	L = WS ¹ 60
30	200	180	200	180	
35	250	245	250	245	L = WS ¹ 60
40	305	320	305	320	
45	360	540	360	540	L = WS ¹ 60
50	425	600	425	600	
55	495	660	495	660	L = WS ¹ 60
60	570	720	570	720	
65	645	780	645	780	L = WS ¹ 60
70	730	840	730	840	

Table I Device Spacing

Speed (mph)	Max. Distance Between Devices (ft.)			
	Cones or Tubular Markers	Type I or Type II Barricades or Vertical Panels or Drums	Taper	Tangent
25	25	50	25	30
30 to 45	25	50	30	30
50 to 70	25	50	50	100

- GENERAL NOTES:**
- Work operations shall be confined to one traffic lane, leaving the adjacent lane open to traffic.
 - On undivided highways the median signs as shown are to be omitted.
 - When work is performed in the median lane on divided highways, the channelizing device plan is inverted and left lane closed and lane end signs substituted for the right lane closed and lane end signs.
 - The same applies to undivided highways with the following exceptions:
 - Work shall be confined within one median lane.
 - Additional barricades, cones, or drums shall be placed along the centerline abutting the work area and across the trailing end of the work area.
 - When work on undivided highways occurs across the centerline so as to encroach on both median lanes, the inverted plan is applied to the approach of both roadways.
 - Signs and traffic control devices are to be modified in accordance with INTERMITTENT WORK STOPPAGE details (sheet 2 of 2) when no work is being performed and the highway is open to traffic.
 - The two channelizing devices directly in front of the work area may be omitted provided vehicles in the work area have high-intensity rotating, flashing, oscillating, or strobe lights operating.
 - When paved shoulders having a width of 8 ft. or more are closed, channelizing devices shall be used to close the shoulder in advance of the merging taper to direct vehicular traffic to remain within the travel way. See Index 102-612 for shoulder taper formulas.
 - When a side road intersects the highway within the TTC zone, additional TTC devices shall be placed in accordance with other applicable TCZ Indexes.
 - This TCZ plan does not apply when work is being performed in the middle lane(s) of a six or more lane highway. See Index 102-614.
 - For general TCZ requirements and additional information, refer to Index 102-600.
- DURATION NOTES:**
- Temporary white edgeline may be omitted for work operations less than 3 consecutive calendar days.
 - For work operations up to approximately 15 minutes, signs, channelizing devices, arrow board, and buffer space may be omitted if all of the following conditions are met:
 - Speed limit is 45 mph or less.
 - No sight obstructions to vehicles approaching the work area for a distance equal to the buffer space and the taper length combined.
 - Volume and complexity of the roadway has been considered.
 - The closed lane is occupied by a class 5 or larger, medium duty truck(s) with a minimum gross weight vehicle rating (GVWR) of 16,000 lb with high-intensity, rotating, flashing, oscillating, or strobe lights mounted above the cab height and operating.
 - For work operations up to 60 minutes, arrow board and buffer space may be omitted if conditions a, b, and c in DURATION NOTE 2 are met, and vehicles in the work area have high-intensity, rotating, flashing, oscillating, or strobe lights operating.
- CONDITIONS:**
- WHERE ANY VEHICLE, EQUIPMENT, WORKERS OR THEIR ACTIVITIES ENCRoACH ON THE LANE ADJACENT TO EITHER SHOULDER AND THE AREA 2' OUTSIDE THE EDGE OF TRAVELWAY.

LAST REVISION: 11/01/17	DESCRIPTION: MULTILANE, WORK WITHIN TRAVEL WAY MEDIAN OR OUTSIDE LANE	FY 2019-20 STANDARD PLANS	INDEX: 102-613	SHEET: 1 of 2
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DIMENSIONS & QUANTITIES

D	X	A	B	C	E	F	G	H	M	N	GRATE SIZES			CONCRETE (CY)				SODDING (SY)			
											Standard Weight Pipe	Extra Strong Pipe	Single Pipe	Double Pipe	Triple Pipe	Quad Pipe	Single Pipe	Double Pipe	Triple Pipe	Quad Pipe	
15"	2'-0"	2.27'	4.09'	6.36'	4.03'	8'	1.22'	4.0'	4.63'	7.21'	9.79'	12.37'	1.19'	0.76	1.16	1.54	1.94	8	10	11	12
18"	2'-10"	2.36'	5.12'	7.48'	5.03'	9'	1.41'	4.0'	4.92'	7.75'	10.58'	13.42'	1.21'	0.85	1.28	1.71	2.17	9	10	12	13
24"	3'-5"	2.53'	7.18'	9.71'	7.03'	11'	1.73'	4.0'	5.50'	8.92'	12.33'	15.75'	1.25'	1.02	1.58	2.15	2.75	10	12	13	15
30"	4'-3"	2.70'	9.25'	11.95'	9.05'	12'	2.00'	4.0'	6.08'	10.33'	14.58'	18.83'	1.29'	1.23	1.98	2.74	3.50	12	14	15	17
36"	5'-1"	2.87'	11.31'	14.18'	11.03'	15'	2.24'	4.0'	6.67'	11.75'	16.83'	21.92'	1.33'	1.40	2.38	3.33	4.24	13	15	17	20
42"	6'-0"	3.05'	13.37'	16.42'	13.03'	17'	2.45'	4.0'	7.25'	13.25'	19.25'	25.25'	1.38'	1.60	2.83	4.04	5.26	14	17	19	22
48"	6'-9"	3.22'	15.43'	18.65'	15.03'	19'	2.65'	4.0'	7.83'	14.58'	21.33'	28.08'	1.42'	1.81	3.26	4.70	6.14	15	18	21	24
54"	7'-8"	3.39'	17.49'	20.88'	17.03'	21'	2.83'	4.0'	8.42'	16.08'	23.75'	31.42'	1.46'	2.03	3.78	5.54	7.28	17	20	23	27
60"	8'-6"	3.56'	19.55'	23.11'	19.03'	25'	3.00'	4.0'	9.00'	17.50'	26.00'	34.50'	1.50'	2.28	4.36	6.43	8.50	18	22	25	29

- GENERAL NOTES:**
- Dimensions permitted to allow use of 8' standard pipe lengths.
 - Dimensions permitted to allow use of 12' standard pipe lengths.
 - Concrete slab shall be deepened to form bridge across crown of pipe. See section below.
 - Values shown for estimating pipe quantities and are for information only.
- SECTION:**
- Concrete Slab, 3" Thick, Reinforced With WWP 6x6-W1.4xW1.4
- TOP VIEW-SINGLE PIPE:**
- Concrete Slab, 3" Thick, Reinforced With WWP 6x6-W1.4xW1.4
- TOP VIEW-MULTIPLE PIPE:**
- Concrete Slab, 3" Thick, Reinforced With WWP 6x6-W1.4xW1.4

LAST REVISION: 11/01/17	DESCRIPTION: SIDE DRAIN MITERED END SECTION	FY 2019-20 STANDARD PLANS	INDEX: 430-022	SHEET: 1 of 7
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REVISIONS

NO.	DATE	DESCRIPTION
1		
2		
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4		
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6		

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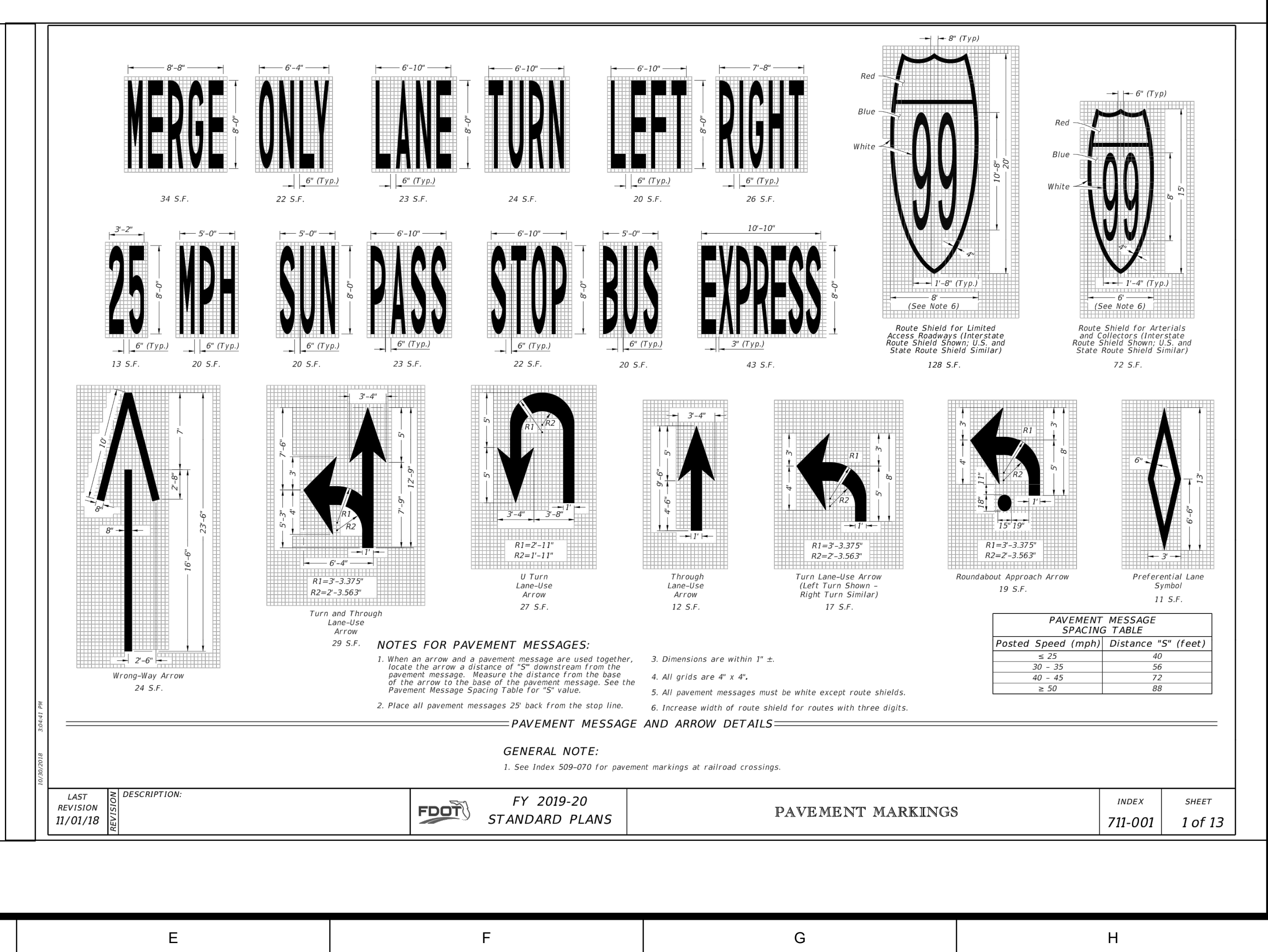
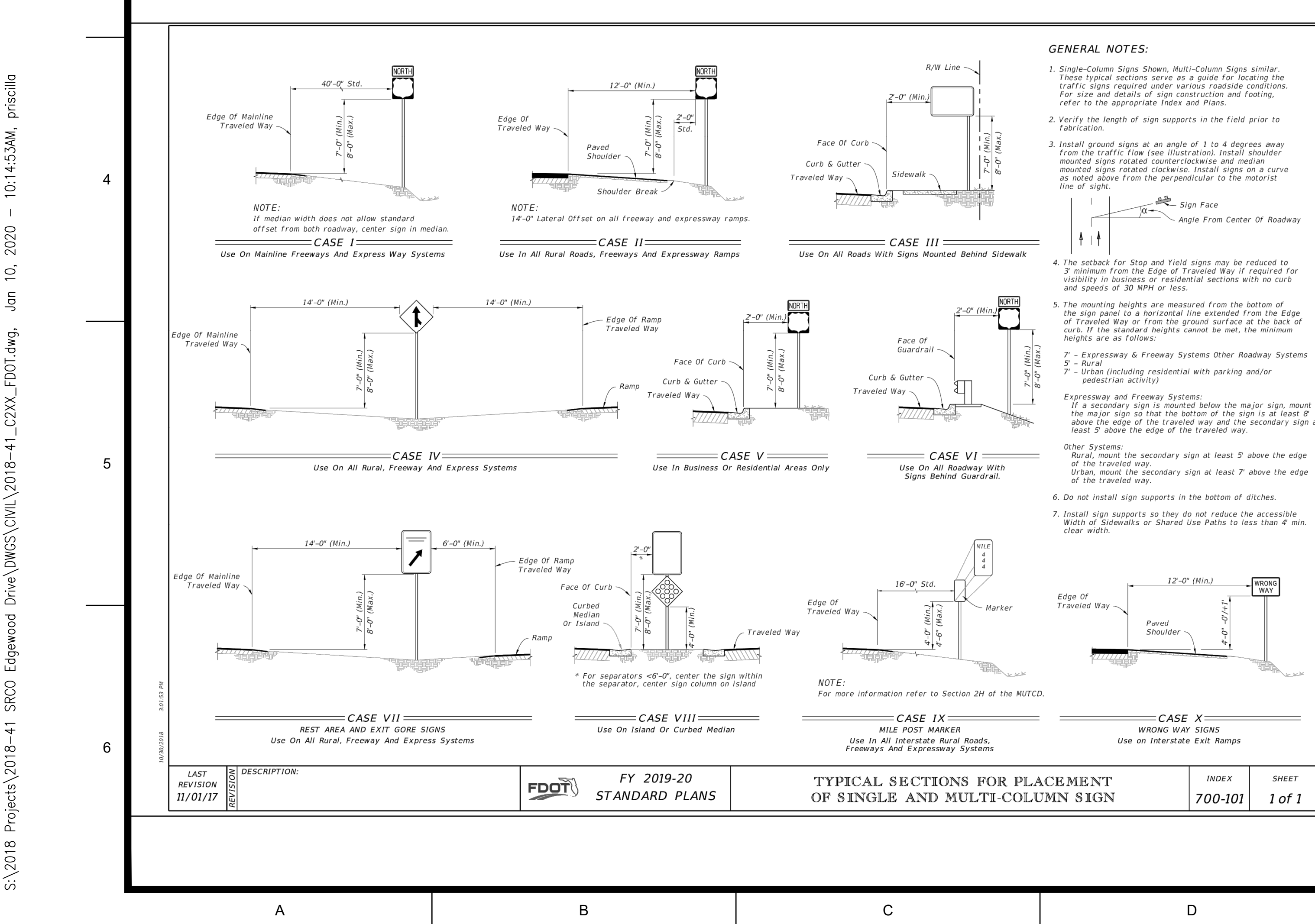
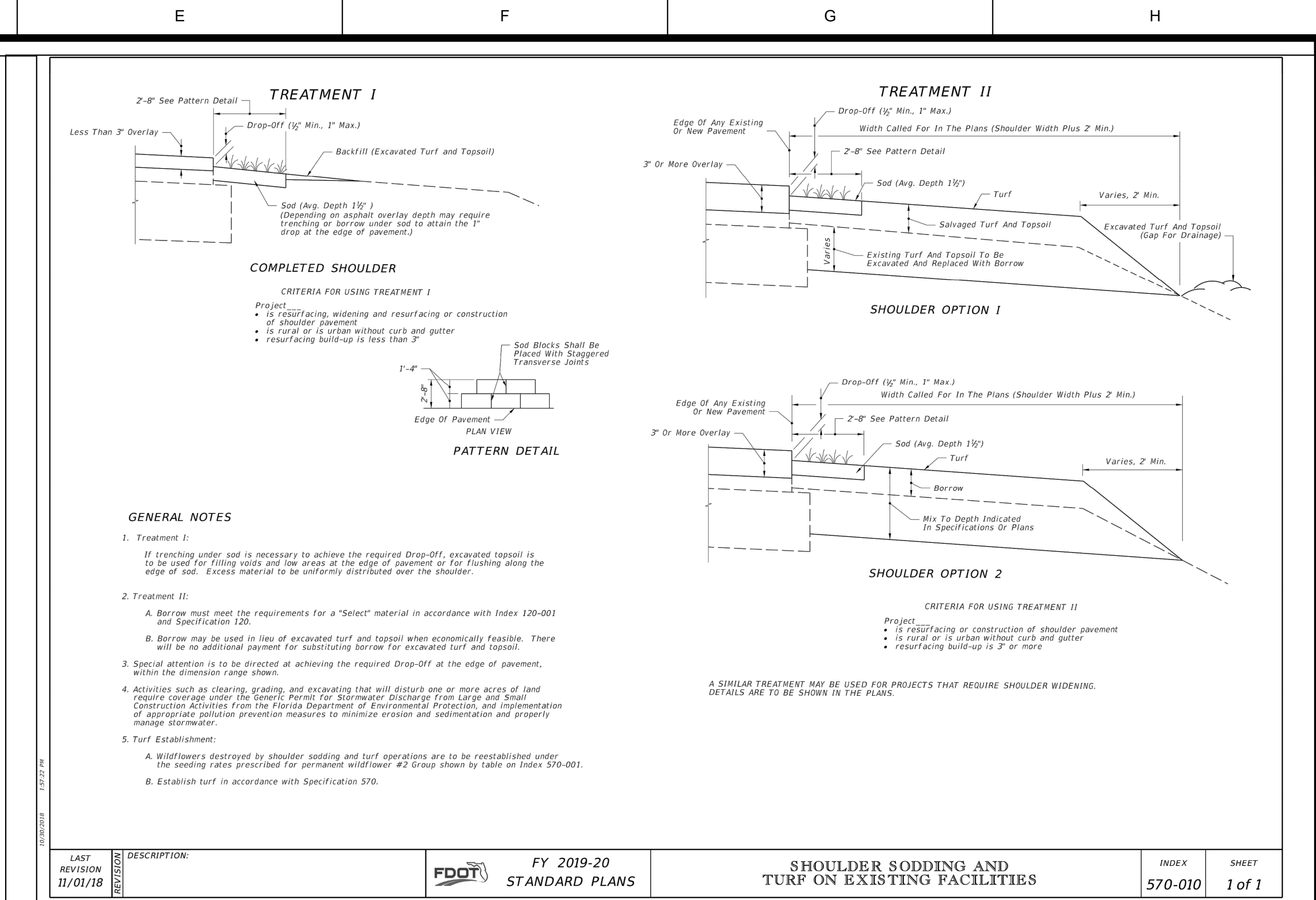
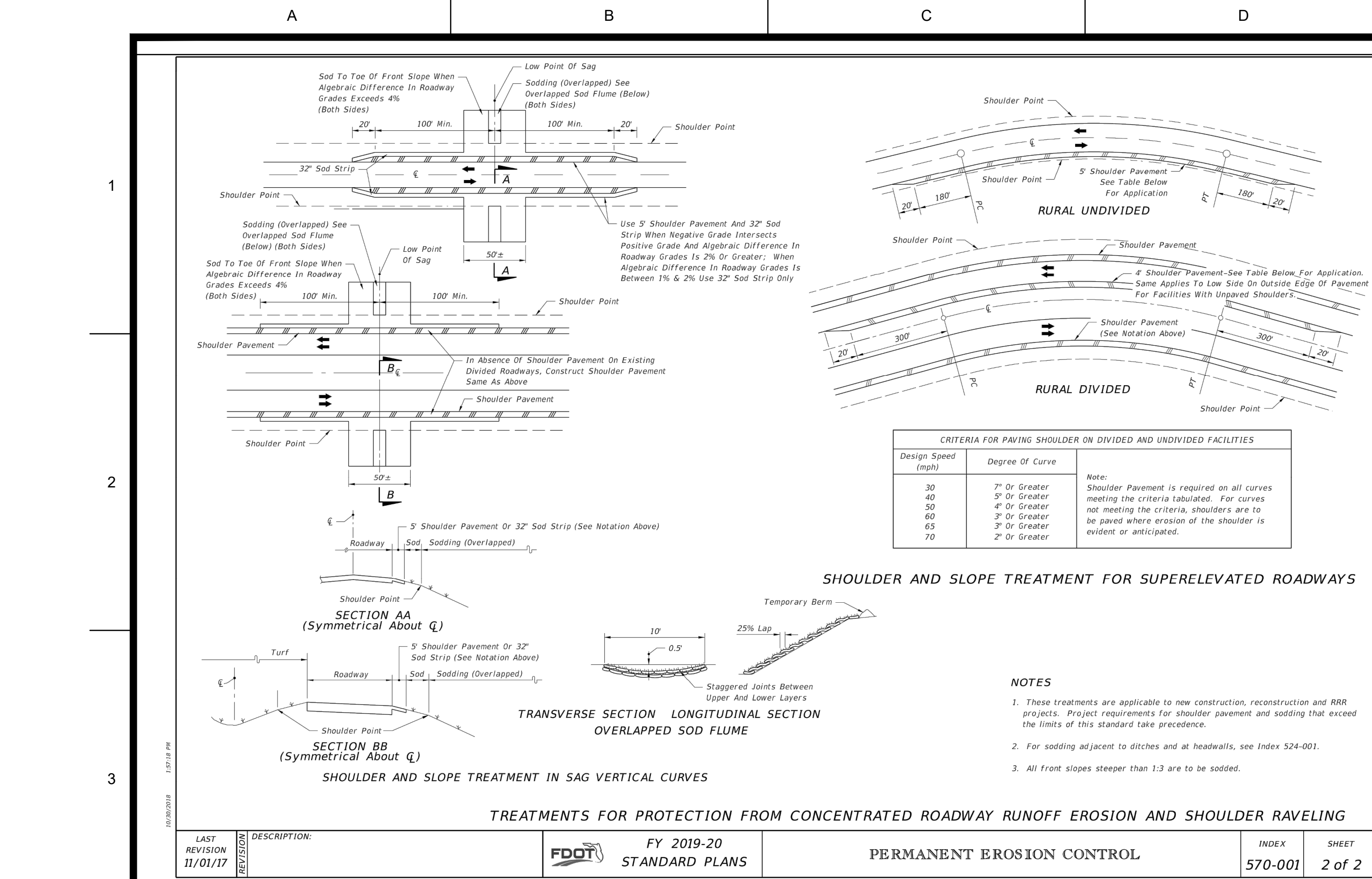
FL. CERTIFICATE OF AUTHORIZATION NO. 8288

SRCO EDGEWOOD DRIVE
DRAINAGE AND ROADWAY IMPROVEMENTS

FDOT INDEXES

SANTA ROSA FLORIDA

DRAWN BY: PLC	DESIGNED BY: RCK	CHECKED BY: RCK	DATE: 1/10/2020
SCALE: N.T.S.	BY: DATE:	PROJECT NO: 2018-41	C701 approved
SHEET: 61 OF 62 00136			



REVISIONS

NO.	DATE	DESCRIPTION

FDOT **FY 2019-20 STANDARD PLANS** **PERMANENT EROSION CONTROL** **INDEX 570-001** **SHEET 2 of 2**

FDOT **FY 2019-20 STANDARD PLANS** **SHOULDER SODDING AND TURF ON EXISTING FACILITIES** **INDEX 570-010** **SHEET 1 of 1**

FDOT **FY 2019-20 STANDARD PLANS** **TYPICAL SECTIONS FOR PLACEMENT OF SINGLE AND MULTI-COLUMN SIGN** **INDEX 700-101** **SHEET 1 of 1**

FDOT **FY 2019-20 STANDARD PLANS** **PAVEMENT MARKINGS** **INDEX 711-001** **SHEET 1 of 13**

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SRCO EDGEWOOD DRIVE
DRAINAGE AND ROADWAY IMPROVEMENTS
FDOT INDEXES
FLORIDA
SANTA ROSA

PROJECT NO: 2018-41
C702
SHEET: 62 OF 62
DATE: 1/10/2020
SCALE: N.T.S.

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SHEET	CONTENTS
1	General Notes
2	Definitions Temporary Traffic Control Devices Pedestrian and Bicyclist Overhead Work Railroads Sight Distance Above Ground Hazard
3	Clear Zone Widths For Work Zones Superelevation Length Of Lane Closures Overweight/Oversize Vehicles Lane Widths High-Visibility Safety Apparel Regulatory Speeds In Work Zones
4	Flagger Control Survey Work Zones Signs
5	Work Zone Sign Supports
6	Project Information Sign
7	Commonly Used Warning and Regulatory Signs In Work Zones
8	Manholes/Crosswalks/Joints Truck Mounted Attenuators Removing Pavement Markings Signals Channelizing Devices Channelizing Devices Consistency Portable Changeable (Variable) Message Signs (PCMS) Advanced Warning Arrow Boards
9	Drop-Offs In Work Zones
10	Business Entrance Temporary Asphalt Separator
11	Channelizing Devices Notes Temporary Barrier Notes
12	Pavement Markings

GENERAL NOTES:

1. All projects and works on highways, roads and streets shall have a traffic control plan. All work shall be executed under the established plan and Department-approved procedures. This Index contains information specific to the Federal and State guidelines and standards for the preparation of traffic control plans and for the execution of traffic control in work zones, for construction and maintenance operations and utility work on highways, roads and streets on the State Highway System. Certain requirements in this Index are based on the high volume nature of State Highways. For highways, roads and streets off the State Highway System, the local agency (City/County) having jurisdiction may adopt requirements based on the minimum requirements provided in the MUTCD.
2. Indexes 102-601 through 102-670 are Department-specific typical applications of commonly encountered situations. Adjust device location or number thereof as recommended by the Worksite Traffic Supervisor and approved by the Engineer. Devices include, but are not limited to, Flaggers, portable temporary signals, signs, pavement markings, and channelizing devices. Comply with MUTCD or applicable Department criteria for any changes and document the reason for the change.
3. Except for emergencies, any road closure on State Highway System shall comply with Section 335.15, F.S.

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2019-A-395-00136
David Wilks
3/18/2020

LAST REVISION
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REVISION

DESCRIPTION:



FY 2018-19
STANDARD PLANS

GENERAL INFORMATION FOR TRAFFIC
CONTROL THROUGH WORK ZONES

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102-600

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DEFINITIONS

Regulatory Speed (In Work Zones)

The maximum permitted travel speed posted for the work zone is indicated by the regulatory speed limit signs. The work zone speed must be shown or noted in the plans. This speed should be used as the minimum design speed to determine runoff lengths, departure rates, flare rates, lengths of need, clear zone widths, taper lengths, crash cushion requirements, marker spacings, superelevation and other similar features.

Advisory Speed

The maximum recommended travel speed through a curve or a hazardous area.

Travel Way

The portion of the roadway for the movement of vehicles. For traffic control through work zones, travel way may include the temporary use of shoulders and any other permanent or temporary surface intended for use as a lane for the movement of vehicular traffic.

- a. **Travel Lane:** The designated widths of roadway pavement marked to carry through traffic and to separate it from opposing traffic or traffic occupying other traffic lanes.
- b. **Auxiliary Lane:** The designated widths of roadway pavement marked to separate speed change, turning, passing and climbing maneuvers from through traffic.

Detour, Lane Shift, and Diversion

A detour is the redirection of traffic onto another roadway to bypass the temporary traffic control zone. A lane shift is the redirection of traffic onto a different section of the permanent pavement. A diversion is the redirection of traffic onto a temporary roadway, usually adjacent to the permanent roadway and within the limits of the right of way.

Aboveground Hazard

An aboveground hazard is any object, material or equipment other than traffic control devices that encroaches upon the travel way or that is located within the clear zone which does not meet the Department's safety criteria, i.e., anything that is greater than 4" in height and is firm and unyielding or doesn't meet breakaway requirements.

TEMPORARY TRAFFIC CONTROL DEVICES

All temporary traffic control devices shall be ON the Department's Approved Products List (APL). Ensure the appropriate APL number is permanently marked on the device in a readily visible location.

All temporary traffic control devices shall be removed as soon as practical when they are no longer needed. When work is suspended for short periods of time, temporary traffic control devices that are no longer appropriate shall be removed or covered.

Arrow Boards, Portable Changeable Message Signs, Radar Speed Display Trailer, Portable Regulatory Signs, and any other trailer mounted device shall be delineated with a channelizing device placed at each corner when in use and shall be moved outside the travel way and clear zone or be shielded by a barrier or crash cushion when not in use.

PEDESTRIAN AND BICYCLIST

When an existing pedestrian way or bicycle way is located within a traffic control work zone, accommodation must be maintained and provision for the disabled must be provided.

Only approved pedestrian longitudinal channelizing devices may be used to delineate a temporary traffic control zone pedestrian walkway.

Advanced notification of sidewalk closures and marked detours shall be provided by appropriate signs.

OVERHEAD WORK

Work is only allowed over a traffic lane when one of the following options is used:

OPTION 1 (OVERHEAD WORK USING A MODIFIED LANE CLOSURE)

Overhead work using a modified lane closure is allowed if all of the following conditions are met:

- a. Work operation is located in a signalized intersection and limited to signals, signs, lighting and utilities.
- b. Work operations are 60 minutes or less.
- c. Speed limit is 45 mph or less.
- d. Aerial lift equipment in the work area has high-intensity, rotating, flashing, oscillating, or strobe lights operating.
- e. Aerial lift equipment is placed directly below the work area to close the lane.
- f. Traffic control devices are placed in advance of the vehicle/equipment closing the lane using a minimum 100 foot taper.
- g. Volume or complexity of the roadway may dictate additional devices, signs, flagmen and/or a traffic control officer.

OPTION 2 (OVERHEAD WORK ABOVE AN OPEN TRAFFIC LANE)

Overhead work above a open traffic lane is allowed if all of the following conditions are met:

- a. Work operation is located on a utility pole, light pole, signal pole, or their appurtenances.
- b. Work operations are 60 minutes or less.
- c. Speed limit is 45 mph or less.
- d. No encroachment by any part of the work activities and equipment within an area bounded by 2 feet outside the edge of travel way and 18 feet high.
- e. Aerial lift equipment in the work area has high-intensity, rotating, flashing, oscillating, or strobe lights operating.
- f. Volume or complexity of the roadway may dictate additional devices, signs, flagmen and/or a traffic control officer.
- g. Adequate precautions are taken to prevent parts, tools, equipment and other objects from falling into open lanes of traffic.
- h. Other Governmental Agencies, Rail facilities, or Codes may require a greater clearance. The greater clearance required prevails as the rule.

OPTION 3 (OVERHEAD WORK ADJACENT TO AN OPEN TRAFFIC LANE)

Overhead work adjacent to an open traffic lane is allowed if all of the following conditions are met:

- a. Work operation is located on a utility pole, light pole, signal pole, or their appurtenances.
- b. Work operations are 1 day or less.
- c. Speed limit is 45 mph or less.
- d. No encroachment by any part of the work activities and equipment within 2 foot from the edge of travel way up to 18' height.
Above 18' in height, no encroachment by any part of the work activities and equipment over the open traffic lane (except as allowed in Option 2 for work operations of 60 minutes or less).
- e. Aerial lift equipment in the work area has high-intensity, rotating, flashing, oscillating, or strobe lights operating.
- f. Volume or complexity of the roadway may dictate additional devices, signs, flagmen and/or a traffic control officer.
- g. Adequate precautions are taken to prevent parts, tools, equipment and other objects from falling into open lanes of traffic.
- h. Other Governmental Agencies, Rail facilities, or Codes may require a greater clearance. The greater clearance required prevails as the rule.

OPTION 4 (OVERHEAD WORK MAINTAINING TRAFFIC WITH NO ENCROACHMENT BELOW THE OVERHEAD WORK AREA)

Traffic shall be detoured, shifted, diverted or paced as to not encroach in the area directly below the overhead work operations in accordance with the appropriate index drawing or detailed in the plans. This option applies to, but not limited to, the following construction activities:

- a. Beam, girder, segment, and bent/pier cap placement.
- b. Form and falsework placement and removal.
- c. Concrete placement.
- d. Railing construction located at edge of deck.
- e. Structure demolition.

OPTION 5 (CONDUCTOR/CABLE PULLING ABOVE AN OPEN TRAFFIC LANE)

Overhead cable and/or de-energized conductor installations initial pull to proper tension shall be done in accordance with the appropriate Index or temporary traffic control plan.

Continuous pulling operations of secured cable and/or conductors are allowed over open lane(s) of traffic with no encroachment by any part of the work activities, materials or equipment within the minimal vertical clearance above the travel way. The utility shall take precautions to ensure that pull ropes and conductors/cables at no time fall below the minimum vertical clearance.

On Limited Access facilities, a site specific temporary traffic control plan is required. The temporary traffic control plan shall include:

- a. The temporary traffic control set up for the initial pulling of the pull rope across the roadway.
- b. During pulling operations, advance warning consisting of no less than a Changeable Message Sign upstream of the work area with alternating messages, "Overhead Work Ahead" and "Be Prepared to Stop" followed by a traffic control officer and police vehicle with blue lights flashing during the pulling operation.

RAILROADS

Railroad crossings affected by a construction project should be evaluated for traffic controls to reduce queuing on the tracks. The evaluation should include as a minimum: traffic volumes, distance from the tracks to the intersections, lane closure or taper locations, signal timing, etc.

SIGHT DISTANCE

Tapers: Transition tapers should be obvious to drivers. If restricted sight distance is a problem (e.g., a sharp vertical or horizontal curve), the taper should begin well in advance of the view obstruction. The beginning of tapers should not be hidden behind curves.

Intersections: Traffic control devices at intersections must provide sight distances for the road user to perceive potential conflicts and to traverse the intersection safely. Construction equipment and materials shall not restrict intersection sight distance.


ABOVEGROUND HAZARD

Aboveground hazards (see definitions) are to be considered work areas during working hours and treated with appropriate work zone traffic control procedures. During nonworking hours, all objects, materials and equipment that constitute an aboveground hazard must be stored/placed outside the travel way and clear zone or be shielded by a barrier or crash cushion.

For aboveground hazards within a work zone the clear zone required should be based on the regulatory speed posted during construction.

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CLEAR ZONE WIDTHS FOR WORK ZONES

The term 'clear zone' describes the unobstructed relatively flat area, impacted by construction, extending outward from the edge of the traffic lane. The table below gives clear zone widths in work zones for medians and roadside conditions other than for roadside canals; where roadside canals are present, clear zone widths are to conform with the distances to canals as described in the FDM 215.2.

CLEAR ZONE WIDTHS FOR WORK ZONES		
WORK ZONE SPEED (MPH)	TRAVEL LANES & MULTILANE RAMPS (feet)	AUXILIARY LANES & SINGLE LANE RAMPS (feet)
60-70	30	18
55	24	14
45-50	18	10
30-40	14	10
ALL SPEEDS CURB & GUTTER	4' BEHIND FACE OF CURB	4' BEHIND FACE OF CURB

SUPERELEVATION

Horizontal curves constructed in conjunction with work zone traffic control should have the required superelevation applied to the design radii. Under conditions where normal crown controls curvature, the minimum radii that can be applied are listed in the table below.

MINIMUM RADII FOR NORMAL CROWN	
WORK ZONE POSTED SPEED	MINIMUM RADIUS
MPH	feet
70	4090
65	3130
60	2400
55	1840
50	1390
45	1080
40	820
35	610
30	430
Superelevate When Smaller Radii is Used	

LENGTH OF LANE CLOSURES

Lane closures must not exceed the following total lengths (includes taper, buffer space and work space) in any given direction on the interstate or on state highways with a posted speed of 55 MPH or greater:

- 3 miles for ground-in rumble strip operations on two-lane, two-way roadways.
- 2 miles for all other operations.

OVERWEIGHT/OVERSIZE VEHICLES

Restrictions to Lane Widths, Heights or Load Capacity can greatly impact the movement of over dimensioned loads. The Contractor shall notify the Engineer who in turn shall notify the State Permits Office, phone no. (850) 410-5777, at least seven calendar days in advance of implementing a maintenance of traffic plan which will impact the flow of overweight/oversized vehicles. Information provided shall include location, type of restriction (height, width or weight) and restriction time frames. When the roadway is restored to normal service the State Permits Office shall be notified immediately.

LANE WIDTHS

Lane widths of through roadways should be maintained through work zone travel ways wherever practical. The minimum widths for work zone travel lanes shall be as follows: 11' for Interstate with at least one 12' lane provided in each direction, unless formally excepted by the Federal Highway Administration; 11' for freeways; and 10' for all other facilities.

HIGH-VISIBILITY SAFETY APPAREL

All high-visibility safety apparel shall meet the requirements of the International Safety Equipment Association (ISEA) and the American National Standards Institute (ANSI) for "High-Visibility Safety Apparel", and labeled as ANSI/ISEA 107-2004 or newer. The apparel background (outer) material color shall be either fluorescent orange-red or fluorescent yellow-green as defined by the standard. The retroreflective material shall be orange, yellow, white, silver, yellow-green, or a fluorescent version of these colors, and shall be visible at a minimum distance of 1,000 feet. Class 3 apparel may be substituted for Class 2 apparel. Replace apparel that is not visible at 1,000 feet.

WORKERS: All workers within the right-of-way shall wear ANSI/ISEA Class 2 apparel. Workers operating machinery or equipment in which loose clothing could become entangled during operation shall wear fitted high-visibility safety apparel. Workers inside the bucket of a bucket truck are not required to wear high-visibility safety apparel.

UTILITIES: When other industry apparel safety standards require utility workers to wear apparel that is inconsistent with FDOT requirements such as NFPA, OSHA, ANSI, etc., the other standards for apparel may prevail.

FLAGGERS: For daytime activities, Flaggers shall wear ANSI/ISEA Class 2 apparel. For nighttime activities, Flaggers shall wear ANSI/ISEA Class 3 apparel.

REGULATORY SPEEDS IN WORK ZONES

Traffic Control Plans (TCP's) for all projects must include specific regulatory speeds for each phase of work. This can either be the posted speed or a reduced speed. The speed shall be noted in the TCPs; this includes indicating the existing speed if no reduction is to be made. Regulatory speeds are to be uniformly established through each phase.

In general, the regulatory speed should be established to route vehicles safely through the work zone as close as to normal highway speed as possible. The regulatory speed should not be reduced more than 10 mph below the posted speed and never below the minimum statutory speed for the class of facility. When a speed reduction greater than 10 mph is imposed, the reduction is to be done in 10 mph per 500' increments.

Temporary regulatory speed signs shall be removed as soon as the conditions requiring the reduced speed no longer exist. Once the work zone regulatory speeds are removed, the regulatory speed existing prior to construction will automatically go back into effect unless new speed limit signing is provided for in the plans.


On projects with interspaced work activities, speed reductions should be located in proximity to those activities which merit a reduced speed, and not "blanketed" for the entire project. At the departure of such activities, the normal highway speed should be posted to give the motorist notice that normal speed can be resumed.

If the existing regulatory speed is to be used, consideration should be given to supplementing the existing signs when the construction work zone is between existing regulatory speed signs. For projects where the reduced speed conditions exist for greater than 1 mile in rural areas (non-interstate) and on rural or urban interstate, additional regulatory speed signs are to be placed at no more than 1 mile intervals. Engineering judgement should be used in placement of the additional signs. Locating these signs beyond ramp entrances and beyond major intersections are examples of proper placement. For urban situations (non-interstate), additional speed signs are to be placed at a maximum of 1000' apart.

When field conditions warrant speed reductions different from those shown in the TCP the contractor may submit to the project engineer for approval by the Department, a signed and sealed study to justify the need for further reducing the posted speed, or, the engineer may request the District Traffic Operations Engineer (DTOE) to investigate the need. It will not be necessary for the DTOE to issue regulations for regulatory speeds in work zones due to the revised provisions of F.S. 316.07451(2) (b). Advisory Speed plates will be used at the option of the field engineer for temporary use while processing a request to change the regulatory speed specified in the plans when deemed necessary. Advisory speed plates cannot be used alone but must be placed below the construction warning sign for which the advisory speed is required.

For additional information, refer to the Plans Preparation Manual, Volume I, Chapter 10.

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LAST REVISION 11/01/17	DESCRIPTION:	 FY 2018-19 STANDARD PLANS	GENERAL INFORMATION FOR TRAFFIC CONTROL THROUGH WORK ZONES	INDEX 102-600	SHEET 3 of 12
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FLAGGER CONTROL

Where flaggers are used, a FLAGGER symbol or legend sign must replace the WORKERS symbol or legend sign.

The flagger must be clearly visible to approaching traffic for a distance sufficient to permit proper response by the motorist to the flagging instructions, and to permit traffic to reduce speed or to stop as required before entering the work site. Flaggers shall be positioned to maintain maximum color contrast between the flagger's high-visibility safety apparel and equipment and the work area background.

Hand-Signaling Devices

STOP/SLOW paddles are the primary hand-signaling device. The STOP/SLOW paddle shall have an octagonal shape on a rigid handle. If the STOP/SLOW paddle is placed on a rigid staff, the minimum length of the staff, measured from the bottom of the paddle to the end of the staff that rests on the ground, must not be less than 6 ft. STOP/SLOW paddles shall be at least 24 inches wide with letters at least 6 inches high and should be fabricated from light semirigid material. The background of the STOP face shall be red with white letters and border. The background of the SLOW face shall be orange with black letters and border. When used at night-time, the STOP/SLOW paddle shall be retroreflectorized.

Flag use is limited to immediate emergencies, intersections, and when working on the centerline or shared left turn lanes where two (2) flaggers are required and there is opposing traffic in the adjacent lanes. Flags, when used, shall be a minimum of 24 inches square, made of a good grade of red material, and securely fastened to a staff that is approximately 36 inches in length. When used at nighttime, flags shall be retroreflectorized red.

Flashlight, lantern or other lighted signal that will display a red warning light shall be used at night.

Flagger Stations

Flagger stations shall be located far enough in advance of the work space so that approaching road users will have sufficient distance to stop before entering the work space. When used at nighttime, the flagger station shall be illuminated.

SURVEY WORK ZONES

The SURVEY CREW AHEAD symbol or legend sign shall be the principal Advance Warning Sign used for Traffic Control Through Survey Work Zones and may replace the ROAD WORK AHEAD sign when lane closures occur, at the discretion of the Party Chief.

When Traffic Control Through Work Zones is being used for survey purposes only, the END ROAD WORK sign as called for on certain 102 Series of Indexes should be omitted.

Survey Between Active Traffic Lanes or Shared Left Turn Lanes

The following provisions apply to Main Roadway Traffic Control Work Zones. These provisions must be adjusted by the Party Chief to fit roadway and traffic conditions when the Survey Work Zone includes intersections.

- (A) A STAY IN YOUR LANE (MOT-1-06) sign shall be added to the Advance Warning Sign sequence as the second most immediate sign from the work area.
- (B) Elevation Surveys-Cones may be used at the discretion of the Party Chief to protect prism holder and flagger(s). Cones, if used, may be placed at up to 50' intervals along the break line throughout the work zone.
- (C) Horizontal Control-With traffic flow in the same direction, cones shall be used to protect the backsight tripod and/or instrument. Cones shall be placed at the equipment, and up to 50' intervals for at least 200' towards the flow of traffic.
- (D) Horizontal Control-With traffic flow in opposite directions, cones shall be used to protect the backsight tripod and/or instrument. Cones shall be placed at the equipment, and up to 50' intervals for at least 200' in both directions towards the flow of traffic.

SIGNS

SIGN MATERIALS

Mesh signs and non-retroreflective vinyl signs may only be used for daylight operations. Non-retroreflective vinyl signs must meet the requirements of Specifications Section 994.

Retroreflective vinyl signs meeting the requirements of Specification Section 994 may be used for daylight or night operations not to exceed 1 day except as noted in the Indexes.

Rigid or Lightweight sign panels may be used in accordance with the vendor APL drawing for the sign stand to which they are attached.

INTERSECTING ROAD SIGNING

Signing for the control of traffic entering and leaving work zones by way of intersecting crossroads shall be adequate to make drivers aware of work zone conditions. When Work operations exceed 60 minutes, place the ROAD WORK AHEAD sign on the side street entering the work zone.

ADJOINING AND/OR OVERLAPPING WORK ZONE SIGNING

Adjoining work zones may not have sufficient spacing for standard placement of signs and other traffic control devices in their advance warning areas or in some cases other areas within their traffic control zones. Where such restraints or conflicts occur or are likely to occur, one of the following methods will be employed to avoid conflicts and prevent conditions that could lead to misunderstanding on the part of the traveling public as to the intended travel way by the traffic control procedure applied:

- (A) For scheduled projects the engineer in responsible charge of project design will resolve anticipated work zone conflicts during the development of the project traffic control plan. This may entail revision of plans on preceding projects and coordination of plans on concurrent projects.
- (B) Unanticipated conflicts arising between adjoining in progress highway construction projects will be resolved by the Resident Engineer for projects under his residency, and, by the District Construction Engineer for in progress projects under adjoining residencies.
- (C) The District Maintenance Engineer will resolve anticipated and occurring conflicts within scheduled maintenance operations.
- (D) The Unit Maintenance Engineer will resolve conflicts that occur within routine maintenance works; between routine maintenance work, unscheduled work and/or permitted work; and, between unit controlled maintenance works and highway construction projects.

SIGN COVERING AND INTERMITTENT WORK STOPPAGE SIGNING

Existing or temporary traffic control signs that are no longer applicable or are inconsistent with intended travel paths shall be removed or fully covered.

Sign blanks or other available coverings must completely cover the existing sign. Rigid sign coverings shall be the same size as the sign it is covering, and bolted in a manner to prevent movement.

Sign covers are incidental to work operations and are not paid for separately.

SIGNING FOR DETOURS, LANE SHIFTS AND DIVERSIONS

Detours should be signed clearly over their entire length so that motorists can easily determine how to return to the original roadway. The reverse curve (W1-4) warning sign should be used for the advanced warning for a lane shift. A diversion should be signed as a lane shift.

EXTENDED DISTANCE ADVANCE WARNING SIGN

Advance Warning Signs shall be used at extended distance of one-half mile or more when limited sight distance or the nature of the obstruction may require a motorist to bring their vehicle to a stop. Extended distance Advanced Warning Signs may be required on any type roadway, but particularly be considered on multilane divided highways where vehicle speed is generally in the higher range (45 MPH or more).

UTILITY WORK AHEAD SIGN

The UTILITY WORK AHEAD (W21-7) sign may be used as an alternate to the ROAD WORK AHEAD or the ROAD WORK XX FT (W20-1) sign for utility operations on or adjacent to a highway.

LENGTH OF ROAD WORK SIGN

The length of road work sign (G20-1) bearing the legend ROAD WORK NEXT _____ MILES is required for all projects of more than 2 miles in length. The number of miles entered should be rounded up to the nearest mile. The sign shall be located at begin construction points.

SPEEDING FINES DOUBLED WHEN WORKERS PRESENT SIGN

The SPEEDING FINES DOUBLED WHEN WORKERS PRESENT sign should be installed on all projects, but may be omitted if the work operation is less than 1 day. The placement should be 500 feet beyond the ROAD WORK AHEAD sign or midway to the next sign whichever is less.

GROOVED PAVEMENT AHEAD SIGN

The GROOVED PAVEMENT AHEAD sign is required 500 feet in advance of a milled or grooved surface open to traffic. The W8-15P placard shall be used in conjunction with the GROOVED PAVEMENT AHEAD sign.


END ROAD WORK SIGN

The END ROAD WORK sign (G20-2) should be installed on all projects, but may be omitted where the work operation is less than 1 day. The sign should be placed approximately 500 feet beyond the end of a construction or maintenance project unless other distance is called for in the plans. When other Construction or Maintenance Operations occur within 1 mile this sign should be omitted and signing coordinated in accordance with Index 102-600, ADJOINING AND/OR OVERLAPPING WORK ZONE SIGNING.

PROJECT INFORMATION SIGN

The Project information sign shall be installed when called for in the plans.

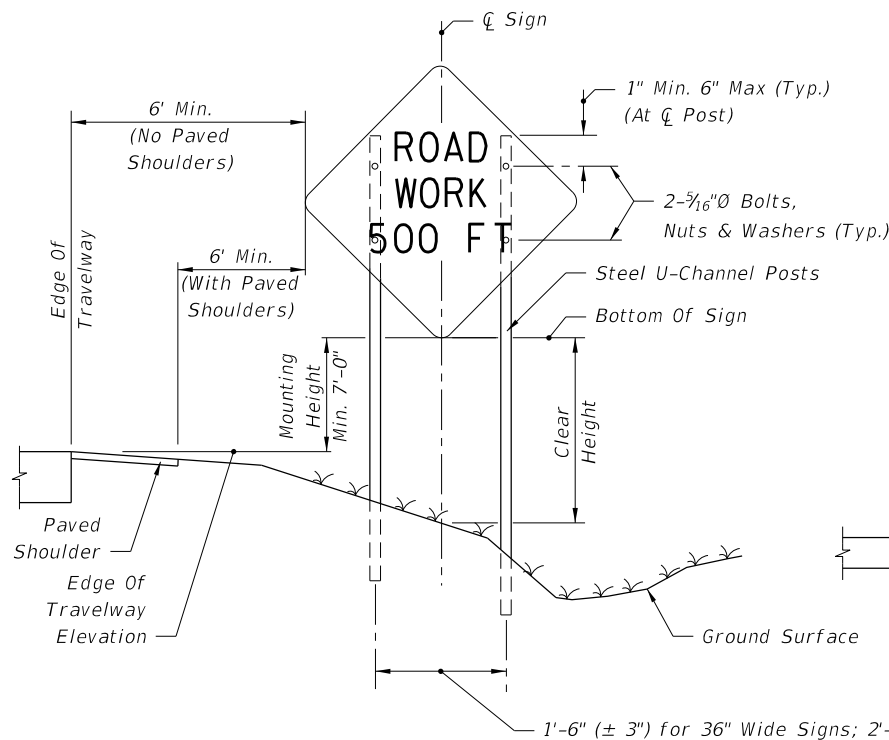
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LAST REVISION 11/01/17	REVISION	DESCRIPTION:	 FY 2018-19 STANDARD PLANS	GENERAL INFORMATION FOR TRAFFIC CONTROL THROUGH WORK ZONES	INDEX 102-600	SHEET 3/18/2020 4 of 12
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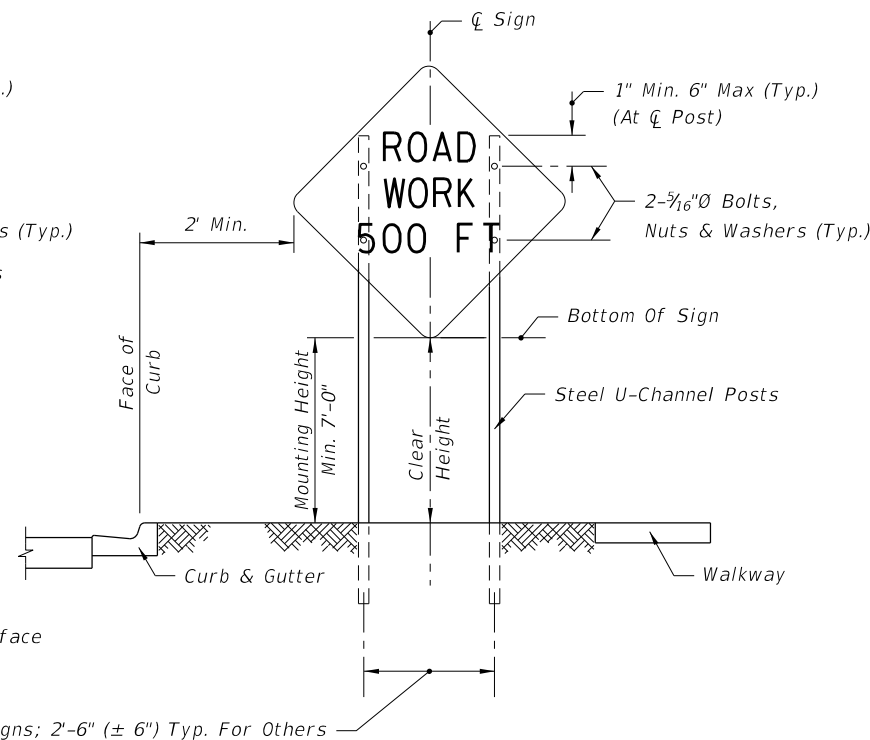
Approved
2019-A-395-00136
David Wilks

TEMPORARY SIGN SUPPORT NOTES:

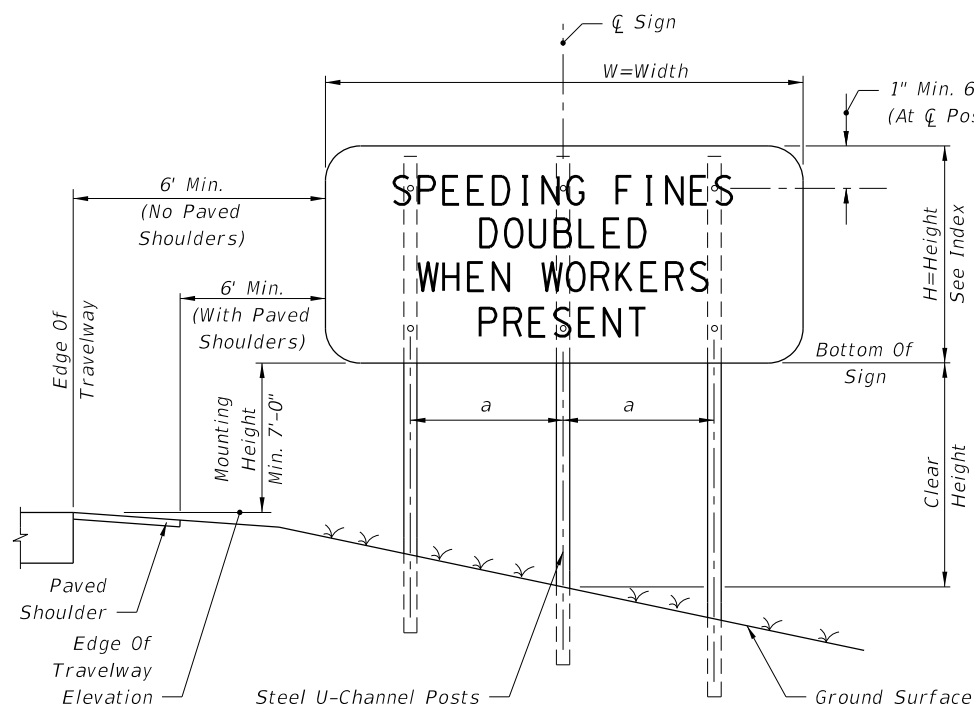
- All signs shall be post mounted when work operations exceed one day except for:
 - Road closure signs mounted in accordance with the vendor drawing for the Type III Barricade shown on the APL.
 - Pedestrian advanced warning or pedestrian regulatory signs mounted on sign supports in accordance with the vendor drawing shown on the APL.
 - Median barrier mounted signs per Index 700-013.
- Unless shielded with barrier or outside of the Clear Zone, signs mounted on temporary supports or barricades, and barricade/sign combination must be crashworthy in accordance with NCHRP 350 requirements and included on the Approved Products List (APL).
- Use only approved systems listed on the Department's Approved Products List (APL).
- Manufacturers seeking approval of U-Channel and steel square tube sign support assemblies for inclusion on the Approved Products List (APL) must submit a APL application, design calculations (for square tube only), and detailed drawings showing the product meets all the requirements of this Index.
- Provide 3 lb/ft Steel U-Channel Posts with a minimum section modulus of 0.43 in³ for 60 ksi steel, a minimum section modulus of 0.37 in³ for 70 ksi steel, or a minimum section modulus of 0.34 in³ for 80 ksi steel.
- Provide 4 lb/ft Steel U-Channel Posts with a minimum section modulus of 0.56 in³ for 60 ksi steel, or a minimum section modulus of 0.47 in³ for 70 ksi or 80 ksi steel.
- U-channel posts shall conform with ASTM A 499, Grade 60, or ASTM A 576, Grade 1080 (with a minimum yield strength of 60 ksi). Square tube posts shall conform with ASTM A 653, Grade 50, or ASTM A 1011, Grade 50.
- Sign attachment bolts, washers, nuts, and spacers shall conform with ASTM A307 or A 36.
- For diamond warning signs with supplement plaque (up to 5 ft² in area), use 4 lb/ft posts for up to 10 ft Clear Height (measure to the bottom of diamond warning sign).
- Install 4 lb/ft Steel U-Channel Posts with approved breakaway splice in accordance with the manufacturer's detail shown on the APL.
- The contractor may install 3 lb/ft Steel U-Channel Posts with approved breakaway splice in accordance with the manufacturer's detail shown on the APL.
- Install all posts plumb.
- The contractor may set posts in preformed holes to the specified depth with suitable backfill tamped securely on all sides, or drive 3 lb/ft sign posts and any size base post in accordance with the manufacturer's detail shown on the APL.



**2 POST SIGN SUPPORT MOUNTING DETAILS
(SINGLE POST SIMILAR)
RURAL**

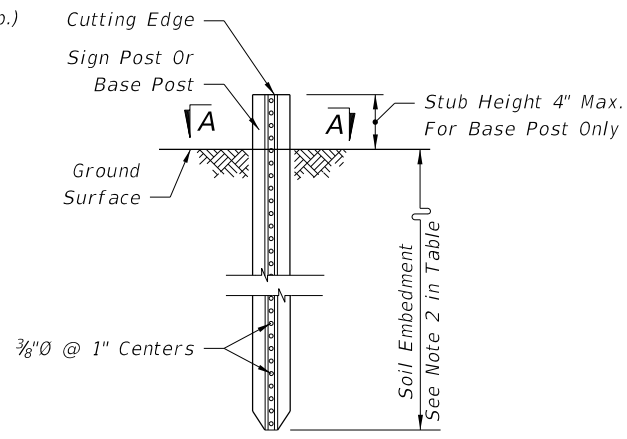


**2 POST SIGN SUPPORT MOUNTING DETAILS
(SINGLE POST SIMILAR)
URBAN**



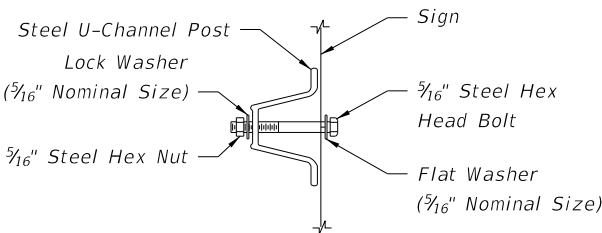
3 POST SIGN SUPPORT MOUNTING DETAILS

Where $W = 48"$: $a = 1' - 4\frac{1}{2}" (\pm 1")$
 $W = 60"$: $a = 1' - 9" (\pm 1")$
 $W = 72"$: $a = 2' - 1" (\pm 1")$



TYPICAL FOUNDATION DETAIL

See APL for post, splice and connection details.
No bolts installed closer than 1" to cutting edge.



**SECTION A-A
(SCHEMATIC)**

**SIGN ATTACHMENT DETAIL
(WITHOUT Z-BRACKET)**

POST AND FOUNDATION TABLE FOR WORK ZONE SIGNS		
SIGN SHAPE	SIGN SIZE (inches)	NUMBER OF STEEL U CHANNEL POSTS
Octagon	30x30	1
	36x36x36	1
	48x48x48	1
Triangle	60x60x60	2
	24x18	1
	24x30	1
Rectangle (W x H)	30x24	1
	36x18	1
	36x24	1
	48x18	1
	48x24	1
	36x48	2
	48x30	2
	48x36	2
	54x36	2
	48x60	3
	60x54	3
	72x48	3
Square	120x60*	4*
	30x30	1
	36x36	2
Diamond (See Note 7)	48x48	2
	360	2

Notes For Table:

- Use 3 lb/ft posts for Clear Height up to 10' and 4 lb/ft posts for Clear Height up to 12'.

* Use 4 lb/ft U-channel sign post with a mounting height of 7' min. and 8' max. Attach sign panel using Z-bracket detail on Sheet 6.

- Minimum foundation depth is 4.0' for 3 lb/ft posts and 4.5' for 4 lb/ft posts.

- For both 3 lb/ft and 4 lb/ft base or sign posts installed in rock, a minimum cumulative depth of 2' of rock layer is required.

- The soil plate as shown on the APL vendor drawing is not required for base posts or sign posts installed in existing rock (as defined in Note 3), asphalt roadway, shoulder pavement or soil under sidewalk.

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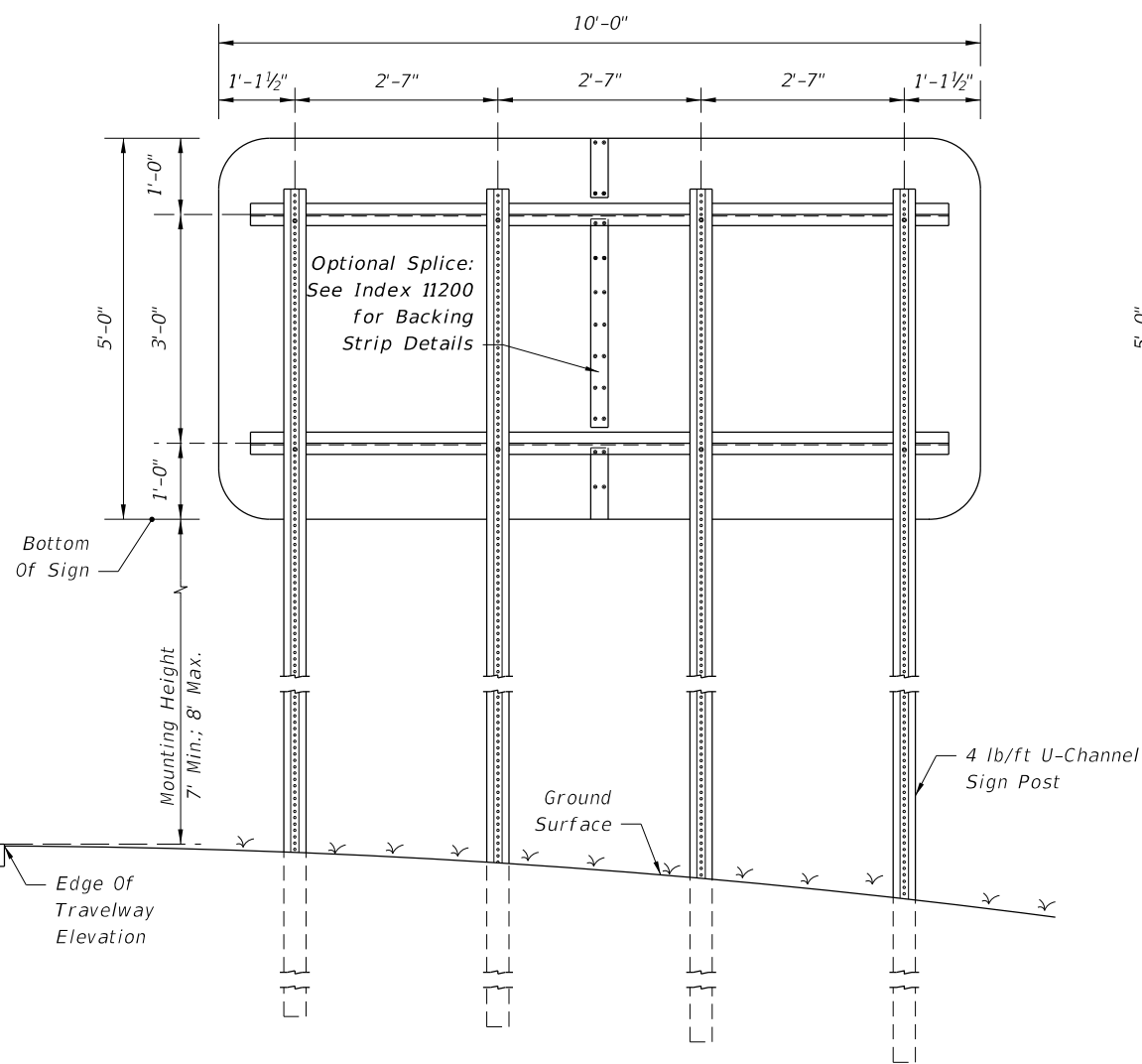
LAST REVISION	DESCRIPTION:
11/01/17	

FY 2018-19
STANDARD PLANS

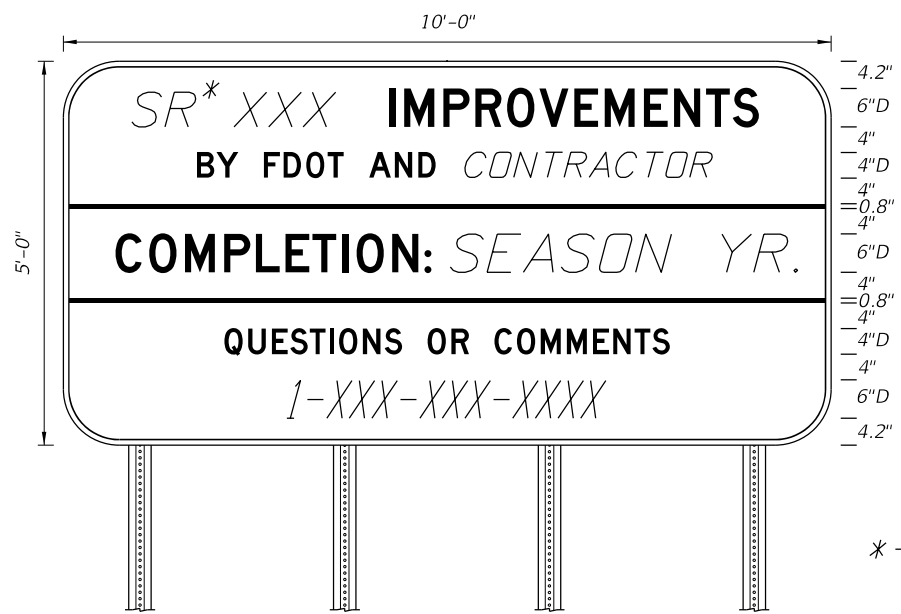
GENERAL INFORMATION FOR TRAFFIC CONTROL THROUGH WORK ZONES

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Approved
 2019-A-395-00136
 David Wilks
 3/18/2020
WORK ZONE SIGN SUPPORTS

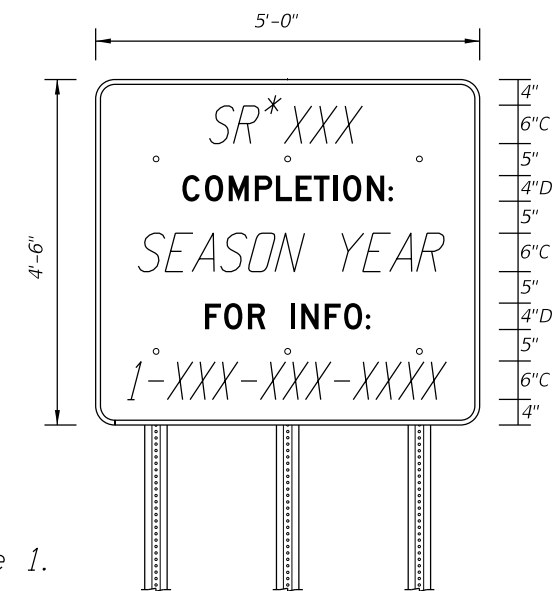


4 POST SIGN SUPPORT MOUNTING DETAIL



BORDER 10'-0" x 5'-0"
 R=8" 8" Radii
 TH=0.25" 4" and 6" series D Legend
 IN=0.75" Blue Background
 White Legend and Border

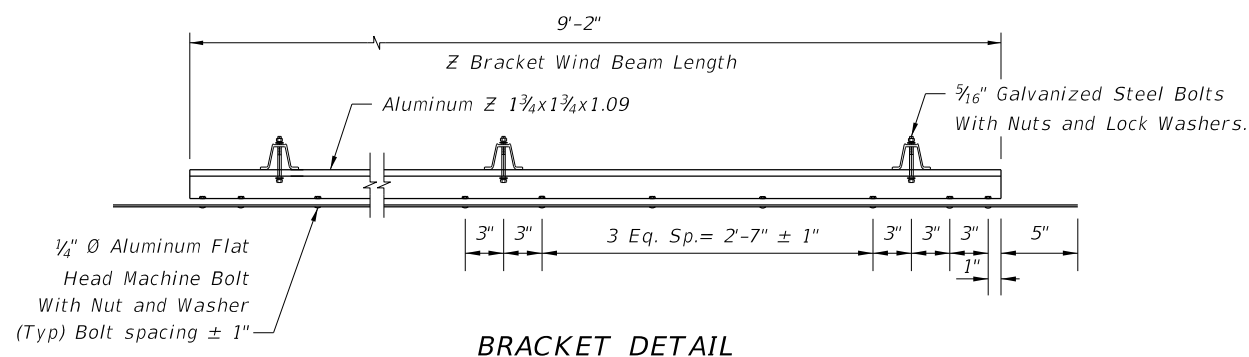
PROJECT INFORMATION SIGN DETAIL
 50 MPH OR GREATER
 Use SIGN ATTACHMENT DETAIL
 (WITH Z-BRACKET).



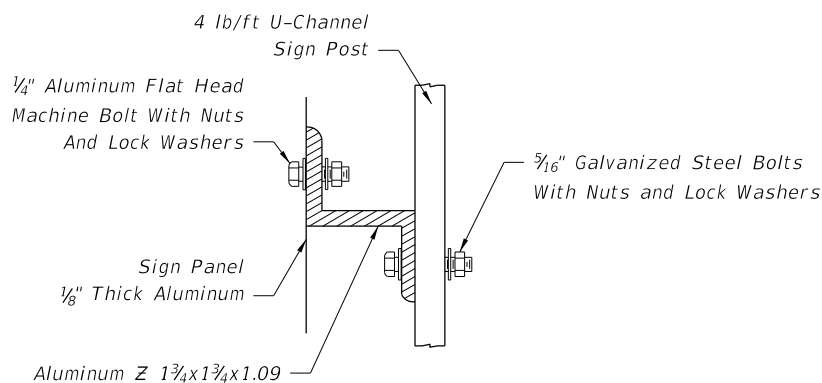
BORDER 5'-0" x 4'-6"
 R=3" 3" Radii
 TH=0.25" 4" series D Legend and
 6" series C Legend
 IN=0.75" Blue Background
 White Legend and Border

PROJECT INFORMATION SIGN DETAIL
 45 MPH OR LESS
 Use SIGN ATTACHMENT DETAIL
 (WITHOUT Z-BRACKET)
 On Sheet 5.

*-See Note 1.



BRACKET DETAIL



SIGN ATTACHMENT DETAIL
 (WITH Z-BRACKET)

PROJECT INFORMATION SIGN NOTES:

1. Road designation should be the most common designation (ie. I-Interstate, SR-State Road or US.)
2. Italic text on signs indicate variable information specific to the project.
3. See Sheet 5 for Typical Foundation Details and Post and Foundations Table.

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LAST REVISION 11/01/17	DESCRIPTION:
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 3/18/2020

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E5-2 B/O	E5-2a B/O	G20-1 B/O	G20-2 B/O	G20-4 B/O	M4-8 B/O	M4-8A B/O	M4-9L B/O	M4-9R B/O	M4-10L O/B	M4-10R O/B	OM-3R B/Y	R1-1 W/R	R1-2 RW/R	R2-1 B/W	R4-1 B/W	R4-2 B/W	R4-5 B/W	R4-7 B/W	R4-8 B/W	R4-7AL B/W
R4-7AR B/W	R4-7BL B/W	R4-7BR B/W	R5-1 WR/W	R9-8 B/W	R9-9 B/W	R9-10 B/W	R9-11 B/W	R9-11a B/W	R11-2 B/W	W1-1R B/O	W1-2R B/O	W1-3R B/O	W1-4R B/O	W1-4b B/O	W1-4c B/O	W1-6 B/O	W1-7 B/O	W1-8 B/O	W3-1 RB/O	W3-2 RB/O
W3-3 B(RYG)/O	W3-4 B/O	W3-5 B/O	W4-1 B/O	W4-2 B/O	W5-1 B/O	W5-2 B/O	W5-3 B/O	W6-1 B/O	W6-2 B/O	W6-3 B/O	W8-1 B/O	W8-2 B/O	W8-3 B/O	W8-4 B/O	W8-5 B/O	W8-6 B/O	W8-7 B/O	W8-8 B/O	W8-9 B/O	W8-9a B/O
W8-11 B/O	W9-1L B/O	W9-1R B/O	W9-2L B/O	W9-2R B/O	W10-1 B/Y	W11-2 B/O	W12-1 B/O	W12-2 B/O	W13-1 B/O	W20-1A B/O	W20-1B B/O	W20-1C B/O	W20-1D B/O	W20-1E B/O	W20-1F B/O	W20-2A B/O	W20-2B B/O	W20-2C B/O	W20-2D B/O	W20-2E B/O
W20-3 B/O	W20-4 B/O	W20-5a B/O	W20-5L B/O	W20-5R B/O	W20-5C B/O	W20-7A B/O	W20-7 B/O	W21-1A B/O	W21-1 B/O	W21-5 B/O	W21-5a B/O	W21-6 B/O	W21-7 B/O	W8-15P B/O						
W22-1 B/O	W22-2 B/O	W22-3 B/O																		
																		<p>Notes:</p> <ol style="list-style-type: none"> The size of diamond shaped Temporary Traffic Control (TTC) warning signs shall be a minimum of 48" X 48". Fluorescent orange shall be used for all orange colored work zone signs. The sign shields, symbols and messages contained on this sheet are provided for ready reference to those signs used in the development of the 102 Series of Indexes and are commonly used in the development of traffic control plans. For additional signs and sign detail information refer to the STANDARD HIGHWAY SIGNS MANUAL as specified in the MUTCD. Special signs for traffic control plans will be as approved by the State Traffic Plans Engineer. <p>The sign codes shown on this sheet are for the purpose of identifying cell names found in the Traffic Control Cell Library (TCZ.Cel).</p> <p>The STANDARD HIGHWAY SIGNS MANUAL should be referenced for the official sign codes for use in the development of traffic control plans.</p> <p>See Index 700-102 for MOT sign details.</p>		
																		<p>COLOR CODES Legend and/or Symbol Background</p> <p>O-Orange (Reflectorized) R-Red (Reflectorized) B-Black (Non-Reflectorized) Y-Yellow (Reflectorized) W-White (Reflectorized) G-Green (Reflectorized)</p>		
MOT-1-06 B/O	MOT-4-06 B/O	MOT-5-06 B/O	MOT-7-06 B/O	MOT-8-06 B/O	MOT-9-06 B/O	MOT-10-06 B/O	MOT-11-06 BLUE/W	MOT-12-06R B/W	MOT-12-06L B/W	MOT-13-06 (Limited access facilities)	MOT-14-06 (All other facilities)	MOT-15-06 B/O	MOT-16-06 B/O	MOT-17-06 B/O	MOT-18-10 B/O					

COMMONLY USED WARNING AND REGULATORY SIGNS IN WORK ZONES

Approved 2018-03-25-2018-136
David Wilks
INDEX SHEET
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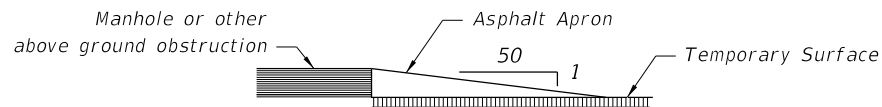
FY 2018-19
STANDARD PLANS

GENERAL INFORMATION FOR TRAFFIC CONTROL THROUGH WORK ZONES

MANHOLES/CROSSWALKS/JOINTS

Manholes extending 1" or more above the travel lane and crosswalks having an uneven surface greater than 1/4" shall have a temporary asphalt apron constructed as shown in the diagram below.

All transverse joints that have a difference in elevation of 1" or more shall have a temporary asphalt apron constructed as shown in the diagram below.



The apron is to be removed prior to constructing the next lift of asphalt. The cost of the temporary asphalt shall be included in the contract unit price for Maintenance of Traffic, LS.

REMOVING PAVEMENT MARKINGS

Existing pavement markings that conflict with temporary work zone delineation shall be removed by any method approved by the Engineer, where operations exceed one daylight period. Remove conflicting pavement marking using a method that will not damage the surface texture of the pavement, unless the pavement will be restored prior to traffic use. Painting over existing pavement markings with black paint or spraying with asphalt shall not be accepted as substitute for removal or obliteration. Full pavement width overlays of either a structural or friction course (non-final surface) are an acceptable alternate means to achieve removal.

SIGNALS

Existing traffic signal operations that require modification in order to carry out work zone traffic control shall be included in the TCP and be approved by the District Traffic Operations Engineer.

Maintain all existing actuated or traffic responsive mode signal operations for main and side street movements for the duration of the Contract and require restoration of any loss of detection within 12 hours. The contractor shall select only detection technology listed on the Department's Approved Products List (APL) and approved by the Engineer to restore detection capabilities.

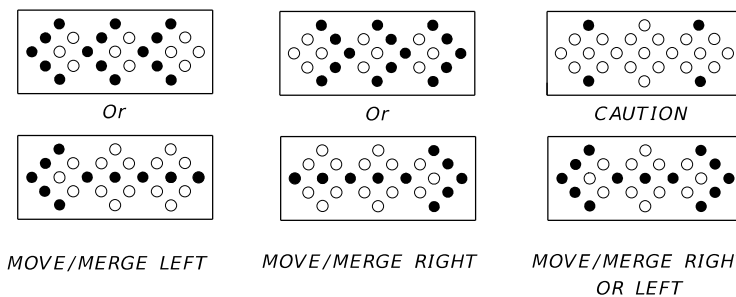
ADVANCE WARNING ARROW BOARDS

An arrow board in the arrow or chevron mode shall be used only for stationary or moving lane closures on multilane roadways.

For shoulder work, blocking the shoulder, for roadside work near the shoulder, or for temporarily closing one lane on a two-lane, two-way roadway, an arrow board shall be used only in the caution mode.

A single arrow board shall not be used to merge traffic laterally more than one lane. When arrow boards are used to close multiple lanes, a single board shall be used at the merging taper for each closed lane.

When Advance Warning Arrow Boards are used at night, the intensity of the flashers shall be reduced during darkness when lower intensities are desirable.



● Minimum Required Lamps
○ Additional Lamps Allowed

MODES

PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS)

The PCMS can be used to:

1. Supplement standard signing in construction or maintenance work zones.
2. Reinforce static advance warning messages.
3. Provide motorists with updated guidance information.

PCMS should be placed approx. 500 to 800 feet in advance of the work zone conflicts or 0.5 to 2 miles in advance of complex traffic control schemes which require new and/or unusual traffic maneuvers.

If PCMS are to be used at night, the intensity of the flashers shall be reduced during darkness when lower intensities are desirable.

For additional information refer to the FDOT Plans Preparation Manual, Volume I, Chapter 10.

TRUCK/TRAILER-MOUNTED ATTENUATORS


Truck/Trailer-mounted attenuators (TMA) can be used for moving operations and short-term stationary operations. For moving operations, see Indexes 102-607 and 102-619. For short-term, stationary operations, see Part VI of the MUTCD.

CHANNELIZING DEVICES

Channelizing devices for work zone traffic control shall be as prescribed in Part VI of the MUTCD, subject to supplemental revisions provided in the contract documents and the 102 Series of Indexes. Lighting Devices must not be used to supplement channelization.

CHANNELIZING DEVICE CONSISTENCY

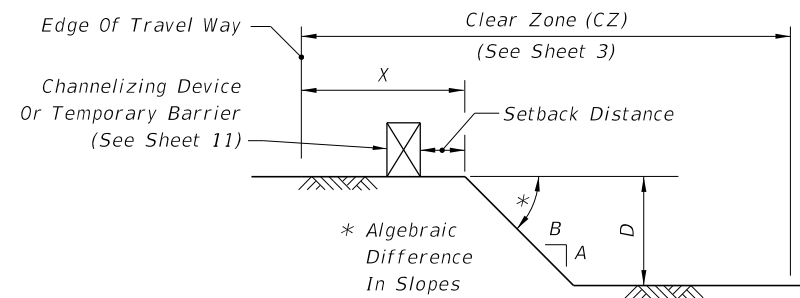
Barricades, vertical panels, cones, tubular markers and drums shall not be intermixed within either the lateral transition or within the tangent alignment.

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Approved
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David Wilks

DROP-OFF CONDITION NOTES

1. These conditions and treatments can be applied only in work areas that fall within a properly signed work zone.
2. When drop-offs occur within the clear zone due to construction or maintenance activities, protection devices are required (See Table 1). A drop-off is defined as a drop in elevation, parallel to the adjacent travel lanes, greater than 3" with slope (A:B) steeper than 1:4. In superelevated sections, the algebraic difference in slopes should not exceed 0.25 (See Drop-off Condition Detail).
3. Drop-offs may be mitigated by placement of slopes with optional base material per Specifications Section 285. Slopes shallower than 1:4 may be required to avoid algebraic difference in slopes greater than 0.25. Include the cost for the placement and removal of the material in Maintenance of Traffic, LSD. Use of this treatment in lieu of a temporary barrier is not eligible for CSIP consideration. Conduct daily inspections for deficiencies related to erosion, excessive slopes, rutting or other adverse conditions. Repair any deficiencies immediately.
4. For Setback Distance, refer to the Index or Approved Products List (APL) drawing of the selected barrier.
5. For Conditions 1 and 3 provided in Table 1, any drop-off condition that is created and restored within the same work period will not be subject to the use of temporary barriers; however, channelizing devices will be required.
6. When permanent curb heights are $\geq 6"$, no channelizing device will be required. For curb heights $< 6"$, see Table 1.



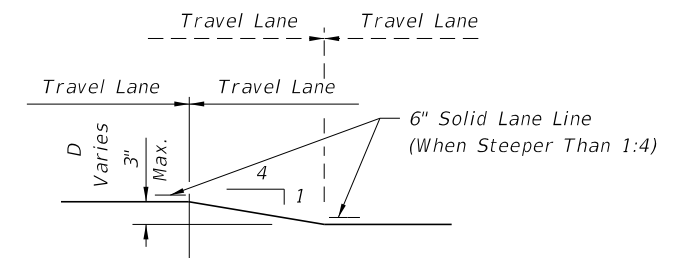
DROP-OFF CONDITION DETAIL

**Table 1
Drop-off Protection Requirements**

Condition	X (ft)	D (in.)	Device Required
1	0-12	> 3	Temporary Barrier
2	> 12-CZ	> 3 to ≤ 5	Channelizing Device
3	0-CZ	> 5	Temporary Barrier
4	Removal of Bridge or Retaining Wall Barrier		Temporary Barrier
5	Removal of portions of Bridge Deck		Temporary Barrier

TRAVEL LANE TREATMENT FOR MILLING OR RESURFACING NOTES

1. This treatment applies to resurfacing or milling operations between adjacent travel lanes.
2. Whenever there is a difference in elevation between adjacent travel lanes, the W8-11 sign with "UNEVEN LANES" is required at intervals of 1/2 mile maximum.
3. If D is 1 1/2" or less, no treatment is required.
4. Treatment allowed only when D is 3" or less.
5. If the slope is steeper than 1:4 (not to be steeper than 1:1), the R4-1 and MOT-1-06 signs shall be used as a supplement to the W8-11; this condition should never exceed 3 miles in length.



TRAVEL LANE TREATMENT FOR MILLING OR RESURFACING DETAIL

PEDESTRIAN WAY DROP-OFF CONDITION NOTES

1. A pedestrian way drop-off is defined as:
 - a. a drop in elevation greater than 10" that is closer than 2' from the edge of the pedestrian way
 - b. a slope steeper than 1:2 that begins closer than 2' from the edge of the pedestrian way when the total drop-off is greater than 60"
2. Protect any drop-off adjacent to a pedestrian way with pedestrian longitudinal channelizing devices, temporary barrier wall, or approved handrail.

Approved
2019-A-395-00136
David Wilks
3/18/2020

DROP-OFFS IN WORK ZONES

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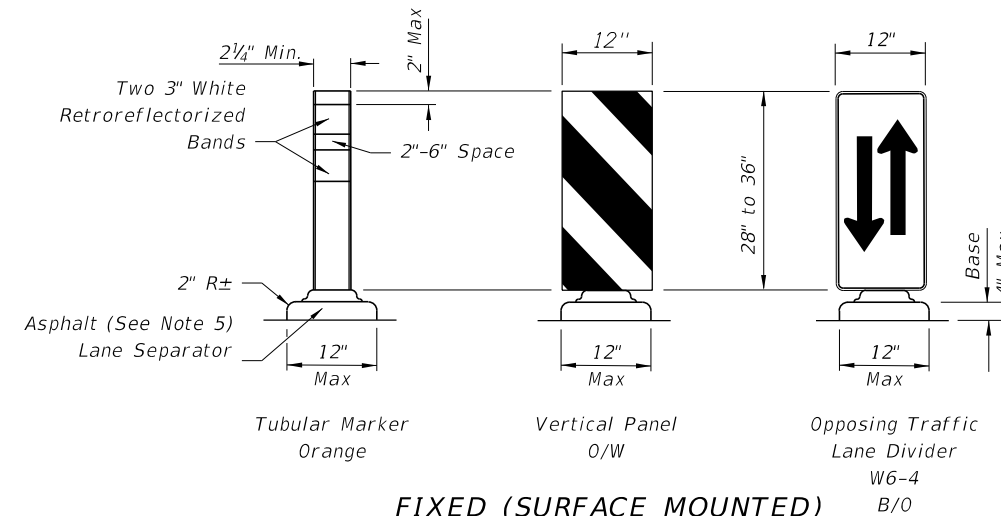
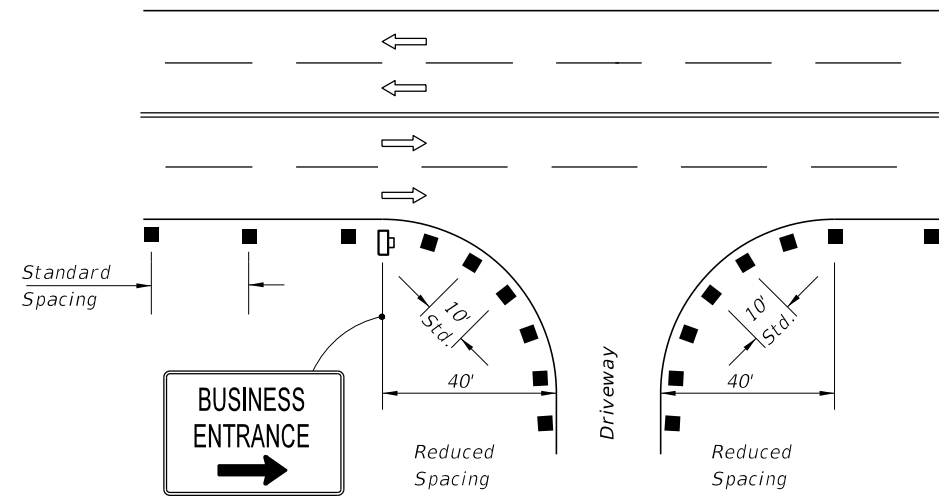
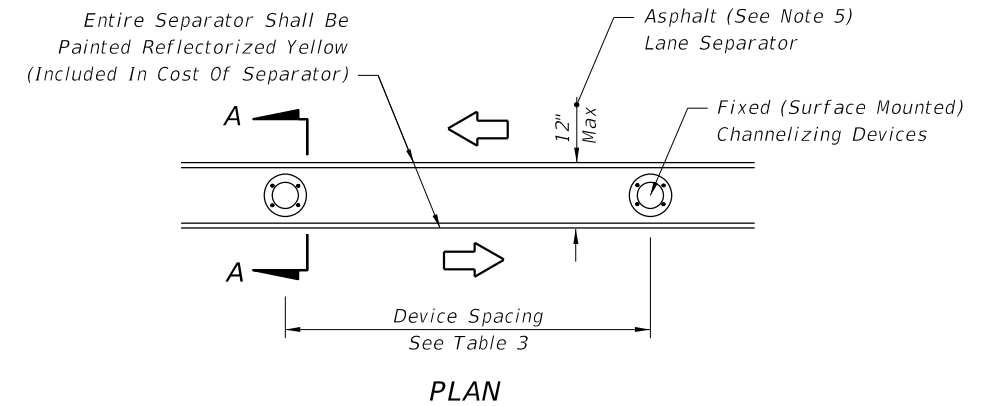
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FDOT FY 2018-19
STANDARD PLANS

GENERAL INFORMATION FOR TRAFFIC CONTROL THROUGH WORK ZONES

INDEX 102-600	SHEET 9 of 12
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Speed (mph)	Max. Distance Between Devices (ft.)			
	Tubular Markers		Vertical Panels or Opposing Traffic Lane Divider	
	Taper	Tangent	Taper	Tangent
25	25	50	25	50
30 to 45	25	50	30	50
50 to 70	25	50	50	100



FIXED (SURFACE MOUNTED)
CHANNELIZING DEVICES

SECTION AA

1. For single business entrances, place one 24" x 36" business sign for each driveway entrance affected. Signs shall show specific business names. Logos may be provided by business owners. Standard BUSINESS ENTRANCE sign in Index 700-102 may be used when approved by the Engineer.
2. When several businesses share a common driveway entrance, place one 24" x 36" standard BUSINESS ENTRANCE sign in accordance with Index 700-102 at the common driveway entrance.
3. Channelizing devices shall be placed at a reduced spacing on each side of the driveway entrance, but shall not restrict sight distance for the driveway users.
4. Business entrance signs are intended to guide motorist to business entrances moved/modified or disturbed during construction projects. Business entrance signs are not required where there is minimal disruption to business driveways which is often the case with resurfacing type projects.

1. Temporary lane separators shall be supplemented with any of the following approved fixed (surface mounted) channelizing devices: tubular markers, vertical panels, or opposing traffic lane divider panels. Opposing traffic lane divider panels (W6-4) shall only be used as center lane dividers to separate opposing vehicular traffic on a two-lane, two-way operation. Tubular Markers, Vertical Panels and Opposing Traffic Lane Divider panels shall not be intermixed within the limits where the temporary lane separator is used. The connection between the channelizing device and the temporary lane separator curb shall hold the channelizing device in a vertical position.
2. Reflectorized materials shall have a smooth sealed outer surface which will display the same approximate color day and night. Furnish channelizing devices having retroreflective sheeting meeting the requirements of Section 990.
3. 12" openings for drainage shall be constructed in the asphalt and portable temporary lane separator at a maximum spacing of 25' in areas with grades of 1% or less or 50' in areas with grades over 1% as directed by the Engineer.
4. Tapered ends shall be used at the beginning and end of each run of the temporary lane separator to form a gradual increase in height from the pavement level to the top of the temporary lane separator.
5. The Contractor has the option of using portable temporary lane separators containing fixed channelizing devices in lieu of the temporary asphalt separator and channelizing devices detailed on this sheet. The portable temporary lane separator shall come in portable sections that can be connected to maintain continuous alignment between the separate curb sections. Each temporary lane separator section shall be 36 inches to 48 inches in total length. Portable temporary lane separators shall duplicate the color of the pavement marking. Portable temporary lane separators shall be one of those listed on the Approved Products List.
6. Any damage to existing pavement caused by the removal of temporary lane separator shall be satisfactorily repaired and the cost of such repairs are to be included in the cost of Maintenance of Traffic, LS.

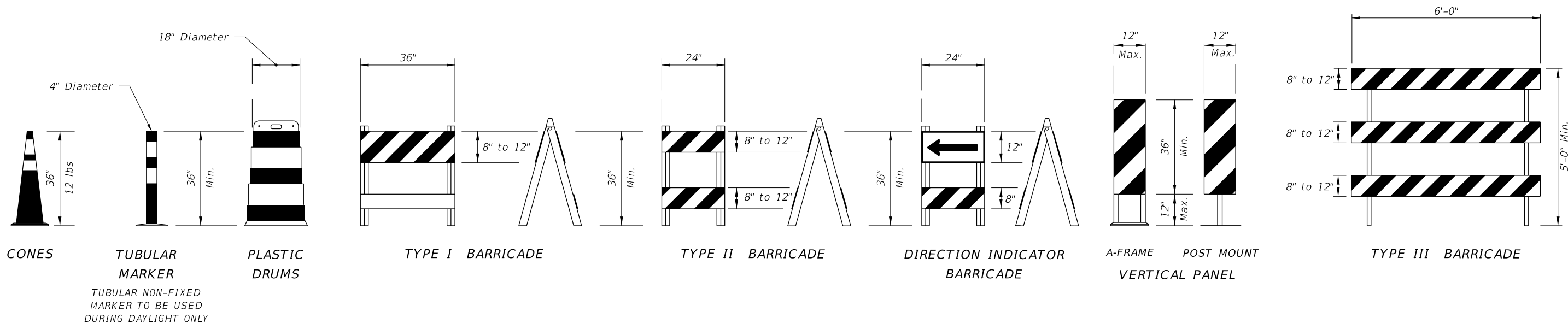
PLACEMENT OF BUSINESS ENTRANCE SIGNS AND
CHANNELIZING DEVICES AT BUSINESS ENTRANCE

TEMPORARY LANE SEPARATOR

Approved
2019-A-395-00136
David Wilks
INDEX SHEET
3/18/2020
102-600 10 of 12

10/30/2017 9:36:48 AM

LAST REVISION 11/01/17	DESCRIPTION:	FDOT FY 2018-19 STANDARD PLANS	GENERAL INFORMATION FOR TRAFFIC CONTROL THROUGH WORK ZONES	INDEX SHEET 102-600 10 of 12
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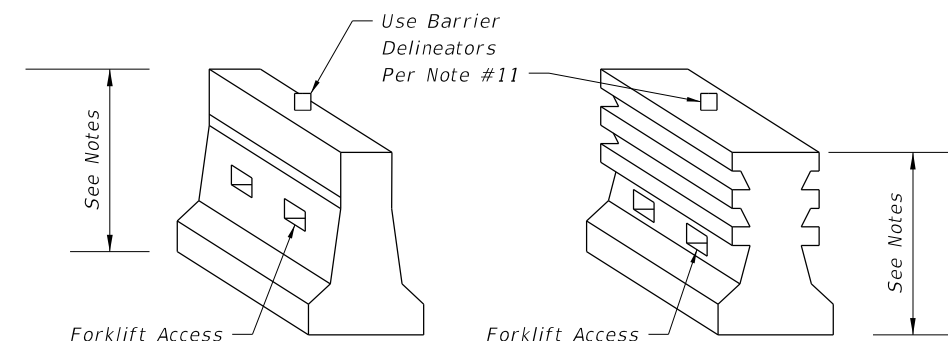
CHANNELIZING DEVICES

CHANNELIZING DEVICE NOTES:

- The details shown on this sheet are for the following purposes:
 - For ease of identification and
 - To provide information that supplements or supersedes that provided by the MUTCD.
- The Type III Barricade shall have a unit length of 6'-0" only. When barricades of greater lengths are required those lengths shall be in multiples of the 6'-0" unit.
- No sign panel should be mounted on any channelizing device unless the channelizing device/sign combination was found to be crashworthy and the sign panel is mounted in accordance with the vendor drawing for the channelizing device shown on the Approved Products List (APL).
- Ballast shall not be placed on top rails or any striped rails or higher than 13" above the driving surface.
- The direction indicator barricade may be used in tapers and transitions where specific directional guidance to drivers is necessary. If used, direction indicator barricades shall be used in series to direct the driver through the transition and into the intended travel lane.
- The splicing of sheeting is not permitted on either channelizing devices or MOT signs.
- For rails less than 3'-0" long, 4" stripes shall be used.
- Cones shall:
 - Be used only in active work zones where workers are present.
 - Not exceed 2 miles in length of use at any one time.
 - Be reflectorized as per the MUTCD with Department-approved reflective collars when used at night.
- Vehicular longitudinal channelizing devices shall not exceed 36" in height. For vehicular longitudinal channelizing devices (LCDs) less than 32" in height, the LCD shall be supplemented with approved fixed (surface mounted) channelizing devices (tubular markers, vertical panels, etc.) along the run of the LCD, at the ends, at 50' centers on tangents, and 25' centers on radii. The cost of the fixed supplemented channelizing devices shall be included in the cost of the LCD. LCDs less than 32" in height shall not be used for speeds greater than 45 mph.

10. For pedestrian longitudinal channelizing devices, the device shall have a minimum of 8" continuous detectable edging above the walkway. A gap not exceeding a height of 2" is allowed to facilitate drainage. The top surface of the device shall be a minimum height of 32" and have a 1/8" or less difference in any plane at all connection points between the devices to facilitate hand trailing. The bottom and the top surface of the device shall be in the same vertical plane. If pedestrian drop-off protection is required, the device shall have a footprint or offset of at least 2', otherwise the device must be at least 42" in height above the walkway and be anchored or ballasted to withstand a 200 lb lateral point load at the top of the device.

11. For Barrier Delineators, see Specification 102. Place on top of unit so that retroreflective sheeting faces vehicular traffic. Color must match adjacent longitudinal pavement marking.

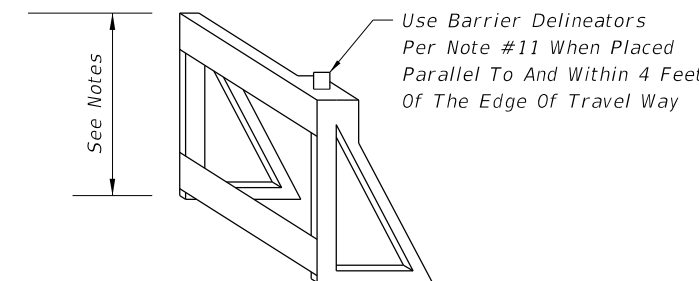


TEMPORARY BARRIER NOTES:

1. Where a barrier is specified, any of the types below may be used in accordance with the applicable Index:

Index	Description
102-100	Temporary Barrier
102-120	Low Profile Barrier
536-001	Guardrail

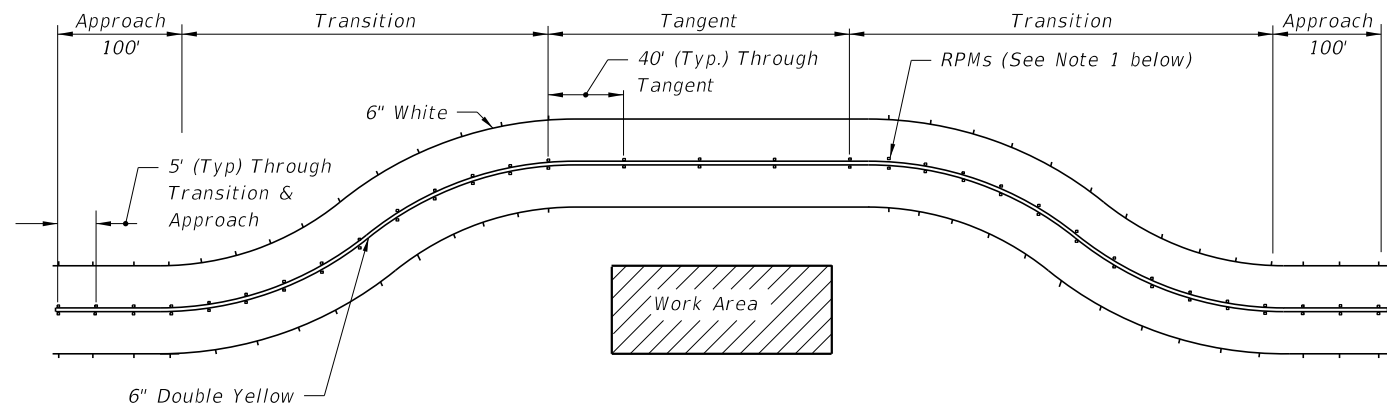
2. Trailer Mounted Barriers may be used to provide positive protection for workers within the work areas. APL drawings may be used as a guide to develop project specific Temporary Traffic Control Plans that are signed and sealed by the Contractor's Engineer.



LONGITUDINAL CHANNELIZING DEVICE

10/30/2017 9:36:49 AM

Approved
 2019-A-395-00136
 David Wilks

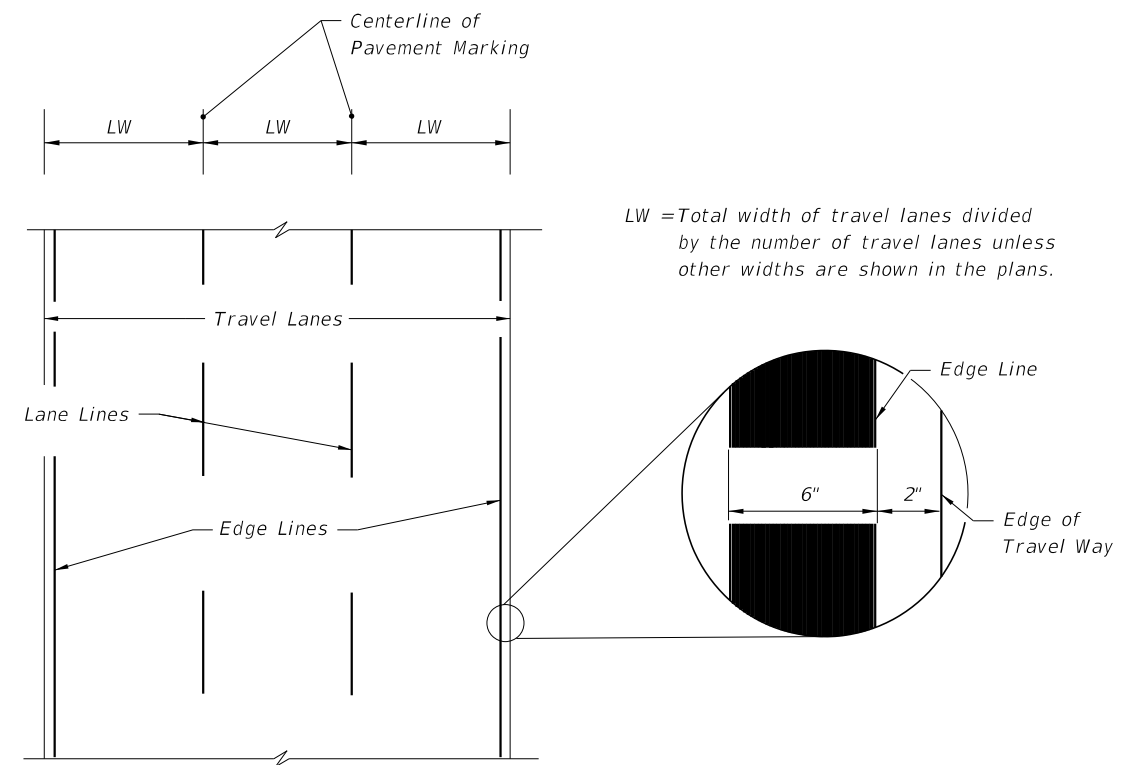


USE OF RPMS TO SUPPLEMENT PAINT OR REMOVABLE TAPE IN WORK ZONES

1. RPMS shall be installed as a supplement to:
 - a. All lane lines.
 - b. Edge lines in transition & approach areas.
 - c. Edge lines of gore areas.
2. Placement of RPMS should be as shown in Index 706-001 with the following exceptions:
 - RPMS shall be placed at 5 feet center to center in approach and transition areas.

NOTES FOR RAISED PAVEMENT MARKERS:

1. The color of the raised pavement marker under both day and night conditions shall conform to the color of the marking for which they serve as a positioning guide, or for which they supplement.
2. RPMS used to supplement lane lines are to be paid for as Raised Pavement Marker (Temporary), EA. RPMS used as a temporary substitute for paint or removable tape due to equipment malfunction are to be placed at the Contractor's expense.



PLACEMENT OF PAVEMENT MARKINGS

10/30/2017 9:36:49 AM

Approved
 2019-A-225-00136
 PAVEMENT MARKINGS
 David Wilks

LAST REVISION 11/01/17	REVISION	DESCRIPTION:
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**FY 2018-19
STANDARD PLANS**

GENERAL INFORMATION FOR TRAFFIC CONTROL THROUGH WORK ZONES

INDEX 102-600	SHEET 12 of 12
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STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION
**RECORD OF WAIVED REQUIREMENTS
FOR ALL CATEGORIES**

THIS FORM SHALL BE KEPT WITH THE APPLICATION FILE

PART 1: IDENTIFICATION

Project Name: Edgewood Right Turn Lane
Application Number: 2019-A-395-00136
Applicant: Michael Schmidt
Telephone: (850) 981-7100 ext. _____

PART 2: STAFF INFORMATION

Staff Person: Beth Townsend
Date of Contact: 1/14/2020
Type of Contact: Telephone
 Visit
 E-mail
 Written Request

PART 3: REQUIREMENT WAIVED

Driveway Application Fee

PART 4: JUSTIFICATION

This Justification will be based on principles found in existing Florida Statutes or Department Administrative Rules
Government Entity

Signature of Staff Person: Maria Townsend
Title: PERMITS COORDINATOR I
Date: 1/14/2020

Approved
2019-A-395-00136
David Wilks
3/18/2020



SANTA ROSA COUNTY PROCUREMENT DEPARTMENT

6495 Caroline Street, Suite L | Milton, Florida 32570 850-983-1870 procurement@santarosa.fl.gov

BID SUBMISSION CHECKLIST


ITB 21-034 Edgewood Drive Roadway and Drainage Improvements

- Sealed Bid Package with Bid Name and Number, Firm name and Address with Contact information clearly marked on the outside of envelope/box.
- 1 Original Bid Package and 1 Electronic Copy in .pdf on a CD or USB Drive
- Bid Submittal Checklist attached to top of Original Bid Package
- Bid Bond
- Bid Form and Schedule of Values (Unit Pricing)
- Cone of Silence
- Sworn Statement Public Entity Crimes
- Debarment Form
- References Form
- Conflict of Interest Form
- Copy of current Required Insurance declaration page with Santa Rosa County named interest, or, Letter of Insurability from Carrier stating that the levels of coverage will be obtained.
- Copy of General Contractors license
- Santa Rosa County business tax receipt
- Copy of "active status" with Florida Department of State Division of Corporations (sunbiz.org)
- Addendum (s) if any

All required documentation submitted must be updated with most current and complete information from date of bid opening) including notarizations where required. Failure to submit all required forms may result in your submittal being deemed non-responsive. **ATTACH THIS PAGE TO THE TOP OF YOUR BID SUBMISSION**

Firm: Roads, Inc. of NWF

By: Cody Rawson
(Print)

Signature: 

Title: President

Date: June 24, 2021

THE AMERICAN INSTITUTE OF ARCHITECTS

AIA Document A310 Bid Bond

KNOW ALL MEN BY THESE PRESENTS, THAT WE Roads, Inc. of NWF
106 Stone Boulevard, Cantonment, FL 32533

as Principal, hereinafter called the Principal, and Western Surety Company
151 N. Franklin Street, Chicago, IL 60606

a corporation duly organized under the laws of the State of SD
as Surety, hereinafter called the Surety, are held and firmly bound unto Santa Rosa County, Florida

as Obligee, hereinafter called the Obligee, in the sum of Five Percent of Amount Bid
Dollars (\$ 5%),
for the payment of which sum well and truly to be made, the said Principal and the said Surety, bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has submitted a bid for ITB 21-034 Edgewood Drive Roadway and Drainage Improvements

NOW, THEREFORE, if the Obligee shall accept the bid of the Principal and the Principal shall enter into a Contract with the Obligee in accordance with the terms of such bid, and give such bond or bonds as may be specified in the bidding or Contract Documents with good and sufficient surety for the faithful performance of such Contract and for the prompt payment of labor and materials furnished in the prosecution thereof, or in the event of the failure of the Principal to enter such Contract and give such bond or bonds, if the Principal shall pay to the Obligee the difference not to exceed the penalty hereof between the amount specified in said bid and such larger amount for which the Obligee may in good faith contract with another party to perform the Work covered by said bid, then this obligation shall be null and void, otherwise to remain in full force and effect.

Signed and sealed this 24th day of June



(Witness)

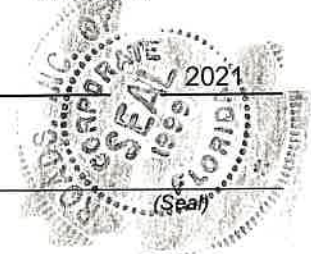
Roads, Inc. of NWF

(Principal)

By:

Cody Rawson, Pres.

(Title)



Western Surety Company

(Surety)

By:

Robert Corley McLendon
Attorney-in-Fact & Licensed Resident Agent

(Title)

Paula S. Nelloms
Paula S. Nelloms
(Witness)



Western Surety Company

POWER OF ATTORNEY APPOINTING INDIVIDUAL ATTORNEY-IN-FACT

Know All Men By These Presents, That WESTERN SURETY COMPANY, a South Dakota corporation, is a duly organized and existing corporation having its principal office in the City of Sioux Falls, and State of South Dakota, and that it does by virtue of the signature and seal herein affixed hereby make, constitute and appoint

Robert Corley McLendon , Individually

of Pensacola, FL its true and lawful Attorney(s)-in-Fact with full power and authority hereby conferred to sign, seal and execute for and on its behalf bonds, undertakings and other obligatory instruments of similar nature

- In Unlimited Amounts -

Surety Bond No.: Bid Bond
Principal: Roads, Inc. of NWF
Obligee: Santa Rosa County, Florida

and to bind it thereby as fully and to the same extent as if such instruments were signed by a duly authorized officer of the corporation and all the acts of said Attorney, pursuant to the authority hereby given, are hereby ratified and confirmed.

This Power of Attorney is made and executed pursuant to and by authority of the By-Law printed on the reverse hereof, duly adopted, as indicated, by the shareholders of the corporation.

In Witness Whereof, WESTERN SURETY COMPANY has caused these presents to be signed by its Vice President and its corporate seal to be hereto affixed on this 27th day of February, 2018.



WESTERN SURETY COMPANY

Paul T. Bruffat
Paul T. Bruffat, Vice President

State of South Dakota }
County of Minnehaha } ss

On this 27th day of February, 2018, before me personally came Paul T. Bruffat, to me known, who, being by me duly sworn, did depose and say: that he resides in the City of Sioux Falls, State of South Dakota; that he is the Vice President of WESTERN SURETY COMPANY described in and which executed the above instrument; that he knows the seal of said corporation; that the seal affixed to the said instrument is such corporate seal; that it was so affixed pursuant to authority given by the Board of Directors of said corporation and that he signed his name thereto pursuant to like authority, and acknowledges same to be the act and deed of said corporation.

My commission expires
June 23, 2021



J. Mohr
J. Mohr, Notary Public

CERTIFICATE

I, L. Nelson, Assistant Secretary of WESTERN SURETY COMPANY do hereby certify that the Power of Attorney hereinabove set forth is still in force, and further certify that the By-Law of the corporation printed on the reverse hereof is still in force. In testimony whereof I have hereunto subscribed my name and affixed the seal of the said corporation this 24th day of June, 2021.



WESTERN SURETY COMPANY

L. Nelson
L. Nelson, Assistant Secretary

Authorizing By-Law

ADOPTED BY THE SHAREHOLDERS OF WESTERN SURETY COMPANY

This Power of Attorney is made and executed pursuant to and by authority of the following By-Law duly adopted by the shareholders of the Company.

Section 7. All bonds, policies, undertakings, Powers of Attorney, or other obligations of the corporation shall be executed in the corporate name of the Company by the President, Secretary, and Assistant Secretary, Treasurer, or any Vice President, or by such other officers as the Board of Directors may authorize. The President, any Vice President, Secretary, any Assistant Secretary, or the Treasurer may appoint Attorneys in Fact or agents who shall have authority to issue bonds, policies, or undertakings in the name of the Company. The corporate seal is not necessary for the validity of any bonds, policies, undertakings, Powers of Attorney or other obligations of the corporation. The signature of any such officer and the corporate seal may be printed by facsimile.



SANTA ROSA COUNTY PROCUREMENT DEPARTMENT



166 stone Blvd. Cantonment, FL 32533
Phone: (850) 968-0991
Fax: (850) 968-0996

6495 Caroline Street, Suite L | Milton, Florida 32570 850-983-1870 procurement@santarosa.fl.gov

REVISED BID FORM

(May be copied by the Bidder on his own letterhead)

TO: Santa Rosa County Procurement Department
Attention Procurement Officer
6495 Caroline Street, Suite L
Milton, Florida 32570

REFERENCE: **ITB 21-034 Edgewood Drive Roadway and Drainage Improvements**

To whom it may concern,

I, Cody Rawson have received and reviewed the Bidding Documents consisting of Drawings and Specifications (Project Manual) entitled **ITB 21-034 Edgewood Drive Roadway and Drainage Improvements**, prepared by Santa Rosa County Engineering, 6051 Old Bagdad Highway, Suite 300, Milton, Florida 32570, and Kenneth Horne & Associates, Inc.

I have also received Addenda Numbers 1 and 2 and have included their provisions in my Bid.

In submitting the Bid, I agree:

1. To hold my bid in full force and effect for a period of sixty (60) calendar days after the time of the opening of this Bid.
2. To accept the provisions of the Instructions to Bidders regarding disposition of Bid Guarantee.
3. To enter into and execute a Contract within 10 (ten) calendar days after said Contract is delivered to me, if awarded on the basis of this Bid.
4. To accomplish the work in accordance with the Contract Documents.
5. To commence work under this Contract on or before a date to be specified in written "Notice of Proceed" by the County Attorney and to complete project within three hundred sixty-five (365) calendar days thereafter.
6. To pay as liquidated damages, the sum of **\$2,500.00** for each consecutive calendar day after completion date, as called for in the Contract Agreement as modified.
7. Provide Santa Rosa County with performance Bonds and adhere to Supplementary Conditions.



SANTA ROSA COUNTY PROCUREMENT DEPARTMENT

6495 Caroline Street, Suite L | Milton, Florida 32570 850-983-1870 procurement@santarosa.fl.gov

I will construct this project for the lump sum price of:

	One Million Eight Hundred Ninety Six Thousand Five Hundred		
BASE BID TOTAL	<u>Fifteen Dollars and 96/100</u>	\$	<u>1,896,515 . 96</u>
	Two Hundred Twenty Five Thousand Seven Hundred		
ADD ALTERNATE #1	<u>Thirty One Dollars and 86/100</u>	\$	<u>225,731 . 86</u>
	Three Hundred Eighty Six Thousand Eight Hundred Twenty		
ADD ALTERNATE #2	<u>Eight Dollars and 44/100</u>	\$	<u>386,828 . 44</u>

This is a lump sum project. The purpose for providing a bid tabulation format is to provide unit prices in case of change order. There is no implied statement by the engineer or Santa Rosa County as to the accuracy of the stated quantities within the bid tab or that the bid tab is all inclusive of the work items within the plans. It is the contractor's responsibility to carefully review the plans, specifications, and project to determine what is needed to do the whole job, and to reflect this in his LUMP SUM BID. This basis of award will be the total base bid for the project.

FIRM: Roads, Inc. of NWF

BY (print): Cody Rawson

SIGNATURE: 

TITLE: President

DATE: June 24, 2021

MAILING ADDRESS 106 Stone Blvd.

Cantonment, FL 32533

PHONE (850) 968-0991 FAX (850) 968-0996

EMAIL josh@roadsinc.com



See Attached Schedule of Unit Prices

EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

SCHEDULE OF UNIT PRICES

Unit prices are attached for informational purposes. Change orders and progress payments will be based on unit prices provided. Quantities are engineer's estimate and are to be used as a guide. **All quantities are in-place measure.** Contractor should make their own adjustments to price to include labor, transportation, compaction, etc. **Schedule of unit prices to be turned in with Bid Package**

Item	Description	Quantity	Unit	Unit Price	Amount
	BASE BID				
1	MOBILIZATION	1	LS	\$84,151.60	\$84,151.60
2	GENERAL CONDITIONS	1	LS	\$21,043.27	\$21,043.27
3	MAINTENANCE OF TRAFFIC	1	LS	\$44,247.83	\$44,247.83
4	CONSTRUCTION LAYOUT	1	LS	\$31,373.84	\$31,373.84
5	CONSTRUCTION TESTING	1	LS	\$30,905.57	\$30,905.57
6	POLLUTION CONTROL - PREPARE SWPPP	1	LS	\$23,437.87	\$23,437.87
7	POLLUTION CONTROL - NPDES PERMITTING (PREPARE AND SUBMIT) AND INSPECTIONS	1	LS	\$972.53	\$972.53
8	POLLUTION CONTROL - HAY BALES, DUST CONTROL PER SWPPP	1	LS	\$23,082.20	\$23,082.20
9	SILT FENCE	31400	LF	\$1.32	\$41,448.00
10	CLEARING (SWALES)	1	LS	\$55,607.60	\$55,607.60
11	CLEARING (CREEKBED)	1	LS	\$44,206.96	\$44,206.96
12	EARTHWORK	1	LS	\$113,903.04	\$113,903.04
13	GRADING	1	LS	\$38,482.70	\$38,482.70
14	REMOVE LANDSCAPING	1	LS	\$1,275.73	\$1,275.73
15	REMOVE TREE	3	EA	\$716.77	\$2,150.31
16	REMOVE DRIVEWAY PIPE	87	LF	\$22.45	\$1,953.15
17	REMOVE ROADWAY PIPE	185	LF	\$21.11	\$3,905.35
18	REMOVE MITERED END SECTION	3	EA	\$260.43	\$781.29
19	REMOVE GAS MARKER	1	EA	\$71.50	\$71.50
20	REMOVE POSTS	4	EA	\$100.10	\$400.40
21	RELOCATE EXISTING STANDARD MAILBOX	43	EA	\$86.98	\$3,740.14
22	REMOVE BRICK MAILBOX	10	EA	\$347.95	\$3,479.50
23	RE-INSTALL BRICK MAILBOX	10	EA	\$1,449.79	\$14,497.90
24	INSTALL NEW MAILBOX	10	EA	\$260.96	\$2,609.60
25	REMOVE AND STORE PAVERS FOR REINSTALLATION	58	SY	\$28.99	\$1,681.42
26	SAWCUT AND REMOVE CONC DRIVEWAY	1762	SY	\$8.26	\$14,554.12
27	REMOVE DIRT ROAD	770	SY	\$3.14	\$2,417.80
28	SAWCUT REMOVE AND REPLACE ASPHALT PATCH (STORM)	44	SY	\$95.93	\$4,220.92
29	REMOVE ASPHALT (EXCESS)	964	SY	\$5.96	\$5,745.44
30	RELOCATE DECORATIVE POST	1	EA	\$173.98	\$173.98
31	RELOCATE TRAFFIC SIGN	12	EA	\$57.99	\$695.88
32	RELOCATE CROSSWALK SIGNAL	1	EA	\$8,234.81	\$8,234.81
33	ADJUST WATER VALVE	10	EA	\$271.06	\$2,710.60
34	ADJUST GAS VALVE	9	EA	\$293.60	\$2,642.40

Item	Description	Quantity	Unit	Unit Price	Amount
35	18" RCP	22	LF	\$88.94	\$1,956.68
36	36" RCP	120	LF	\$136.96	\$16,435.20
37	12" X 18" ERCP	108	EA	\$84.26	\$9,100.08
38	19" X 30" ERCP	195	EA	\$121.21	\$23,635.95
39	MITERED END SECTION FOR 18" RCP	1	EA	\$1,826.96	\$1,826.96
40	MITERED END SECTION FOR 12" X 18" ERCP	8	EA	\$1,875.74	\$15,005.92
41	CONCRETE ENDWALL FOR 24" CPP	1	EA	\$4,158.67	\$4,158.67
42	ALUMINUM PIPE GUIDERAIL, WITHOUT HANDRAIL, FDOT INDEX 870	50	LF	\$125.26	\$6,263.00
43	6" FIBER REINFORCED CONCRETE DRIVEWAY	1072	SY	\$48.71	\$52,217.12
44	RE-INSTALL BRICK PAVER DRIVEWAY	27	SY	\$125.26	\$3,382.02
45	VERTICAL CURB	23	LF	\$48.71	\$1,120.33
46	6" THICK CONCRETE SIDEWALK LANDING	16	SY	\$62.63	\$1,002.08
47	5' FIBER REINFORCED CONCRETE SIDEWALK	7670	SY	\$42.91	\$329,119.70
48	THICKENED EDGE CONCRETE SIDEWALK (5'-9" WIDTH) (FOR ALUM GUIDERAIL)	20	SY	\$53.35	\$1,067.00
49	DETECTABLE HANDICAP WARNING MAT	485	SF	\$25.52	\$12,377.20
50	LANDSCAPE AND IRRIGATION REPLACEMENT OR RESTORATION (ALLOWANCE)	1	LS	\$5,799.16	\$5,799.16
51	SOD (MATCH EXISTING)	11100	SY	\$3.41	\$37,851.00
52	SAWCUT EX. ASPHALT	28550	LF	\$2.14	\$61,097.00
53	6" GRADED AGGREGATE BASE	16190	SY	\$22.03	\$356,665.70
54	12" STABILIZED SUBGRADE	16190	SY	\$7.05	\$114,139.50
55	1 5" FDOT SP 12 5 ASPHALT	16190	SY	\$9.84	\$159,309.60
56	TACK COAT	222	SY	\$0.80	\$177.60
57	1" FDOT SP 9 5 ASPHALT (OVERLAY W/ 10' MILLED TAPERS)	222	SY	\$17.75	\$3,940.50
58	THERMOPLASTIC 6" SOLID STRIPE, WHITE	24590	LF	\$0.84	\$20,655.60
59	THERMOPLASTIC 6" 2-4 SKIP STRIPE, WHITE	2520	LF	\$0.70	\$1,764.00
60	THERMOPLASTIC 12" WHITE SOLID STRIPE	1715	LF	\$4.64	\$7,957.60
61	THERMOPLASTIC 24" STOP BAR	436	LF	\$9.28	\$4,046.08
62	THERMOPLASTIC DIRECTIONAL ARROW, SINGLE HEAD (TURN RIGHT)	2	EA	\$57.99	\$115.98
63	THERMOPLASTIC BICYCLE SYMBOL WITH ARROW	53	EA	\$255.16	\$13,523.48
Base Bid Total					\$1,896,515.96

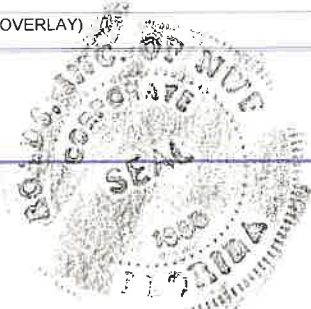
EDGEWOOD DRIVE DRAINAGE AND ROADWAY IMPROVEMENTS

SCHEDULE OF UNIT PRICES

Unit prices are attached for informational purposes. Change orders and progress payments will be based on unit prices provided. Quantities are engineer's estimate and are to be used as a guide. **All quantities are in-place measure.** Contractor should make their own adjustments to price to include labor, transportation, compaction, etc. **Schedule of unit prices to be turned in with Bid Package**

Item	Description	Quantity	Unit	Unit Price	Amount
ADDITIVE ALTERNATE BID #1 (Phase 2)					
1	CLEARING (SWALES)	1	LS	\$34,683.26	\$34,683.26
2	REMOVE ROADWAY PIPE	319	LF	\$20.16	\$6,431.04
3	REMOVE DIRT ROAD	146	SY	\$3.36	\$490.56
4	SAWCUT REMOVE AND REPLACE ASPHALT PATCH (STORM)	111	SY	\$95.78	\$10,631.58
5	REMOVE ASPHALT (EXCESS)	14	SY	\$42.62	\$596.68
6	RELOCATE TRAFFIC SIGN	2	EA	\$57.99	\$115.98
7	24" RCP	110	LF	\$73.26	\$8,058.60
8	36" RCP	890	LF	\$125.83	\$111,988.70
9	12" X 18" ERCP	126	EA	\$84.31	\$10,623.06
10	19" X 30" ERCP	100	EA	\$124.97	\$12,497.00
11	STRAIGHT CONCRETE ENDWALL FOR DOUBLE 36" RCP	2	EA	\$7,263.04	\$14,526.08
12	6" GRADED AGGREGATE BASE	140	SY	\$24.63	\$3,448.20
13	12" STABILIZED SUBGRADE	140	SY	\$8.67	\$1,213.80
14	1.5" FDOT SP 12.5 ASPHALT	140	SY	\$17.61	\$2,465.40
15	TACK COAT	592	SY	\$0.80	\$473.60
16	1" FDOT SP 9.5 ASPHALT (OVERLAY W/ 10' MILLED TAPERS)	592	SY	\$11.45	\$6,778.40
17	THERMOPLASTIC 12" WHITE SOLID STRIPE	65	LF	\$4.64	\$301.60
18	24" WHITE THERMO STOP BAR	44	LF	\$9.28	\$408.32
Additive Alternated #1 Total					\$225,731.86
Base Bid & Additive Alternate #1 Total					\$2,122,247.82

Item	Description	Quantity	Unit	Unit Price	Amount
ADDITIVE ALTERNATE BID #2					
1	TEMPORARY 4" SOLID STRIPE, WHITE	24590	LF	\$0.20	\$4,918.00
2	TEMPORARY 4" SOLID STRIPE, YELLOW	3670	LF	\$0.29	\$1,064.30
3	TEMPORARY 4" 10-30 SKIP STRIPE, YELLOW	14050	LF	\$0.19	\$2,669.50
4	THERMOPLASTIC 6" SOLID STRIPE, YELLOW	3670	LF	\$0.93	\$3,413.10
5	THERMOPLASTIC 6" 10-30 SKIP STRIPE, YELLOW	14050	LF	\$0.52	\$7,306.00
6	24" WHITE THERMO STOP BAR	243	LF	\$9.28	\$2,255.04
7	TACK COAT	55250	SY	\$0.80	\$44,200.00
8	1" FDOT SP 9.5 ASPHALT (OVERLAY)	55250	SY	\$5.81	\$321,002.50
Additive Alternate #2 Total					\$386,828.44
Base Bid & Additive Alternate #1 & #2 Total					\$2,509,076.26





SANTA ROSA COUNTY PROCUREMENT DEPARTMENT

6495 Caroline Street, Suite L | Milton, Florida 32570 850-983-1870 procurement@santarosa.fl.gov

CONE OF SILENCE FORM

SRC Procurement Form COS 013_01_091619

The Board of County Commissioners have established a solicitation silence policy (Cone of Silence) that prohibits oral and written communication regarding all formal solicitations for goods and services (ITB, RFP, ITQ, ITN, and RFQ) or other competitive solicitation between the bidder (or its agents or representatives) or other entity with the potential for a financial interest in the award (or their respective agents or representatives) regarding such competitive solicitation, and any County Commissioner or County employee, selection committee member or other persons authorized to act on behalf of the Board including the County’s Architect, Engineer or their sub-consultants, or anyone designated to provide a recommendation to award a particular contract, other than the Procurement Department Staff.

The period commences from the time of advertisement until contract award.

Any information thought to affect the committee or staff recommendation submitted after bids are due, should be directed to the Procurement Officer or an appointed representative. It shall be the Procurement Officers decision whether to consider this information in the decision process.

Any violation of this policy shall be grounds to disqualify the respondent from consideration during the selection process.

All respondents must agree to comply with this policy by signing the following statement and including it with their submittal.

I, Cody Rawson representing Roads, Inc. of NWF
(Print) (Company)

On this 24th day of June ²¹~~2020~~ hereby agree to abide by the County’s “Cone of Silence” clause and understand violation of this policy shall result in disqualification of my proposal/submittal.


(Signature)



SANTA ROSA COUNTY PROCUREMENT DEPARTMENT

6495 Caroline Street, Suite L | Milton, Florida 32570 850-983-1870 procurement@santarosa.fl.gov

SWORN STATEMENT UNDER SETION 287.133 (3) (A) FLORIDA STATUTE ON PUBLIC ENTITY CRIMES

SRC Procurement Form SSPEC 016 01 091619

THIS FORM MUST BE SIGNED IN THE PRESENCE OF A NOTARY PUBLIC OR OTHER OFFICER AUTHORIZED TO ADMINISTER OATHS.

1. This sworn statement is submitted with Bid, Proposal or Contract for: _____
ITB 21-034 Edgewood Drive Roadway and Drainage Improvements
2. This sworn statement is submitted by, Roads, Inc. of NWF, whose business address is, 106 Stone Blvd. Cantonment, FL 32533, and (if applicable) Federal Employer Identification Number (FEIN) is 59-3598732 (if the entity has no FEIN, include the Social Security Number of the individual signing this sworn statement).
3. My name is Cody Rawson and my relationship to the entity named above is President (title).
4. I understand that a "public entity crime" as defined in paragraph 287.133 (1) (g) Florida Statute, means a violation of any state or federal law by a person with respect to and directly related to the transaction of business with any public entity or with an agency or political subdivision of any other state or with the United States including, but not limited to , any bid or contract for goods or services to be provided to any public entity or any agency or public subdivision of any other state or of the United States and involved antitrust, fraud, theft, bribery, collusion, racketeering, conspiracy or material misrepresentation.
5. I understand that "convicted" or "convicted" as defined in paragraph 287.133 (1) (b), Florida Statutes, means a finding of guilt or a conviction of a public entity crime with or without an adjudication of guilt, in any federal or state trial court of records relating to charges brought by indictment or information after July 1, 1989, as a result of a jury verdict, non-jury trial, or entry of a plea of guilty or nolo contendere.
6. I understand that an "affiliate" as defined in Paragraph 287 .133 (1) (a), Florida Statutes, means:
 - a. A predecessor or successor of a person convicted of a public entity crime; or
 - b. An entity under the control of any natural person who is active in the management of the entity and who has been convicted of a public entity crime. The term "affiliate" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in the management of an affiliate. The ownership by one of shares constituting a controlling income among persons when not for fair interest in another person, or a pooling of equipment or income among persons when not for fair market value under an length agreement, shall be a prima facie case that one person controls another person. A person who knowingly convicted of a public entity crime, in Florida during the preceding 36 months shall be considered an affiliate.
7. I understand that a "person" as defined in paragraph 287 .133 (1) (e), Florida Statutes, means any natural person or entity organized under the laws of the state or of the United States with the legal power to enter into a binding contract provision of goods or services let by a public entity, or which otherwise transacts or applies to transact business with a public entity. The term "person" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in management of an entity.



SANTA ROSA COUNTY PROCUREMENT DEPARTMENT

6495 Caroline Street, Suite L | Milton, Florida 32570 850-983-1870 procurement@santarosa.fl.gov

8. Based on information and belief, the statement which I have marked below is true in relation to the entity submitting this sworn statement. (Please indicate which statement applies)

- Neither the entity submitting this sworn statement, nor any officers, directors, executive, partners, shareholders, employees, member, or agents who are active in management of the entity, nor affiliate of the entity have been charged with and convicted of a public entity crime subsequent to July 1, 1989.
- The entity submitting this sworn statement, or one or more of the officers, directors, executives, partners, shareholders, employees, members, or agents who are active in management of the entity, or an affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989 And (please attach a copy of the final order)
- The person or affiliate was placed on the convicted vendor list. There has been a subsequent proceeding before a hearing officer of the State of Florida, Division of Administrative Hearings. The final order entered by the hearing officer determined that it was in public interest to remove the person or affiliate from the convicted vendor list. (Please attach a copy of the final order)
- The person or affiliate has not been placed on the convicted vendor list. (Please describe any action taken by, or pending with, the department of General Services)

I UNDERSTAND THAT THE SUBMISSION OF THIS FORM TO THE CONTRACTING OFFICER FOR THE PUBLIC ENTITY IDENTIFIED IN PARAGRAPH 1 (ONE) ABOVE IS FOR THAT PUBLIC ENTITY ONLY AND THAT THIS FORM IS VALID THROUGH DECEMBER 31 OF THE CALENDAR YEAR IN WHICH IT IS FILED. I ALSO UNDERSTAND THAT I AM REQUIRED TO INFORM THE PUBLIC ENTITY PRIOR TO ENTERING INTO A CONTRACT IN EXCESS OF THE THRESHOLD AMOUNT PROVIDED IN SECTION 287.017, FLORIDA STATUTES FOR CATEGORY TWO OF ANY CHANGE IN THE INFORMATION CONTAINED IN THIS FORM

Cody Rawson
Name

Signature

June 24, 2021
Date

PERSONALLY APPEARED BEFORE ME, the undersigned authority, who, after first being sworn by me, affixed his/her signature at the space provided above on this 24 day of June, 2021, and is personally known to me or has provided _____ as identification.

STATE OF FLORIDA
COUNTY OF: Escambia
My Commission expires: _____

Notary Public



**SANTA ROSA COUNTY
PROCUREMENT DEPARTMENT**

6495 Caroline Street, Suite L | Milton, Florida 32570 850-983-1870 procurement@santarosa.fl.gov


DEBARMENT FORM

SRC Procurement Form Debar 022_00_082719

Certification Regarding Debarment, Suspension, And Other Responsibility Matters

1. The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:
 - a. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
 - b. Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or Local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
 - c. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State, or Local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and
 - d. Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State, or Local) terminated for cause or default.
2. Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

Name: Cody Rawson Title: President

Signature: 

Firm: Roads, Inc. of NWF

Street Address: 106 Stone Blvd.

City: Cantonment

State: FL Zip Code: 32533

Solicitation Name ITB 21-034 Edgewood Drive Roadway and Drainage Improvements # XX-XXX



SANTA ROSA COUNTY PROCUREMENT DEPARTMENT

6495 Caroline Street, Suite L | Milton, Florida 32570 850-983-1870 procurement@santarosa.fl.gov

REFERENCES FORM

SRC Procurement Form Memo 024_00_082719

List work which best illustrates current qualifications relevant to this solicitation accomplished by personnel that will be assigned to the County's project. List at least three but no more than five (5) projects. (This form may be reproduced.)

YOUR FIRMS NAME Roads, Inc. of NWF
PROPOSAL POINT OF CONTACT Josh Haggard PHONE 850-968-0991
EMAIL josh@roadsinc.com

REFERENCE I.

PROJECT NAME: SR 8 (I-10)
AGENCY: Florida Department of Transportation (D3 - Milton Operations Center)
ADDRESS: 6025 Old Bagdad Highway
CITY, STATE, ZIP CODE: Milton, Florida 32583
CONTACT PERSON: Eric Benson
TITLE: Resident Construction Engineer
EMAIL: eric.benson@dot.state.fl.us
TELEPHONE: (850) 698-2606
PROJECT COST: \$11,816,467.00
COMPLETION DATE: November - 2018

SCOPE of Project (list tasks, attach samples of deliverables, outlines or descriptions of items:
(You may attach information to this form)

Expand existing bridge - Construct: roadway, storm system, signalization, curbing,
concrete ditch, pond, striping, permanent signs, erosion control.

List key personnel assigned to this project that will work on the County project (include assignments. You may attach information to this form):

Robby Williams, Lisa Neidlinger, Kevin Gibson - Project Managing
Construction Crews (Personnel) would be determined at a later date

REFERENCE II.

PROJECT NAME: Olive Road East (Multi-lane Reconstruction / Drainage Improvements)

AGENCY: Escambia County, Florida (Escambia County Engineering)

ADDRESS: 3363 West Park Place

CITY, STATE, ZIP CODE: Pensacola, FL 32505

CONTACT PERSON: James Duncan

TITLE: Engineering Deputy Division Manager

EMAIL: jeduncan@co.escambia.fl.us

TELEPHONE: (850) 777-4735

PROJECT COST: \$5,336,957.00

COMPLETION DATE: May 2018

SCOPE of Project (list tasks, attach samples of deliverables, outlines or descriptions of items:
(You may attach information to this form)

Build a multi-lane road - demolish existing road, clearing & grubbing, construct roadway, storm system, curbing, sidewalk, concrete ditch, pond, striping, permanent signs, erosion control.

List key personnel assigned to this project that will work on the County project (include assignments. You may attach information to this form):

Robby Williams, Lisa Neidlinger, Kevin Gibson - Project Managing

Construction Crews (Personnel) would be determined at a later date.

REFERENCE III.

PROJECT NAME: Muscogee Road Phase I & II (Widening & Drainage Improvements)

AGENCY: Escambia County, Florida (Escambia County Engineering)

ADDRESS: 3363 West Park Place

CITY, STATE, ZIP CODE: Pensacola, FL 32505

CONTACT PERSON: James Duncan

TITLE: Engineering Deputy Division Manager

EMAIL: jeduncan@co.escambia.fl.us

TELEPHONE: (850) 777-4735

PROJECT COST: \$4,013,029.00

COMPLETION DATE: Fall of 2018

SCOPE of Project (list tasks, attach samples of deliverables, outlines or descriptions of items:
(You may attach information to this form)

Widen Muscogee Road, milling, paving, storm drainage, concrete ditches, earthwork, 10" water line, jack and bores, sodding, demolition.

List key personnel assigned to this project that will work on the County project (include assignments. You may attach information to this form):

Robby Williams, Lisa Neidlinger, Kevin Gibson - Project Managing

Construction Crews (Personnel) would be determined at a later date.

REFERENCE IV.

PROJECT NAME: South Old Corryfield Road Bridge Replacement & Sidewalk & Drainage Improvements

AGENCY: Escambia County, Florida (Escambia County Engineering)

ADDRESS: 3363 West Park Place

CITY, STATE, ZIP CODE: Pensacola, FL 32505

CONTACT PERSON: James Duncan

TITLE: Deputy Division Manager

EMAIL: jeduncan@co.escambia.fl.us

TELEPHONE: (850) 777-4735

PROJECT COST: \$3,406,316.92

COMPLETION DATE: June 2020

SCOPE of Project (list tasks, attach samples of deliverables, outlines or descriptions of items:
(You may attach information to this form)

Replaced an existing box culvert, removed and replaced roadway, installed new drainage system, sidewalk & curb demo and replacement, major de-watering,

List key personnel assigned to this project that will work on the County project (include assignments. You may attach information to this form):

Robby Williams, Lisa Neidlinger, Kevin Gibson - Project Managing

Construction Crews (Personnel) would be determined at a later date.

REFERENCE V.

PROJECT NAME: SR 95 (US 29) Proposal Id # T3359

AGENCY: Florida Department of Transportation

ADDRESS: 6025 Old Bagdad Highway

CITY, STATE, ZIP CODE: Milton, FL 32583

CONTACT PERSON: Eric Benson

TITLE: Construction Resident Engineer

EMAIL: eric.benson@dot.state.fl.us

TELEPHONE: (850) 698-2606

PROJECT COST: \$48,912,839.63

COMPLETION DATE: June 2021

SCOPE of Project (list tasks, attach samples of deliverables, outlines or descriptions of items:
(You may attach information to this form)

Remove and Replace overpass bridge, Demolish entire roadway and install new 6 lane roadway with new curbing and sidewalk, Install new storm drain system with 4 new ponds

List key personnel assigned to this project that will work on the County project (include assignments. You may attach information to this form):

Robby Williams, Lisa Neidlinger, Kevin Gibson - Project Managing

Construction Crews (Personnel) would be determined at a later date.



SANTA ROSA COUNTY PROCUREMENT DEPARTMENT

6495 Caroline Street, Suite L | Milton, Florida 32570 850-983-1870 procurement@santarosa.fl.gov

CONFLICT OF INTEREST DISCLOSURE FORM

SRC Procurement Form COS 027_00_091319

For purposes of determining any possible conflict of interest, all respondents, must disclose if any Santa Rosa Board of County Commissioner, employee(s), elected officials(s), or if any of its agencies is also an owner, corporate officer, agency, employee, etc., of their business.

Indicate either "yes" (a county employee, elected official, or agency is also associated with your business), or "no". If yes, give person(s) name(s) and position(s) with your business.

Yes: _____ No: X

Name(s)

Position(s)

_____	_____
_____	_____
_____	_____
_____	_____

All respondents must agree to comply with this policy by signing the following statement and including it with their submittal.

FIRM NAME: Roads, Inc. of NWF

BY (PRINTED): Cody Rawson

BY (SIGNATURE): 

TITLE: President

ADDRESS: 106 Stone Blvd. Cantonment State FL Zip Code 32533

PHONE NO: 850-968-0991

E-MAIL: josh@roadsinc.com

Date: June 24, 2021



Ron DeSantis, Governor

Halsey Beshears, Secretary



STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION

CONSTRUCTION INDUSTRY LICENSING BOARD

THE GENERAL CONTRACTOR HEREIN IS CERTIFIED UNDER THE
PROVISIONS OF CHAPTER 489, FLORIDA STATUTES

BOOKER, TIMOTHY HESTER

ROADS INC OF NWF
106 STONE BLVD
CANTONMENT FL 32533

LICENSE NUMBER: CGC056968

EXPIRATION DATE: AUGUST 31, 2022

Always verify licenses online at MyFloridaLicense.com



Do not alter this document in any form.

This is your license. It is unlawful for anyone other than the licensee to use this document.

MACHINES	ROOMS	SEATS	EMPLOYEES	EXPIRES
BUSINESS TYPE	9007 CONTRACTOR			SEPTEMBER 30, 2021
BUSINESS ADDRESS	106 STONE BLVD CANTONMENT, FL 32533-7344			RENEWAL
	ROADS INC OF NWF JOHNSON DARRIN			AMOUNT 45.00
	ROADS INC OF NWF 106 STONE BLVD CANTONMENT, FL 32533-7344			PENALTY 0.00
				TOTAL DUE 45.00
				TOTAL PAID 45.00

[Signature]
STAN COLIE NICHOLS, TAX COLLECTOR
SANTA ROSA COUNTY, FLORIDA

ORIGINAL CHECK HAS AN ARTIFICIAL WATERMARK ON REVERSE SIDE - HOLD AT AN ANGLE TO VIEW

FOLD INFORMATION BELOW BEHIND RECEIPT OR DETACH AND KEEP FOR YOUR RECORDS.



Stan Colie Nichols, Tax Collector
6495 Caroline Street, Suite E
Milton, Florida 32570
(850) 983-1800

**BEFORE POSTING YOUR BUSINESS TAX RECEIPT READ ALL INFORMATION CAREFULLY.
IT IS THE OWNERS RESPONSIBILITY TO ENSURE COMPLIANCE.**

THIS B.T.R. IS FURNISHED PURSUANT TO FLORIDA STATUTES, SANTA ROSA COUNTY ORDINANCE AND AMENDMENTS

The law requires this business tax receipt to be displayed conspicuously at the place of business in such a manner that it can be open to the view of the public and subject to inspection by all duly authorized officers of the county.

Pursuant to state law, all business tax receipts shall expire on September 30th of the succeeding year. Those business tax receipts renewed beginning October 1st shall be delinquent and subject to a delinquency penalty of 10% for the month of October, plus an additional 5% penalty for each month of delinquency thereafter until paid; provided that the total delinquency penalty shall not exceed 25% of the business tax for the delinquent establishment.

This business tax receipt is an occupational tax only. It does not permit the B.T.R. holder to violate any existing regulatory or zoning laws of the state, county, or cities, nor does it exempt the B.T.R. holder from any other business tax receipts or permits that may be required by law or municipal ordinance. IT IS YOUR RESPONSIBILITY TO NOTIFY THE TAX COLLECTOR'S OFFICE IF YOUR BUSINESS HAS CLOSED.

THIS BUSINESS TAX RECEIPT IS IN ADDITION AND NOT IN LIEU OF ANY OTHER LICENSE REQUIRED BY LAW OR MUNICIPAL ORDINANCE AND IS SUBJECT TO REGULATIONS OF ZONING, HEALTH, AND ALL OTHER LAWFUL AUTHORITY.

If you intend to do any business in Santa Rosa County that is regulated by the state of Florida such as construction, roofing, plumbing, electrical, demolition, etc. it is your responsibility to contact the Building Inspection Department as to the necessary licensing requirements of both Santa Rosa County and the state of Florida. You can receive a citation and/or be arrested for performing a job for which additional qualifications are required. All B.T.R. holders are held to be responsible for complying with all applicable Worker's Compensation laws. All licensees are also held responsible for understanding and complying with all "price gouging" laws and understanding the severe penalties. Other areas which you need to investigate include zoning laws, city licenses when applicable, Department of Revenue and sales tax requirements, IRS and federal I.D. numbers, the Property Appraiser and personal property tax, County Building Inspector for information on construction permits, competency testing, contractors, etc., and filing for a Fictitious Name If applicable.

State of Florida

Department of State

I certify from the records of this office that ROADS, INC. OF NWF is a corporation organized under the laws of the State of Florida, filed on September 23, 1999.

The document number of this corporation is P99000085237.

I further certify that said corporation has paid all fees due this office through December 31, 2021, that its most recent annual report/uniform business report was filed on April 1, 2021, and that its status is active.

I further certify that said corporation has not filed Articles of Dissolution.

*Given under my hand and the
Great Seal of the State of Florida
at Tallahassee, the Capital, this
the First day of April, 2021*



Randy Be
Secretary of State

Tracking Number: 9303562087CC

To authenticate this certificate, visit the following site, enter this number, and then follow the instructions displayed.

<https://services.sunbiz.org/Filings/CertificateOfStatus/CertificateAuthentication>



**SANTA ROSA COUNTY
PROCUREMENT DEPARTMENT**

6495 Caroline Street, Suite L | Milton, Florida 32570 850-983-1870 procurement@santarosa.fl.gov

ADDENDUM FORM

To: Planholders
From: Procurement Office
Date: May 27, 2021
Ref: Addendum #1 for ITB 21-034 Edgewood Drive Roadway and Drainage Improvements

The following clarifications, amendments, additions, deletions, revisions and modifications form a part of the contract documents and change the original documents in the manner and to the extent stated.

***Please see attached Revised Bid Form with Schedule of Unit Prices

This Addendum is furnished to all known prospective Proposers. **Please sign and include one copy of this Addendum, with original signature, with your proposal as an acknowledgement of your having received same.**

NAME/TITLE: Cody Rawson, President SIGNATURE: 
COMPANY: Roads, Inc. of NWF DATE: June 24, 2021

See Attached



SANTA ROSA COUNTY PROCUREMENT DEPARTMENT

6495 Caroline Street, Suite L | Milton, Florida 32570 850-983-1870 procurement@santarosa.fl.gov

ADDENDUM FORM

To: Planholders
From: Procurement Office
Date: June 1, 2021
Ref: Addendum #2 for ITB 21-034 Edgewood Dr Roadway & Drainage Improvements

The following clarifications, amendments, additions, deletions, revisions and modifications form a part of the contract documents and change the original documents in the manner and to the extent stated.

QUESTIONS AND ANSWERS:

1. Can you please provide Santa Rosa County's budget for this project and/or the engineers cost estimate?
The County will NOT be releasing the estimated budget.

2. As discussed in the Pre-bid, we request the bid date to be extended if possible.
The bid deadline for this project has been extended until June 24, 2021, at 10:00 a.m.

This Addendum is furnished to all known prospective Proposers. **Please sign and include one copy of this Addendum, with original signature, with your proposal as an acknowledgement of your having received same.**

NAME/TITLE: Cody Rawson, President SIGNATURE: 

COMPANY: Roads, Inc. of NWF DATE: June 24, 2021

End of Addendum #2

Exhibit B- Civil Rights Clauses

Title VI List of Pertinent Nondiscrimination Acts and Authorities

During the performance of this Agreement, the Contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the “Contractor”), as applicable, agrees to comply with the following non-discrimination statutes and authorities; including but not limited to:

- Title VI of the Civil Rights Act of 1964 (42 USC § 2000d *et seq.*, 78 stat. 252) (prohibits discrimination on the basis of race, color, national origin);
- 49 CFR part 21 (Non-discrimination in Federally-assisted programs of the Department of Transportation—Effectuation of Title VI of the Civil Rights Act of 1964);
- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 USC § 4601) (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);
- Section 504 of the Rehabilitation Act of 1973 (29 USC § 794 *et seq.*), as amended (prohibits discrimination on the basis of disability); and 49 CFR part 27;
- The Age Discrimination Act of 1975, as amended (42 USC § 6101 *et seq.*) (prohibits discrimination on the basis of age);
- Airport and Airway Improvement Act of 1982 (49 USC § 471, Section 47123), as amended (prohibits discrimination based on race, creed, color, national origin, or sex);
- The Civil Rights Restoration Act of 1987 (PL 100-209) (broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, the Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms “programs or activities” to include all of the programs or activities of the Federal-aid recipients, sub-recipients and contractors, whether such programs or activities are Federally funded or not);
- Titles II and III of the Americans with Disabilities Act of 1990, which prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 USC §§ 12131 – 12189) as implemented by U.S. Department of Transportation regulations at 49 CFR parts 37 and 38;
- The Federal Aviation Administration’s Nondiscrimination statute (49 USC § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex);
- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures nondiscrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations;
- Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs (70 Fed. Reg. at 74087 to 74100);
- Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 USC 1681 *et seq.*)

Exhibit C

VENDORS ON SCRUTINIZED COMPANIES LISTS

By executing this Certificate, the bid proposer, certifies that it is not: (1) listed on the Scrutinized Companies that Boycott Israel List, created pursuant to section 215.4725, Florida Statutes, (2) engaged in a boycott of Israel, (3) listed on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, created pursuant to section 215.473, Florida Statutes, or (4) engaged in business operations in Cuba or Syria. Pursuant to section 287.135(5), Florida Statutes, the County may disqualify the bid proposer immediately or immediately terminate any agreement entered into for cause if the bid proposer is found to have submitted a false certification as to the above or if the Contractor is placed on the Scrutinized Companies that Boycott Israel List, is engaged in a boycott of Israel, has been placed on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or has been engaged in business operations in Cuba or Syria, during the term of the Agreement. If the County determines that the bid proposer has submitted a false certification, the County will provide written notice to the bid proposer. Unless the bid proposer demonstrates in writing, within 90 calendar days of receipt of the notice, that the County's determination of false certification was made in error, the County shall bring a civil action against the bid proposer. If the County's determination is upheld, a civil penalty shall apply, and the bid proposer will be ineligible to bid on any Agreement with a Florida agency or local governmental entity for three years after the date of County's determination of false certification by bid proposer.

As the person authorized to sign this statement, I certify that this firm complies fully with the above requirements.

DATE: 7-7-21

SIGNATURE: 

COMPANY: Roads Inc of NWF

NAME: Cody Rawson
(Typed or Printed)

ADDRESS: 106 Stone Blvd.
Cantonment, FL 32533

TITLE: President

E-MAIL: crawson@roadsinc.com

PHONE NO.: 850-968-0991