

# INVITATION TO BID



**CITY OF CALLAWAY  
BERTHE AVENUE BRIDGE REPLACEMENT  
& ASSOCIATED INFRASTRUCTURE  
BID NO: PW2022-15**

**ADVERTISED:** The Panama City News Herald, Tuesday, August 30, 2022

**PREBID MEETING:** 10:00 a.m. - Wednesday, September 14, 2022 (Non-Mandatory)

**BID DEADLINE:** 10:00 a.m. Monday, October 17, 2022

**BIDS/PROPOSALS ARE TO BE SUBMITTED TO:**

**CITY OF CALLAWAY  
ATTN: JANICE L. PETERS, CITY CLERK  
6601 EAST HWY. 22  
CALLAWAY, FL 32404**

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Janice L. Peters, MMC, City Clerk

## INSTRUCTIONS TO BIDDERS/PROPOSERS

Qualified firms are invited to submit a Bid/Proposal to the **CITY OF CALLAWAY** for the **CITY OF CALLAWAY BERTHE AVENUE BRIDGE REPLACEMENT & ASSOCIATED INFRASTRUCTURE, BID NO: PW2022-15**, by replying to the enclosed specification. In order for the Bid/Proposal to be considered, complete all items in this specification.

All Bids/Proposals must include one **(1) unbound original** and **three (3) copies** and be addressed to:

CITY OF CALLAWAY  
ATTN: CITY CLERK  
6601 EAST HWY. 22  
CALLAWAY, FL 32404

Proposals **must be received** at the address listed above no later than **10:00 a.m. on Monday, October 17, 2022**. Late Proposals will not be accepted, regardless of the reason.

Proposal envelopes must be **sealed and marked** with the Bid number, due date, and name of Proposer so as to identify the enclosed submittal. If more than one package is submitted, please mark "1 of 2", "2 of 2", etc.

### **INTERPRETATION OF SPECIFICATION**

**All questions** pertaining to the terms and conditions of the scope of work of this Bid/Proposal must be submitted **in writing** via email or fax to the City Clerk as shown below:

Janice L. Peters, MMC, City Clerk  
City of Callaway  
6601 East Hwy. 22  
Callaway, FL 32404  
jlpeters@cityofcallaway.com

No oral interpretations will be made to any firm as to the meaning of specifications or any other contract documents. **In accordance with Florida Statutes 287.057(23), "Respondents to this solicitation or persons acting on their behalf may not contact, between the release of the solicitation and the end of the 72-hour period following the agency posting the notice of intended award, excluding Saturdays, Sundays, and state holidays, any employee or officer of the executive or legislative branch concerning any aspect of this solicitation, except in writing to the procurement officer or as provided in the solicitation documents. Violation of this provision may be grounds for rejecting a response."** Questions must be submitted as referenced above.

All questions must be received at least five (5) calendar days prior to the scheduled opening of Bids/Proposals. Any interpretation of the Bid/Proposal terms, conditions, and/or specification, if made, will be only by Addendum issued by the City Clerk. A copy of such Addendum will be posted to the City's website at [www.cityofcallaway.com](http://www.cityofcallaway.com) and mailed to each proposer that received a copy of the advertisement of the Request for Bids/Proposals. **IT IS THE RESPONSIBILITY OF THE BIDDER/PROPOSER TO CHECK THE CITY'S WEBSITE FOR ANY ADDENDUMS PRIOR TO SUBMITTING A BID/PROPOSAL.** No verbal instructions or interpretations of drawings and specifications will be made other than indicated above.

The City reserves the right to reject any or all proposals, to waive informalities in the Bids/Proposals and to re-advertise for Bids/Proposals. The City also reserves the right to separately accept or reject any item or items of a Bid/Proposal and to award and/or negotiate a contract in the best interest of the City.

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**CITY OF CALLAWAY**  
**SPECIAL INSTRUCTIONS AND CONDITIONS**  
**BERTHE AVENUE BRIDGE REPLACEMENT & ASSOCIATED**  
**INFRASTRUCTURE**  
**BID NO: PW2022-15**

\* **Note:** The **GENERAL INSTRUCTIONS AND CONDITIONS** (attached hereto) apply, except as set forth below, for this Bid.

**A. Description: ( ) See Attached (X) As Follows**

The Project consists of existing concrete box culvert demo, concrete bridge construction, concrete bridge abutments, concrete foundation piles, roadway guardrail, asphalt roadway approaches, concrete sidewalk, earthwork grading and coordination with /avoidance of newly constructed infrastructure from adjacent projects (lift station near Fox Lake Drive, ditch piping from Fox Lake Drive to creek outfall, ditch piping outfall end wall, newly installed sanitary force main and potable watermain (each side of proposed bridge structure), abandoned gravity sewer main (east R/W of Berthe) and driveway reconstruction.

The sidewalk will be FDOT typical and ADA compliant. All proposed improvements shall be located within the existing right-of-way.

Bids will be received for a single prime Contract. Bids shall be on a lump sum and unit price basis.

All bidders shall be certified in the following major classes of work:

- #7 Drainage
- #10 Flexible Pavement
- #27 Minor Bridges
- #28 Pavement Markings
- #38 Roadway Signing
- #40 Sidewalk

**B. Specifications: (X) See Attached ( ) As follows:**

**C. Contract/Agreement Required: ( ) None (X) As follows: See enclosed Sample Contract**

**D. Items to be submitted with Bid: ( ) None (X) As follows:**

- One (1) unbound original with three (3) copies of the bid submittal.
- List of three (3) references for similar type work with contact information.
- List of Subcontractors, if applicable
- State of Florida License Copy
- Drug Free Workplace Certification
- Anti-Collusion Statement
- Sales Tax Exempt Purchasing Agreement
- Bid/Certification Form(s) with signatures
- Public Entity Crimes Statement.
- Proprietary/Confidential Information Form
- Conflict-of-Interest Disclosure

E. **Deadline and place for submission of Bids:**

**10:00 a.m., MONDAY, OCTOBER 17, 2022 (BID DEADLINE)**

**City Hall**

**6601 East Hwy. 22**

**Callaway, FL 32404**

F. **Insurance Requirements:** ( ) None (X) As follows:

	<b><u>Minimum Coverage</u></b>
<b><u>Property Damage:</u></b>	\$ 500,000
<b><u>General Liability:</u></b>	\$ 1,000,000/2,000,000
<b><u>Automobile Liability:</u></b>	\$ 1,000,000/2,000,000
<b><u>Workers' Compensation:</u></b>	\$ Statutory Limit*

***Note: Insurance Certificate must be provided by Successful Bidder upon execution of Agreement. City is to be listed on the bidder's/proposer's Certificate of Insurance as additionally insured and certificate holder in order for the City to be notified if the insurance is canceled or modified.***

G. **Bond Requirements:** ( ) None (X) As follows:

	<b><u>Amount of Bond</u></b>
Bid Bond	\$ _____ or <u>5</u> % of Bid
Performance Bond	\$ _____ or <u>100</u> % of Bid
Payment Bond	\$ _____ or <u>100</u> % of Bid
Construction Bond	\$ _____ or <u>N/A</u> % of Bid
Other: _____	\$ _____ or <u>N/A</u> % of Bid

All required bonds should be printed on the issuing company's official papers.

H. **Number of Copies of Bid Forms with original signature(s) Required:**

**One (1) unbound original, with notarized Signatures, plus three (3) copies**

***NOTICE: Proposals may be rejected if all documents are not complete and executed, and the numbers of copies specified/requested of each are not submitted with the proposal.***

# GENERAL INSTRUCTIONS AND CONDITIONS

## (1) NOTICE TO BIDDERS/PROPOSERS

The following general instructions and conditions apply to all Requests for Bids/Proposals unless modified by the provisions set forth in the “**Special Instructions and Conditions**” attached hereto. If there is a conflict between the “Special Instructions and Conditions” and these “General Instructions and Conditions,” the provisions in the Special Instructions and Conditions will apply. **Note: The General Instructions and Conditions and the Special Instructions and Conditions are periodically revised; potential Bidders/Proposers should read both carefully prior to submitting a Bid/Proposal. The attached Special Instructions and Conditions apply only to this Bid/Proposal.**

## (2) SUBMITTAL OF BIDS/PROPOSALS

Qualified businesses or individuals requesting consideration must submit a complete Bid/Proposal with any/all attachments in a sealed package clearly marked with the **name and number of the Bid/Proposal**, to the attention of the City Clerk, prior to closing time at the address shown in the **Special Instructions and Conditions** attached hereto. If not so marked as to this wording, sealed and/or received by the closing time, the Bid/Proposal will not be accepted. Bid/Proposal packages, additional information regarding this Bid/Proposal, or the bidding procedures may be obtained by contacting the City Clerk, 6601 East Hwy. 22, Callaway, FL 32404, (850) 215-6694.

It shall be the sole responsibility of the Bidders/Proposers to have their Bid/Proposal delivered on or before the closing time and date stated in the **Special Instructions and Conditions**. Any Bids/Proposals received after the stated time and/or due to delays caused by mail or courier delivery, or any other reason, shall not be opened or otherwise considered, and will be returned at the bidder's/proposer's expense.

Bids/Proposals shall be opened and publicly announced at the City Clerk's Office, City Hall, 6601 East Hwy. 22, Callaway, Florida, after closing of Bids/Proposals, unless otherwise specified in the Special Instructions and Conditions.

## (3) SPECIFICATIONS AND REQUIREMENTS

The detailed specifications and additional requirements relating to this Bid/Proposal are set forth in the Special Instructions and Conditions attached hereto.

**SILENCE OF SPECIFICATIONS:** The apparent silence of any specification as to any details or any omission of a detailed description concerning any point shall be regarded as meaning that only the best construction practices are to prevail and that only new materials of first quality and correct type, size and design are to be used. All workmanship is to be first quality. All interpretations of specifications shall be made accordingly by the City.

## (4) BID/PROPOSAL FORM

Bidders/Proposers shall complete, sign, and furnish the “Bid Certification Form”, together with the forms, specifications and materials required in the “Special Instructions and Conditions” or any exhibits attached hereto. This will include a properly executed Drug-Free Workplace Certification, and a Sworn Statement on Public Entity Crimes Form, pursuant to Section 287.133(3)(a), Florida Statutes. The minimum number of complete Bid/Proposal packages to be submitted is set forth in the Special Instructions and Conditions.

If the "Special Instructions and Conditions" include a "Scope of Work" provision, and/or provide for a supplemental and or implementing agreement, the City reserves the right to modify the "Scope of Services." Further, the terms and conditions of any such agreement shall be modified prior to execution by the City, if such modifications are determined to be in the best interest of the City.

Bids/Proposals may be considered non-responsive, at the sole option of the City, and may be rejected if they include omissions, alterations of form, additions not called for, conditions or limitations, unauthorized alternate Bids/Proposals, submission of less than the number of bid packages requested, or other irregularities of any kind.

Unless otherwise stated, the price(s) set forth in the Bid/Proposal include(s) all costs and expenses for labor, equipment, materials, commissions, transportation charges and expenses, handling material inspection, and patent fees and royalties, together with all other costs and expenses for providing the service, equipment, materials or performing and completing the work as shown according to the plans and specifications herein.

If quotations are requested for the various items of work, they are intended to establish a total price for providing the materials, equipment, services, or completing the work in its entirety. If the Bidder/Proposer determines that the cost for any item of work has not been established by the Proposal Form, the cost for that work is to be included in other applicable Bid/Proposal item(s), so that the Bid/Proposal reflects the total price for completing that work in its entirety.

In the event of a discrepancy between a unit bid price and an extension, the unit bid price will govern. Written prices shall govern over figures.

**(5) CLARIFICATION AND ADDENDA**

Each Bidder/Proposer shall examine all Bid/Proposal documents and shall judge all matters relating to the adequacy and accuracy of such documents. Any inquiries, suggestions or requests concerning the interpretation, clarification or additional information pertaining to this Invitation to Bid/Request for Bid/Proposal will be accepted by the City Clerk up to and including five (5) working days prior to the closing date and time stated herein. The issuance of a written addendum signed by the City Clerk is the only official method whereby interpretation, clarification or additional information can be given. The City shall not be responsible for oral interpretations given by any City employee, representative or others. If any addenda are issued, the City will attempt to notify all known prospective Bidders/Proposers. However, it shall be the responsibility of each Bidder/Proposer, prior to submitting a Bid/Proposal, to contact the City Clerk's Office to determine if addenda were issued, and to make such addenda a part of the Bid/Proposal. If an addendum has been issued and was not incorporated in the Bid/Proposal documents submitted by Bidder/Proposer, the Bid/Proposal may not be accepted or considered by the City.

**(6) MANUFACTURER'S NAMES AND APPROVED EQUIVALENTS**

Unless otherwise specifically stated in the Special Instructions and Conditions, any manufacturer's names, trade names, brand names, catalog numbers, or similar information listed in a specification, are for the purpose of information and illustration, and are not intended to restrict the submission of alternates meeting minimum specifications. The Bidder/Proposer may offer the same or any alternate for which the Bidder/Proposer is an authorized representative, which meets or exceeds the specifications for any item. If a manufacturer's name or model is included in the specification, and a Bid/Proposal is based on alternate products or services which Bidder/Proposer maintains is equivalent and meets or exceeds specifications, Bidder/Proposer is to indicate on the Bid/Proposal Form the manufacturer's name and related information of the alternate, including any deviation from the specifications. Unless expressly noted on the Bid/Proposal that an alternate is being

proposed, and the specification includes a specific manufacturer's model or brand, the Bid/Proposal will be considered as a quotation for the item(s) stated in the specifications.

**(7) INFORMATION AND DESCRIPTIVE LITERATURE**

Bidders/Proposers must furnish all information requested in the Bid/Proposal packet including but not limited to any sketches, plans, designs, specification, and descriptive literature regarding the product(s)/service(s) being offered. Bids/Proposals which do not comply with these requirements are subject to rejection. Reference to submission of documentation or materials with a previous Bid/Proposal will not satisfy this provision.

**(8) BONDS/INSURANCE**

If the Bid/Proposal is accepted by the City, it will become a binding contract on both parties. If a bond or cashiers/certified check is required as a bond, it shall be submitted with the Bid/Proposal. If the undersigned shall fail to deliver or perform, or if applicable, execute a contract if provided for herein, then the City may, at its option, determine that the undersigned has abandoned the award/contract, and thereupon such acceptance of the Bid/Proposal and/or award shall be null and void, and any cashiers/certified check or bond accompanying this Bid/Proposal shall be forfeited to and become the property of the City. The full amount of said check, or if a bond, the full amount of such bond, shall be paid to the City as partial liquidated damages; otherwise, any bond or cashiers/certified check accompanying this Bid/Proposal shall be returned to the undersigned within 30 calendar days from the date of award, or if provisions for a Notice to Proceed are included, from the date of the Notice to Proceed.

If a bid or proposal bond is required, the bonds of unsuccessful Bidders/Proposers will be returned within 30 calendar days of the Bid/Proposal due date, except as set forth below.

If a proposal is subject to the Competitive Negotiations Act, the bonds will be returned within 60 days of the proposal due date, except for the bond of the 3 highest ranked proposers. Within 30 days of execution of a contract, bonds from the remaining unsuccessful proposers will be returned.

Bid bond, if required, will be returned within 30 calendar days of delivery/acceptance of the item(s) bid or service(s) provided, unless a standard payment and performance bond is required. When a standard Payment and Performance Bond is required, the bid bond of the successful Bidder/Proposer will be returned within 30 calendar days from the date of the Notice to Proceed.

In the event a bid is awarded, a proposal is accepted, and/or a contract is executed, and the Bidder/Proposer chooses not to proceed, or fails to perform for any reason, the bond will be forfeited and retained by the City as partial liquidated damages. Future Bids/Proposals will not be accepted for consideration from the Bidder/Proposer for five (5) years, or such shorter period as the City Commission may determine.

In the event an award/selection is not made within 90 days after the Bid/Proposal due date and the City does not return all bonds, upon 30 business days written request, a bidders/proposer may withdraw their bid or proposal from consideration and obtain a refund of the Bid/Proposal bond.

All Awards will be subject to presentation of any required performance bond or certificate of insurance prior to any purchase authorizations, agreements, contract documents, or delivery. The Bidder/Proposer shall maintain any performance bonds or insurance coverage set forth in the Special Instructions and Conditions, at its own expense. If insurance is required, the City is to be listed on the bidder/proposer's Certificate of Insurance as an additional insured and certificate holder in order that the City will be notified if the insurance is canceled or modified. The certificate shall also list the name of the project/service/equipment purchased, and the expiration



date of the policy. At the City's option, an award may be canceled, and any bid bond forfeited if any required performance bond or insurance certificate is not delivered within 21 calendar days of the date of award.

***Note:** The provisions of this section are in addition to and not a replacement for, any Bid/Proposal and/or performance bond required in the Special Instructions and Conditions. The foregoing provisions are intended to be in addition to any other legal remedy available to the City for non-performance by a Bidder/Proposer subsequent to the acceptance and/or award of a bid or proposal.*

**(9) SERVICE AND WARRANTY**

If any warranty repair or replacement service is requested in the Special Instructions and Conditions, any deviation or limitation from the requirements is to be expressly stated on the Bid Request for Proposal Certification Form.

If the service or product provided to the City pursuant to the bid consists of computer hardware, software or firmware, the Bidder/Proposer warrants that said product will accurately process/or reflect data from, into and between the twentieth and twenty-first centuries, including leap-year calculations.

**(10) CONTRACT FORMS**

Any agreement or contract resulting from the acceptance of a Bid/Proposal shall be on forms either supplied by or approved by the City, and shall contain, as a minimum, applicable provisions of the Invitation to Bid/Request for Proposal, and the Bid/Proposal documents to be submitted by Bidder/Proposer, including the Special Instructions and Conditions, General Instructions and Conditions, and all attachments therewith. The City reserves the right to reject any Bid/Proposal or resulting agreement which does not conform to the Invitation to Bid/Proposal and, if applicable, any City requirement relating to such an Agreement.

The City reserves the right to extend any contract or agreement for an additional period of not more than ninety (90) days beyond the original expiration date. Prices in effect on the last day of the contract shall remain in effect for the contract extension period. Additional extensions shall be subject to agreement of both parties.

The successful Bidder/Proposer will be required to execute any resulting agreement and provide any bonds or insurance certificates required within 10 days of contract execution. Failure to timely execute the necessary bond or insurance certificate will result in cancellation of an award, with no further obligation by the City.

This Bid/Proposal is subject to the appropriation of funds in an amount sufficient to allow continuation of the City's performance in accordance with the terms and conditions of this Bid/Proposal for each and every fiscal year in which this Bid/Proposal is executed and entered into. If funds are not appropriated/available, the City shall provide prompt written notice to the selected Bidder/Proposer that effective thirty (30) days after giving such notice, or upon the expiration of the time for which funds were appropriated, whichever occurs first, the City will thereafter be released of all further obligations related to the Bid/Proposal and/or award.

**(11) BID/PROPOSAL EXPENSES**

All expenses for preparing and submitting Bids/Proposals to the City are to be borne by the Bidder/Proposer.

**(12) VARIANCES**

Any variance whatsoever from the Bid/Proposal Specifications are to be clearly identified on the Bid/Proposal form. Acceptance of any proposed variations will be at the sole discretion of the City.

**(13) CONFLICT OF INTEREST**

The award of a bid or acceptance of proposal is subject to Chapter 112, Florida Statutes. All Bidders/Proposers must disclose with their Bid/Proposal the name of any officer, director, or agent who is a city official or employee, or a member of an official's or employee's immediate family. Further, Bidders/Proposers must disclose the name of any city official or employee, or a member of an official's or employee's immediate family, who owns directly or indirectly an interest of ten percent (10%) or more in the bidder's/proposer's firm or related business.

**(14) DELIVERY**

All items provided pursuant to an award are to be delivered prepaid to the City Clerk's Office, 6601 East Hwy. 22, Callaway, Florida 32404-2041, unless a different location is specified in the Special Instructions and Conditions. All delivery charges are to be included in the Bid/Proposal price. No Collect on Delivery (C.O.D.) will be accepted. Title and risk of loss or damage to all items shall be the responsibility of the Bidder/Proposer until delivered to the City.

**(15) INSPECTION, ACCEPTANCE AND TITLE**

All items delivered pursuant to an award are subject to inspection and review prior to acceptance by the City. Acceptance, evidenced by separately written Notice of Acceptance or full payment, will be made only after verification of compliance with all specifications. Acknowledgment of delivery and/or partial payment does not constitute acceptance.

**(16) OWNERSHIP RIGHTS AND PUBLIC RECORDS LAW**

Public Records Law. Bidder/Proposer acknowledges that they are familiar with the provisions of the Public Records Law of the State of Florida.

Bidder/Proposer agrees to comply with Chapter 119, Florida Statutes, and specifically per Florida Statute 119.0701, Bidder/Proposer agrees to keep and maintain public records that would be required by the City of Callaway in order to perform the services provided for in this agreement; Bidder/Proposer agrees to provide public access to any required public records in the same manner as a public agency; Bidder/Proposer agrees to protect exempt or confidential records from disclosure; Bidder/Proposer agrees to meet public records retention requirement; and Bidder/Proposer agrees that at the end of the term of this agreement, to transfer all public records to the City of Callaway and destroy any duplicate, exempt or confidential public records.

All products generated by the Bidder/Proposer for the City become the property of the City. The City may require submission of any electronic file version of reports, data, maps, or other submission of documentation produced for or as a result of this Bid/Proposal in addition to paper documents.

Further, in accordance with the Public Records Laws of the State of Florida, Section 119.0701, (2013), Contractor must:

- A. Keep and maintain public records that ordinarily and necessarily would be required by the public agency in order to perform the service.
- B. Provide the public with access to public records on the same terms and conditions that the public agency would provide the records and at a cost that does not exceed the cost provided in this chapter or as otherwise provided by law.

- C. Ensure that public records that are exempt or confidential and exempt from public records are not disclosed except as authorized by law.
- D. Meet all requirements for retaining public records and transfer, at no cost, to the public agency all public records in possession of the contractor upon termination of the contract and destroy any duplicate public records that are exempt or confidential and exempt from public record disclosure requirements. All records stored electronically must be provided to the public agency in a format that is compatible with the information technology systems of the public agency.
- E. If a contractor does not comply with a public records request, the public agency shall enforce the contract provision in accordance with the contract.

**(17) RESERVED RIGHTS**

The City reserves the right to reject any and all Bids/Proposals, with or without statement of cause, request resubmissions, or to waive any irregularities or technicality or negotiate modifications to any Bid/Proposal which may be in the best interest of the City.

Bidders/Proposers which do not normally engage in providing the types of commodities/services specified herein may be required to demonstrate they have sufficient financial support, equipment, and organization to ensure they can satisfactorily perform if awarded a bid/contract under the terms and conditions herein stated.

The City reserves the right to make such investigations as it deems necessary to determine the ability of any Bidder/Proposer to perform the work or service requested. Any information the City deems necessary to make such determinations shall be provided by the Bidder/Proposer upon request as a condition of further consideration of the Bid/Proposal. The applicability of all information obtained, and the City's decision shall be final. By submitting a bid or proposal, Bidder/Proposer authorizes such investigation.

If the contract awarded as a result of this bid is terminated prior to the end of the term, the City reserves the right to award the balance of the contract to the next lowest responsive and responsible bidder.

**(18) ADVERTISING**

In submitting a Bid/Proposal, Bidder/Proposer agrees not to use the results therefrom as a part of any commercial advertising or marketing purposes without written approval of the City Manager.

**(19) GOVERNMENTAL RESTRICTIONS/REQUIREMENTS**

In the event any governmental restrictions are imposed which would necessitate alteration of the material, quality, workmanship, or performance of the items offered in a Bid/Proposal, it shall be the responsibility of the successful Bidder/Proposer to immediately notify the City of the specific regulation which required an alteration, and the specific alterations that will be made to the item(s) bid/proposed. The City reserves the right to accept any such alteration/substitution, including any price adjustments resulting therefrom, or to cancel the award at no expense to the City.

**(20) NON-DISCRIMINATION**

There shall be no discrimination as to race, sex, color, creed, handicap, or national origin in the selection, award, or operations conducted, or performance related to any bid or proposal.

**(21) UNAUTHORIZED EMPLOYEES OR AGENTS**

Employment of unauthorized aliens by Bidder/Proposer is considered a violation of Section 274A(e) of the Immigration and Nationality Act. If selected Bidder/Proposer knowingly employs unauthorized aliens, such action shall be cause for unilateral cancellation of this agreement and the City may recover damages from selected Bidder/Proposer resulting from such cancellation. The selected Bidder/Proposer shall be responsible for including this provision in any context with and requiring compliance by any/all subcontracts performing for selected Bidder/Proposer relating to this agreement.

**(22) OTHER GOVERNMENTAL ENTITIES - OPTIONAL APPLICATION**

In the State of Florida, other Florida public entities may “piggy-back” on competitive Bid/Proposal awards under the same terms and conditions, if all parties are in agreement.

**(23) LEGAL NAME**

Bids/Proposals shall clearly indicate the legal name and organizational structure, business address, telephone number, and email address of the Bidder/Proposer. Bids/Proposals shall be signed above the typed or printed name and title of the individual submitting the Bid/Proposal. The signer shall warrant he/she has the authority to bind the Bidder/Proposer to the terms and conditions of the submitted Bid/Proposal.

**(24) WAGES**

State and Federal minimum wage and hour regulation apply to Bidder/Proposer and all subcontractors.

**(25) SELECTION**

The city intends to award this bid to the lowest responsive and responsible bidder or bidders. However, the city reserves the right to reject any and all Bids/Proposals. The procedures for the selection/award of Bids/Proposals are provided for by Florida Statutes and the City’s Charter, Code of Ordinances, and Administrative Policies. Generally, all Bids/Proposals are reviewed by City staff and evaluated by the City Manager, and if required by law, by a Selection Advisory Committee appointed by the City Manager. The type and price of the product(s) or service(s) being acquired determines if an award or selection may be made by the City Manager or requires City Commission approval. For information on which procedure applies to a particular Bid/Proposal contact the City Clerk.

Bids/Proposals will be evaluated based on, but not limited to, one or more of the following criteria as appropriate:

- compliance with specifications,
- price (if applicable),
- capability/adequacy of Bidder/Proposer,
- past and current projects, services or equipment provided to the City,
- delivery schedule,
- prior government projects, services or equipment provided to other jurisdictions, and
- general reputation, location, and references.

Separate procedures and requirements relating to Requests for Bids/Proposals/Qualifications apply for certain grant programs and for professional services, for example the Consultants' Competitive Negotiation Act (Florida Statute 287.055), and by the City's Code. When the City initiates such a Request for Proposals/Qualifications, the selection process and related procedures are included in the Special Instructions and Conditions.

Pursuant to Chapter 287.087 Florida Statutes, in the event two (2) or more bids are equal with respect to price, quantity, and services, preference will be given to Bidders/Proposers which have implemented Drug-Free Workplace Programs.

Further, per 287.087(11) "If two equal responses to a solicitation or a request for quote are received and one response is from a certified minority business enterprise, the agency shall enter into a contract with the certified minority business enterprise." In addition, at the sole discretion of the City, payment terms, conditions, and other consequential information may be utilized in resolving apparent tie Bids/Proposals.

**NOTE: For consideration, Bidder/Proposer must return the Bid Certification Form included in the Bid/Proposal package.**

**(26) INDEMNIFY**

After notification of award, the successful Bidder/Proposer agrees to defend, indemnify and hold harmless the City and its officials, officers, employees, agents, and invites, from and against all claims, suits, sections, damages, or causes of action arising from any personal injury, loss of life or damage to property, sustained by reason of, or as a result of constructing, manufacturing, processing, delivery, or performance of the services or work for which the Bid/Proposal was awarded or any resulting agreement executed, and from and against any orders, judgments, or decrees which may be entered thereto, and from and against all costs, attorney's fees, expenses, and liabilities incurred in or by reason of the defense of any such claim, suit or action, and the investigation thereof. Nothing in any resulting agreement shall be deemed to affect the rights, privileges, and immunities of the City of Callaway.

The selected Bidder/Proposer, without exception, shall also indemnify and hold harmless the City and its officials, employees, agents, and invites from liability of any nature or kind, including cost and expenses for or on account of any copyrighted, patented, or unpatented invention, process or article manufactured or used in the performance of the contract, including its use by the City. If the selected Bidder/Proposer uses any design, device or materials covered by patent or copyright, it is mutually agreed and understood that the Bid/Proposal prices include all royalties or costs arising from the use in any way of such design, device or materials involved in the product and/or services provided to the City.

**(27) MODIFICATION - AFTER AWARD**

Any changes proposed by a Bidder/Proposer after an award in (a) materials used, (b) manufacturing process, (c) construction or (d) specifications, are to be submitted in writing to the City Manager prior to delivery. No changes shall be approved and binding upon the City unless evidenced by a Change Order issued and signed by the City Manager.

**(28) ASSIGNMENT**

Any purchase order issued pursuant to this bid invitation/request for proposal and the funds which may become due hereunder, are not assignable, except with the prior written approval of the City Manager.

**(29) DISCLOSURE**

Bidder/Proposer acknowledges by submitting a Bid/Proposal that all information provided to the City is part of the public domain as defined by Florida Statutes and is considered a public record. Information should not be labeled “confidential,” unless specifically exempted under said Statutes, and exempts the City from any liability for releasing all information to the public, including inadvertently releasing information deemed confidential by the Bidder/Proposer.

**(30) TAXES**

The city is a tax-exempt Florida municipality, Federal Employment Identification Number 59-6000-284, Florida State Tax Number 37-02-008131-54C. Copies of Exemption Certificate and related information may be obtained by contacting the City Clerk, City of Callaway, 6601 East Hwy. 22, Callaway, Florida 32404-2041 or (850) 215-6694.

**(31) APPLICABLE LAWS/LEGAL VENUE**

All applicable laws, regulations and ordinances of the State of Florida, Bay County and the City of Callaway will apply to consideration and award of any Bid/Proposal and the performance of the Bidder/Proposer pursuant thereto and shall be governed by the laws of the State of Florida both as to intention and performance. The venue for any action arising from the award or subsequent performance shall lie exclusively in the Circuit Court of Bay County, Florida, or the United States District Court for the Northern District of Florida, as applicable.

***NOTE: ANY AND ALL PROVISIONS SET FORTH IN THE SPECIAL INSTRUCTIONS AND CONDITIONS ATTACHED HERETO, WHICH VARY FROM THESE GENERAL INSTRUCTIONS AND CONDITIONS, SHALL HAVE PRECEDENCE.***

**CITY OF CALLAWAY  
AGREEMENT FOR CONTRACTOR SERVICES  
BERTHE AVENUE BRIDGE REPLACEMENT  
& ASSOCIATED INFRASTRUCTURE  
BID NO.: PW2022-15**

This Agreement made as of this \_\_\_ day of \_\_\_\_\_, 20\_\_\_, by and between the **City of Callaway**, Florida - (the "CITY"), and \_\_\_\_\_, authorized to do business in the State of Florida (the "CONTRACTOR"), and whose address is \_\_\_\_\_; Phone: \_\_\_\_\_.

In consideration of the mutual promises contained herein, the CITY and the CONTRACTOR agree as follows:

**ARTICLE 1 - SERVICES**

The CONTRACTOR'S responsibility under this Agreement is to furnish, deliver, and construct all materials, labor, and equipment and to perform all operations in accordance with the plans and specifications and as listed in the Bid Form for **BID NO. PW2022-15 – BERTHE AVENUE BRIDGE REPLACEMENT & ASSOCIATED INFRASTRUCTURE**.

**CONTRACTOR shall comply with all applicable procedures, guidelines, manuals, standards, and directives as described in the Special Federal Provisions (ATTACHED HERETO AS EXHIBIT A), along with the Davis-Bacon Act (ATTACHED HERETO AS EXHIBIT B). The contractor will also be responsible for including these requirements in any subcontract.**

Services of the CONTRACTOR shall be under the general direction of the CITY MANAGER, who may designate a person to act as the CITY'S representative (hereinafter "REPRESENTATIVE") during the performance of this Agreement.

The CITY shall furnish to the CONTRACTOR up to four (4) sets of the Contract Documents for execution of the Work. Additional copies of the Contract Documents are available at the cost of reproduction.

**ARTICLE 2 - SCHEDULE**

The CONTRACTOR will commence the work required by the CONTRACT DOCUMENTS within 10 calendar days of approval and will substantially complete the project within 360 consecutive calendar days after the date of the NOTICE TO PROCEED, unless the period for completion is extended otherwise by the CONTRACT DOCUMENTS. A Limited Notice to Proceed may be issued to allow for the current state of supply and demand.

**ARTICLE 3 - PAYMENTS TO CONTRACTOR**

- A. The CITY shall pay to the CONTRACTOR for services satisfactorily performed \$ \_\_\_\_\_, which includes all direct charges, indirect charges, and reimbursable expenses, if any. The CONTRACTOR will bill the CITY monthly.
- B. The invoices received from the CONTRACTOR pursuant to this Agreement will be reviewed and approved by the City Manager's office, indicating that services have been rendered in conformity with the Agreement, and then will be sent to the Finance Department for payment. The invoice must specify the work performed. Ten percent (10%) of each invoiced amount will be withheld and retained by the CITY until completion of the work to the satisfaction of the CITY.

- C. In order for both parties herein to close their books and records, the CONTRACTOR will clearly state “final invoice” on the CONTRACTOR’S final/last billing to the CITY. This indicates that all services have been performed and all charges and costs have been invoiced to the CITY. Since this account will thereupon be closed, any and other further charges if not properly included on this final invoice shall be waived by the CONTRACTOR.
- D. CONTRACTOR acknowledges that it has reviewed the scope of work and inspected the work site and does not anticipate having any CONTRACTOR requested change orders.

#### **ARTICLE 4 - TERMINATION**

This Agreement may be terminated by the CONTRACTOR on 60 days prior written notice to the CITY in the event of substantial failure by the CITY to perform in accordance with the terms hereof through no fault of the CONTRACTOR. It may also be terminated by the CITY, with or without cause, immediately upon written notice to the CONTRACTOR. Unless the CONTRACTOR is in breach of this Agreement, the CONTRACTOR shall be paid for services rendered to the CITY’S satisfaction through the date of termination. After receipt of a termination notice and except as otherwise directed by the CITY the CONTRACTOR shall:

- A. Stop work on the date and to the extent specified.
- B. Terminate and settle all orders and subcontracts relating to the performance of the terminated work.
- C. Transfer all work in process, completed work, and other material related to the terminated work to the CITY.
- D. Continue and complete all parts of the work that have not been terminated.

#### **ARTICLE 5 - PERSONNEL**

The CONTRACTOR represents that it has or will secure at its own expense all necessary personnel required to perform the services under this Agreement. Such personnel shall not be employees of or have any contractual relationship with the CITY.

All of the services required herein under shall be performed by the CONTRACTOR or under its supervision, and all personnel engaged in performing the services shall be fully qualified and, if required, authorized or permitted under State and local law to perform such services.

The CONTRACTOR warrants that all services shall be performed by skilled and competent personnel to the highest professional standards in the field.

#### **ARTICLE 6 - SUBCONTRACTING**

The CITY reserves the right to accept the use of a subcontractor or to reject the selection of a particular subcontractor and to inspect all facilities of any subcontractors in order to make a determination as to the capability of the subcontractor to perform properly under this Agreement. The CONTRACTOR is encouraged to seek minority and women business enterprises for participation in subcontracting opportunities.

If a subcontractor fails to perform or make progress, as required by this Agreement, and it is necessary to replace the subcontractor to complete the work in a timely fashion, the CONTRACTOR shall promptly do so, subject to acceptance of the new subcontractor by the CITY.



## **ARTICLE 7 - FEDERAL AND STATE TAX**

The CONTRACTOR shall be responsible for payment of its own FICA and Social Security benefits with respect to this Agreement and the personnel it employs.

## **ARTICLE 8 – INSURANCE & BONDS**

- A. The CONTRACTOR shall not commence work under this Agreement until it has obtained all insurance and bonds required under this paragraph and such insurance has been verified by the CITY.
- B. All insurance policies shall be issued by companies authorized to do business under the laws of the State of Florida.

The CONTRACTOR shall maintain, during the life of this Agreement, comprehensive automobile liability insurance in the amount of \$1,000,000 and \$2,000,000 combined single limit for property damage and bodily injury liability covering claims which may arise from the ownership, use, or maintenance of owned and non-owned automobiles, including rented automobiles, whether such operations be by the CONTRACTOR or by anyone directly or indirectly employed by the CONTRACTOR. CONTRACTOR shall purchase and maintain a policy or policies of commercial general liability insurance satisfactory in all respects to CITY, and casualty and extended coverage insurance. All policies shall be occurrence form policies and shall name CITY as an additional insured, with the premium thereon fully paid by CONTRACTOR on or before their due date. The general liability insurance policy shall afford minimum protection of \$1,000,000 and \$2,000,000 combined single limit coverage for bodily injury.

Required insurance shall be documented in Certificates of Insurance which provide that CITY shall be notified at least 30 days in advance of cancellation, non-renewal or adverse change. New Certificates of Insurance are to be provided to CITY at least 15 days prior to coverage renewals. City of Callaway, Florida is to be named as an additional insured entity.

If requested by CITY, CONTRACTOR shall furnish complete copies of its insurance policies, forms and endorsements.

For commercial general liability coverage, CONTRACTOR shall, at the option of CITY, provide an indication of the amount of claims, payments or reserves chargeable to the aggregate amount of liability coverage.

Receipt of certificates or other documentation of insurance or policies or copies of policies by CITY, or by any of its representatives, which indicate less coverage than required does not constitute a waiver of CONTRACTOR'S obligation to fulfill the insurance requirements herein.

CONTRACTOR shall also purchase and maintain workers compensation insurance for all obligations imposed by law, with employer's liability limits of at least the statutory limit, or provide notarized affidavit of exemption listing relevant statutes. CONTRACTOR shall also purchase any other coverage required by law.

CONTRACTOR'S maintenance of the insurance policies required hereunder shall not limit or otherwise affect its liability hereunder.

- C. In the event that a performance or payment bond is required due to use of grant funds for the project, by City Commission or as otherwise required, the CONTRACTOR shall not commence work under this Agreement until it has obtained the required bonds and provided such bonds to the CITY.

#### **ARTICLE 9 - EXCUSABLE DELAYS**

The CONTRACTOR shall not be considered in default by reason of any failure in performance if such failure arises out of causes reasonably beyond the CONTRACTOR'S control and without its fault or negligence. Such causes may include but are not limited to: acts of God; the City's omissive and commissive failures; natural or public health emergencies; labor disputes; freight embargoes; and severe weather conditions. If failure to perform is caused by the failure of the CONTRACTOR'S subcontractor(s) and is without the fault or negligence of them, the CONTRACTOR shall not be deemed to be in default.

Upon the CONTRACTOR'S request, the CITY shall consider the facts and extent of any failure to perform the work and, if the CONTRACTOR'S failure to perform was without its fault or negligence as determined by the CITY, any affected provision of this Agreement shall be revised accordingly; subject to the CITY's rights to change, terminate, or stop any or all of the work at anytime.

#### **ARTICLE 10 - LIQUIDATED DAMAGES**

Liquidated damages shall be paid to the CITY at the rate of \$200 per day for all work awarded under the contract until the work has been satisfactorily completed as provided by the Contract Documents. Sundays and Legal Holidays shall be excluded in determining days in default.

It is agreed that the amount is the per-diem rate for damage incurred by reason of failure to complete the work. The said amount is hereby agreed upon as the reasonable costs which may be accrued by the CITY after the expiration of the time of completion. It is expressly understood and agreed that this amount is not to be considered in the nature of a penalty, but as liquidated damages which have accrued against the CONTRACTOR. The CITY shall have the right to deduct such damages from any amount due, or that may become due the CONTRACTOR, or the amount of such damages shall be due and collectable from the CONTRACTOR or Surety.

#### **ARTICLE 11 - ARREARS**

The CONTRACTOR shall not pledge the CITY'S credit or make it a guarantor of payment or surety for any contract, debt, obligation, judgment, lien, or any form of indebtedness.

#### **ARTICLE 12 - DISCLOSURE AND OWNERSHIP OF DOCUMENTS**

The CONTRACTOR shall deliver to the CITY for approval and acceptance, and before being eligible for final payment of any amount due, all documents and materials prepared by and for the CITY under this Agreement.

All written and oral information not in the public domain or not previously known, and all information and data obtained, developed, or supplied by the CITY or at its expense will be kept confidential by the CONTRACTOR and will not be disclosed to any other party, directly or indirectly, without the CITY'S prior written consent.

Such information and data shall be and will remain the CITY'S property and may be reproduced and reused at the discretion of the CITY.

All products generated by the CONTRACTOR for the CITY become the property of the CITY. The CITY may require submission of any electronic file version of reports, data, maps, or other submission of documentation produced for or as a result of this project in addition to paper documents.

The CITY and the CONTRACTOR shall comply with the provisions of the Florida Public Records Law.

**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, Janice Peters, City Clerk, at 850-215-6694, by email at [jpeters@cityofcallaway.com](mailto:jpeters@cityofcallaway.com), or via mail, at 6601 E. Hwy. 22, Callaway, FL 32404.**

**PUBLIC RECORDS LAW.** CONTRACTOR acknowledges that it is familiar with the provisions of the Public Records Law of the State of Florida.

CONTRACTOR agrees to comply with Chapter 119, Florida Statutes, and specifically per Florida Statute 119.0701, CONTRACTOR agrees to keep and maintain public records that would be required by the City of Callaway in order to perform the services provided for in this Agreement; CONTRACTOR agrees to provide public access to any required public records in the same manner as a public agency; CONTRACTOR agrees to protect exempt or confidential records from disclosure; CONTRACTOR agrees to meet public records retention requirement; and CONTRACTOR agrees that at the end of term of this Agreement, to transfer all public records to the City of Callaway and destroy any duplicate exempt or confidential public records.

All products generated by the CONTRACTOR for the CITY become the property of the CITY. The CITY may require submission of any electronic file version of reports, data, maps or other submission of documentation produced for or as a result of this Bid/Proposal in addition to paper documents.

Further, in accordance with the Public Records Laws of the State of Florida, Section 119.0701, (2013), Contractor must:

- A. Keep and maintain public records that ordinarily and necessarily would be required by the public agency in order to perform the service.
- B. Provide the public with access to public records on the same terms and conditions that the public agency would provide the records and at a cost that does not exceed the cost provided in this chapter or as otherwise provided by law.
- C. Ensure that public records that are exempt or confidential and exempt from public records are not disclosed except as authorized by law.
- D. Meet all requirements for retaining public records and transfer, at no cost, to the public agency all public records in possession of the contractor upon termination of the contract and destroy any duplicate public records that are exempt or confidential and exempt from public record disclosure requirements. All records stored electronically must be provided to the public agency in a format that is compatible with the information technology systems of the public agency.
- E. If a contractor does not comply with a public records request, the public agency shall enforce the contract provision in accordance with the contract.

All covenants, agreements, representations, and warranties made herein, or otherwise made in writing by any party pursuant hereto shall survive the execution and delivery of this Agreement and the consummation of the transactions contemplated hereby.

### **ARTICLE 13 - INDEPENDENT CONTRACTOR RELATIONSHIP**

The CONTRACTOR is, and shall be, in the performance of all work services and activities under this Agreement, an independent contractor, and not an employee, agent, or servant of the CITY. All persons engaged in any of the work or services performed pursuant to this Agreement shall at all times, and in all places, be subject to the CONTRACTOR'S sole direction, supervision, and control. The CONTRACTOR shall exercise control over the means and manner in which it and its employees perform the work, and in all respects the CONTRACTOR'S relationship and the relationship of its employees to the CITY shall be that of an independent contractor and not as employees or agents of the CITY.

The CONTRACTOR does not have the power or authority to bind the CITY in any promise, agreement, or representation.

The CONTRACTOR shall hold the CITY, its officers, agents and employees harmless and free from any loss, damage or expense arising out of any occurrence relating to this Agreement or its performance and shall indemnify the CITY, its officers, agents and employees, customers, and successors against any damage or claim of any type arising from the negligent or intentional acts or omission of the CONTRACTOR.

### **ARTICLE 14 - CONTRACT ASSIGNMENT**

The CONTRACTOR shall not sublet, sell, transfer, assign or otherwise dispose of the CONTRACT or any portion thereof, or of his right, title, or interest therein, without written consent of the CITY. The CONTRACTOR shall complete the work contemplated by the terms and conditions of this Agreement in an amount equivalent to at least 50 percent (50%) of the dollar value of work to be performed under this Contract utilizing its own business or corporate entity, so that no single labor, material man, or subcontractor shall be permitted to perform more than 50% of the work contemplated by this Contract.

### **ARTICLE 15 - AMENDMENT**

None of the provisions, terms and conditions contained in this Agreement may be added to, modified, superseded, or otherwise altered, except by a written instrument executed by the parties hereto.

### **ARTICLE 16 - ENFORCEMENT COSTS**

If any legal action or other proceeding is brought for the enforcement of this Agreement, or because of an alleged dispute, breach, default, or misrepresentation in connection with any provision, the successful or prevailing party or parties shall be entitled to recover reasonable attorney's fees, court costs and all expenses even if not taxable as court costs (including, without limitation, all such fees, costs and expenses incident to appeals), incurred in that action or proceeding, in addition to any other relief to which such party or parties may be entitled.

### **ARTICLE 17 - AUTHORITY TO PRACTICE**

The CONTRACTOR hereby represents and warrants that it has and will continue to maintain all licenses and approvals required to conduct its business, and that it will at all times conduct its business activities in a reputable manner.

**ARTICLE 18 - SEVERABILITY**

If any term or provision on this Agreement, or the application thereof to any person or circumstances shall, to any extent, be held invalid or unenforceable, the remainder of this Agreement, or the application of such terms or provisions to persons or circumstances other than those as to which it is held invalid or unenforceable, shall not be affected, and every other term and provision of this Agreement shall be deemed valid and enforceable to the extent permitted by law.

**ARTICLE 19 - CITY’S REPRESENTATIVE AND AUTHORITY**

The person designated by the CITY MANAGER shall serve as the CITY’S REPRESENTATIVE and shall decide questions which may arise as to quality and acceptability of materials furnished and work performed and shall interpret the intent of the Contract Documents with reasonable promptness.

The REPRESENTATIVE will not be responsible for the construction means, controls, techniques, sequences, procedures, or construction safety.

The REPRESENTATIVE may assign Project Inspector(s) who shall serve to assist the REPRESENTATIVE in determining if the work performed and the materials used meet the Contract requirements. The Project Inspector shall be authorized to issue Field Orders. The Project Inspector shall be authorized to stop all or any portion of the work if in his opinion the work is not proceeding according to the requirements of the plans and specifications.

**ARTICLE 20 - MODIFICATION**

The CITY reserves the right to make changes in the work, including alterations, reductions therein or additions thereto. Upon receipt by the CONTRACTOR of the CITY’S notification of a contemplated change, the CONTRACTOR shall (1) if requested by CITY, provide an estimate for the increase or decrease in cost due to the contemplated change, (2) notify the CITY of any estimated change in the completion date, and (3) advise the CITY in writing if the contemplated change shall affect the CONTRACTOR’S ability to meet the completion dates or schedules of this Agreement.

If the CITY so instructs in writing, the CONTRACTOR shall suspend work on that portion of the work affected by a contemplated change, pending the CITY’S decision to proceed with the change.

If the CITY elects to make the change, the CITY shall issue a contract amendment or change order and the CONTRACTOR shall not commence work on any such change until such written amendment or change order has been issued and signed by each of the parties.

**ARTICLE 21 - CONTRACT DOCUMENTS**

The other documents which comprise the entire Agreement are attached hereto, made a part hereof and consist of the following:

- A. Advertisement for Bids,
  - B. Special Instructions and Conditions,
  - C. General Instructions and Conditions,
  - D. Minimum Technical Specifications,
  - E. Bid Certification Form  
Drug-Free Workplace Certification  
Conflict of Interest Disclosure
  - F. Addenda (if any),
  - G. Change Orders (if any),
  - H. Proprietary/Confidential Information Disclosure Form
- Sales Tax Exempt Purchasing Agreement  
Public Entity Crimes Statement,  
Anti-Collusion Statement

- I. Notice of Award & Notice to Proceed
- Exhibit A Special Federal Provisions
- Exhibit B Current Davis Bacon Act Wage Determination

In the event of a conflict between the terms of the above documents and the terms of this Agreement, the terms of this Agreement shall prevail.

There are no contract documents other than those listed above and there are no promises or understandings other than those stated herein.

**ARTICLE 22 - VENUE**

All applicable laws, regulations and ordinances of the State of Florida, Bay County and the City of Callaway will apply to consideration and award of any Bid/Proposal and the performance of the bidder/proposal pursuant thereto and shall be governed by the laws of the State of Florida both as to intention and performance. The venue for any action arising from the award or subsequent performance shall lie exclusively in the Circuit Court of Bay County, Florida, or the United States District Court for the Northern District of Florida, as applicable.

**ARTICLE 23 - NOTICE**

All notices required in this Agreement shall be sent by certified mail, return receipt requested, and if sent to the CITY shall be mailed to:

City of Callaway  
 6601 East Hwy. 22  
 Callaway, Florida 32404  
 Attention: Janice L. Peters, City Clerk  
 Phone: (850) 215-6694  
 Fax: (850) 871-2224  
 Email: jpeters@cityofCallaway.com

With a copy to: Kevin D. Obos, Esq. City Attorney  
 Hand Arendall Harrison Sale, LLC  
 304 Magnolia Avenue  
 Panama City, FL 32401  
 Phone: (850) 769-3434  
 Fax: (850) 769-6121

and if sent to the CONTRACTOR shall be mailed to:

Contractor: \_\_\_\_\_  
 Attn: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 \_\_\_\_\_  
 Phone: \_\_\_\_\_  
 E-Mail: \_\_\_\_\_

Either party may change its address noted above by giving written notice to the other party in accordance with the requirements of the Section.

This Agreement is entered into as of the day and year first written above and is executed in at least two original copies of which one is to be delivered to the CONTRACTOR, and one to the CITY CLERK for filing in the official records.

CITY CLERK

CITY OF CALLAWAY, FLORIDA

Attest: \_\_\_\_\_  
Janice L. Peters, MMC  
City Clerk

By: \_\_\_\_\_  
Keith E. Cook, City Manager

Contractor Witnesses:  
(2 REQUIRED)

Contractor:

Witness: \_\_\_\_\_  
Name  
  
\_\_\_\_\_  
Signature

\_\_\_\_\_  
Business Name  
  
By: \_\_\_\_\_  
Signature

Witness: \_\_\_\_\_  
Name  
  
\_\_\_\_\_  
Signature

\_\_\_\_\_  
Print Name and Title

APPROVED AS TO FORM FOR THE RELIANCE OF THE  
CITY OF CALLAWAY ONLY:

\_\_\_\_\_  
KEVIN D. OBOS, HAND ARENDALL HARRISON SALE  
CITY ATTORNEY

## **SPECIAL FEDERAL PROVISIONS**

### **A. GRANT CONDITIONS**

FEMA funding requirements apply to projects funding in part or in whole with funds made available by the Federal government.

#### **1. Goals for Women and Minorities in Construction**

Department of Labor regulations set forth in 41 CFR 60-4 establish goals and timetables for participation of minorities and women in the construction industry. These regulations apply to all Federally-assisted construction contracts in excess of \$10,000. The recipient must comply with these regulations and must obtain compliance with 41 CFR 60-4 from contractors and subcontractors employed in the completion of the project by including such notices, clauses and provisions in the Solicitations for Offers or Bids as required by 41 CFR 60-4. The goal for participation of women in each trade area must be as follows:

- a. From April 1, 1981, until further notice: 6.9 percent;
- b. All changes to this goal, as published in the Federal Register in accordance with the Office of Federal Contract Compliance Programs regulations at CFR 60- 4.6, or any successor regulations, must hereafter be incorporated by reference into these Special Award Conditions; and,
- c. Goals for minority participation must be as prescribed by Appendix B-Federal Register, Volume 45, No. 194, October 3, 1980, or subsequent publications. The Recipient must include the “Standard Federal Equal Employment Opportunity Construction Contract Specifications” (or cause them to be included if appropriate) in all federally assisted contracts subcontracts. The goals and timetables for minority and female participation may not be less than those published pursuant to 41 CFR 60-6.

#### **2. Contracting with small and minority businesses, women’s business enterprise, and labor surplus area firms**

The non-federal entity must take all necessary affirmative steps to assure that minority businesses, women’s business enterprises, and labor surplus area firms are used when possible. Affirmative steps must include:

- a. Placing qualified small and minority businesses and women’s business enterprises on solicitation lists;
- b. Assuring that small and minority businesses, and women’s business enterprises are solicited whenever they are potential sources;
- c. Dividing total requirements, when economically feasible, into smaller tasks quantities to permit maximum participation by small and minority business, and women’s business enterprises;
- d. Establishing delivery schedules, where the requirement permits, which encourage participation by small and minority businesses, and women’s business enterprises;



- e. Using the services and assistance, as appropriate, of such organizations as the Small Business Administration and the Minority Business Development Agency of the Department of Commerce; and,
- f. Requiring the prime contractor, if subcontracts are to be let, to take the affirmative steps listed in (a) — (e) of this paragraph.

### **3. Davis Bacon Act, as amended (40 U.S.C.3141—3148)**

Davis-Bacon Act-related provisions are applicable for a construction project if it is for the construction of a project that can be defined as a “treatment works” in 33 U.S.C 1292; or for a construction project regardless of whether it is a “treatment works” project if it is receiving federal assistance from another federal agency operating under an authority that requires the enforcement of Davis-Bacon Act-related provisions. When required, all prime construction contracts in excess of \$2,000 awarded by the non-Federal entity must include a provision for compliance with the Davis-Bacon Act (40 U.S.C. 3141—3144, and 3146—3148) as supplemented by Department of Labor regulations (29 CFR Part 5, “Labor Standards Provisions Applicable to Contracts Covering Federally Financed and Assisted Construction”). In accordance with the statute, contractors must be required to pay wages to laborers and mechanics at a rate not less than the prevailing wages specific in a wage determination made by the Secretary of Labor. In addition contracts must be required to pay wages not less than once a week.

The non-Federal entity must place a copy of the current prevailing wage determination issued by the Department of Labor in each solicitation. The decision to award a contract or subcontract must be conditioned upon the acceptance of the wage determination. The non-Federal entity must report all suspected or reported violations to Treasury. The contracts must also include a provision for compliance with the Copeland “Anti-Kickback” Act (40 U.S.C. 3145), as supplemented by Department of Labor regulations (29 CFR Part 3, “Contracts and Subcontractors on Public Building or Public Work Financed in Whole or in Part by Loans or Grants from the United States”). The Act provides that each contractor or sub-recipient must be prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public work, to give up any part of the compensation or which he or she is otherwise entitled. The non-federal entity must report all suspected or reported violations to Treasury. See Attachment Nos. 1, 2, and 3 of this Section.

### **4. Equal Opportunity Clause**

Pursuant to 41 CFR 60-1.4(b), Federally assisted construction contracts, for construction which is not exempt from the requirements of the equal opportunity clause, 41 CFR Part 60-1—Obligations of Contractors and Subcontractors, [t]he [recipient] hereby agrees that it will incorporate or cause to be incorporated into any contract for construction work, or modification thereof, as defined in the regulations of the Secretary of Labor at 41 CFR Chapter 60, which is paid for in whole or in part with funds obtained from the federal government or borrowed on the credit of the federal government pursuant to a grant, contract, loan, insurance, or guarantee, or undertaken pursuant to any federal program involving such grant, contract, loan, insurance, or guarantee, the following equal opportunity clause:

41 CFR §60-1.4 Equal opportunity clause. During the performance of this contract, the contractor agrees as follows:

- (1) The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated

during employment without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. Such action shall include, but not be limited to the following:

Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.

(2) The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, or national origin.

(3) The contractor will not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision shall not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee's essential job functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with the contractor's legal duty to furnish information.

(4) The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(5) The contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.

(6) The contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(7) In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

(8) The contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (8) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or

purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance. Provided, however, that in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency, the contractor may request the United States to enter into such litigation to protect the interests of the United States. The applicant further agrees that it will be bound by the above equal opportunity clause with respect to its own employment practices when it participates in federally assisted construction work: Provided, That if the applicant so participating is a State or local government, the above equal opportunity clause is not applicable to any agency, instrumentality or subdivision of such government which does not participate in work on or under the contract. The applicant agrees that it will assist and cooperate actively with the administering agency and the Secretary of Labor in obtaining the compliance of contractors and subcontractors with the equal opportunity clause and the rules, regulations, and relevant orders of the Secretary of Labor, that it will furnish the administering agency and the Secretary of Labor such information as they may require for the supervision of such compliance, and that it will otherwise assist the administering agency in the discharge of the agency's primary responsibility for securing compliance. The applicant further agrees that it will refrain from entering into any contract or contract modification subject to Executive Order 11246 of September 24, 1965, with a contractor debarred from, or who has not demonstrated eligibility for, Government contracts and federally assisted construction contracts pursuant to the Executive Order and will carry out such sanctions and penalties for violation of the equal opportunity clause as may be imposed upon contractors and subcontractors by the administering agency or the Secretary of Labor pursuant to Part II, Subpart D of the Executive Order. In addition, the applicant agrees that if it fails or refuses to comply with these undertakings, the administering agency may take any or all of the following actions: Cancel, terminate, or suspend in whole or in part this grant (contract, loan, insurance, guarantee); refrain from extending any further assistance to the applicant under the program with respect to which the failure or refund occurred until satisfactory assurance of future compliance has been received from applicant; and refer the case to the Department of Justice for appropriate legal proceedings.

## **5. Revised ADA Standards for Accessible Design for Construction Awards**

The U.S. Department of Justice has issued revised regulations implementing Title II of the ADA (28 C.F.R. Part 35) and Title III of the ADA (28 C.F.R. Part 36). The revised regulations adopted new enforceable accessibility standards called the "2010 ADA Standards for Accessible Design" (2010 Standards). The 2010 Standards are an acceptable alternative to the Uniform Federal Accessibility Standards (UFAS). Treasury deems compliance with the 2010 Standards to be an acceptable means of complying with the Section 504 accessibility requirements for new construction and alteration projects.

## **6. Historic Artifact Discovery**

If prehistoric or historic artifacts, such as pottery or ceramics, projectile points, dugout canoes, metal implements, historic building materials, or any other physical remains that could be associated with Native American, early European, or American settlement are encountered at any time within the project site area, the permitted project shall cease all activities involving subsurface disturbance in the vicinity of the discovery. The applicant shall contact the Florida Department of State, Division of Historical Resources, Compliance Review Section at (850)-245-6333. Project activities shall not resume without verbal and/or written authorization. In the event that unmarked human remains are encountered during permitted activities, all work shall stop immediately and the proper authorities notified in accordance with Section 872.05, Florida Statutes.

EXHIBIT B

DAVIS-BACON ACT

General Decision Number: FL20220105 02/25/2022
Superseded General Decision Number: FL20210105
State: Florida
Construction Type: Heavy
County: Bay County in Florida.

HIGHWAY CONSTRUCTION PROJECTS (Including Sewer and Water Lines)

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60).

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022, Executive Order 14026 generally applies to the contract. The contractor must pay all covered workers at least \$15.00 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2022.

If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022, Executive Order 13658 generally applies to the contract. The contractor must pay all covered workers at least \$11.25 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2022.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at www.dol.gov/whd/govcontracts.

Table with 2 columns: Modification Number, Publication Date. Rows: 0 01/07/2022, 1 02/25/2022

ENGI0653-012 10/01/2012

Table with 3 columns: Classification, Rates, Fringes. Row 1: POWER EQUIPMENT OPERATOR: Cranes 100 Tons & Over (Conventional & Hydraulic) & Tower Cranes, \$26.30, 11.13. Row 2: Cranes Under 100 Tons, \$25.30, 11.13. Row 3: Oiler, \$23.85, 11.13. Row 4: Cranes w/350' or more boom and/or 400-ton capacity - additional \$1.10 per hour. Row 5: Cranes w/500' boom and/or 600-ton capacity - additional \$1.45 per hour.

IRON0798-008 10/01/2021

IRONWORKER, STRUCTURAL .....\$28.00 16.37

PAIN0164-006 06/01/2021

PAINTER: Brush, Roller and Spray .....\$20.21 12.38

\*SUFL2009-144 06/24/2009

CARPENTER .....	\$15.36	0.00
CEMENT MASON/CONCRETE FINISHER .....	\$14.77**	3.50
ELECTRICIAN .....	\$17.25	3.02
LABORER: Common or General .....	\$ 9.13**	1.02
LABORER: Landscape.....	\$ 7.25**	0.00
LABORER: Pipelayer.....	\$11.51**	2.94
LABORER: Power Tool Operator (Hand Held Drills/Saws, Jackhammer and Power Saws Only).....	\$10.63**	2.20
OPERATOR: Asphalt Paver.....	\$11.59**	0.00
OPERATOR: Backhoe Loader Combo .....	\$16.10	2.44
OPERATOR: Backhoe/Excavator .....	\$13.11**	1.51
OPERATOR: Bulldozer.....	\$15.00	4.98
OPERATOR: Grader/Blade.....	\$16.00	2.84
OPERATOR: Loader .....	\$13.89**	2.07
OPERATOR: Mechanic.....	\$14.32**	0.00
OPERATOR: Roller .....	\$10.76**	0.00
OPERATOR: Scraper .....	\$11.00**	1.74
OPERATOR: Trackhoe .....	\$20.92	5.50
OPERATOR: Tractor.....	\$10.54**	0.00
TRUCK DRIVER: Includes Dump Truck.....	\$ 8.52**	0.25
TRUCK DRIVER: Lowboy Truck .....	\$12.73**	0.00
TRUCK DRIVER: Off the Road Truck.....	\$12.21**	1.97

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

\*\* Workers in this classification may be entitled to a higher minimum wage under Executive Order 14026 (\$15.00) or 13658 (\$11.25). Please see the Note at the top of the wage determination for more information.

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family

member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at [www.dol.gov/whd/govcontracts](http://www.dol.gov/whd/govcontracts).

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

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The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of ""identifiers"" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

#### Union Rate Identifiers

A four-letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union, which prevailed in the survey for this classification, which in this example would be Plumbers 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

#### Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

#### Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

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### WAGE DETERMINATION APPEALS PROCESS

- 1.) Has there been an initial decision in the matter? This can be:
- \* an existing published wage determination
  - \* a survey underlying a wage determination
  - \* a Wage and Hour Division letter setting forth a position on a wage determination matter
  - \* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations  
Wage and Hour Division  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

- 2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION



**CITY OF CALLAWAY**  
**SALES TAX EXEMPT PURCHASING AGREEMENT**

PWTHIS SALES TAX EXEMPT PURCHASING AGREEMENT made as of \_\_\_\_\_, 20\_\_, between \_\_\_\_\_ hereinafter called the “Contractor” and the City of Callaway, Florida, hereinafter called the “Owner.”

RECITALS

1. Contractor and Owner entered a contract dated \_\_\_\_\_, 20\_\_, for Bid No. PW2022-14, and the performance of the work described therein.
2. Contractor and Owner desire to enter into an arrangement whereby certain purchases under the Contract may be made through the Owner as a means of taking advantage of the Owner’s status of being exempt from sales and use taxes.
3. The Owner is exempt from sales and use taxes. As such it is exempt from the payment of sales and use tax on purchases of tangible property, materials, etc., necessary for the performance of work under construction contracts, provided the Owner determines it is to its best interest to do so, and provided the purchase of such properties, materials, et cetera, are handled in the manner hereinafter described.
4. Should the Owner determine that it is in its best interest to provide the opportunity to eliminate the payments of sales tax for tangible property, materials, etc., to be used in the construction of this project, it will notify the Contractor of its intent to do so.

AGREEMENT

1. The parties intend by this Agreement to comply with the procedures and elements described in Florida Department of Revenue Technical Assistance Advisements 01A-003 (January 8, 2001) and 00A-083 (December 21, 2000), and any conflict or ambiguity in this Agreement shall be resolved in favor of meeting the elements necessary to make tax exempt the purchases contemplated by this Agreement.
2. The Owner shall, at its sole discretion, have the option to purchase directly from the supplier or vendor, any supplies, materials or equipment included in the Contractor’s bid for the Contract. The Owner reserves the right to require Contractor to assign to the Owner agreements with suppliers for such goods. Contractor shall, from time to time submit, update and keep current, for consideration by the Owner, a list of all materials, supplies and equipment to be purchased, organized by supplier or vendor. Such list shall include a brief description of the materials, supplies and equipment and the name and address of the supplier or vendor. Suppliers or vendors reasonably anticipated to furnish material, supplies and equipment with an aggregate purchase value of less than \$5,000 need not be listed. Contractor’s initial list is attached, incorporated and marked “Exhibit B.” Goods not required for the performance of the Contract shall not be purchased under this Agreement. The Owner reserves the right to delete or add items from this Agreement when it is in the Owner’s best interest.

3. The Owner will be liable for the payment of all purchases properly made hereunder.
4. Contractor shall notify all suppliers not to make sales to the Contractor under this Agreement.
5. For each purchase approved by the Owner to be made under this Agreement, the Contractor shall furnish the Owner, in writing, information sufficient for the Owner to issue to the supplier its Owner purchase order for the requested item, which shall include as an attachment the Owner's Certificate of Exemption. Suppliers will render statements for materials purchased to the Owner in care of the Contractor. After accepting the goods, reviewing and approving the invoices, Contractor will forward the invoices to the Owner's Engineer for approval, processing and delivery to the Owner for payment. Contractor will keep and furnish to the Owner all such records, summaries, reports of purchase orders and invoices, and reports of the status and use of goods handled under this Agreement, as the Owner may reasonably require.
6. The Contract provides that Contractor will perform the work under the Contract for a total lump sum of \$ \_\_\_\_\_, as may be amended from time to time as provided in the Contract. Said amount, as amended, due Contractor under the Contract, shall be reduced by the sum of all amounts paid by the Owner for materials and equipment purchased under this Agreement, including any shipping, handling, insurance or other, similar charges paid by the Owner, and all of the savings of sales and use tax on the purchase of such items.
7. The Contractor shall submit his proposal for base bid and proposals for each Alternate with the inclusion of all required taxes including applicable sales and use tax, the same is if tax were to be paid in the normal manner. Any sales and use tax savings will be effected during the performance of the Contract.
8. Contractor shall immediately notify all subcontractors and material and equipment dealers of the Owner's intent to possibly reduce the construction cost of the project by the purchase of properties, materials, et cetera, in the manner herein described and the Contractor shall not withhold his consent to the arrangement.
9. Administrative costs incurred by the Contractor with this Agreement, including administering the purchases in the name of the Owner, shall be considered to be included in the base bid proposal for work. No addition shall be added to the Contract amount because of the service provided by the Contractor in the purchase of property, materials, et cetera, in the name of the Owner.
10. All sales and use tax savings on the purchase of property, materials, et cetera, shall be credited to the Owner and the amount of the Contract shall be reduced by the full amount of savings which are affected by the omission of payment of sales and use tax.

11. By virtue of its payment of material and equipment invoices, the Owner further intends to benefit from any discounts offered for timely payment to the extent of one-half of the discount offered, the remaining one-half to accrue to the Contractor as an incentive for the Contractor to process invoices well within the discount period. The Contractor shall pay any late penalties caused by their failure to facilitate the processing of invoices within allotted time.
12. The Contractor, notwithstanding this special purchase arrangement, shall select, describe, order, obtain approvals, submit samples, coordinate, process, prepare shop drawings, pursue, receive, inspect, store, protect, guarantee and otherwise be responsible for all materials, the same as would have been the case if the tax saving procedures were not implemented.
13. The Contractor as bailee shall have the obligation of receiving, inspecting, storing and safekeeping all goods and materials purchased on behalf of the Owner pursuant to this Agreement. Further, the Contractor shall be responsible for the cost of replacing or repairing any goods or materials lost, stolen, damaged or destroyed while in the Contractor's possession or control as bailee, as well as processing all warranty claims for defective goods and materials to the same extent as if such goods had been Contractor-supplied or purchased in the name of the Contractor.
14. Contractor shall maintain separate accounting records for all transactions carried out under the authority granted to it under this Agreement. Such records shall be open to the Owner or its authorized agent during normal business hours of Contractor.
15. As equitable and legal owner of the materials and equipment purchased under this Agreement, the Owner shall bear the risk of loss thereto and shall have the insurable interest therein. Therefore, Contractor shall, at no additional cost to Owner, cause the Owner to be insured or named as an additional insured as its interest may appear against any loss or damage to such goods to the extent of their full insurable value. All such insurance shall be in such form and through such companies as may be reasonably acceptable to Owner and Contractor shall provide Owner certificates thereof requiring each insurer to provide the Owner ten (10) days written notice in advance of cancellation or modification of coverage.
16. Contractor shall be fully responsible for all matters relating to the procurement of materials and equipment covered by this Agreement, including but not limited to, overseeing that the correct materials and the correct amounts are received timely with appropriate warranties; for inspecting and accepting the goods; and for unloading, handling and storing the materials until installed. Contractor shall inspect the materials when they arrive at the job site, verify that all necessary documentation accompanies the delivery and conforms with the Owner's purchase order, and forward the invoice to the Owner for payment if the goods are conforming and acceptable. Contractor shall verify that the materials conform to plans and specifications and determine before installation that such materials are not defective. Contractor shall manage and enforce the warranties on all materials and equipment covered by this Agreement. Contractor shall be responsible to the Owner for its failure to fully and timely perform its obligations under this paragraph, and this Agreement generally.

17. Whenever title to the materials and equipment covered by this Agreement passes to the Owner prior to being incorporated into the work, the Contractor's possession of the goods is a bailment until such time as each of such goods is returned to the Owner by being incorporated into the work.
18. The Owner shall not be liable for delays in the work caused by delays in delivery of or defects in the goods covered by this Agreement, nor shall such delays or defects excuse Contractor in whole or in part from its obligation to timely perform the Contract.
19. In the event Contractor objects to the payment of any invoice for goods covered by this Agreement, Contractor shall at no additional cost to the Owner, provide all assistance, records and testimony necessary or convenient for the Owner to resolve the supplier's claim for payment.
20. This Agreement and the authority granted to Contractor hereunder may be revoked by the Owner at any time upon verbal or written notice to Contractor at its offices located at \_\_\_\_\_, during normal business hours.

IN WITNESS WHEREOF the parties have caused these presents to be executed in their names as of the date and year first above written.

**CONTRACTOR:**

By: \_\_\_\_\_

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Title

**OWNER:**

**CITY OF CALLAWAY**

By: \_\_\_\_\_

Eddie Cook, City Manager

Date: \_\_\_\_\_

Attest: \_\_\_\_\_

Janice L. Peters, City Clerk



# PROPOSAL CHECKLIST

## CITY OF CALLAWAY BERTHE AVENUE BRIDGE REPLACEMENT & ASSOCIATED INFRASTRUCTURE BID NO: PW2022-15

### FORMS/ITEMS TO BE RETURNED WITH YOUR PROPOSAL!

The following forms are to be completed/signed by the Proposer and submitted to the City:

1. Bid/RFP Certification Form(s),
2. One (1) unbound set of bid packet with original notarized signatures, plus three (3) copies
3. Bid Bond or Cashier's Check/Certified Check in the amount of 5% of bid,
4. Sales Tax Exempt Purchasing Agreement,
5. Proof of Insurance in amounts required by the City with the City listed as Certificate Holder and Additionally Insured (See Special Instructions & Conditions),
6. State of Florida Contractor License
7. Public Entity Crime Statement, [Complete items 1 and 6; notarized signature required]
8. Drug-Free Workplace Certification Form, [Complete Part I; notarized signature, or sign Part II]
9. List of Subcontractors with names of directors or owners, addresses, telephone numbers, and email address (if applicable),
10. List of references for similar type work with contact information.
11. Proprietary/Confidential Information Form
12. Conflict-of-Interest Disclosure
13. Anti-Collusion Statement

**Note:** Incomplete Bid/Proposal submissions may not be accepted/considered. Do not modify the forms! Any additional information you desire to present may be included as an attachment.

**Reminder:** Submit requested number of copies! (See Special Instructions and Conditions)

**BID/RFP CERTIFICATION FORM**  
**CITY OF CALLAWAY**  
**BERTHE AVENUE BRIDGE REPLACEMENT**  
**& ASSOCIATED INFRASTRUCTURE**  
**BID NO: PW2022-15**

PROPOSERS CERTIFICATION TO THE CITY OF CALLAWAY:

1. The undersigned warrants that: (A) This Proposal is submitted in response to, and is in compliance with, all terms and conditions applicable thereto as set forth in the Advertisement, Instructions to Proposers, General Instructions and Conditions, Special Instructions and Conditions, Bid/RFP Certification Forms, the Minimum Technical Specifications, Addendum, Exhibits, Agreement, Bonds, and Insurance Requirements, each of which has been carefully examined, (B) Proposer or Proposer's representative has made such investigation as is necessary to determine the character and extent of the work and their capability to perform the work, and (C) agrees that if the Proposal is accepted by the City, Proposer will provide the necessary labor, materials, machinery, equipment, tools or apparatus, and perform all the work or services required to complete the assignment and/or contract within the time specified according to the requirements of the City as herein and hereinafter set forth, and (D) he/she is authorized to legally execute binding contracts for and on behalf of the Proposer.
2. Please check one:
  - Proposer declares that the only person, persons, company, or parties interested in this Proposal are named in the Proposal.
  - Proposer, or one or more of Proposer's officers, principals, or any owner of more than 5% in or of proposer, or members of their immediate families: (A) have a financial interest in another company, project, or property that could benefit financially from this proposed project; and/or (B) another individual or business will be compensated by (or on behalf of proposer) if Proposer is selected by the City for the requested services. (Attach a detailed explanation for either.)
3. Bid Bond - If the Proposal is accepted by the City, it will become a binding contract on both parties. If a Bid Bond or Cashier's Check/Certified Check is required, it shall be submitted with the Proposal. If the undersigned shall fail to deliver or perform, or if applicable, execute a Contract as stated herein, then the City may, at its option, determine that the undersigned has abandoned the Award/Contract, and thereupon such Bid and/or Award shall be null and void, and any Cashier's Check/Certified Check or Bond accompanying this Bid shall be forfeited to and become the property of the City, and the full amount of said check, or if a Bid Bond, the full amount of such bond, shall be paid to the City as partial liquidated damages; otherwise, any Bond or Cashier's Check/Certified Check accompanying this Bid shall be returned to the undersigned within 30 calendar days from the date of Award, or if provisions for a Notice to Proceed are included, from the date of the Notice to Proceed.
4. Vendor proposes and agrees to provide all materials, services or equipment required for the City of Callaway **BERTHE AVENUE BRIDGE REPLACEMENT & ASSOCIATED INFRASTRUCTURE BID NO: PW2022-15**, for the Total Sum(s) as follows: (*Totals must match breakdown of costs for each part on next page.*) Dollar Amount (\$ \_\_\_\_\_)  
Written Amount: \_\_\_\_\_
5. Number of days from date of the Notice to Proceed that will be required for the final completion of all work as described herein.

\_\_\_\_\_

**(Maximum 360 Calendar Days)**
6. The City reserves the right to accept any or all prices itemized in any combination that best serves the interests of the City. The City further reserves the right to accept or reject any of the components of this Proposal, including alternates.

## ARTICLE 1 – BASIS OF BID

1.01 Bidder will complete the Work in accordance with the Contract Documents for the following price(s):

1.02 LUMP SUM

A. Where payment for items is shown to be paid for on a lump sum basis, no separate payment will be made for any item of work required to complete the lump sum item. The lump sum price bid for various items shall be compensation in full for furnishing all materials, labor, equipment, and incidentals with these plans and specification. All disposal costs shall be included in the bid items. Unless otherwise stated, measurement shall be based upon the Engineer's estimate of percent complete per partial payment period.

1. **Bid Item 1.03 – Demolition:** The LUMP SUM BID AMOUNT will be a payment for the demolition and removal of any existing structures or hardscape which conflicts with proposed construction. This includes, but is not limited to the existing concrete box culverts, miscellaneous concrete rubble and debris, existing asphalt roadway in the areas of proposed roadway approaches and bridge structure, concrete headwalls, wingwalls, etc. The LUMP SUM BID AMOUNT shall be based on the percentages of work completed as approved by the ENGINEER.
2. **Bid Item 1.06 – Dewatering:** The LUMP SUM BID AMOUNT will be a payment for furnishing and installing all necessary equipment, piping, fittings, valves, shoring, and electrical work required to effectively dewater submerged areas which conflict with construction efforts. This includes, but is not limited to, all pumps, fuel, hoses/piping, fittings, valves, restraints, supports, clearing, grading, debris removal and electrical (i.e. generators). The LUMP SUM BID AMOUNT shall be based on the percentages of work completed as approved by the ENGINEER.
3. **Bid Item 1.25 – Signage and Marking:** The LUMP SUM BID AMOUNT will be a payment for furnishing and installing all necessary signage and roadway striping as per the design plans specifications. The LUMP SUM BID AMOUNT shall be based on the percentages of work completed as approved by the ENGINEER.
4. **Bid Item 1.26 – General Provisions:** The LUMP SUM BID AMOUNT for all work included under this bid item will be made for mobilization and demobilization of all labor, equipment, materials and appurtenances necessary for construction of the project. Mobilization shall include all those operations necessary for the movement of personnel, equipment, supplies, and incidentals to the initial project site, safety equipment and first aid supplies, and sanitary and other facilities. Also included as part of this bid item is the cost for project performance and payment bonds, insurance, indemnifications, photographs, shop drawings, working drawings, schedules, documents, coordination, and phasing and other miscellaneous items associated with the work. Measurement for this bid item will be lump sum. The lump sum price for general provisions will be limited to five percent (5%) of the contract amount. Seventy percent (70%) of the lump sum price will be payable with the first month's partial payment. The remaining thirty (30%) will be payable with the final partial payment.

ITEM	FDOT #	DESCRIPTION	QUANT.	UNIT	UNIT PRICE	AMOUNT
1.01	0102 1	TEMPORARY TRAFFIC CONTROL (ONE YEAR ROAD CLOSURE/DISCLOSURE)	365	DA		
1.02	0110 1 1	CLEARING & GRUBBING	1	AC		
1.03	0110 3	DEMOLITION (Ex. Box Culverts, Headwalls, Wingwalls, Conc. Debris)	1	LS		
1.04	110	DEMOLITION OF EXISTING WATER MAIN	370	LF		
1.05	0630 2 12	6" HDPE WATER MAIN VIA DIRECTIONAL DRILL	323	LF		
1.06		DEWATERING	1	LS		
1.07	0104 11	FLOATING TURBIDITY BARRIER	145	LF		
1.08	0104 10 3	SILT FENCE	625	LF		
1.09	0530 74	BEDDING STONE	600	TN		
1.10	110	REMOVE AND DISPOSE EXISTING ASPHALT PAVEMENT DEBRIS	1,920	SY		
1.11	0425 5 1	ADJUST SS MANHOLE RIM ELEVATION	1	EA		
1.12	0110 4 10	DEMOLITION OF EXISTING CONCRETE SIDEWALK	235	SY		
1.13	0110 4 10	DEMOLITION OF EXISTING CONCRETE DRIVEWAY	50	SY		
1.14	0522 1	NEW CONCRETE SIDEWALK	305	SY		
1.15	0286 1	NEW CONCRETE DRIVEWAY	50	SY		
1.16	0104 1	EROSION CONTROL BLANKET	2,250	SY		
1.17	0530 3	RIPRAP - BANK & SHORE	840	TN		
1.18	0160 4	APPROACH STABILIZED SUBGRADE - TYPE B	1,515	SY		
1.19	285709	APPROACH GRADED AGGREGATE BASE	1,515	SY		
1.20	0334 1 13	APPROACH TYPE FC - 9.5 (TRAFFIC C)	152	TN		
1.21	0536 1 0	GUARDRAIL, LOW SPEED TL-2	385	LF		
1.22	0536 8111	GUARDRAIL, TRANSITION CONNECTION, TL-2	3	EA		
1.23	0570 1 2	PERFORMANCE TURF, SOD	3,800	SY		
1.24		SEED & MULCH	500	SY		
1.25		SIGNAGE & MARKING	1	LS		
1.26		GENERAL PROVISIONS (5% of Contract Amount)	1	LS		
<b>TOTAL BASE BID FOR SITE/CIVIL</b>						
2.01	0120 1	REGULAR EXCAVATION	696.5	CY		
2.02	0120 6	EMBANKMENT	698.0	CY		
2.03	0125 1	EXCAVATION FOR STRUCTURES	177.5	CY		
2.04	0125 3	SELECT BEDDING MATERIAL	177.5	CY		
2.05	0455 34 5	PRESTRESSED CONCRETE PILING, 24" SQ	1,596	LF		
2.06	0455 143 5	TEST PILES-PRESTRESSED CONCRETE, 24" SQ	80	LF		
2.07	0458 1 11	BRIDGE DECK EXPANSION JOINT, NEW CONSTRUCTION, F&I POURED JOINT WITH BACKER ROD	216	LF		
2.08	0400 4 5	CONCRETE CLASS IV, BRIDGE SUBSTRUCTURE	317.5	CY		
2.09	0413 154	CLEANING & SEALING CONCRETE SURFACES - PENETRANT SEALER OR METHACRYLATES	194	SF		
2.10	0415 1 5	REINFORCING STEEL - BRIDGE SUBSTRUCTURE	43,034	LB		
2.11	0440 73 2	UNDERDRAIN OUTLET PIPE, 6"	208	LF		
2.12	0514 71 1	PLASTIC FILTER FABRIC, SUBSURFACE	355	SY		
2.13	0400 4 10	CONCRETE CLASS IV, APPROACH SLABS	61.5	CY		
2.14	0415 1 9	REINFORCING STEEL - APPROACH SLABS	31,188	LB		
2.15	0400 4 4	CONC CLASS IV, BRIDGE SUPERSTRUCTURE	92.8	CY		
2.16	0400 148	PLAIN NEOPRENE BEARING PADS	2.0	CF		
2.17	0415 1 4	REINFORCING STEEL - BRIDGE SUPERSTRUCTURE	20,634	LB		
2.18	0450 8 31	PRESTRESSED BEAM: FLORIDA SLAB BEAM, BEAM DEPTH 18" CARBON STEEL, WIDTH 48-51"	728	LF		
2.19	0515 2 213	PEDESTRIAN/BICYCLE RAILING, STEEL, 42" TYPE 3	117	LF		
2.20	0512 5 1	CONCRETE TRAFFIC RAILING - BRIDGE, 32" F-SHAPE	234	LF		
2.21	0400 95 3	COFFERDAM, SPECIAL	1	EA		
<b>TOTAL BASE BID FOR BRIDGE</b>						
3.01	0400 4 11	WALL 1: CONCRETE CLASS IV, RETAINING WALLS	63.8	CY		
3.02	0413 154	WALL 1: CLEANING & SEALING CONCRETE SURFACES - PENETRANT SEALER OR METHACRYLATES	53	SF		
3.03	0415 1 3	WALL 1: REINFORCING STEEL - RETAINING WALL	4,308	LB		
3.04	0440 73 2	WALL 1: UNDERDRAIN OUTLET PIPE, 6"	79	LF		
3.05	0514 71 1	WALL 1: PLASTIC FILTER FABRIC, SUBSURFACE	110	SY		
3.06	0400 4 11	WALL 2: CONCRETE CLASS IV, RETAINING WALLS	51.0	CY		
3.07	0413 154	WALL 2: CLEANING & SEALING CONCRETE SURFACES - PENETRANT SEALER OR METHACRYLATES	33	SF		
3.08	0415 1 3	WALL 2: REINFORCING STEEL - RETAINING WALL	3,449	LB		
3.09	0440 73 2	WALL 2: UNDERDRAIN OUTLET PIPE, 6"	63	LF		
3.10	0514 71 1	WALL 2: PLASTIC FILTER FABRIC, SUBSURFACE	88	SY		
<b>TOTAL BASE BID FOR RETAINING WALLS</b>						
<b>TOTAL BASE BID</b>						



7. BIDDER HEREBY ACKNOWLEDGES RECEIPT OF THE FOLLOWING ADDENDUMS: \_\_\_\_\_

Name of Bidder: \_\_\_\_\_

Business structure: ( ) Corporation, ( ) Partnership, ( ) Individual, ( ) Other: \_\_\_\_\_

If a Partnership: \_\_\_\_\_

Name(s) of Partner(s): \_\_\_\_\_

If a Corporation: \_\_\_\_\_

Incorporated in State of: \_\_\_\_\_ Date of Incorporation: \_\_\_\_\_

Business Address: \_\_\_\_\_

City: \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Telephone Number: ( ) \_\_\_\_\_ Fax ( ) \_\_\_\_\_

E-mail Address: \_\_\_\_\_

Submitted By: \_\_\_\_\_

(Print)

Affix Corporate Seal  
(If Corporation)

Title: \_\_\_\_\_

Signature: \_\_\_\_\_

ATTEST: \_\_\_\_\_

Secretary

By: \_\_\_\_\_

Print Name

State of Florida  
County of \_\_\_\_\_

The foregoing instrument was acknowledged before  
me by means of  Physical Presence or  
 Online Notarization

The foregoing instrument was acknowledged before me this \_\_\_ day of \_\_\_\_\_, 20 \_\_, by \_\_\_\_\_,  
who is personally known to me or who presented \_\_\_\_\_ as identification, and who (did) (did not) take  
an oath.

\_\_\_\_\_  
[Signature of Notary Public]

\_\_\_\_\_  
[Printed, typed, or stamped name of Notary Public]

**NOTE: BIDS MAY BE REJECTED IF ALL DOCUMENTS ARE NOT COMPLETE AND EXECUTED, AND  
THE NUMBER OF COPIES SPECIFIED/REQUESTED OF EACH ARE NOT SUBMITTED WITH THE  
BID.**

**SWORN STATEMENT PURSUANT TO SECTION 287.133(3)(a),  
FLORIDA STATUTES, ON PUBLIC ENTITY CRIMES**

**THIS FORM MUST BE SIGNED AND SWORN TO IN THE PRESENCE OF A NOTARY PUBLIC OR OTHER OFFICIAL AUTHORIZED TO ADMINISTER OATHS.**

1. This sworn statement is submitted to City of Callaway, Florida, a Municipal Corporation, 6601 East Hwy. 22, Callaway, Florida 32404 by \_\_\_\_\_  
[print individual's name and title]  
for \_\_\_\_\_ whose business  
[print name of entity submitting sworn statement]  
address is \_\_\_\_\_  
\_\_\_\_\_ and (if applicable) it's Federal Identification Number  
(FEIN) is \_\_\_\_\_ (If the entity has no FEIN, include the Social Security  
Number of the individual signing this sworn statement \_\_\_\_\_)
2. I understand that a "public entity crime" as defined in Paragraph 287.133(1)(g), **Florida Statutes**, 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 of 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 political subdivision of any other state or of the United States and involving antitrust, fraud, theft, bribery, collusion, racketeering, conspiracy, or material misrepresentation.
3. I understand that "convicted" or "conviction" 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 record 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.
4. 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 person of shares constituting a controlling interest in another person, or a pooling of equipment or income among persons when not for fair market value under an arm's length agreement, shall be a prima facie case that one person controls another person. A person who knowingly enters into a joint venture with a person who has been convicted of a public entity crime in Florida during the preceding 36 months shall be considered an affiliate.
5. 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 any state or of the United States with the legal power to enter into a binding contract and which bids or applies to bid on contracts for the 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.

6. Based on information and belief, the statement which I have marked below is true in relation to the entity submitting this sworn statement. **[Indicate which statement applies.]**

\_\_\_\_\_ Neither the entity submitting this sworn statement, nor any of its officers, directors, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity, nor any affiliate of the entity has 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 its officers, directors, executives, partners, shareholders, employees, members, or agents who are active in the 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.

\_\_\_\_\_ The entity submitting this sworn statement, or one or more of its officers, directors, executives, partners, shareholders, employees, members, or agents who are active in the 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. However, there has been a subsequent proceeding before a Hearing Officer of the State of Florida, Division of Administrative Hearings and the Final Order entered by the Hearing Officer determined that it was not in the public interest to place the entity submitting this sworn statement on the convicted vendor list. **[attach a copy of the final order]**

**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.**

\_\_\_\_\_  
**[signature]**

PW2022-15  
\_\_\_\_\_  
**[Reference: RFP Number]**

Sworn to and subscribed before me this \_\_\_ day of \_\_\_\_\_, 20\_\_ . Personally known \_\_\_\_\_ or produced identification \_\_\_\_\_.

**[Type of identification]**

The foregoing instrument was acknowledged before me by means of  Physical Presence

or

Online Notarization

Notary Public - State of \_\_\_\_\_

My Commission expires: \_\_\_\_\_

\_\_\_\_\_  
**[Signature of Notary]**

\_\_\_\_\_  
**[Printed, typed or stamped commissioned name of Notary Public]**

**CITY OF CALLAWAY**  
**DRUG-FREE WORKPLACE CERTIFICATION**

**Please complete Part I or Part II as applicable.**

In order to be given preference in the award process for having implemented a drug-free workplace program prior to the Bid/Proposal submission date, the Bidder/Proposer is requested to certify that as part of their drug-free workplace program, they have:

1. Published a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the workplace and specified the actions that will be taken against employees for violations of such prohibition.
2. Informed employees about the dangers of drug abuse in the workplace, the business policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation, and employee assistance programs, and the penalties that may be imposed upon employees for drug abuse violations.
3. Given each employee engaged in providing the commodities or contractual services that are under bid a copy of the statement specified in Subsection 1.
4. In the statement specified in Subsection 1, notified the employees that, as a condition of working on the commodities or contractual services that are under bid, the employee will abide by the terms of the statement and will notify the employer of any conviction of, or plea of guilty or nolo contendere to, any violation of Chapter 893 or of any controlled substance law of the United States or any state, for a violation occurring in the workplace no later than five (5) days after such conviction.
5. Imposed a sanction on or required the satisfactory participation in a drug abuse assistance or rehabilitation program if such is available in the employee's community by any employee who is so convicted.
6. Made a good faith effort to continue to maintain a drug-free workplace through implementation of this section.

**Part I - PROGRAM IMPLEMENTED**

I certify that I/we have established a drug-free workplace program meeting the foregoing minimum requirements.

\_\_\_\_\_  
[Printed, typed name]

\_\_\_\_\_  
[Signature]

State of Florida

County of \_\_\_\_\_

The foregoing instrument was acknowledged before me this \_\_\_\_ day of \_\_\_\_\_, 20\_\_, by \_\_\_\_\_, who appeared by means of  Physical Presence or  Online Notarization, is personally known to me or who presented \_\_\_\_\_ as identification, and who (did) (did not) take an oath.

\_\_\_\_\_  
[Signature of Notary Public]

\_\_\_\_\_  
[Printed, typed or stamped name of Notary Public]

\_\_\_\_\_  
[Commission Number of Notary Public]

**Part II - PROGRAM NOT IMPLEMENTED**

A program meeting the above stated requirements has not been established or has not been fully implemented prior to Bid/Proposal closing date, and therefore I/we are not eligible for certification as a drug-free workplace.

\_\_\_\_\_  
[Signature]

\_\_\_\_\_  
[Date]

**PROPRIETARY/CONFIDENTIAL INFORMATION  
CITY OF CALLAWAY  
BERTHE AVENUE BRIDGE REPLACEMENT & ASSOCIATED  
INFRASTRUCTURE  
BID NO. PW2022-15**

**Name of Firm of Bidder/Vendor:** \_\_\_\_\_

Trade secrets or proprietary information submitted by a Vendor shall not be subject to public disclosure under the Freedom of Information Act; however, the Vendor must invoke such protections provided by state law, in writing, either before or at the time the data or other material is submitted. The written notice must specifically identify the data or materials to be protected, including the section of the proposal in which it is contained, as well as the page number(s), and state the reasons why protection is necessary. The proprietary or trade secret material submitted must be identified by some distinct method such as highlighting or underlining and must indicate only the specific words, figures, or paragraphs that constitute a trade secret or proprietary information. In addition, a summary of proprietary information provided shall be submitted on this form. The designation of an entire proposal document, line-item prices, and/or total proposal prices as proprietary or trade secrets is not acceptable. If, after being given reasonable time, the Vendor refuses to withdraw such a classification designation, the proposal will be rejected.

SECTION/TITLE	PAGE NUMBER(S)	REASON(S) FOR WITHHOLDING FROM DISCLOSURE

**Check this box if there are none.**

*This document must be completed and returned with proposal.*

**CITY OF CALLAWAY  
BERTHE AVENUE BRIDGE REPLACEMENT & ASSOCIATED  
INFRASTRUCTURE  
BID NO. PW2022-15**

**CONFLICT-OF-INTEREST DISCLOSURE**

The award of a bid or acceptance of proposal is subject to Chapter 112, Florida Statutes\*. All Bidders/Proposers must disclose with their Bid/Proposal the name of any officer, director, or agent who is a city official or employee, or a member of an official's or employee's immediate family. Further, Bidders/Proposers must disclose the name of any city official or employee, or a member of an official's or employee's immediate family, who owns directly or indirectly an interest of ten percent (10%) or more in the bidder's/proposer's firm or related business.

**CERTIFICATION**

- I declare that I do not have any matters which might give rise to a real or perceived conflict of interest.
- I hereby disclose that the following named person(s) is an Officer, Director, or Agent who is also a City Official, Employee, or member of a City Official or Employee's immediate family and could pose a possible conflict of interest:

Name: \_\_\_\_\_

Affiliation: \_\_\_\_\_

By signing below, I affirm that I have read and understood the principles of conflict-of-interest disclosure and I have made full disclosure of all matters that may put me in a conflict-of-interest situation in performing my role.

I acknowledge that non-disclosure could result in action being taken to terminate my work with the City of Callaway and potentially bar me from submissions of Bids/RFPs in the future.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Company

Project/Bid/RFP Number: \_\_\_\_\_ Date: \_\_\_\_\_

\*Florida Statutes Chapter 112.311(5) It is hereby declared to be the policy of the state that no officer or employee of a state agency or of a county, city, or other political subdivision of the state, and no member of the Legislature or legislative employee, shall have any interest, financial or otherwise, direct or indirect; engage in any business transaction or professional activity; or incur any obligation of any nature which is in substantial conflict with the proper discharge of his or her duties in the public interest.

**CITY OF CALLAWAY  
BERTHE AVENUE BRIDGE REPLACEMENT  
& ASSOCIATED INFRASTRUCTURE  
BID NO. PW2022-15**

**ANTI-COLLUSION STATEMENT**

I hereby attest that I am the person responsible within my company for the final decision as to the price(s) and amount of this Bid or, if not, that I have written authorization, enclosed herewith, from that person to make the statements set out below on his or her behalf and on behalf of my company.

I further attest that:

- A. The price(s) and amount of this Bid have been arrived at independently, without consultation, communication, or agreement for the purpose or with the effect of restricting competition with any other company or person who is a Bidder or potential Prime Bidder.
- B. Neither the price(s) nor the amount of this Bid have been disclosed to any other company or person who is a Bidder or potential Prime Bidder on this Project and will not be so disclosed prior to Bid Opening.
- C. Neither the prices nor the amount of the Bid of any other company or person who is a Bidder or potential Prime Bidder on this Project have been disclosed to me or my company.
- D. No attempt has been made to solicit, cause, or induce any company or person who is a Bidder or potential Prime Bidder to refrain from Bidding on this project, or to submit a Bid higher than the Bid of this company, or any intentionally high or noncompetitive Bid or other form of complementary Bid.
- E. No agreement has been promised or solicited for any other company or person who is a Bidder or potential Prime Bidder on this Project to submit an intentionally high, noncompetitive, or other form of complementary Bid on this project.
- F. The Bid of my company is made in good faith and not pursuant to any consultation, communication, agreement, or discussion with, or inducement or solicitation by or from any company or person to submit any intentionally high, noncompetitive or other form of complementary Bid.
- G. My company has not offered or entered into a subcontract or agreement regarding the purchase or sale of materials or services from any company or person, or offered, promised or paid cash or anything of value to any company or person, whether in connection with this or any other project, in consideration for an agreement or promise by any company or person to refrain from bidding or to submit any intentionally high, noncompetitive or other form of complementary bid or agreeing or promising to do so on this project.

- H. My company has not accepted or been promised any subcontract or agreement regarding the sale of materials or services to any company or person and has not been promised or paid cash or anything of value by any company or person, whether in connection with this or any other Project, in consideration for my company's submitting any intentionally high, noncompetitive, or other form of complementary Bid, or agreeing or promising to do so, on this Project.
  
- I. I have made a diligent inquiry of all members, officers, employees, and agents of my company with responsibilities relating to the preparation, approval, or submission of my company's Bid on this Project and have been advised by each of them that he or she has not participated in any communication, consultation, discussion, agreement, collusion, or other conduct inconsistent with any of the statements and representations made in this affidavit.
  
- J. I understand and my company understands that any misstatement in this affidavit is and shall be treated as a fraudulent concealment of the true facts relating to submission of Bids for this Contract.

I DECLARE UNDER PENALTY OF PERJURY IN THE SECOND DEGREE, AND ANY OTHER APPLICABLE STATE OR FEDERAL LAWS THAT THE STATEMENTS MADE ON THIS DOCUMENT ARE TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE.

Signature	Company Name
Title	Address
Date	Phone Number



**SCHEDULE OF EVENTS**  
**BERTHE AVENUE BRIDGE REPLACEMENT**  
**& ASSOCIATED INFRASTRUCTURE**  
**BID NO: PW2022-15**

Bid Advertisement	Tue., August 30, 2022
Pre-Bid Meeting (Non-Mandatory) 10:00 a.m.	Wed., Sept. 14, 2022
Deadline For Questions	Wednesday, October 5, 2022
Bid Due Date – 10:00 a.m.	Monday, October 17, 2022
Bid Evaluation & Approval By FDOT	Monday, October 24, 2022
Board Approval of Low Bid & Contract Award	Tuesday, November 8, 2022
Begin Construction	Monday, November 21, 2022
Substantial Completion of Construction	Friday, November 17, 2023
Final Completion of Construction	Monday, December 18, 2023

**CITY OF CALLAWAY  
BERTHE AVENUE BRIDGE REPLACEMENT  
& ASSOCIATED INFRASTRUCTURE  
BID NO. PW2022-15**

**MINIMUM TECHNICAL  
SPECIFICATIONS**

TECHNICAL SPECIFICATIONS TABLE OF CONTENTS  
CITY OF CALLAWAY BERTHE AVENUE BRIDGE AND ASSOCIATED INFRASTRUCTURE DESIGN

Division	Section Title	Pages
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**SPECIFICATIONS GROUP**

*General Requirements Subgroup*

**DIVISION 01 - GENERAL REQUIREMENTS**

01 10 00	SUMMARY	3
01 25 00	SUBSTITUTION PROCEDURES	4
01 29 00	PAYMENT PROCEDURES	4
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01 32 33	PHOTOGRAPHIC DOCUMENTATION	3
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01 73 00	EXECUTION	5
01 74 19	CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL	2
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**DIVISION 03 – CONCRETE**

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31 20 00	EARTH MOVING	12
31 23 16	EXCAVATION	4
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31 23 23	FILL	5
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33 11 16	SITE WATER UTILITY DISTRIBUTION PIPING	9

END OF TECHNICAL SPECIFICATIONS TABLE OF CONTENTS

## SECTION 01 10 00 - SUMMARY

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section Includes:

- 1. Project information.
- 2. Work covered by Contract Documents.
- 3. Owner-Purchased Material
- 4. Access to site.
- 5. Work restrictions.
- 6. Specification and drawing conventions.

- B. Related Requirements:

- 1. Section 01 50 00 "Temporary Facilities and Controls" for limitations and procedures governing temporary use of Owner's facilities.

#### 1.3 PROJECT INFORMATION

- A. Project Identification: Berthe Bridge and Associated Infrastructure.

- 1. Project Location: Berthe Avenue, Callaway, FL

- B. Owner: City of Callaway  
6601 East Highway 22  
Callaway, Florida 32404

- 1. Owner's Representative: Mr. Eddie Cook, Callaway City Manager

- C. Engineer: Jeffrey Petermann P.E., Regional Manager, 850-438-9661,  
jpetermann@baskervilledonovan.com.

#### 1.4 WORK COVERED BY CONTRACT DOCUMENTS

- A. The Work of Project is defined by the Contract Documents and consists of the following:

- 1. This project consist of existing concrete box culvert demo, concrete bridge construction, concrete bridge abutments, concrete foundation piles, roadway guardrail, asphalt roadway approaches, concrete sidewalk, earthwork grading and coordination with /avoidance of

newly constructed infrastructure from adjacent projects (lift station near Fox Lake Drive, ditch piping from Fox Lake Drive to creek outfall, ditch piping outfall end wall, newly installed sanitary force main and potable watermain (each side of proposed bridge structure), abandoned gravity sewer main (east R/W of Berthe) and driveway reconstruction.

B. Type of Contract:

1. Project will be constructed under a single prime contract.
  - a. Berthe Bridge and Associated Infrastructure Project.

1.5 WORK BY OWNER

- A. General: Cooperate fully with Owner so work may be carried out smoothly, without interfering with or delaying work under this Contract or work by Owner. Coordinate the Work of this Contract with work performed by Owner.

1.6 ACCESS TO SITE

- A. General: Contractor shall have full use of Project site for construction operations during construction period. Contractor's use of Project site is limited only by Owner's right to perform work or to retain other contractors on portions of Project.
- B. Use of Site: Limit use of Project site to the right-of-ways of City, County and State roadways as indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.

1.7 WORK RESTRICTIONS

- A. Work Restrictions, General: Comply with restrictions on construction operations.
1. Comply with limitations on use of public streets and with other requirements of authorities having jurisdiction.
- B. On-Site Work Hours: Limit work in the existing building to normal business working hours of 7:00 a.m. to 6:00 p.m. local time, Monday through Friday, unless otherwise indicated.
1. Weekend Hours: Two weeks advance written notice by Owner, times limited to regular weekday work hours unless approved otherwise
  2. Hours for Utility Shutdowns: Arrange two weeks in advance with Owner, time specified by Owner with no additional costs to the Owner. Contractor responsible for notifying residents that shall be impacted by shutdown.
- C. Noise, Vibration, and Odors: Coordinate operations that may result in high levels of noise and vibration, odors, or other disruption to area residents with Owner.
1. Notify Owner not less than two days in advance of proposed disruptive operations.
- D. Controlled Substances: Use of tobacco products and other controlled substances on Project site is not permitted.

- E. Employee Identification: Provide identification Employee Roster Badges for Contractor personnel working on Project site. Require personnel to use identification tags at all times.
- F. Employee Screening: Comply with Owner's requirements for drug and background screening of Contractor personnel working on Project site.
  - 1. Maintain list of approved screened personnel with Owner's representative.

## 1.8 SPECIFICATION AND DRAWING CONVENTIONS

- A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
  - 1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
  - 2. Specification requirements are to be performed by Contractor unless specifically stated otherwise.
- B. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.
- C. Drawing Coordination: Requirements for materials and products identified on Drawings are described in detail in the Specifications. One or more of the following are used on Drawings to identify materials and products:
  - 1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.
  - 2. Keynoting: Materials and products are identified by reference keynotes referencing Specification Section numbers found in this Project Manual.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 10 00

## SECTION 01 25 00 - SUBSTITUTION PROCEDURES

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section includes administrative and procedural requirements for substitutions.

#### 1.3 DEFINITIONS

- A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.
  - 1. Substitutions for Cause: Changes proposed by Contractor that are required due to changed Project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms.
  - 2. Substitutions for Convenience: Changes proposed by Contractor or Owner that are not required in order to meet other Project requirements but may offer advantage to Contractor or Owner.

#### 1.4 ACTION SUBMITTALS

- A. Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
  - 1. Substitution Request Form: Use CSI Form 13.1A.
  - 2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
    - a. Statement indicating why specified product or fabrication or installation cannot be provided, if applicable.
    - b. Coordination information, including a list of changes or revisions needed to other parts of the Work and to construction performed by Owner and separate contractors that will be necessary to accommodate proposed substitution.
    - c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Include annotated copy of applicable Specification Section. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.

- d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
  - e. Samples, where applicable or requested.
  - f. Certificates and qualification data, where applicable or requested.
  - g. List of similar installations for completed projects with project names and addresses and names and addresses of Engineers and owners.
  - h. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
  - i. Research reports evidencing compliance with building code in effect for Project.
  - j. Detailed comparison of Contractor's construction schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.
  - k. Cost information, including a proposal of change, if any, in the Contract Sum.
  - l. Contractor's certification that proposed substitution complies with requirements in the Contract Documents except as indicated in substitution request, is compatible with related materials, and is appropriate for applications indicated.
  - m. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.
3. Engineer's Action: If necessary, Engineer will request additional information or documentation for evaluation within seven days of receipt of a request for substitution. Engineer will notify Contractor of acceptance or rejection of proposed substitution within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.
- a. Forms of Acceptance: Owner's Change Order, Owner's Work Change Directive, or Engineer's Field Order for minor changes in the Work.
  - b. Use product specified if Engineer does not issue a decision on use of a proposed substitution within time allocated.

## 1.5 QUALITY ASSURANCE

- A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage a qualified testing agency to perform compatibility tests recommended by manufacturers.

## 1.6 PROCEDURES

- A. Coordination: Revise or adjust affected work as necessary to integrate work of the approved substitutions.



## PART 2 - PRODUCTS

### 2.1 SUBSTITUTIONS

- A. Substitutions for Cause: Submit requests for substitution immediately on discovery of need for change, but not later than 15 days prior to time required for preparation and review of related submittals.
1. Conditions: Engineer will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Engineer will return requests without action, except to record noncompliance with these requirements:
    - a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
    - b. Substitution request is fully documented and properly submitted.
    - c. Requested substitution will not adversely affect Contractor's construction schedule.
    - d. Requested substitution has received necessary approvals of authorities having jurisdiction.
    - e. Requested substitution is compatible with other portions of the Work.
    - f. Requested substitution has been coordinated with other portions of the Work.
    - g. Requested substitution provides specified warranty.
    - h. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.
- B. Substitutions for Convenience: Engineer will consider requests for substitution if received within 60 days after the Notice of Award. Requests received after that time may be considered or rejected at discretion of Engineer.
1. Conditions: Engineer will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Engineer will return requests without action, except to record noncompliance with these requirements:
    - a. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Engineer for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
    - b. Requested substitution does not require extensive revisions to the Contract Documents.
    - c. Requested substitution is consistent with the Contract Documents and will produce indicated results.
    - d. Substitution request is fully documented and properly submitted.
    - e. Requested substitution will not adversely affect Contractor's construction schedule.
    - f. Requested substitution has received necessary approvals of authorities having jurisdiction.
    - g. Requested substitution is compatible with other portions of the Work.
    - h. Requested substitution has been coordinated with other portions of the Work.

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- i. Requested substitution provides specified warranty.
- j. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 25 00

## SECTION 01 29 00 - PAYMENT PROCEDURES

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section includes administrative and procedural requirements necessary to prepare and process Applications for Payment.
- B. Related Requirements:

#### 1.3 DEFINITIONS

- A. Schedule of Values: A statement furnished by Contractor allocating portions of the Contract Sum to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

#### 1.4 SCHEDULE OF VALUES

- A. Coordination: Coordinate preparation of the schedule of values with preparation of Contractor's construction schedule.
  - 1. Coordinate line items in the schedule of values with line items in the bid form, including the following:
    - a. Application for Payment forms with continuation sheets.
    - b. Submittal schedule.
  - 2. Submit the schedule of values to Engineer at earliest possible date, but no later than ten days before the date scheduled for submittal of initial Applications for Payment.
- B. Format and Content: Use Project Manual Bid Proposal form as a guide to establish line items for the schedule of values.
  - 1. Identification: Include the following Project identification on the schedule of values:
    - a. Project name and location.
    - b. Name of Engineer.
    - c. Engineer's project number.
    - d. Contractor's name and address.
    - e. Date of submittal.

2. Arrange schedule of values consistent with format of EJCDC Document C-620.
3. Arrange the schedule of values in tabular form with separate columns to indicate the following for each item listed:
  - a. Related Specification Section or Division.
  - b. Description of the Work.
  - c. Name of subcontractor.
  - d. Name of manufacturer or fabricator.
  - e. Name of supplier.
  - f. Change Orders (numbers) that affect value.
4. Round amounts to nearest whole dollar; total shall equal the Contract Sum.
5. Provide a separate line item in the schedule of values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.
  - a. Differentiate between items stored on-site and items stored off-site. If required, include evidence of insurance.
6. Provide separate line items in the schedule of values for initial cost of materials, for each subsequent stage of completion, and for total installed value of that part of the Work.
7. Each item in the schedule of values and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item.
8. Schedule Updating: Update and resubmit the schedule of values before the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

#### 1.5 APPLICATIONS FOR PAYMENT

- A. Each Application for Payment following the initial Application for Payment shall be consistent with previous applications and payments as certified by Engineer and paid for by Owner.
  1. Initial Application for Payment, Application for Payment at time of Substantial Completion, and final Application for Payment involve additional requirements.
- B. Payment Application Times: The date for each progress payment is indicated in the Agreement between Owner and Contractor. The period of construction work covered by each Application for Payment is the period indicated in the Agreement.
- C. Payment Application Times: Submit Application for Payment to Engineer by the 25<sup>th</sup> day of the month. The period covered by each Application for Payment is one month, ending on the 20<sup>th</sup> day of the month.
  1. Submit draft copy of Application for Payment two days prior to due date for review by Engineer.
- D. Application for Payment Forms: Use EJCDC Document C-620 as form for Applications for Payment.

- E. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Engineer will return incomplete applications without action.
1. Entries shall match data on the schedule of values and Contractor's construction schedule. Use updated schedules if revisions were made.
  2. Include amounts for work completed following previous Application for Payment, whether or not payment has been received. Include only amounts for work completed at time of Application for Payment.
  3. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.
  4. Indicate separate amounts for work being carried out under Owner-requested project acceleration.
- F. Stored Materials: Include in Application for Payment amounts applied for materials or equipment purchased or fabricated and stored, but not yet installed. Differentiate between items stored on-site and items stored off-site.
1. Provide certificate of insurance, evidence of transfer of title to Owner, and consent of surety to payment, for stored materials.
  2. Provide supporting documentation that verifies amount requested, such as paid invoices. Match amount requested with amounts indicated on documentation; do not include overhead and profit on stored materials.
  3. Provide summary documentation for stored materials indicating the following:
    - a. Value of materials previously stored and remaining stored as of date of previous Applications for Payment.
    - b. Value of previously stored materials put in place after date of previous Application for Payment and on or before date of current Application for Payment.
    - c. Value of materials stored since date of previous Application for Payment and remaining stored as of date of current Application for Payment.
- G. Transmittal: Submit three signed and notarized original copies of each Application for Payment to Engineer by a method ensuring receipt within 48 hours. One copy shall include waivers of lien and similar attachments if required.
1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.
- H. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's liens from subcontractors, sub-subcontractors, and suppliers for construction period covered by the previous application.
1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
  2. Submit final Application for Payment with or preceded by conditional final waivers from every entity involved with performance of the Work covered by the application who is lawfully entitled to a lien.
  3. Waiver Forms: Submit executed waivers of lien on forms, acceptable to Owner.

- I. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:
  - 1. List of subcontractors.
  - 2. Schedule of values.
  - 3. Contractor's construction schedule (preliminary if not final).
  - 4. Submittal schedule (preliminary if not final).
  - 5. Copies of building permits.
  - 6. Initial progress report.
  - 7. Certificates of insurance and insurance policies.
  
- J. Application for Payment at Substantial Completion: After Engineer issues the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.
  - 1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
  - 2. This application shall reflect Certificate(s) of Substantial Completion issued previously for Owner occupancy of designated portions of the Work.
  
- K. Final Payment Application: After completing Project closeout requirements, submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:
  - 1. Evidence of completion of Project closeout requirements.
  - 2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
  - 3. Final liquidated damages settlement statement.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 29 00

## SECTION 01 31 00 - PROJECT MANAGEMENT AND COORDINATION

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
  - 1. General coordination procedures.
  - 2. Coordination drawings.
  - 3. Requests for Information (RFIs).
  - 4. Project meetings.
- B. Each contractor shall participate in coordination requirements. Certain areas of responsibility are assigned to a specific contractor.
- C. Related Requirements:
  - 1. Section 01 32 00 "Construction Progress Documentation" for preparing and submitting Contractor's construction schedule.
  - 2. Section 01 77 00 "Closeout Procedures" for coordinating closeout of the Contract.

#### 1.3 DEFINITIONS

- A. RFI: Request to Engineer from Contractor seeking information required by or clarifications of the Contract Documents.

#### 1.4 INFORMATIONAL SUBMITTALS

- A. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Use CSI Form 1.5A or approved equivalent. Include the following information in tabular form:
  - 1. Name, address, and telephone number of entity performing subcontract or supplying products.
  - 2. Number and title of related Specification Section(s) covered by subcontract.
  - 3. Drawing number and detail references, as appropriate, covered by subcontract.
- B. Key Personnel Names: Contractor shall have employees complete City of Callaway ID Badge process before starting construction operations. Submit a list of key personnel assignments,

including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home, office, and cellular telephone numbers and e-mail addresses. Provide names, addresses, and telephone numbers of individuals assigned as alternates in the absence of individuals assigned to Project.

1. Post copies of list in project meeting room, in temporary field office, and by each temporary telephone. Keep list current at all times.

## 1.5 GENERAL COORDINATION PROCEDURES

- A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections that depend on each other for proper installation, connection, and operation.
1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
  2. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair.
  3. Make adequate provisions to accommodate items scheduled for later installation.
- B. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.
1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.
- C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of other contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
1. Preparation of Contractor's construction schedule.
  2. Preparation of the schedule of values.
  3. Installation and removal of temporary facilities and controls.
  4. Delivery and processing of submittals.
  5. Progress meetings.
  6. Preinstallation conferences.
  7. Project closeout activities.
  8. Startup and adjustment of systems.
- D. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials. Coordinate use of temporary utilities to minimize waste.



1. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. See other Sections for disposition of salvaged materials that are designated as Owner's property.

## 1.6 COORDINATION DRAWINGS

- A. Coordination Drawings, General: Prepare coordination drawings according to requirements in individual Sections, and additionally where installation is not completely shown on Shop Drawings, where limited space availability necessitates coordination, or if coordination is required to facilitate integration of products and materials fabricated or installed by more than one entity.
  1. Content: Project-specific information, drawn accurately to a scale large enough to indicate and resolve conflicts. Do not base coordination drawings on standard printed data. Include the following information, as applicable:
    - a. Use applicable Drawings as a basis for preparation of coordination drawings. Prepare sections, elevations, and details as needed to describe relationship of various systems and components.
    - b. Coordinate the addition of trade-specific information to the coordination drawings by multiple contractors in a sequence that best provides for coordination of the information and resolution of conflicts between installed components before submitting for review.
    - c. Indicate functional and spatial relationships of components of architectural, structural, civil, mechanical, and electrical systems.
    - d. Indicate space requirements for routine maintenance and for anticipated replacement of components during the life of the installation.
    - e. Show location and size of access doors required for access to concealed dampers, valves, and other controls.
    - f. Indicate required installation sequences.
    - g. Indicate dimensions shown on the Drawings. Specifically note dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternate sketches to Engineer indicating proposed resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the Contract.
- B. Coordination Drawing Organization: Organize coordination drawings as follows (where applicable):
  1. Floor Plans and Reflected Ceiling Plans: Show architectural and structural elements, and mechanical, plumbing, fire-protection, fire-alarm, and electrical Work. Show locations of visible ceiling-mounted devices relative to acoustical ceiling grid. Supplement plan drawings with section drawings where required to adequately represent the Work.
  2. Plenum Space: Indicate subframing for support of ceiling and wall systems, mechanical and electrical equipment, and related Work. Locate components within ceiling plenum to accommodate layout of light fixtures indicated on Drawings. Indicate areas of conflict between light fixtures and other components.
  3. Mechanical Rooms: Provide coordination drawings for mechanical rooms showing plans and elevations of mechanical, plumbing, fire-protection, fire-alarm, and electrical equipment.

4. Structural Penetrations: Indicate penetrations and openings required for all disciplines.
  5. Slab Edge and Embedded Items: Indicate slab edge locations and sizes and locations of embedded items for metal fabrications, sleeves, anchor bolts, bearing plates, angles, door floor closers, slab depressions for floor finishes, curbs and housekeeping pads, and similar items.
  6. Mechanical and Plumbing Work: Show the following:
    - a. Sizes and bottom elevations of ductwork, piping, and conduit runs, including insulation, bracing, flanges, and support systems.
    - b. Dimensions of major components, such as dampers, valves, diffusers, access doors, cleanouts and electrical distribution equipment.
    - c. Fire-rated enclosures around ductwork.
  7. Electrical Work: Show the following:
    - a. Runs of vertical and horizontal conduit 1-1/4 inches in diameter and larger.
    - b. Light fixture, exit light, emergency battery pack, smoke detector, and other fire-alarm locations.
    - c. Panel board, switch board, switchgear, transformer, busway, generator, and motor control center locations.
    - d. Location of pull boxes and junction boxes, dimensioned from column center lines.
  8. Fire-Protection System: Show the following:
    - a. Locations of standpipes, mains piping, branch lines, pipe drops, and sprinkler heads.
  9. Review: Engineer will review coordination drawings to confirm that the Work is being coordinated, but not for the details of the coordination, which are Contractor's responsibility. If Engineer determines that coordination drawings are not being prepared in sufficient scope or detail, or are otherwise deficient, Engineer will so inform Contractor, who shall make changes as directed and resubmit.
  10. Coordination Drawing Prints: Prepare coordination drawing prints according to requirements in Section 01 33 00 "Submittal Procedures."
- C. Coordination Digital Data Files: Prepare coordination digital data files according to the following requirements:
1. File Preparation Format: Same digital data software program, version, and operating system as original Drawings.
  2. File Preparation Format: DWG Autocad, operating in Microsoft Windows operating system.
  3. File Submittal Format: Submit or post coordination drawing files using Portable Data File (PDF) format.
  4. Engineer will furnish Contractor one set of digital data files of Drawings for use in preparing coordination digital data files.
    - a. Engineer makes no representations as to the accuracy or completeness of digital data files as they relate to Drawings.
    - b. Digital Data Software Program: Drawings are available in Autocad.

- c. Contractor shall execute a data licensing agreement in the form of Agreement form acceptable to Owner and Engineer.

## 1.7 REQUESTS FOR INFORMATION (RFIs)

- A. General: Immediately on discovery of the need for additional information or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the form specified.
  1. Engineer will return RFIs submitted to Engineer by other entities controlled by Contractor with no response.
  2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.
- B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:
  1. Project name.
  2. Project number.
  3. Date.
  4. Name of Contractor.
  5. Name of Engineer.
  6. RFI number, numbered sequentially.
  7. RFI subject.
  8. Specification Section number and title and related paragraphs, as appropriate.
  9. Drawing number and detail references, as appropriate.
  10. Field dimensions and conditions, as appropriate.
  11. Contractor's narrative statement of requested information of problem statement.
  12. Contractor's suggested resolution for problem statements. If Contractor's suggested resolution impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
  13. Contractor's signature.
  14. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.
    - a. Include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments on attached sketches.
- C. RFI Forms: Software-generated form with substantially the same content as indicated above, acceptable to Engineer.
  1. Attachments shall be electronic files in Adobe Acrobat PDF format.
- D. Engineer's Action: Engineer will review each RFI, determine action required, and respond. Allow seven working days for Engineer's response for each RFI. RFIs received by Engineer after 1:00 p.m. will be considered as received the following working day.
  1. The following Contractor-generated RFIs will be returned without action:
    - a. Requests for approval of submittals.

- b. Requests for approval of substitutions.
  - c. Requests for approval of Contractor's means and methods.
  - d. Requests for coordination information already indicated in the Contract Documents.
  - e. Requests for adjustments in the Contract Time or the Contract Sum.
  - f. Requests for interpretation of Engineer's actions on submittals.
  - g. Incomplete RFIs or inaccurately prepared RFIs.
2. Engineer's action may include a request for additional information, in which case Engineer's time for response will date from time of receipt of additional information.
  3. Engineer's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal.
    - a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Engineer in writing within 10 days of receipt of the RFI response.
    - b. Engineer's RFI response shall not be construed as authorization of actions requiring a contract cost or time change. Such Authorization is reserved to the Owner.
- E. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log monthly. Include the following:
1. Project name.
  2. Name and address of Contractor.
  3. Name and address of Engineer.
  4. RFI number including RFIs that were returned without action or withdrawn.
  5. RFI description.
  6. Date the RFI was submitted.
  7. Date Engineer's response was received.
- F. On receipt of Engineer's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Engineer within seven days if Contractor disagrees with response.
1. Identification of the need for a related Engineer's Field Order, Owner's Work Change Directive, or a Proposal Request, as appropriate.

## 1.8 PROJECT MEETINGS

- A. General: Schedule and conduct meetings and conferences at Project site unless otherwise indicated.
1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Engineer of scheduled meeting dates and times.
  2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.

3. Minutes: Record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and Engineer, within seven days of the meeting.
- B. Preconstruction Conference: Engineer will schedule and conduct a preconstruction conference before starting construction, at a time convenient to Owner and Contractor, but no later than 15 days after execution of the Agreement.
1. Conduct the conference to review responsibilities and personnel assignments.
  2. Attendees: Authorized representatives of Owner, Contractor, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
  3. Agenda: Discuss items of significance that could affect progress, including the following:
    - a. Tentative construction schedule.
    - b. Phasing.
    - c. Critical work sequencing and long-lead items.
    - d. Designation of key personnel and their duties.
    - e. Lines of communications.
    - f. Procedures for processing field decisions and Change Orders.
    - g. Procedures for RFIs.
    - h. Procedures for testing and inspecting.
    - i. Procedures for processing Applications for Payment.
    - j. Distribution of the Contract Documents.
    - k. Submittal procedures.
    - l. Sustainable design requirements.
    - m. Preparation of record documents.
    - n. Use of the premises and existing building.
    - o. Work restrictions.
    - p. Working hours.
    - q. Owner's occupancy requirements.
    - r. Responsibility for temporary facilities and controls.
    - s. Procedures for moisture and mold control.
    - t. Procedures for disruptions and shutdowns.
    - u. Construction waste management and recycling.
    - v. Parking availability.
    - w. Office, work, and storage areas.
    - x. Equipment deliveries and priorities.
    - y. First aid.
    - z. Security.
    - aa. Progress cleaning.
  4. Minutes: Engineer will record and distribute meeting minutes.
- C. Preinstallation Conferences: Contractor shall conduct any required preinstallation conferences at Project site before each construction activity that requires coordination with other construction.
1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and

installations that have preceded or will follow, shall attend the meeting. Advise Engineer of scheduled meeting dates.

2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:

- a. Contract Documents.
- b. Options.
- c. Related RFIs.
- d. Related Change Orders.
- e. Purchases.
- f. Deliveries.
- g. Submittals.
- h. Sustainable design requirements.
- i. Review of mockups.
- j. Possible conflicts.
- k. Compatibility requirements.
- l. Time schedules.
- m. Weather limitations.
- n. Manufacturer's written instructions.
- o. Warranty requirements.
- p. Compatibility of materials.
- q. Acceptability of substrates.
- r. Temporary facilities and controls.
- s. Space and access limitations.
- t. Regulations of authorities having jurisdiction.
- u. Testing and inspecting requirements.
- v. Installation procedures.
- w. Coordination with other work.
- x. Required performance results.
- y. Protection of adjacent work.
- z. Protection of construction and personnel.

3. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
4. Reporting: Distribute minutes of the meeting to each party present and to other parties requiring information.
5. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.

- D. Project Closeout Conference: Engineer shall schedule and conduct a project closeout conference, at a time convenient to Owner and Contractor, but no later than 30 days prior to the scheduled date of Substantial Completion.

1. Conduct the conference to review requirements and responsibilities related to Project closeout.
2. Attendees: Authorized representatives of Owner, Contractor, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the meeting. Participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.

3. Agenda: Discuss items of significance that could affect or delay Project closeout, including the following:
    - a. Preparation of record documents.
    - b. Procedures required prior to inspection for Substantial Completion and for final inspection for acceptance.
    - c. Submittal of written warranties.
    - d. Requirements for completing sustainable design documentation.
    - e. Requirements for preparing operations and maintenance data.
    - f. Requirements for delivery of material samples, attic stock, and spare parts.
    - g. Requirements for demonstration and training.
    - h. Preparation of Contractor's punch list.
    - i. Procedures for processing Applications for Payment at Substantial Completion and for final payment.
    - j. Submittal procedures.
    - k. Coordination of separate contracts.
    - l. Owner's partial occupancy requirements.
    - m. Installation of Owner's furniture, fixtures, and equipment.
    - n. Responsibility for removing temporary facilities and controls.
  4. Minutes: Entity conducting meeting will record and distribute meeting minutes.
- E. Progress Meetings: Contractor shall conduct progress meetings at monthly intervals.
1. Coordinate dates of meetings with preparation of payment requests.
  2. Attendees: In addition to representatives of Owner and Engineer, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
  3. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
    - a. Contractor's Construction Schedule: Review progress since the last meeting. Identify whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's construction schedule Identify how construction behind schedule will be expedited and if commitments from parties involved to do so have been secure. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
      - 1) Review schedule for next period.
    - b. Review present and future needs of each entity present, including the following:
      - 1) Interface requirements.
      - 2) Sequence of operations.
      - 3) Resolution of BIM component conflicts.
      - 4) Status of submittals.
      - 5) Status of sustainable design documentation.
      - 6) Deliveries.

- 7) Off-site fabrication.
  - 8) Access.
  - 9) Site utilization.
  - 10) Temporary facilities and controls.
  - 11) Progress cleaning.
  - 12) Quality and work standards.
  - 13) Status of correction of deficient items.
  - 14) Field observations.
  - 15) Status of RFIs.
  - 16) Status of proposal requests.
  - 17) Pending changes.
  - 18) Status of Change Orders.
  - 19) Pending claims and disputes.
  - 20) Documentation of information for payment requests.
  - 21) Record Drawings
4. Minutes: Contractor is responsible for conducting the meeting, recording and distributing the meeting minutes to each party present and to parties requiring information.
- a. Schedule Updating: Revise Contractor's construction schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.
- F. Contractor's Coordination Meetings: Conduct Project coordination meetings at regular intervals in advance of and in preparation for the Project Progress Meetings. Project coordination meetings are in addition to specific meetings held for other purposes, such as progress meetings and preinstallation conferences.
1. Attendees: Include each contractor, subcontractor, supplier, and other entity concerned with current progress exclusive of the Owner and Engineer's representatives. Also those involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meetings shall be familiar with Project and authorized to conclude matters relating to the Work.
  2. Agenda: Review and correct or approve minutes of the previous coordination meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
    - a. Combined Contractor's Construction Schedule: Review progress since the last coordination meeting. Determine whether each contract is on time, ahead of schedule, or behind schedule, in relation to combined Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
    - b. Schedule Updating: Revise combined Contractor's construction schedule after each coordination meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with report of each meeting.
    - c. Review present and future needs of each contractor present, including the following:
      - 1) Interface requirements.



- 2) Sequence of operations.
  - 3) Resolution of BIM component conflicts.
  - 4) Status of submittals.
  - 5) Deliveries.
  - 6) Off-site fabrication.
  - 7) Access.
  - 8) Site utilization.
  - 9) Temporary facilities and controls.
  - 10) Work hours.
  - 11) Hazards and risks.
  - 12) Progress cleaning.
  - 13) Quality and work standards.
  - 14) Change Orders.
3. Reporting: Record meeting results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting exclusive of the Owner and Engineer's representatives. Include in the Progress Meetings the reporting of relevant components of the Coordination Meetings to the Owner and Engineer's representatives.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 31 00

## SECTION 01 32 00 - CONSTRUCTION PROGRESS DOCUMENTATION

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:
  - 1. Startup construction schedule.
  - 2. Contractor's construction schedule.
  - 3. Construction schedule updating reports.
  - 4. Daily construction reports.
  - 5. Material location reports.
  - 6. Site condition reports.
  - 7. Special reports.
- B. Related Requirements:
  - 1. Section 01 33 00 "Submittal Procedures" for submitting schedules and reports.
  - 2. Section 01 40 00 "Quality Requirements" for submitting a schedule of tests and inspections.

#### 1.3 DEFINITIONS

- A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction project. Activities included in a construction schedule consume time and resources.
  - 1. Critical Activity: An activity on the critical path that must start and finish on the planned early start and finish times.
  - 2. Predecessor Activity: An activity that precedes another activity in the network.
  - 3. Successor Activity: An activity that follows another activity in the network.
- B. Cost Loading: The allocation of the schedule of values for the completion of an activity as scheduled. The sum of costs for all activities must equal the total Contract Sum unless otherwise approved by Engineer.
- C. CPM: Critical path method, which is a method of planning and scheduling a construction project where activities are arranged based on activity relationships. Network calculations determine when activities can be performed and the critical path of Project.

- D. Critical Path: The longest connected chain of interdependent activities through the network schedule that establishes the minimum overall Project duration and contains no float.
- E. Event: The starting or ending point of an activity.
- F. Float: The measure of leeway in starting and completing an activity.
  - 1. Float time is not for the exclusive use or benefit of either Owner or Contractor, but is a jointly owned, expiring Project resource available to both parties as needed to meet schedule milestones and Contract completion date.
  - 2. Free float is the amount of time an activity can be delayed without adversely affecting the early start of the successor activity.
  - 3. Total float is the measure of leeway in starting or completing an activity without adversely affecting the planned Project completion date.
- G. Resource Loading: The allocation of manpower and equipment necessary for the completion of an activity as scheduled.

#### 1.4 INFORMATIONAL SUBMITTALS

- A. Format for Submittals: Submit required submittals in the following format:
  - 1. Working electronic copy of schedule file, where indicated.
  - 2. PDF electronic file.
  - 3. Three paper copies.
- B. Startup construction schedule.
  - 1. Approval of cost-loaded, startup construction schedule will not constitute approval of schedule of values for cost-loaded activities.
- C. Startup Network Diagram: Of size required to display entire network for entire construction period. Show logic ties for activities.
- D. Contractor's Construction Schedule: Initial schedule, of size required to display entire schedule for entire construction period.
  - 1. Submit a working electronic copy of schedule, using software indicated, and labeled to comply with requirements for submittals. Include type of schedule (initial or updated) and date on label.
- E. CPM Reports: Concurrent with CPM schedule, submit each of the following reports. Format for each activity in reports shall contain activity number, activity description, cost and resource loading, original duration, remaining duration, early start date, early finish date, late start date, late finish date, and total float in calendar days.
  - 1. Activity Report: List of all activities sorted by activity number and then early start date, or actual start date if known.
  - 2. Logic Report: List of preceding and succeeding activities for all activities, sorted in ascending order by activity number and then early start date, or actual start date if known.

3. Total Float Report: List of all activities sorted in ascending order of total float.
  4. Earnings Report: Compilation of Contractor's total earnings from the Notice to Proceed until most recent Application for Payment.
- F. Construction Schedule Updating Reports: Submit with Applications for Payment.
- G. Daily Construction Reports: Submit at monthly intervals.
- H. Material Location Reports: Submit at monthly intervals.
- I. Site Condition Reports: Submit at time of discovery of differing conditions.
- J. Special Reports: Submit at time of unusual event.
- K. Qualification Data: For scheduling consultant.

#### 1.5 QUALITY ASSURANCE

- A. Scheduling Consultant Qualifications: An experienced specialist in CPM scheduling and reporting, with capability of producing CPM reports and diagrams within 24 hours of Engineer's request.
- B. Prescheduling Conference: Conduct conference at Project site to comply with requirements in Section 01 31 00 "Project Management and Coordination." Review methods and procedures related to the preliminary construction schedule and Contractor's construction schedule, including, but not limited to, the following:
1. Review software limitations and content and format for reports.
  2. Verify availability of qualified personnel needed to develop and update schedule.
  3. Discuss constraints, including phasing work stages area separations interim milestones and partial Owner occupancy.
  4. Review delivery dates for Owner-furnished products.
  5. Review schedule for work of Owner's separate contracts.
  6. Review submittal requirements and procedures.
  7. Review time required for review of submittals and resubmittals.
  8. Review requirements for tests and inspections by independent testing and inspecting agencies.
  9. Review time required for Project closeout and Owner startup procedures, including commissioning activities.
  10. Review and finalize list of construction activities to be included in schedule.
  11. Review procedures for updating schedule.

#### 1.6 COORDINATION

- A. Coordinate Contractor's construction schedule with the schedule of values, list of subcontracts, submittal schedule, progress reports, payment requests, and other required schedules and reports.

1. Secure time commitments for performing critical elements of the Work from entities involved.
2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

## PART 2 - PRODUCTS

### 2.1 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

- A. Time Frame: Extend schedule from date established for the Notice to Proceed to date of final completion.
  1. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.
- B. Activities: Treat each story or separate area as a separate numbered activity for each main element of the Work. Comply with the following:
  1. Activity Duration: Define activities so no activity is longer than 30 days, unless specifically allowed by Engineer.
  2. Procurement Activities: Include procurement process activities for the following long lead items and major items, requiring a cycle of more than 60 days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.
    - a. Major pieces of equipment.
  3. Submittal Review Time: Include review and resubmittal times indicated in Section 01 33 00 "Submittal Procedures" in schedule. Coordinate submittal review times in Contractor's construction schedule with submittal schedule.
  4. Startup and Testing Time: Include no fewer than 15 days for startup and testing.
  5. Substantial Completion: Indicate completion in advance of date established for Substantial Completion and allow time for Engineer's administrative procedures necessary for certification of Substantial Completion.
  6. Punch List and Final Completion: Include not more than 60 days for completion of punch list items and final completion.
- C. Constraints: Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule and show how the sequence of the Work is affected.
  1. Phasing: Arrange list of activities on schedule by phase.
  2. Work under More Than One Contract: Include a separate activity for each contract.
  3. Work by Owner: Include a separate activity for each portion of the Work performed by Owner.
  4. Products Ordered in Advance: Include a separate activity for each product. Include delivery date indicated in Section 01 10 00 "Summary." Delivery dates indicated stipulate the earliest possible delivery date.

5. Owner-Furnished Products: Include a separate activity for each product. Include delivery date indicated in Section 01 10 00 "Summary." Delivery dates indicated stipulate the earliest possible delivery date.
  6. Work Restrictions: Show the effect of the following items on the schedule:
    - a. Coordination with existing construction.
    - b. Limitations of continued occupancies.
    - c. Uninterruptible services.
    - d. Partial occupancy before Substantial Completion.
    - e. Use of premises restrictions.
    - f. Provisions for future construction.
    - g. Seasonal variations.
    - h. Environmental control.
  7. Work Stages: Indicate important stages of construction for each major portion of the Work, including, but not limited to, the following:
    - a. Subcontract awards.
    - b. Submittals.
    - c. Purchases.
    - d. Mockups.
    - e. Fabrication.
    - f. Sample testing.
    - g. Deliveries.
    - h. Installation.
    - i. Tests and inspections.
    - j. Adjusting.
    - k. Curing.
    - l. Building flush-out.
    - m. Startup and placement into final use and operation.
  8. Construction Areas: Identify each major area of construction for each major portion of the Work. Indicate where each construction activity within a major area must be sequenced or integrated with other construction activities to provide for the following:
    - a. Structural completion.
    - b. Temporary enclosure and space conditioning.
    - c. Permanent space enclosure.
    - d. Completion of mechanical installation.
    - e. Completion of electrical installation.
    - f. Substantial Completion.
- D. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, Substantial Completion, and final completion.
- E. Cost Correlation: Superimpose a cost correlation timeline, indicating planned and actual costs. On the line, show planned and actual dollar volume of the Work performed as of planned and actual dates used for preparation of payment requests.
1. See Section 01 29 00 "Payment Procedures" for cost reporting and payment procedures.

- F. Upcoming Work Summary: Prepare summary report indicating activities scheduled to occur or commence prior to submittal of next schedule update. Summarize the following issues:
1. Unresolved issues.
  2. Unanswered Requests for Information.
  3. Rejected or unreturned submittals.
  4. Notations on returned submittals.
  5. Pending modifications affecting the Work and Contract Time.
- G. Recovery Schedule: When periodic update indicates the Work is 14 or more calendar days behind the current approved schedule, submit a separate recovery schedule indicating means by which Contractor intends to regain compliance with the schedule. Indicate changes to working hours, working days, crew sizes, and equipment required to achieve compliance, and date by which recovery will be accomplished.
- H. Computer Scheduling Software: Prepare schedules using current version of a program that has been developed specifically to manage construction schedules.

## 2.2 STARTUP CONSTRUCTION SCHEDULE

- A. Bar-Chart Schedule: Submit startup, horizontal, bar-chart-type construction schedule within 14 days of date established for the Notice to Proceed.
- B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line. Outline significant construction activities for first 90 days of construction. Include skeleton diagram for the remainder of the Work and a cash requirement prediction based on indicated activities.

## 2.3 REPORTS

- A. Daily Construction Reports: Prepare a daily construction report recording the following information concerning events at Project site:
1. List of subcontractors at Project site.
  2. List of separate contractors at Project site.
  3. Approximate count of personnel at Project site.
  4. Equipment at Project site.
  5. Material deliveries.
  6. High and low temperatures and general weather conditions, including presence of rain or snow.
  7. Accidents.
  8. Meetings and significant decisions.
  9. Unusual events (see special reports).
  10. Stoppages, delays, shortages, and losses.
  11. Meter readings and similar recordings.
  12. Emergency procedures.
  13. Orders and requests of authorities having jurisdiction.
  14. Change Orders received and implemented.
  15. Work Change Directives received and implemented.

16. Services connected and disconnected.
17. Equipment or system tests and startups.
18. Partial completions and occupancies.
19. Substantial Completions authorized.

B. Material Location Reports: At monthly intervals, prepare and submit a comprehensive list of materials delivered to and stored at Project site. List shall be cumulative, showing materials previously reported plus items recently delivered. Include with list a statement of progress on and delivery dates for materials or items of equipment fabricated or stored away from Project site. Indicate the following categories for stored materials:

1. Material stored prior to previous report and remaining in storage.
2. Material stored prior to previous report and since removed from storage and installed.
3. Material stored following previous report and remaining in storage.

C. Site Condition Reports: Immediately on discovery of a difference between site conditions and the Contract Documents, prepare and submit a detailed report. Submit with a Request for Information. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.

## 2.4 SPECIAL REPORTS

- A. General: Submit special reports directly to Owner within one day(s) of an occurrence. Distribute copies of report to parties affected by the occurrence.
- B. Reporting Unusual Events: When an event of an unusual and significant nature occurs at Project site, whether or not related directly to the Work, prepare and submit a special report. List chain of events, persons participating, response by Contractor's personnel, evaluation of results or effects, and similar pertinent information. Advise Owner in advance when these events are known or predictable.

## PART 3 - EXECUTION

### 3.1 CONTRACTOR'S CONSTRUCTION SCHEDULE

- A. Contractor's Construction Schedule Updating: At monthly intervals, update schedule to reflect actual construction progress and activities. Issue schedule one week before each regularly scheduled progress meeting.
1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.
  2. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.
  3. As the Work progresses, indicate final completion percentage for each activity.



- B. Distribution: Distribute copies of approved schedule to Engineer Owner, separate contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.
1. Post copies in Project meeting rooms and temporary field offices.
  2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

END OF SECTION 01 32 00

## SECTION 01 32 33 - PHOTOGRAPHIC DOCUMENTATION

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section includes administrative and procedural requirements for the following:
  - 1. Preconstruction photographs.
  - 2. Periodic construction photographs.
  - 3. Final completion construction photographs.
- B. Related Requirements:
  - 1. Section 01 33 00 "Submittal Procedures" for submitting photographic documentation.
  - 2. Section 01 77 00 "Closeout Procedures" for submitting photographic documentation as project record documents at Project closeout.

#### 1.3 INFORMATIONAL SUBMITTALS

- A. Key Plan: Submit key plan of Project site and building with notation of vantage points marked for location and direction of each photograph and video recording. Indicate elevation or story of construction. Include same information as corresponding photographic documentation.
- B. Digital Photographs: Submit image files within three days of taking photographs.
  - 1. Digital Camera: Minimum sensor resolution of 8 megapixels.
  - 2. Format: Minimum 3200 by 2400 pixels, in unaltered original files, with same aspect ratio as the sensor, uncropped, date and time stamped, in folder named by date of photograph, accompanied by key plan file.
  - 3. Identification: Provide the following information with each image description in file metadata tag:
    - a. Name of Project.
    - b. Name and contact information for photographer.
    - c. Name of Engineer.
    - d. Name of Contractor.
    - e. Date photograph was taken.
    - f. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.
    - g. Unique sequential identifier keyed to accompanying key plan.

- C. Construction Photographs: Submit two prints of each photographic view within seven days of taking photographs.
  - 1. Format: 8-by-10-inch (203-by-254-mm) smooth-surface matte prints on single-weight, commercial-grade photographic paper punched for standard three-ring binder.
  - 2. Identification: On back of each print, provide an applied label or rubber-stamped impression with the following information:
    - a. Name of Project.
    - b. Name and contact information for photographer.
    - c. Name of Engineer.
    - d. Name of Contractor.
    - e. Date photograph was taken if not date stamped by camera.
    - f. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.
    - g. Unique sequential identifier keyed to accompanying key plan.

#### 1.4 USAGE RIGHTS

- A. Obtain and transfer copyright usage rights from photographer to Owner for unlimited reproduction of photographic documentation.

### PART 2 - PRODUCTS

#### 2.1 PHOTOGRAPHIC MEDIA

- A. Digital Images: Provide images in JPG format, produced by a digital camera with minimum sensor size of 8 megapixels, and at an image resolution of not less than 3200 by 2400 pixels.
- B. Digital Video Recordings: Provide high-resolution, digital video disc in format acceptable to Engineer.

### PART 3 - EXECUTION

#### 3.1 CONSTRUCTION PHOTOGRAPHS

- A. General: Take photographs using the maximum range of depth of field, and that are in focus, to clearly show the Work. Photographs with blurry or out-of-focus areas will not be accepted.
  - 1. Maintain key plan with each set of construction photographs that identifies each photographic location.
- B. Digital Images: Submit digital images exactly as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.
  - 1. Date and Time: Include date and time in file name for each image.

2. Field Office Images: Maintain one set of images accessible in the field office at Project site, available at all times for reference. Identify images in the same manner as those submitted to Engineer.
- C. Preconstruction Photographs: Before starting construction, take photographs of Project site and surrounding properties, including existing items to remain during construction, from different vantage points, as directed by Engineer.
1. Take **20** photographs to show existing conditions adjacent to property before starting the Work.
  2. Take additional photographs as required to record settlement or cracking of adjacent structures, pavements, and improvements.
- D. Periodic Construction Photographs: Take 5 photographs each day that construction is in progress with the cutoff date associated with each Application for Payment. Select vantage points to show status of construction and progress since last photographs were taken.
- E. Engineer-Directed Construction Photographs: From time to time, **Engineer** will instruct photographer about number and frequency of photographs and general directions on vantage points. Select actual vantage points and take photographs to show the status of construction and progress since last photographs were taken.
- F. Final Completion Construction Photographs: Take 20 color photographs after date of Substantial Completion for submission as project record documents. Engineer will inform photographer of desired vantage points.
1. Do not include date stamp.

END OF SECTION 01 32 33

## SECTION 01 33 00 - SUBMITTAL PROCEDURES

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section includes requirements for the submittal schedule and administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.
- B. Related Requirements:
  - 1. Section 01 29 00 "Payment Procedures" for submitting Applications for Payment and the schedule of values.
  - 2. Section 01 78 39 "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.

#### 1.3 DEFINITIONS

- A. Action Submittals: Written and graphic information and physical samples that require Engineer's responsive action. Action submittals are those submittals indicated in individual Specification Sections as "action submittals."
- B. Informational Submittals: Written and graphic information and physical samples that do not require Engineer's responsive action. Submittals may be rejected for not complying with requirements. Informational submittals are those submittals indicated in individual Specification Sections as "informational submittals."
- C. File Transfer Protocol (FTP): Communications protocol that enables transfer of files to and from another computer over a network and that serves as the basis for standard Internet protocols. An FTP site is a portion of a network located outside of network firewalls within which internal and external users are able to access files.
- D. Portable Document Format (PDF): An open standard file format licensed by Adobe Systems used for representing documents in a device-independent and display resolution-independent fixed-layout document format.

#### 1.4 ACTION SUBMITTALS

- A. Submittal Schedule: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making

corrections or revisions to submittals noted by Engineer and additional time for handling and reviewing submittals required by those corrections.

1. Coordinate submittal schedule with list of subcontracts, the schedule of values, and Contractor's construction schedule.
2. Initial Submittal: Submit concurrently with startup construction schedule. Include submittals required during the first 60 days of construction. List those submittals required to maintain orderly progress of the Work and those required early because of long lead time for manufacture or fabrication.
3. Final Submittal: Submit concurrently with the first complete submittal of Contractor's construction schedule.
  - a. Submit revised submittal schedule to reflect changes in current status and timing for submittals.
4. Format: Arrange the following information in a tabular format:
  - a. Scheduled date for first submittal.
  - b. Specification Section number and title.
  - c. Submittal category: Action; informational.
  - d. Name of subcontractor.
  - e. Description of the Work covered.
  - f. Scheduled date for Engineer's final release or approval.
  - g. Scheduled date of fabrication.
  - h. Scheduled dates for purchasing.
  - i. Scheduled dates for installation.
  - j. Activity or event number.

#### 1.5 SUBMITTAL ADMINISTRATIVE REQUIREMENTS

- A. Engineer's Digital Data Files: Electronic digital data files of the Contract Drawings will be provided by Engineer for Contractor's use in preparing submittals.
- B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
  1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
  2. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.
  3. Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals.
  4. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
    - a. Engineer reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

- C. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Engineer's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.
1. Initial Review: Allow 15 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Engineer will advise Contractor when a submittal being processed must be delayed for coordination.
  2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
  3. Resubmittal Review: Allow 15 days for review of each resubmittal.
  4. Sequential Review: Where sequential review of submittals by Engineer's consultants, Owner, or other parties is indicated, allow 21 days for initial review of each submittal.
  5. Concurrent Consultant Review: Where the Contract Documents indicate that submittals may be transmitted simultaneously to Engineer and to Engineer's consultants, allow 15 days for review of each submittal. Submittal will be returned to Engineer before being returned to Contractor.
- D. Electronic Submittals: Identify and incorporate information in each electronic submittal file as follows:
1. Assemble complete submittal package into a single indexed file incorporating submittal requirements of a single Specification Section and transmittal form with links enabling navigation to each item.
  2. Name file with submittal number or other unique identifier, including revision identifier.
    - a. File name shall use project identifier and Specification Section number followed by a decimal point and then a sequential number (e.g., LNHS-061000.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., LNHS-061000.01.A).
  3. Provide means for insertion to permanently record Contractor's review and approval markings and action taken by Engineer.
  4. Transmittal Form for Electronic Submittals: Use electronic form acceptable to Owner, containing the following information:
    - a. Project name.
    - b. Date.
    - c. Name and address of Engineer.
    - d. Name of Contractor.
    - e. Name of firm or entity that prepared submittal.
    - f. Names of subcontractor, manufacturer, and supplier.
    - g. Category and type of submittal.
    - h. Submittal purpose and description.
    - i. Specification Section number and title.
    - j. Specification paragraph number or drawing designation and generic name for each of multiple items.
    - k. Drawing number and detail references, as appropriate.
    - l. Location(s) where product is to be installed, as appropriate.
    - m. Indication of full or partial submittal.
    - n. Transmittal number, numbered consecutively.

- o. Submittal and transmittal distribution record.
  - p. Other necessary identification.
  - q. Remarks.
- E. Options: Identify options requiring selection by Engineer.
- F. Deviations and Additional Information: On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Engineer on previous submittals, and deviations from requirements in the Contract Documents, including minor variations and limitations. Include same identification information as related submittal.
- G. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
  - 1. Note date and content of previous submittal.
  - 2. Note date and content of revision in label or title block and clearly indicate extent of revision.
  - 3. Resubmit submittals until they are marked with approval notation from Engineer's action stamp.
- H. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
- I. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Engineer's action stamp.

## PART 2 - PRODUCTS

### 2.1 SUBMITTAL PROCEDURES

- A. General Submittal Procedure Requirements: Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.
  - 1. Submit electronic submittals via email as PDF electronic files.
    - a. Engineer will return annotated file. Annotate and retain one copy of file as an electronic Project record document file.
  - 2. Certificates and Certifications Submittals: Provide a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
    - a. Provide a digital signature with digital certificate on electronically submitted certificates and certifications where indicated.
    - b. Provide a notarized statement on original paper copy certificates and certifications where indicated.



- B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
1. If information must be specially prepared for submittal because standard published data are not suitable for use, submit as Shop Drawings, not as Product Data.
  2. Mark each copy of each submittal to show which products and options are applicable.
  3. Include the following information, as applicable:
    - a. Manufacturer's catalog cuts.
    - b. Manufacturer's product specifications.
    - c. Standard color charts.
    - d. Statement of compliance with specified referenced standards.
    - e. Testing by recognized testing agency.
    - f. Application of testing agency labels and seals.
    - g. Notation of coordination requirements.
    - h. Availability and delivery time information.
  4. For equipment, include the following in addition to the above, as applicable:
    - a. Wiring diagrams showing factory-installed wiring.
    - b. Printed performance curves.
    - c. Operational range diagrams.
    - d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.
  5. Submit Product Data before or concurrent with Samples.
  6. Submit Product Data in the following format:
    - a. PDF electronic file.
- C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.
1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
    - a. Identification of products.
    - b. Schedules.
    - c. Compliance with specified standards.
    - d. Notation of coordination requirements.
    - e. Notation of dimensions established by field measurement.
    - f. Relationship and attachment to adjoining construction clearly indicated.
    - g. Seal and signature of professional engineer if specified.
  2. Submit Shop Drawings in the following format:
    - a. PDF electronic file.
- D. Coordination Drawing Submittals: Comply with requirements specified in Section 01 31 00 "Project Management and Coordination."

- E. Contractor's Construction Schedule: Comply with requirements specified in Section 01 32 00 "Construction Progress Documentation."
- F. Application for Payment and Schedule of Values: Comply with requirements specified in Section 01 29 00 "Payment Procedures."
- G. Closeout Submittals and Maintenance Material Submittals: Comply with requirements specified in Section 01 77 00 "Closeout Procedures."

## PART 3 - EXECUTION

### 3.1 CONTRACTOR'S REVIEW

- A. Action and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Engineer.
- B. Project Closeout and Maintenance Material Submittals: See requirements in Section 01 77 00 "Closeout Procedures."
- C. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

### 3.2 ENGINEER'S ACTION

- A. Action Submittals: Engineer will review each submittal, make marks to indicate corrections or revisions required, and return it. Engineer will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action.
- B. Informational Submittals: Engineer will review each submittal and will not return it, or will return it if it does not comply with requirements. Engineer will forward each submittal to appropriate party.
- C. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from Engineer.
- D. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.
- E. Submittals not required by the Contract Documents may be returned by the Engineer without action.

END OF SECTION 01 33 00

## SECTION 01 35 13 - SPECIAL CONDITIONS

The following Special Conditions take precedence over Plans and Specifications:

1. The Engineer's review of Shop Drawings and Samples submitted by the Contractor in accordance with General Conditions Subsection 6.17 shall be reviewed without expense to the Contractor for the original submittal and first resubmittal, in response to the Engineer's review of the original submittal, only. However, beginning with the second resubmittal, and for each subsequent resubmittal thereafter, the Contractor shall pay the cost of the Engineer's review. Payment shall be made in the form of a check, made payable to the Engineer in the amount of \$500.00 and submitted with each required resubmittal. Second and subsequent resubmittals made without payment shall be returned to the Contractor without review and marked as incomplete.
2. Sufficient precautions shall be taken during construction to minimize the run-off of polluting substances such as silt, clay, fuels, oils, bitumens, calcium chloride, or other polluting materials harmful to humans, fish, or other life, into the supplies and surface waters of the state. Control measures must be adequate to assure that turbidity in the receiving water will not be increased more than 10 nephelometric turbidity units (NTU), or as otherwise required by the state or other controlling body, in water used for public water supply or fish unless limits have been established for the particular water. In surface water used for other purposes, the turbidity must not exceed 25 NTU unless otherwise permitted. Special precautions shall be taken in the use of construction equipment to prevent operations which promote erosion.
3. Erosion evident within the limits of construction shall be the responsibility of the CONTRACTOR during the full term of the contract and for the full (1) year guarantee period. Areas subject to erosion during this time shall be fully restored to original or design conditions (as applicable) within 10 days of notice to the CONTRACTOR.
4. Within 20 days of the date of Notice to Proceed, the CONTRACTOR shall submit to the ENGINEER and OWNER a Hurricane Preparedness Plan. The plan should outline the necessary measures which the CONTRACTOR proposes to perform at no additional cost to the OWNER in case of a hurricane warning. Such measures shall be in accordance with local and state requirements

In the event of inclement weather, CONTRACTOR will, and will cause Subcontractors to protect carefully the Work and materials against damage or injury from the weather. If, in the opinion of ENGINEER, any portion of Work or materials shall have been damaged or injured by reason of failure on the part of the CONTRACTOR or Subcontractors to so protect the Work, such Work and materials shall be removed and replaced at the expense of CONTRACTOR

5. Any disturbance by the Contractor beyond the limits of construction shall be repaired to original condition or better at the Contractor's expense.
6. The Contractor shall maintain prominent and clear labeling of its company name and its local phone number at each project site. The Contractor and each of its major subcontractors shall provide two points of contact with 24-hour phone numbers to Owner prior to beginning construction.
7. **PROGRESS MEETINGS**
  - A. Contractor shall schedule progress meetings recognized as "Project Status Meetings" not more than 30 calendar days after the initial progress meeting and at least ONCE EACH MONTH thereafter. Owner, Engineer, Contractor, and any Subcontractor active on the site shall be represented at each meeting.

- B. Any single meeting may be cancelled with permission of the Owner and Engineer.
- C. At each meeting, agenda shall include
  - 1. Contractor's report of current status of all major work items, status of project schedule, and anticipated modifications.
  - 2. Contractor's outline of the schedule of needed inspections for the next two week period.
  - 3. Discussion of current status of all outstanding information requests, resolution status of known conflicts and any anticipated information requests.
  - 4. Engineer's status report of submitted shop drawings.
- D. Contractor shall keep minutes of the significant points of progress meetings and distribute to the Owner and Engineer within one week of each meeting for concurrence by Engineer and Owner.

8. ARCHEOLOGICAL FINDS

During any activities which involve excavation or ground disturbance, Contractor shall monitor all construction activities. In the event that fortuitous finds or unexpected discoveries, such as prehistoric or historic artifacts, including pottery or ceramics, stone tools or metal implements, or other physical remains that could be associated with North American cultures or early colonial or American settlement are encountered at any time within the project areas, the Contractor should cease all activities involving subsurface disturbance in the immediate vicinity of such discoveries. If the excavation process uncovers items, or evidence thereof, which might be of archaeological, historic, or architectural interest, Contractor shall stop work immediately and take all reasonable measures to protect the items in a manner sufficient to avoid additional harm until the significance of the discovery can be determined. If items of significance are discovered, the Owner will contact the appropriate agencies for a determination of required actions. Project activities should not resume in the area without written authorization from the Owner.

In the event that any human remains are unearthed, all work shall stop immediately and the area shall be secured in accordance with local, state, and federal statutes.

9. The procedure below explains the City of Callaway's consideration of claims for a contract time extension due to abnormal weather. All days shall be considered as calendar days.
- A. Any time there is a documented rainfall of 0.1" or greater, this is counted as a rainfall day. The official measurement used is rainfall at the Northwest Florida Beaches International Airport. If another measurement location is desired, this must be proposed and accepted by the Owner at the beginning of the project.
  - B. Each month the number of rainfall days is determined by the Contractor and verified by the Engineer. This information shall be submitted with each pay application for the last full calendar month (e.g., the pay application is for the period November 22, 2019 through December 21, 2019, the rainfall data submitted would be the month of November 2019).
  - C. Upon reaching Substantial Completion for the project, all recorded rainfall days for each individual month of the project will be added together for a total number of rainfall days for the project.
  - D. This final rainfall day number can be used for Contract Time extensions, if necessary.
  - E. The time period for which rainfall days will be considered shall coincide with the dates for commencement of work and Substantial Completion, as defined in the Standard Form of Agreement of the Contract.

- F. If there is a significant, recorded, rainfall event in one, or more, consecutive day(s), the Contractor may submit a claim for additional delay. The Owner will review any such timely filed claim and determine (at the Owner's sole discretion) if an additional equitable Contract Time extension is warranted. A decision by the Owner of such adjustments will occur within a reasonable time of the submission of the claim; the Owner will not wait until Substantial Completion of the project as described in Item G above.
  - G. Other than precipitation, the Owner may, in its sole discretion, consider on a case-by-case basis other abnormal weather conditions (e.g., temperature, tropical storm activity) that the Contractor can affirmatively demonstrate have had an impact on construction. If the Contractor believes such an event has occurred, the Contractor may submit a claim for additional delay in accordance with the time-frames delineated in paragraph 12.01 of the Standard General Conditions of the Construction Contract. The Owner will review any such timely filed claim and determine (at the Owner's sole discretion) if an equitable Contract Time extension is warranted. A decision by the Owner of such adjustments will occur within a reasonable time of the submission of the claim; the Owner will not wait until Substantial Completion of the project as described in Item G above.
- 10. Upon final payment to the Contractor by the Owner, the Contractor's one year warranty period will begin.
  - 11. All internal combustion-powered equipment and/or standby power generators shall have, as a minimum, a residential grade silencer (muffler) for equipment to be operating beyond the hours of operation allowed by local Noise Attenuation Ordinance requirements. The equipment shall be noise attenuated to emit a maximum noise level of 80 dBA at 30 feet from the equipment, unless otherwise required by local ordinance.
  - 12. It is the Contractor's responsibility to satisfy any and all requirements as specified by the Florida Department of Environmental Protection (FDEP), or any other regulatory agency relative to Federal, State or County agencies. Contractor shall be liable for and pay fines or penalties associated with his activities as may be levied by authorities having jurisdiction.

END OF SECTION 01 35 13

## SECTION 01 40 00 - QUALITY REQUIREMENTS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section includes administrative and procedural requirements for quality assurance and quality control.
- B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
  - 1. Specific quality-assurance and -control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
  - 2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and -control procedures that facilitate compliance with the Contract Document requirements.
  - 3. Requirements for Contractor to provide quality-assurance and -control services required by Engineer, Owner, or authorities having jurisdiction are not limited by provisions of this Section.
  - 4. Specific test and inspection requirements are not specified in this Section.

#### 1.3 DEFINITIONS

- A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.
- B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Engineer.
- C. Mockups: Full-size physical assemblies that are constructed on-site. Mockups are constructed to verify selections made under Sample submittals; to demonstrate aesthetic effects and, where indicated, qualities of materials and execution; to review coordination, testing, or operation; to show interface between dissimilar materials; and to demonstrate compliance with specified installation tolerances. Mockups are not Samples. Unless otherwise indicated, approved mockups establish the standard by which the Work will be judged.

1. Laboratory Mockups: Full-size physical assemblies constructed at testing facility to verify performance characteristics.
  2. Integrated Exterior Mockups: Mockups of the exterior envelope erected separately from the building but on Project site, consisting of multiple products, assemblies, and subassemblies.
  3. Room Mockups: Mockups of typical interior spaces complete with wall, floor, and ceiling finishes, doors, windows, millwork, casework, specialties, furnishings and equipment, and lighting.
- D. Preconstruction Testing: Tests and inspections performed specifically for Project before products and materials are incorporated into the Work, to verify performance or compliance with specified criteria.
- E. Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with specified requirements.
- F. Source Quality-Control Testing: Tests and inspections that are performed at the source, e.g., plant, mill, factory, or shop.
- G. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
- H. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.
- I. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.
1. Use of trade-specific terminology in referring to a trade or entity does not require that certain construction activities be performed by accredited or unionized individuals, or that requirements specified apply exclusively to specific trade(s).
- J. Experienced: When used with an entity or individual, "experienced" means having successfully completed a minimum of five previous projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

#### 1.4 CONFLICTING REQUIREMENTS

- A. Referenced Standards: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer conflicting requirements that are different, but apparently equal, to Engineer for a decision before proceeding.
- B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as

appropriate, for the context of requirements. Refer uncertainties to Engineer for a decision before proceeding.

## 1.5 ACTION SUBMITTALS

- A. Shop Drawings: For integrated exterior mockups, provide plans, sections, and elevations, indicating materials and size of mockup construction.
  - 1. Indicate manufacturer and model number of individual components.
  - 2. Provide axonometric drawings for conditions difficult to illustrate in two dimensions.

## 1.6 INFORMATIONAL SUBMITTALS

- A. Contractor's Quality-Control Plan: For quality-assurance and quality-control activities and responsibilities.
- B. Qualification Data: For Contractor's quality-control personnel.
- C. Contractor's Statement of Responsibility: When required by authorities having jurisdiction, submit copy of written statement of responsibility sent to authorities having jurisdiction before starting work on the following systems:
  - 1. Seismic-force-resisting system, designated seismic system, or component listed in the designated seismic system quality-assurance plan prepared by Engineer.
  - 2. Main wind-force-resisting system or a wind-resisting component listed in the wind-force-resisting system quality-assurance plan prepared by Engineer.
- D. Testing Agency Qualifications: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.
- E. Schedule of Tests and Inspections: Prepare in tabular form and include the following:
  - 1. Specification Section number and title.
  - 2. Entity responsible for performing tests and inspections.
  - 3. Description of test and inspection.
  - 4. Identification of applicable standards.
  - 5. Identification of test and inspection methods.
  - 6. Number of tests and inspections required.
  - 7. Time schedule or time span for tests and inspections.
  - 8. Requirements for obtaining samples.
  - 9. Unique characteristics of each quality-control service.

## 1.7 CONTRACTOR'S QUALITY-CONTROL PLAN

- A. Quality-Control Plan, General: Submit quality-control plan within 10 days of Notice to Proceed, and not less than five days prior to preconstruction conference. Submit in format acceptable to Engineer. Identify personnel, procedures, controls, instructions, tests, records, and forms to be



used to carry out Contractor's quality-assurance and quality-control responsibilities. Coordinate with Contractor's construction schedule.

- B. **Quality-Control Personnel Qualifications:** Engage qualified full-time personnel trained and experienced in managing and executing quality-assurance and quality-control procedures similar in nature and extent to those required for Project.
  - 1. Project quality-control manager may also serve as Project superintendent.
- C. **Submittal Procedure:** Describe procedures for ensuring compliance with requirements through review and management of submittal process. Indicate qualifications of personnel responsible for submittal review.
- D. **Testing and Inspection:** In quality-control plan, include a comprehensive schedule of Work requiring testing or inspection, including the following:
  - 1. Contractor-performed tests and inspections including subcontractor-performed tests and inspections. Include required tests and inspections and Contractor-elected tests and inspections.
  - 2. Special inspections required by authorities having jurisdiction and indicated on the "Statement of Special Inspections."
  - 3. Owner-performed tests and inspections indicated in the Contract Documents.
- E. **Continuous Inspection of Workmanship:** Describe process for continuous inspection during construction to identify and correct deficiencies in workmanship in addition to testing and inspection specified. Indicate types of corrective actions to be required to bring work into compliance with standards of workmanship established by Contract requirements and approved mockups.
- F. **Monitoring and Documentation:** Maintain testing and inspection reports including log of approved and rejected results. Include work Engineer has indicated as nonconforming or defective. Indicate corrective actions taken to bring nonconforming work into compliance with requirements. Comply with requirements of authorities having jurisdiction.

## 1.8 REPORTS AND DOCUMENTS

- A. **Test and Inspection Reports:** Prepare and submit certified written reports specified in other Sections. Include the following:
  - 1. Date of issue.
  - 2. Project title and number.
  - 3. Name, address, and telephone number of testing agency.
  - 4. Dates and locations of samples and tests or inspections.
  - 5. Names of individuals making tests and inspections.
  - 6. Description of the Work and test and inspection method.
  - 7. Identification of product and Specification Section.
  - 8. Complete test or inspection data.
  - 9. Test and inspection results and an interpretation of test results.
  - 10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.

11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
  12. Name and signature of laboratory inspector.
  13. Recommendations on retesting and reinspecting.
- B. Manufacturer's Technical Representative's Field Reports: Prepare written information documenting manufacturer's technical representative's tests and inspections specified in other Sections. Include the following:
1. Name, address, and telephone number of technical representative making report.
  2. Statement on condition of substrates and their acceptability for installation of product.
  3. Statement that products at Project site comply with requirements.
  4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
  5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
  6. Statement whether conditions, products, and installation will affect warranty.
  7. Other required items indicated in individual Specification Sections.
- C. Factory-Authorized Service Representative's Reports: Prepare written information documenting manufacturer's factory-authorized service representative's tests and inspections specified in other Sections. Include the following:
1. Name, address, and telephone number of factory-authorized service representative making report.
  2. Statement that equipment complies with requirements.
  3. Results of operational and other tests and a statement of whether observed performance complies with requirements.
  4. Statement whether conditions, products, and installation will affect warranty.
  5. Other required items indicated in individual Specification Sections.
- D. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.
- 1.9 QUALITY ASSURANCE
- A. General: Qualifications paragraphs in this article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.
- B. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- C. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

- D. **Installer Qualifications:** A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.
- E. **Professional Engineer Qualifications:** A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar in material, design, and extent to those indicated for this Project.
- F. **Specialists:** Certain Specification Sections require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.
  - 1. Requirements of authorities having jurisdiction shall supersede requirements for specialists.
- G. **Testing Agency Qualifications:** An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 329; and with additional qualifications specified in individual Sections; and, where required by authorities having jurisdiction, that is acceptable to authorities.
  - 1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
  - 2. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.
- H. **Manufacturer's Technical Representative Qualifications:** An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- I. **Factory-Authorized Service Representative Qualifications:** An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- J. **Preconstruction Testing:** Where testing agency is indicated to perform preconstruction testing for compliance with specified requirements for performance and test methods, comply with the following:
  - 1. Contractor responsibilities include the following:
    - a. Provide test specimens representative of proposed products and construction.
    - b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
    - c. Provide sizes and configurations of test assemblies, mockups, and laboratory mockups to adequately demonstrate capability of products to comply with performance requirements.
    - d. Build site-assembled test assemblies and mockups using installers who will perform same tasks for Project.

- e. Build laboratory mockups at testing facility using personnel, products, and methods of construction indicated for the completed Work.
  - f. When testing is complete, remove test specimens, assemblies, and mockups; do not reuse products on Project.
2. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality-assurance service to Engineer, with copy to Contractor. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.
- K. Mockups: Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:
1. Build mockups in location and of size indicated or, if not indicated, as directed by Engineer.
  2. Notify Engineer seven days in advance of dates and times when mockups will be constructed.
  3. Employ supervisory personnel who will oversee mockup construction. Employ workers that will be employed during the construction at Project.
  4. Demonstrate the proposed range of aesthetic effects and workmanship.
  5. Obtain Engineer's approval of mockups before starting work, fabrication, or construction.
    - a. Allow seven days for initial review and each re-review of each mockup.
  6. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
  7. Demolish and remove mockups when directed unless otherwise indicated.

#### 1.10 QUALITY CONTROL

- A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.
1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspecting they are engaged to perform.
  2. Payment for these services will be made from testing and inspecting allowances, as authorized by Change Orders.
  3. Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor, and the Contract Sum will be adjusted by Change Order.
- B. Contractor Responsibilities: Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Perform additional quality-control activities required to verify that the Work complies with requirements, whether specified or not.

1. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.
  2. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.
    - a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.
  3. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.
  4. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
  5. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
  6. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
- C. **Manufacturer's Field Services:** Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Section 01 33 00 "Submittal Procedures."
- D. **Manufacturer's Technical Services:** Where indicated, engage a manufacturer's technical representative to observe and inspect the Work. Manufacturer's technical representative's services include participation in preinstallation conferences, examination of substrates and conditions, verification of materials, observation of Installer activities, inspection of completed portions of the Work, and submittal of written reports.
- E. **Retesting/Reinspecting:** Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.
- F. **Testing Agency Responsibilities:** Cooperate with Engineer and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
  1. Notify Engineer and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
  2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
  3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
  4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
  5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
  6. Do not perform any duties of Contractor.
- G. **Associated Services:** Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify

agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:

1. Access to the Work.
  2. Incidental labor and facilities necessary to facilitate tests and inspections.
  3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
  4. Facilities for storage and field curing of test samples.
  5. Delivery of samples to testing agencies.
  6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
  7. Security and protection for samples and for testing and inspecting equipment at Project site.
- H. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
1. Schedule times for tests, inspections, obtaining samples, and similar activities.
- I. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality-control services required by the Contract Documents as a component of Contractor's quality-control plan. Coordinate and submit concurrently with Contractor's construction schedule. Update as the Work progresses.
1. Distribution: Distribute schedule to Owner, Engineer, testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.

#### 1.11 SPECIAL TESTS AND INSPECTIONS

- A. Special Tests and Inspections: Engage a qualified testing agency to conduct special tests and inspections required by authorities having jurisdiction as the responsibility of Owner, and as follows:
- B. Special Tests and Inspections: Conducted by a qualified testing agency as required by authorities having jurisdiction, as indicated in individual Specification Sections, and as follows:
1. Verifying that manufacturer maintains detailed fabrication and quality-control procedures and reviews the completeness and adequacy of those procedures to perform the Work.
  2. Notifying Engineer and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
  3. Submitting a certified written report of each test, inspection, and similar quality-control service to Engineer with copy to Contractor and to authorities having jurisdiction.
  4. Submitting a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.
  5. Interpreting tests and inspections and stating in each report whether tested and inspected work complies with or deviates from the Contract Documents.
  6. Retesting and reinspecting corrected work.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 TEST AND INSPECTION LOG

- A. Test and Inspection Log: Prepare a record of tests and inspections. Include the following:
  - 1. Date test or inspection was conducted.
  - 2. Description of the Work tested or inspected.
  - 3. Date test or inspection results were transmitted to Engineer.
  - 4. Identification of testing agency or special inspector conducting test or inspection.
- B. Maintain log at Project site. Post changes and revisions as they occur. Provide access to test and inspection log for Engineer's reference during normal working hours.

3.2 REPAIR AND PROTECTION

- A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
  - 1. Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible. Comply with the Contract Document requirements for cutting and patching in Section 01 73 00 "Execution."
- B. Protect construction exposed by or for quality-control service activities.
- C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 01 40 00

## SECTION 01 50 00 - TEMPORARY FACILITIES AND CONTROLS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section includes requirements for temporary utilities, support facilities, and security and protection facilities.
- B. Related Requirements:
  - 1. Section 01 10 00 "Summary" for work restrictions and limitations on utility interruptions.
  - 2. Section 31 23 18 "Dewatering" for disposal of ground water at Project site.

#### 1.3 USE CHARGES

- A. General: Installation and removal of and use charges for temporary facilities shall be included in the Contract Sum unless otherwise indicated. Allow other entities to use temporary services and facilities without cost, including, but not limited to, Owner, Engineer, testing agencies, and authorities having jurisdiction.
- B. Water Service from Existing System: Water from Owner's existing water system is available for use without charge as long as Contractor arranges to have the use metered.

#### 1.4 INFORMATIONAL SUBMITTALS

- A. Erosion- and Sedimentation-Control Plan: Show compliance with requirements of EPA Construction General Permit or authorities having jurisdiction, whichever is more stringent.
- B. Moisture-Protection Plan: Describe procedures and controls for protecting materials and construction from water absorption and damage.
  - 1. Describe delivery, handling, and storage provisions for materials subject to water absorption or water damage.
  - 2. Indicate procedures for discarding water-damaged materials, protocols for mitigating water intrusion into completed Work, and replacing water-damaged Work.



## 1.5 QUALITY ASSURANCE

- A. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

## PART 2 - PRODUCTS

### 2.1 TEMPORARY FACILITIES

## PART 3 - EXECUTION

### 3.1 TEMPORARY UTILITY INSTALLATION

- A. General: Install temporary service or connect to existing service.
  - 1. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary or permanent services.
- B. Water Service: Install water service and distribution piping in sizes and pressures adequate for construction.
- C. Water Service: Connect to Owner's existing water service facilities. Clean and maintain water service facilities in a condition acceptable to Owner.
- D. At Substantial Completion, restore these facilities to condition existing before initial use.
  - 1. Perform daily construction cleanup and final cleanup.

### 3.2 SUPPORT FACILITIES INSTALLATION

- A. General: Comply with the following:
- B. Traffic Controls: Comply with requirements of authorities having jurisdiction.
  - 1. Protect existing site improvements to remain including curbs, pavement, and utilities.
  - 2. Maintain access for fire-fighting equipment and access to fire hydrants.
- C. Dewatering Facilities: Comply with requirements of authorities having jurisdiction. Maintain Project site, excavations, and construction free of water.
  - 1. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining properties or endanger permanent Work or temporary facilities.
- D. Waste Disposal Facilities: Comply with requirements specified in Section 01 74 19 "Construction Waste Management and Disposal."

### 3.3 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Protection of Existing Facilities: Protect existing vegetation, equipment, structures, utilities, and other improvements at Project site and on adjacent properties, except those indicated to be removed or altered. Repair damage to existing facilities.
- B. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.
  - 1. Comply with work restrictions specified in Section 01 10 00 "Summary."
- C. Temporary Erosion and Sedimentation Control: Provide measures to prevent soil erosion and discharge of soil-bearing water runoff and airborne dust to undisturbed areas and to adjacent properties and walkways, according to requirements of 2003 EPA Construction General Permit or authorities having jurisdiction, whichever is more stringent.
  - 1. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross tree- or plant- protection zones.
  - 2. Inspect, repair, and maintain erosion- and sedimentation-control measures during construction until permanent vegetation has been established.
  - 3. Clean, repair, and restore adjoining properties and roads affected by erosion and sedimentation from Project site during the course of Project.
  - 4. Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.
- D. Stormwater Control: Comply with requirements of authorities having jurisdiction. Provide barriers in and around excavations and subgrade construction to prevent flooding by runoff of stormwater from heavy rains.
- E. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.
- F. Temporary Egress: Maintain temporary egress from existing occupied facilities as indicated and as required by authorities having jurisdiction.

### 3.4 OPERATION, TERMINATION, AND REMOVAL

- A. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
  - 1. At Substantial Completion, repair, renovate, and clean permanent facilities used during construction period. Comply with final cleaning requirements specified in Section 01 77 00 "Closeout Procedures."

END OF SECTION 01 50 00

## SECTION 01 60 00 - PRODUCT REQUIREMENTS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and comparable products.

#### 1.3 DEFINITIONS

- A. Products: Items obtained for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
  - 1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature, that is current as of date of the Contract Documents.
  - 2. New Products: Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.
  - 3. Comparable Product: Product that is demonstrated and approved through submittal process to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.
- B. Basis-of-Design Product Specification: A specification in which a specific manufacturer's product is named and accompanied by the words "basis-of-design product," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of additional manufacturers named in the specification.

#### 1.4 QUALITY ASSURANCE

- A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, select product compatible with products previously selected, even if previously selected products were also options.

## 1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. Comply with manufacturer's written instructions.
- B. Delivery and Handling:
  - 1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
  - 2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
  - 3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
  - 4. Inspect products on delivery to determine compliance with the Contract Documents and to determine that products are undamaged and properly protected.
- C. Storage:
  - 1. Store products to allow for inspection and measurement of quantity or counting of units.
  - 2. Store materials in a manner that will not endanger Project structure.
  - 3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
  - 4. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.

## 1.6 PRODUCT WARRANTIES

- A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.
  - 1. Manufacturer's Warranty: Written warranty furnished by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
- B. Submittal Time: Comply with requirements in Section 01 77 00 "Closeout Procedures."

## PART 2 - PRODUCTS

### 2.1 PRODUCT SELECTION PROCEDURES

- A. General Product Requirements: Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, are new at time of installation.
  - 1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.

2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
4. Or Equal: For products specified by name and accompanied by the term "or equal," or "or approved equal," or "or approved," comply with requirements in "Comparable Products" Article to obtain approval for use of an unnamed product.

B. Product Selection Procedures:

1. Product: Where Specifications name a single manufacturer and product, provide the named product that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
2. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
3. Products:

## 2.2 COMPARABLE PRODUCTS

A. Conditions for Consideration: Architect will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Architect may return requests without action, except to record noncompliance with these requirements:

1. Evidence that the proposed product does not require revisions to the Contract Documents, that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.
2. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
3. Evidence that proposed product provides specified warranty.

## PART 3 - EXECUTION (Not Used)

END OF SECTION 01 60 00

## SECTION 01 73 00 - EXECUTION

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section includes general administrative and procedural requirements governing execution of the Work including, but not limited to, the following:

1. Construction layout.
2. Field engineering and surveying.
3. Installation of the Work.
4. Cutting and patching.
5. Progress cleaning.
6. Starting and adjusting.
7. Protection of installed construction.

- B. Related Requirements:

1. Section 01 10 00 "Summary" for limits on use of Project site.
2. Section 01 33 00 "Submittal Procedures" for submitting surveys.
3. Section 01 77 00 "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, and final cleaning.

#### 1.3 DEFINITIONS

- A. Cutting: Removal of in-place construction necessary to permit installation or performance of other work.
- B. Patching: Fitting and repair work required to restore construction to original conditions after installation of other work.

#### 1.4 INFORMATIONAL SUBMITTALS

- A. Cutting and Patching Plan: Submit plan describing procedures at least 10 days prior to the time cutting and patching will be performed. Include the following information:
  1. Extent: Describe reason for and extent of each occurrence of cutting and patching.

2. Changes to In-Place Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building appearance and other significant visual elements.
3. Products: List products to be used for patching and firms or entities that will perform patching work.
4. Dates: Indicate when cutting and patching will be performed.
5. Utilities and Mechanical and Electrical Systems: List services and systems that cutting and patching procedures will disturb or affect. List services and systems that will be relocated and those that will be temporarily out of service. Indicate length of time permanent services and systems will be disrupted.
  - a. Include description of provisions for temporary services and systems during interruption of permanent services and systems.

## 1.5 QUALITY ASSURANCE

- A. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.
  1. Other Construction Elements: Do not cut and patch other construction elements or components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. General: Comply with requirements specified in other Sections.
- B. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
  1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to Engineer for the visual and functional performance of in-place materials.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities and other construction affecting the Work.

1. Before construction, verify the location and invert elevation at points of connection of water-service piping and other utilities.
2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.

### 3.2 PREPARATION

- A. Existing Utility Information: Furnish information to Owner that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.
- B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
- C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents caused by differing field conditions outside the control of Contractor, submit a request for information to Engineer.

### 3.3 CONSTRUCTION LAYOUT

- A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Engineer promptly.
- B. General: Engage a land surveyor to lay out the Work using accepted surveying practices.
  1. Establish benchmarks and control points to set lines and levels to locate each element of Project.
  2. Establish limits on use of Project site.
- C. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and rim and invert elevations.
- D. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by Engineer.

### 3.4 INSTALLATION

- A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.



- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
- D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.
- E. Sequence the Work and allow adequate clearances to accommodate movement of construction items on site and placement in permanent locations.
- F. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.
- G. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions.

### 3.5 CUTTING AND PATCHING

- A. Cutting and Patching, General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
  - 1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during installation or cutting and patching operations, by methods and with materials so as not to void existing warranties.
- C. Temporary Support: Provide temporary support of work to be cut.
- D. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- E. Adjacent Occupied Areas: Where interference with use of adjoining areas or interruption of free passage to adjoining areas is unavoidable, coordinate cutting and patching according to requirements in Section 01 10 00 "Summary."
- F. Existing Utility Services: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to minimize interruption to occupied areas.
- G. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction.

1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
  2. Excavating and Backfilling: Comply with requirements in applicable Sections where required by cutting and patching operations.
  3. Proceed with patching after construction operations requiring cutting are complete.
- H. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other work. Patch with durable seams that are as invisible as practicable. Provide materials and comply with installation requirements specified in other Sections, where applicable.
- I. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

### 3.6 PROGRESS CLEANING

- A. General: Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.
- B. Site: Maintain Project site free of waste materials and debris.
- C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
1. Remove liquid spills promptly.
- D. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways. Comply with waste disposal requirements Section 01 74 19 "Construction Waste Management and Disposal."
- E. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
- F. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- G. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

### 3.7 PROTECTION OF INSTALLED CONSTRUCTION

- A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.

END OF SECTION 01 73 00

## SECTION 01 74 19 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section includes administrative and procedural requirements for the following:
  - 1. Disposing of nonhazardous construction waste.
- B. Related Requirements:

#### 1.3 DEFINITIONS

- A. Construction Waste: Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.
- B. Demolition Waste: Building and site improvement materials resulting from demolition or selective demolition operations.
- C. Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.
- D. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.
- E. Salvage: Recovery of demolition or construction waste and subsequent sale or reuse in another facility.
- F. Salvage and Reuse: Recovery of demolition or construction waste and subsequent incorporation into the Work.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 GENERAL

- A. General: Provide handling, containers, storage, signage, transportation, and other items as required to accomplish waste management during the entire duration of the Contract.
  - 1. Comply with operation, termination, and removal requirements in Section 01 50 00 "Temporary Facilities and Controls."
- B. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

3.2 DISPOSAL OF WASTE

- A. General: Remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.
  - 1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site for more than seven days.
  - 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
- B. Burning: Do not burn waste materials.
- C. Disposal: Remove waste materials from Owner's property and legally dispose of them.

END OF SECTION 01 74 19

## SECTION 01 77 00 - CLOSEOUT PROCEDURES

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
  - 1. Substantial Completion procedures.
  - 2. Final completion procedures.
  - 3. Warranties.
  - 4. Final cleaning.
  - 5. Repair of the Work.
- B. Related Requirements:
  - 1. Section 01 32 33 "Photographic Documentation" for submitting final completion construction photographic documentation.
  - 2. Section 01 73 00 "Execution" for progress cleaning of Project site.
  - 3. Section 01 78 39 "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.

#### 1.3 ACTION SUBMITTALS

- A. Contractor's List of Incomplete Items: Initial submittal at Substantial Completion.
- B. Certified List of Incomplete Items: Final submittal at Final Completion.

#### 1.4 CLOSEOUT SUBMITTALS

- A. Certificates of Release: From authorities having jurisdiction.
- B. Certificate of Insurance: For continuing coverage.

#### 1.5 SUBSTANTIAL COMPLETION PROCEDURES

- A. Contractor's List of Incomplete Items: Prepare and submit a list of items to be completed and corrected (Contractor's punch list), indicating the value of each item on the list and reasons why the Work is incomplete.

- B. Submittals Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
1. Certificates of Release: Obtain and submit releases from authorities having jurisdiction permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
  2. Submit closeout submittals specified in other Division 01 Sections, including project record documents, operation and maintenance manuals, final completion construction photographic documentation, damage or settlement surveys, property surveys, and similar final record information.
  3. Submit closeout submittals specified in individual Sections, including specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
- C. Procedures Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
1. Advise Owner of pending insurance changeover requirements.
  2. Complete testing of systems and equipment.
  3. Terminate and remove temporary facilities from Project site.
  4. Complete final cleaning requirements.
- D. Inspection: Submit a written request for inspection to determine Substantial Completion a minimum of 10 days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Engineer will either proceed with inspection or notify Contractor of unfulfilled requirements. Engineer will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Engineer, that must be completed or corrected before certificate will be issued.
1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
  2. Results of completed inspection will form the basis of requirements for final completion.

## 1.6 FINAL COMPLETION PROCEDURES

- A. Submittals Prior to Final Completion: Before requesting final inspection for determining final completion, complete the following:
1. Submit a final Application for Payment according to Section 01 29 00 "Payment Procedures."
  2. Certified List of Incomplete Items: Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. Certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
  3. Certificate of Insurance: Submit evidence of final, continuing insurance coverage complying with insurance requirements.

- B. Inspection: Submit a written request for final inspection to determine acceptance a minimum of 10 days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Engineer will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.
  - 1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

#### 1.7 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

- A. Organization of List: Include name and identification of each area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.
  - 1. Submit list of incomplete items in the following format:
    - a. PDF electronic file. Engineer will return annotated file.

#### 1.8 SUBMITTAL OF PROJECT WARRANTIES

- A. Time of Submittal: Submit written warranties on request of Architect for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated, or when delay in submittal of warranties might limit Owner's rights under warranty.

### PART 2 - PRODUCTS (Not Used)

### PART 3 - EXECUTION

#### 3.1 FINAL CLEANING

- A. General: Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
- B. Construction Waste Disposal: Comply with waste disposal requirements in Section 01 74 19 "Construction Waste Management and Disposal."

#### 3.2 REPAIR OF THE WORK

- A. Complete repair and restoration operations before requesting inspection for determination of Substantial Completion.
- B. Repair or remove and replace defective construction. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment. Where damaged or worn items cannot be repaired or restored,

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provide replacements. Remove and replace operating components that cannot be repaired. Restore damaged construction and permanent facilities used during construction to specified condition.

END OF SECTION 01 77 00



## SECTION 01 78 39 - PROJECT RECORD DOCUMENTS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section includes administrative and procedural requirements for project record documents, including the following:
  - 1. Record Drawings.
  - 2. Record Specifications.
- B. Related Requirements:
  - 1. Section 01 73 00 "Execution" for final property survey.
  - 2. Section 01 77 00 "Closeout Procedures" for general closeout procedures.

#### 1.3 CLOSEOUT SUBMITTALS

- A. Record Drawings: Comply with the following:
  - 1. Number of Copies: Submit one set of marked-up record prints.
  - 2. Number of Copies: Submit copies of record Drawings as follows:
    - a. Initial Submittal:
      - 1) Submit PDF electronic files of scanned record prints.
      - 2) Submit record digital data files and one set of plots.
    - b. Final Submittal:
      - 1) Submit PDF electronic files of scanned record prints.
      - 2) Include each drawing, whether or not changes and additional information were recorded.
- B. Record Specifications: Submit annotated PDF electronic files of Project's Specifications, including addenda and contract modifications.
- C. Record Product Data: Submit annotated PDF electronic files and directories of each submittal.

## PART 2 - PRODUCTS

### 2.1 RECORD DRAWINGS

- A. Record Prints: Maintain one set of marked-up paper copies of the Contract Drawings and Shop Drawings, incorporating new and revised drawings as modifications are issued.
1. Preparation: Mark record prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up record prints.
    - a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
    - b. Accurately record information in an acceptable drawing technique.
    - c. Record data as soon as possible after obtaining it.
    - d. Record and check the markup before enclosing concealed installations.
    - e. Cross-reference record prints to corresponding archive photographic documentation.
  2. Content: Types of items requiring marking include, but are not limited to, the following:
    - a. Dimensional changes to Drawings.
    - b. Revisions to details shown on Drawings.
    - c. Locations and depths of underground utilities.
    - d. Revisions to routing of piping and conduits.
    - e. Changes made by Change Order or Work Change Directive.
    - f. Changes made following Engineer's written orders.
    - g. Details not on the original Contract Drawings.
  3. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.
  4. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
  5. Mark important additional information that was either shown schematically or omitted from original Drawings.
  6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.
- B. Newly Prepared Record Drawings: Prepare new Drawings instead of preparing record Drawings where Engineer determines that neither the original Contract Drawings nor Shop Drawings are suitable to show actual installation.
1. New Drawings may be required when a Change Order is issued as a result of accepting an alternate, substitution, or other modification.
- C. Format: Identify and date each record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.

1. Format: Annotated PDF electronic file.
2. Identification: As follows:
  - a. Project name.
  - b. Date.
  - c. Designation "PROJECT RECORD DRAWINGS."
  - d. Name of Engineer.
  - e. Name of Contractor.

## 2.2 RECORD SPECIFICATIONS

- A. Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.
  1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
  2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
  3. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
  4. Note related Change Orders and record Drawings where applicable.
- B. Format: Submit record Specifications as scanned PDF electronic file(s) of marked-up paper copy of Specifications.

## PART 3 - EXECUTION

### 3.1 RECORDING AND MAINTENANCE

- A. Recording: Maintain one copy of each submittal during the construction period for project record document purposes. Post changes and revisions to project record documents as they occur; do not wait until end of Project.

END OF SECTION 01 78 39

## SECTION 03 30 00 - CAST-IN-PLACE CONCRETE

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section includes cast-in-place concrete, including reinforcement, concrete materials, mixture design, placement procedures, and finishes.

#### 1.3 DEFINITIONS

- A. Cementitious Materials: Portland cement alone or in combination with one or more of blended hydraulic cement, fly ash, slag cement, and other pozzolans.
- B. W/C Ratio: The ratio by weight of water to cementitious materials.

#### 1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Design Mixtures: For each concrete mixture.

#### 1.5 QUALITY ASSURANCE

- A. Ready-Mix-Concrete Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94 requirements for production facilities and equipment.

### PART 2 - PRODUCTS

#### 2.1 CONCRETE, GENERAL

- A. Comply with the following sections of ACI 301 unless modified by requirements in the Contract Documents:
  - 1. "General Requirements."
  - 2. "Formwork and Formwork Accessories."
  - 3. "Reinforcement and Reinforcement Supports."
  - 4. "Concrete Mixtures."

5. "Handling, Placing, and Constructing."

- B. Comply with ACI 117.

2.2 STEEL REINFORCEMENT

- A. Recycled content of steel products: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 25 percent.
- B. Reinforcing Bars: ASTM A 615, Grade 60, deformed.
- C. Plain-Steel Wire: ASTM A 1064, as drawn.
- D. Plain-Steel Welded-Wire Reinforcement: ASTM A 1064, plain, fabricated from as-drawn steel wire into flat sheets.
- E. Deformed-Steel Welded-Wire Reinforcement: ASTM A 1064, flat sheet.

2.3 CONCRETE MATERIALS

- A. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant, obtain aggregate from single source, and obtain admixtures from single source from single manufacturer throughout the project.
- B. Cementitious Materials:
1. Portland Cement: ASTM C 150 Type II
- C. Normal-Weight Aggregate: ASTM C 33, 1-1/2-inch nominal maximum aggregate size.
- D. Air-Entraining Admixture: ASTM C 260.
- E. Chemical Admixtures: Certified by manufacturer to be compatible with other admixtures and that do not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride.
1. Water-Reducing Admixture: ASTM C 494, Type A.
  2. Retarding Admixture: ASTM C 494, Type B.
  3. Water-Reducing and Retarding Admixture: ASTM C 494, Type D.
  4. High-Range, Water-Reducing Admixture: ASTM C 494, Type F.
  5. High-Range, Water-Reducing and Retarding Admixture: ASTM C 494, Type G.
  6. Plasticizing and Retarding Admixture: ASTM C 1017, Type II.
- F. Water: ASTM C 94.

2.4 RELATED MATERIALS

- A. Vapor Retarder: Plastic sheet, ASTM E 1745, Class A or B.

- B. Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber, or ASTM D 1752, cork or self-expanding cork.

## 2.5 CURING MATERIALS

- A. Evaporation Retarder: Waterborne, monomolecular film forming; manufactured for application to fresh concrete.
- B. Absorptive Cover: AASHTO M 182, Class 3, burlap cloth or cotton mats.
- C. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.
- D. Water: Potable.
- E. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B.

## 2.6 CONCRETE MIXTURES

- A. Comply with ACI 301.
- B. Normal-Weight Concrete:
  - 1. Minimum Compressive Strength: 3000 psi at 28 days.
  - 2. Maximum W/C Ratio: 0.50.
  - 3. Slump Limit: 5 inches, plus or minus 1 inch.
  - 4. Air Content: Maintain within range permitted by ACI 301. Do not allow air content of trowel-finished floor slabs to exceed 3 percent.

## 2.7 CONCRETE MIXING

- A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94/C 94M and ASTM C 1116/C 1116, and furnish batch ticket information.
  - 1. When air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.

## PART 3 - EXECUTION

### 3.1 FORMWORK INSTALLATION

- A. Design, construct, erect, brace, and maintain formwork according to ACI 301.

### 3.2 EMBEDDED ITEM INSTALLATION

- A. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.

### 3.3 VAPOR-RETARDER INSTALLATION

- A. Install, protect, and repair vapor retarders according to ASTM E 1643; place sheets in position with longest dimension parallel with direction of pour.
  - 1. Lap joints 6 inches and seal with manufacturers recommended adhesive or joint tape.

### 3.4 STEEL REINFORCEMENT INSTALLATION

- A. Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.
  - 1. Do not cut or puncture vapor retarder. Repair damage and reseal vapor retarder before placing concrete.

### 3.5 JOINTS

- A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.
- B. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Engineer.
- C. Contraction Joints in Slabs-on-Grade: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of concrete thickness, as follows:
  - 1. Grooved Joints: Form contraction joints after initial floating by grooving and finishing each edge of joint to a radius of 1/8 inch. Repeat grooving of contraction joints after applying surface finishes. Eliminate groover marks on concrete surfaces.
  - 2. Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch- wide joints into concrete when cutting action does not tear, abrade, or otherwise damage surface and before concrete develops random contraction cracks.
- D. Isolation Joints in Slabs-on-Grade: After removing formwork, install joint-filler strips at slab junctions with vertical surfaces, such as column pedestals, foundation walls, grade beams, and other locations, as indicated.
  - 1. Extend joint-filler strips full width and depth of joint, terminating flush with finished concrete surface unless otherwise indicated.

### 3.6 CONCRETE PLACEMENT

- A. Comply with ACI 301 for placing concrete.
- B. Do not add water to concrete during delivery, at Project site, or during placement.
- C. Consolidate concrete with mechanical vibrating equipment according to ACI 301.

### 3.7 FINISHING FORMED SURFACES

- A. Rough-Formed Finish: As-cast concrete texture imparted by form-facing material with tie holes and defects repaired and patched. Remove fins and other projections exceeding 1/2 inch.
  - 1. Apply to concrete surfaces not exposed to public view.
- B. Smooth-Formed Finish: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Repair and patch tie holes and defective areas. Remove fins and other projections exceeding 1/8 inch.
  - 1. Apply to concrete surfaces exposed to public view.
- C. Rubbed Finish: Apply the following rubbed finish, defined in ACI 301, to smooth-formed-finished as-cast concrete where indicated:
  - 1. Smooth-rubbed finish.
- D. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces unless otherwise indicated.

### 3.8 FINISHING UNFORMED SURFACES

- A. General: Comply with ACI 302.1R for screeding, restraightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.
- B. Screed surfaces with a straightedge and strike off. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane before excess moisture or bleedwater appears on surface.
  - 1. Do not further disturb surfaces before starting finishing operations.
- C. Float Finish: Apply float finish to surfaces indicated, to surfaces to receive trowel finish, and to floor and slab surfaces to be covered with fluid-applied or sheet waterproofing, fluid-applied or direct-to-deck-applied membrane roofing, or sand-bed terrazzo.
- D. Trowel Finish: Apply a hard trowel finish to surfaces indicated and to floor and slab surfaces exposed to view or to be covered with resilient flooring, carpet, ceramic or quarry tile set over a cleavage membrane, paint, or another thin film-finish coating system.



- E. Trowel and Fine-Broom Finish: Apply a partial trowel finish, stopping after second troweling, to surfaces indicated and to surfaces where ceramic or quarry tile is to be installed by either thickset or thinset methods. Immediately after second troweling, and when concrete is still plastic, slightly scarify surface with a fine broom.
- F. Slip-Resistive Broom Finish: Apply a slip-resistive finish to surfaces indicated and to exterior concrete platforms, steps, and ramps. Immediately after float finishing, slightly roughen trafficked surface by brooming with fiber-bristle broom perpendicular to main traffic route.

### 3.9 CONCRETE PROTECTING AND CURING

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and with ACI 301 for hot-weather protection during curing.
- B. Evaporation Retarder: Apply evaporation retarder to concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.
- C. Begin curing after finishing concrete but not before free water has disappeared from concrete surface.
- D. Curing Methods: Cure formed and unformed concrete for at least seven days by one or a combination of the following methods:
  - 1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:
    - a. Water.
    - b. Continuous water-fog spray.
    - c. Absorptive cover, water saturated, and kept continuously wet. Cover concrete surfaces and edges with 12-inch lap over adjacent absorptive covers.
  - 2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive. Cure for not less than seven days. Immediately repair any holes or tears during curing period, using cover material and waterproof tape.
  - 3. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period.

### 3.10 FIELD QUALITY CONTROL

- A. Testing Agency: Owner will engage a qualified testing agency to perform tests and inspections.
- B. Tests: Perform according to ACI 301.

J. Petermann, P.E.  
BDI/PCY

1. Testing Frequency: Obtain at least one composite sample for each 100-cu. yd. or fraction thereof of each concrete mixture placed each day.

END OF SECTION 03 30 00

## SECTION 03 30 53 - MISCELLANEOUS CAST-IN-PLACE CONCRETE

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section includes cast-in-place concrete, including reinforcement, concrete materials, mixture design, placement procedures, and finishes.

#### 1.3 DEFINITIONS

- A. Cementitious Materials: Portland cement alone or in combination with one or more of blended hydraulic cement, fly ash, slag cement, and other pozzolans.
- B. W/C Ratio: The ratio by weight of water to cementitious materials.

#### 1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Design Mixtures: For each concrete mixture.

#### 1.5 QUALITY ASSURANCE

- A. Ready-Mix-Concrete Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94 requirements for production facilities and equipment.

### PART 2 - PRODUCTS

#### 2.1 CONCRETE, GENERAL

- A. Comply with the following sections of ACI 301 unless modified by requirements in the Contract Documents:
  - 1. "General Requirements."
  - 2. "Formwork and Formwork Accessories."
  - 3. "Reinforcement and Reinforcement Supports."
  - 4. "Concrete Mixtures."
  - 5. "Handling, Placing, and Constructing."

- B. Comply with ACI 117.

## 2.2 STEEL REINFORCEMENT

- A. Recycled content of steel products: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 25 percent.
- B. Reinforcing Bars: ASTM A 615, Grade 60, deformed.
- C. Plain-Steel Wire: ASTM A 1064, as drawn.
- D. Plain-Steel Welded-Wire Reinforcement: ASTM A 1064, plain, fabricated from as-drawn steel wire into flat sheets.
- E. Deformed-Steel Welded-Wire Reinforcement: ASTM A 1064, flat sheet.

## 2.3 CONCRETE MATERIALS

- A. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant, obtain aggregate from single source, and obtain admixtures from single source from single manufacturer throughout the project.
- B. Cementitious Materials:
  - 1. Portland Cement: ASTM C 150 Type II
- C. Normal-Weight Aggregate: ASTM C 33, 1-1/2-inch nominal maximum aggregate size.
- D. Air-Entraining Admixture: ASTM C 260.
- E. Chemical Admixtures: Certified by manufacturer to be compatible with other admixtures and that do not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride.
  - 1. Water-Reducing Admixture: ASTM C 494, Type A.
  - 2. Retarding Admixture: ASTM C 494, Type B.
  - 3. Water-Reducing and Retarding Admixture: ASTM C 494, Type D.
  - 4. High-Range, Water-Reducing Admixture: ASTM C 494, Type F.
  - 5. High-Range, Water-Reducing and Retarding Admixture: ASTM C 494, Type G.
  - 6. Plasticizing and Retarding Admixture: ASTM C 1017, Type II.
- F. Water: ASTM C 94.

## 2.4 RELATED MATERIALS

- A. Vapor Retarder: Plastic sheet, ASTM E 1745, Class A or B.
- B. Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber, or ASTM D 1752, cork or self-expanding cork.

## 2.5 CURING MATERIALS

- A. Evaporation Retarder: Waterborne, monomolecular film forming; manufactured for application to fresh concrete.
- B. Absorptive Cover: AASHTO M 182, Class 3, burlap cloth or cotton mats.
- C. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.
- D. Water: Potable.
- E. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B.

## 2.6 CONCRETE MIXTURES

- A. Comply with ACI 301.
- B. Normal-Weight Concrete:
  - 1. Minimum Compressive Strength: 3000 psi at 28 days.
  - 2. Maximum W/C Ratio: 0.50.
  - 3. Slump Limit: 5 inches, plus or minus 1 inch.
  - 4. Air Content: Maintain within range permitted by ACI 301. Do not allow air content of trowel-finished floor slabs to exceed 3 percent.

## 2.7 CONCRETE MIXING

- A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94/C 94M and ASTM C 1116/C 1116, and furnish batch ticket information.
  - 1. When air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.

## PART 3 - EXECUTION

### 3.1 FORMWORK INSTALLATION

- A. Design, construct, erect, brace, and maintain formwork according to ACI 301.

### 3.2 EMBEDDED ITEM INSTALLATION

- A. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.

### 3.3 VAPOR-RETARDER INSTALLATION

- A. Install, protect, and repair vapor retarders according to ASTM E 1643; place sheets in position with longest dimension parallel with direction of pour.
  - 1. Lap joints 6 inches and seal with manufacturers recommended adhesive or joint tape.

### 3.4 STEEL REINFORCEMENT INSTALLATION

- A. Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.
  - 1. Do not cut or puncture vapor retarder. Repair damage and reseal vapor retarder before placing concrete.

### 3.5 JOINTS

- A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.
- B. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Engineer.
- C. Contraction Joints in Slabs-on-Grade: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of concrete thickness, as follows:
  - 1. Grooved Joints: Form contraction joints after initial floating by grooving and finishing each edge of joint to a radius of 1/8 inch. Repeat grooving of contraction joints after applying surface finishes. Eliminate groover marks on concrete surfaces.
  - 2. Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch- wide joints into concrete when cutting action does not tear, abrade, or otherwise damage surface and before concrete develops random contraction cracks.
- D. Isolation Joints in Slabs-on-Grade: After removing formwork, install joint-filler strips at slab junctions with vertical surfaces, such as column pedestals, foundation walls, grade beams, and other locations, as indicated.
  - 1. Extend joint-filler strips full width and depth of joint, terminating flush with finished concrete surface unless otherwise indicated.

### 3.6 CONCRETE PLACEMENT

- A. Comply with ACI 301 for placing concrete.
- B. Do not add water to concrete during delivery, at Project site, or during placement.
- C. Consolidate concrete with mechanical vibrating equipment according to ACI 301.

### 3.7 FINISHING FORMED SURFACES

- A. Rough-Formed Finish: As-cast concrete texture imparted by form-facing material with tie holes and defects repaired and patched. Remove fins and other projections exceeding 1/2 inch.
  - 1. Apply to concrete surfaces not exposed to public view.
- B. Smooth-Formed Finish: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Repair and patch tie holes and defective areas. Remove fins and other projections exceeding 1/8 inch.
  - 1. Apply to concrete surfaces exposed to public view.
- C. Rubbed Finish: Apply the following rubbed finish, defined in ACI 301, to smooth-formed-finished as-cast concrete where indicated:
  - 1. Smooth-rubbed finish.
- D. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces unless otherwise indicated.

### 3.8 FINISHING UNFORMED SURFACES

- A. General: Comply with ACI 302.1R for screeding, restraightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.
- B. Screed surfaces with a straightedge and strike off. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane before excess moisture or bleedwater appears on surface.
  - 1. Do not further disturb surfaces before starting finishing operations.
- C. Float Finish: Apply float finish to surfaces indicated, to surfaces to receive trowel finish, and to floor and slab surfaces to be covered with fluid-applied or sheet waterproofing, fluid-applied or direct-to-deck-applied membrane roofing, or sand-bed terrazzo.
- D. Trowel Finish: Apply a hard trowel finish to surfaces indicated and to floor and slab surfaces exposed to view or to be covered with resilient flooring, carpet, ceramic or quarry tile set over a cleavage membrane, paint, or another thin film-finish coating system.
- E. Trowel and Fine-Broom Finish: Apply a partial trowel finish, stopping after second troweling, to surfaces indicated and to surfaces where ceramic or quarry tile is to be installed by either thickset or thinset methods. Immediately after second troweling, and when concrete is still plastic, slightly scarify surface with a fine broom.
- F. Slip-Resistive Broom Finish: Apply a slip-resistive finish to surfaces indicated and to exterior concrete platforms, steps, and ramps. Immediately after float finishing, slightly roughen trafficked surface by brooming with fiber-bristle broom perpendicular to main traffic route.

### 3.9 CONCRETE PROTECTING AND CURING

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and with ACI 301 for hot-weather protection during curing.
- B. Evaporation Retarder: Apply evaporation retarder to concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.
- C. Begin curing after finishing concrete but not before free water has disappeared from concrete surface.
- D. Curing Methods: Cure formed and unformed concrete for at least seven days by one or a combination of the following methods:
  - 1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:
    - a. Water.
    - b. Continuous water-fog spray.
    - c. Absorptive cover, water saturated, and kept continuously wet. Cover concrete surfaces and edges with 12-inch lap over adjacent absorptive covers.
  - 2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive. Cure for not less than seven days. Immediately repair any holes or tears during curing period, using cover material and waterproof tape.
  - 3. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period.

### 3.10 FIELD QUALITY CONTROL

- A. Testing Agency: Owner will engage a qualified testing agency to perform tests and inspections.
- B. Tests: Perform according to ACI 301.
  - 1. Testing Frequency: Obtain at least one composite sample for each 100 cu. yd. or fraction thereof of each concrete mixture placed each day.

END OF SECTION 03 30 53



## SECTION 31 10 00 - SITE CLEARING

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section Includes:

1. Protecting existing vegetation to remain.
2. Removing existing vegetation.
3. Clearing and grubbing.
4. Stripping and stockpiling topsoil.
5. Removing above- and below-grade site improvements.
6. Disconnecting, capping or sealing, and removing site utilities and abandoning site utilities in place.
7. Temporary erosion and sedimentation control.

#### 1.3 DEFINITIONS

- A. Subsoil: Soil beneath the level of subgrade; soil beneath the topsoil layers of a naturally occurring soil profile, typified by less than 1 percent organic matter and few soil organisms.
- B. Surface Soil: Soil that is present at the top layer of the existing soil profile. In undisturbed areas, surface soil is typically called "topsoil," but in disturbed areas such as urban environments, the surface soil can be subsoil.
- C. Topsoil: Top layer of the soil profile consisting of existing native surface topsoil or existing in-place surface soil; the zone where plant roots grow. Its appearance is generally friable, pervious, and black or a darker shade of brown, gray, or red than underlying subsoil; reasonably free of subsoil, clay lumps, gravel, and other objects larger than 2 inches (50 mm) in diameter; and free of weeds, roots, toxic materials, or other nonsoil materials.
- D. Plant-Protection Zone: Area surrounding individual shrubs or other vegetation to be protected during construction and indicated on Drawings.
- E. Tree-Protection Zone: Area surrounding individual trees or groups of trees to be protected during construction and indicated on Drawings.
- F. Vegetation: Trees, shrubs, groundcovers, grass, and other plants.

#### 1.4 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.

#### 1.5 MATERIAL OWNERSHIP

- A. Except for materials indicated to be stockpiled or otherwise remain Owner's property, cleared materials shall become Contractor's property and shall be removed from Project site.

#### 1.6 INFORMATIONAL SUBMITTALS

- A. Existing Conditions: Documentation of existing trees and plantings, adjoining construction, and site improvements that establishes preconstruction conditions that might be misconstrued as damage caused by site clearing.
  - 1. Use sufficiently detailed photographs or video recordings.
  - 2. Include plans and notations to indicate specific wounds and damage conditions of each tree or other plant designated to remain.
- B. Record Drawings: Identifying and accurately showing locations of capped utilities and other subsurface structural, electrical, and mechanical conditions.

#### 1.7 FIELD CONDITIONS

- A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during site-clearing operations.
  - 1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
  - 2. Provide alternate routes around closed or obstructed traffic ways if required by Owner or authorities having jurisdiction.
- B. Improvements on Adjoining Property: Authority for performing site clearing indicated on property adjoining Owner's property will be obtained by Owner before award of Contract.
  - 1. Do not proceed with work on adjoining property until directed by Engineer.
- C. Salvageable Improvements: Carefully remove items indicated to be salvaged and store on Owner's premises. Coordinate location with Owner's Representative.
- D. Utility Locator Service: Notify Sunshine One Call for area where Project is located before site clearing.
- E. Do not commence site clearing operations until temporary erosion- and sedimentation-control and plant-protection measures are in place.
- F. Soil Stripping, Handling, and Stockpiling: Perform only when the soil is dry or slightly moist.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. Satisfactory Soil Material: Requirements for satisfactory soil material are specified in Section 31 20 00 "Earth Moving."
  - 1. Obtain approved borrow soil material off-site when satisfactory soil material is not available on-site.

## PART 3 - EXECUTION

### 3.1 PREPARATION

- A. Protect and maintain benchmarks and survey control points from disturbance during construction.
- B. Verify that trees, shrubs, and other vegetation to remain or to be relocated have been flagged and that protection zones have been identified and enclosed.
- C. Protect existing site improvements to remain from damage during construction.
  - 1. Restore damaged improvements to their original condition, as acceptable to Owner.

### 3.2 TEMPORARY EROSION AND SEDIMENTATION CONTROL

- A. Provide temporary erosion- and sedimentation-control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, according to erosion- and sedimentation-control Drawings and requirements of authorities having jurisdiction.
- B. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross protection zones.
- C. Inspect, maintain, and repair erosion- and sedimentation-control measures during construction until permanent vegetation has been established.
- D. Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.

### 3.3 TREE AND PLANT PROTECTION

- A. Protect trees and plants remaining on-site.
- B. Repair or replace trees, shrubs, and other vegetation indicated to remain or be relocated that are damaged by construction operations.

### 3.4 EXISTING UTILITIES

- A. Locate, identify, disconnect, and seal or cap utilities indicated to be removed or abandoned in place.
  - 1. Arrange with utility companies to shut off indicated utilities.
- B. Locate, identify, and disconnect utilities indicated to be abandoned in place.
- C. Interrupting Existing Utilities: Do not interrupt utilities serving facilities occupied by Owner or others, unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:
  - 1. Notify Engineer not less than two days in advance of proposed utility interruptions.
  - 2. Do not proceed with utility interruptions without Engineer's written permission.
- D. Excavate for and remove underground utilities indicated to be removed.

### 3.5 CLEARING AND GRUBBING

- A. Remove obstructions, trees, shrubs, and other vegetation to permit installation of new construction.
  - 1. Do not remove trees, shrubs, and other vegetation indicated to remain or to be relocated.
  - 2. Grind down stumps and remove roots larger than 2 inches (50 mm) in diameter, obstructions, and debris to a depth of 18 inches (450 mm) below exposed subgrade.
  - 3. Use only hand methods or air spade for grubbing within protection zones.
  - 4. Chip removed tree branches and dispose of off-site.
- B. Fill depressions caused by clearing and grubbing operations with satisfactory soil material unless further excavation or earthwork is indicated.
  - 1. Place fill material in horizontal layers not exceeding a loose depth of 8 inches (200 mm) and compact each layer to a density equal to adjacent original ground.

### 3.6 TOPSOIL STRIPPING

- A. Remove sod and grass before stripping topsoil.
- B. Strip topsoil to depth of 6 inches (150 mm) in a manner to prevent intermingling with underlying subsoil or other waste materials.
  - 1. Remove subsoil and nonsoil materials from topsoil, including clay lumps, gravel, and other objects larger than 2 inches (50 mm) in diameter; trash, debris, weeds, roots, and other waste materials.
- C. Stockpile topsoil away from edge of excavations without intermixing with subsoil or other materials. Grade and shape stockpiles to drain surface water. Cover to prevent windblown dust and erosion by water.

1. Limit height of topsoil stockpiles to 72 inches (1800 mm).
2. Do not stockpile topsoil within protection zones.
3. Dispose of surplus topsoil. Surplus topsoil is that which exceeds quantity indicated to be reused or requested by the Owner.

### 3.7 SITE IMPROVEMENTS

- A. Remove existing above- and below-grade improvements as indicated and necessary to facilitate new construction.
- B. Remove slabs, paving, curbs, gutters, and aggregate base as indicated.
  1. Unless existing full-depth joints coincide with line of demolition, neatly saw-cut along line of existing pavement to remain before removing adjacent existing pavement. Saw-cut faces vertically.

### 3.8 DISPOSAL OF SURPLUS AND WASTE MATERIALS

- A. Remove surplus soil material, unsuitable topsoil, obstructions, demolished materials, and waste materials including trash and debris, and legally dispose of them off Owner's property.

END OF SECTION 31 10 00

## SECTION 31 20 00 - EARTH MOVING

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section Includes:

1. Excavating and filling for rough grading the Site.
2. Subsurface drainage backfill for walls and trenches.
3. Excavating and backfilling trenches for utilities and pits for buried utility structures.

- B. Related Requirements:

1. Section 31 50 00 "Excavation Support and Protection" for shoring, bracing, and sheet piling of excavations.

#### 1.3 DEFINITIONS

- A. Backfill: Soil material or controlled low-strength material used to fill an excavation.

1. Initial Backfill: Backfill placed beside and over pipe in a trench, including haunches to support sides of pipe.
2. Final Backfill: Backfill placed over initial backfill to fill a trench.

- B. Base Course: Aggregate layer placed between the subbase course and hot-mix asphalt paving.

- C. Bedding Course: Aggregate layer placed over the excavated subgrade in a trench before laying pipe.

- D. Borrow Soil: Satisfactory soil imported from off-site for use as fill or backfill.

- E. Drainage Course: Aggregate layer supporting the slab-on-grade that also minimizes upward capillary flow of pore water.

- F. Excavation: Removal of material encountered above subgrade elevations and to lines and dimensions indicated.

1. Authorized Additional Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions as directed by Engineer. Authorized additional excavation and replacement material will be paid for according to Contract provisions for changes in the Work.

2. Bulk Excavation: Excavation more than 10 feet in width and more than 30 feet in length.
  3. Unauthorized Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions without direction by Engineer. Unauthorized excavation, as well as remedial work directed by Engineer, shall be without additional compensation.
- G. Fill: Soil materials used to raise existing grades.
- H. Rock: Rock material in beds, ledges, unstratified masses, conglomerate deposits, and boulders of rock material that exceed 1 cu. yd. for bulk excavation or 3/4 cu. yd. for footing, trench, and pit excavation that cannot be removed by rock-excavating equipment equivalent to the following in size and performance ratings, without systematic drilling, ram hammering, ripping, or blasting, when permitted:
1. Equipment for Footing, Trench, and Pit Excavation: Late-model, track-mounted hydraulic excavator; equipped with a 42-inch-maximum-width, short-tip-radius rock bucket; rated at not less than 138-hp flywheel power with bucket-curling force of not less than 28,700 lbf and stick-crowd force of not less than 18,400 lbf with extra-long reach boom.
  2. Equipment for Bulk Excavation: Late-model, track-mounted loader; rated at not less than 230-hp flywheel power and developing a minimum of 47,992-lbf breakout force with a general-purpose bare bucket.
- I. Rock: Rock material in beds, ledges, unstratified masses, conglomerate deposits, and boulders of rock material 3/4 cu. yd. or more in volume that exceed a standard penetration resistance of 100 blows/2 inches when tested by a geotechnical testing agency, according to ASTM D 1586.
- J. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below the ground surface.
- K. Subbase Course: Aggregate layer placed between the subgrade and base course for hot-mix asphalt pavement, or aggregate layer placed between the subgrade and a cement concrete pavement or a cement concrete or hot-mix asphalt walk.
- L. Subgrade: Uppermost surface of an excavation or the top surface of a fill or backfill immediately below subbase, drainage fill, drainage course, or topsoil materials.
- M. Utilities: On-site underground pipes, conduits, ducts, and cables as well as underground services within buildings.

#### 1.4 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct preexcavation conference at Project site.
1. Review methods and procedures related to earthmoving, including, but not limited to, the following:
    - a. Personnel and equipment needed to make progress and avoid delays.
    - b. Coordination of Work with utility locator service.

- c. Coordination of Work and equipment movement with the locations of tree- and plant-protection zones.
- d. Extent of trenching by hand or with air spade.
- e. Field quality control.

## 1.5 ACTION SUBMITTALS

- A. Product Data: For each type of the following manufactured products required:
  - 1. Geotextiles.
  - 2. Controlled low-strength material, including design mixture.
  - 3. Geofoam.
  - 4. Warning tapes.

## 1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For qualified testing agency.
- B. Material Test Reports: For each on-site and borrow soil material proposed for fill and backfill as follows:
  - 1. Classification according to ASTM D 2487.
  - 2. Laboratory compaction curve according to ASTM D 698.
- C. Preexcavation Photographs or Videotape: Show existing conditions of adjoining construction and site improvements, including finish surfaces that might be misconstrued as damage caused by earth-moving operations. Submit before earth moving begins.

## 1.7 QUALITY ASSURANCE

- A. Geotechnical Testing Agency Qualifications: Qualified according to ASTM E 329 and ASTM D 3740 for testing indicated.

## 1.8 FIELD CONDITIONS

- A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during earth-moving operations.
  - 1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
  - 2. Provide alternate routes around closed or obstructed traffic ways if required by Owner or authorities having jurisdiction.
- B. Utility Locator Service: Notify utility locator service and Owner for area where Project is located before beginning earth-moving operations.
- C. The following practices are prohibited within protection zones:



1. Storage of construction materials, debris, or excavated material.
  2. Parking vehicles or equipment.
  3. Foot traffic.
  4. Erection of sheds or structures.
  5. Impoundment of water.
  6. Excavation or other digging unless otherwise indicated.
  7. Attachment of signs to or wrapping materials around trees or plants unless otherwise indicated.
- D. Do not direct vehicle or equipment exhaust towards protection zones.
- E. Prohibit heat sources, flames, ignition sources, and smoking within or near protection zones.

## PART 2 - PRODUCTS

### 2.1 SOIL MATERIALS

- A. General: Provide borrow soil materials when sufficient satisfactory soil materials are not available from excavations.
- B. Satisfactory Soils: Soil Classification Groups GW, GP, GM, SW, SP, and SM according to ASTM D 2487 or Groups A-1, A-2-4, A-2-5, and A-3 according to AASHTO M 145, or a combination of these groups; free of rock or gravel larger than 3 inches in any dimension, debris, waste, frozen materials, vegetation, and other deleterious matter.
- C. Unsatisfactory Soils: Soil Classification Groups GC, SC, CL, ML, OL, CH, MH, OH, and PT according to ASTM D 2487, Groups A-2-6, A-2-7, A-4, A-5, A-6, and A-7 according to AASHTO M 145, or a combination of these groups.
1. Unsatisfactory soils also include satisfactory soils not maintained within 2 percent of optimum moisture content at time of compaction.
- D. Subbase Material: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940/D 2940M; with at least 90 percent passing a 1-1/2-inch sieve and not more than 12 percent passing a No. 200 sieve.
- E. Base Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 294/D 2940M 0; with at least 95 percent passing a 1-1/2-inch sieve and not more than 8 percent passing a No. 200 sieve.
- F. Engineered Fill: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940/D 2940M; with at least 90 percent passing a 1-1/2-inch sieve and not more than 12 percent passing a No. 200 sieve.
- G. Bedding Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940/D 2940M; except with 100 percent passing a 1-inch sieve and not more than 8 percent passing a No. 200 sieve.

- H. Drainage Course: Narrowly graded mixture of washed crushed stone or crushed or uncrushed gravel; ASTM D 448; coarse-aggregate grading Size 57; with 100 percent passing a 1-1/2-inch sieve and zero to 5 percent passing a No. 8 sieve.
- I. Filter Material: Narrowly graded mixture of natural or crushed gravel, or crushed stone and natural sand; ASTM D 448; coarse-aggregate grading Size 67; with 100 percent passing a 1-inch sieve and zero to 5 percent passing a No. 4 sieve.
- J. Sand: ASTM C 33/C 33M; fine aggregate.
- K. Impervious Fill: Clayey gravel and sand mixture capable of compacting to a dense state.

## 2.2 GEOTEXTILES

- A. Subsurface Drainage Geotextile: Nonwoven needle-punched geotextile, manufactured for subsurface drainage applications, made from polyolefins or polyesters; with elongation greater than 50 percent; complying with AASHTO M 288 and the following, measured per test methods referenced:
  - 1. Survivability: Class 2; AASHTO M 288.
  - 2. Survivability: As follows:
    - a. Grab Tensile Strength: 157 lbf; ASTM D 4632.
    - b. Sewn Seam Strength: 142 lbf; ASTM D 4632.
    - c. Tear Strength: 56 lbf; ASTM D 4533.
    - d. Puncture Strength: 56 lbf; ASTM D 4833.
  - 3. Apparent Opening Size: No. 40 sieve, maximum; ASTM D 4751.
  - 4. Permittivity: 0.5 per second, minimum; ASTM D 4491.
  - 5. UV Stability: 50 percent after 500 hours' exposure; ASTM D 4355.
- B. Separation Geotextile: Woven geotextile fabric, manufactured for separation applications, made from polyolefins or polyesters; with elongation less than 50 percent; complying with AASHTO M 288 and the following, measured per test methods referenced:
  - 1. Survivability: Class 2; AASHTO M 288.
  - 2. Survivability: As follows:
    - a. Grab Tensile Strength: 247 lbf; ASTM D 4632.
    - b. Sewn Seam Strength: 222 lbf; ASTM D 4632.
    - c. Tear Strength: 90 lbf; ASTM D 4533.
    - d. Puncture Strength: 90 lbf; ASTM D 4833.
  - 3. Apparent Opening Size: No. 60 sieve, maximum; ASTM D 4751.
  - 4. Permittivity: 0.02 per second, minimum; ASTM D 4491.
  - 5. UV Stability: 50 percent after 500 hours' exposure; ASTM D 4355.

## 2.3 ACCESSORIES

- A. Warning Tape: Acid- and alkali-resistant, polyethylene film warning tape manufactured for marking and identifying underground utilities, 6 inches wide and 4 mils thick, continuously inscribed with a description of the utility; colored as follows:
1. Red: Electric.
  2. Yellow: Gas, oil, steam, and dangerous materials.
  3. Orange: Telephone and other communications.
  4. Blue: Water systems.
  5. Green: Sewer systems.
- B. Detectable Warning Tape: Acid- and alkali-resistant, polyethylene film warning tape manufactured for marking and identifying underground utilities, a minimum of 6 inches wide and 4 mils thick, continuously inscribed with a description of the utility, with metallic core encased in a protective jacket for corrosion protection, detectable by metal detector when tape is buried up to 30 inches deep; colored as follows:
1. Red: Electric.
  2. Yellow: Gas, oil, steam, and dangerous materials.
  3. Orange: Telephone and other communications.
  4. Blue: Water systems.
  5. Green: Sewer systems.

## PART 3 - EXECUTION

### 3.1 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earth-moving operations.
- B. Protect and maintain erosion and sedimentation controls during earth-moving operations.
- C. Protect subgrades and foundation soils from freezing temperatures and frost. Remove temporary protection before placing subsequent materials.

### 3.2 DEWATERING

- A. Prevent surface water and ground water from entering excavations, from ponding on prepared subgrades, and from flooding Project site and surrounding area.
- B. Protect subgrades from softening, undermining, washout, and damage by rain or water accumulation.
1. Reroute surface water runoff away from excavated areas. Do not allow water to accumulate in excavations. Do not use excavated trenches as temporary drainage ditches.

### 3.3 EXPLOSIVES

- A. Explosives: Do not use explosives.

### 3.4 EXCAVATION, GENERAL

- A. Unclassified Excavation: Excavate to subgrade elevations regardless of the character of surface and subsurface conditions encountered. Unclassified excavated materials may include rock, soil materials, and obstructions. No changes in the Contract Sum or the Contract Time will be authorized for rock excavation or removal of obstructions.
  - 1. If excavated materials intended for fill and backfill include unsatisfactory soil materials and rock, replace with satisfactory soil materials.
  - 2. Remove rock to lines and grades indicated to permit installation of permanent construction without exceeding the following dimensions:
    - a. 24 inches outside of concrete forms other than at footings.
    - b. 12 inches outside of concrete forms at footings.
    - c. 6 inches outside of minimum required dimensions of concrete cast against grade.
    - d. Outside dimensions of concrete walls indicated to be cast against rock without forms or exterior waterproofing treatments.
    - e. 6 inches beneath bottom of concrete slabs-on-grade.
    - f. 6 inches beneath pipe in trenches and the greater of 24 inches wider than pipe or 42 inches wide.
- B. Classified Excavation: Excavate to subgrade elevations. Material to be excavated will be classified as earth and rock. Do not excavate rock until it has been classified and cross sectioned by Engineer. Changes in the Contract Time may be authorized for rock excavation.
  - 1. Earth excavation includes excavating pavements and obstructions visible on surface; underground structures, utilities, and other items indicated to be removed; and soil, boulders, and other materials not classified as rock or unauthorized excavation.
    - a. Intermittent drilling; blasting, if permitted; ram hammering; or ripping of material not classified as rock excavation is earth excavation.
  - 2. Rock excavation includes removal and disposal of rock. Remove rock to lines and subgrade elevations indicated to permit installation of permanent construction without exceeding the following dimensions:
    - a. 24 inches outside of concrete forms other than at footings.
    - b. 12 inches outside of concrete forms at footings.
    - c. 6 inches outside of minimum required dimensions of concrete cast against grade.
    - d. Outside dimensions of concrete walls indicated to be cast against rock without forms or exterior waterproofing treatments.
    - e. 6 inches beneath bottom of concrete slabs-on-grade.
    - f. 6 inches beneath pipe in trenches and the greater of 24 inches wider than pipe or 42 inches wide.

### 3.5 EXCAVATION FOR UTILITY TRENCHES

- A. Excavate trenches to indicated gradients, lines, depths, and elevations.
  - 1. Beyond building perimeter, excavate trenches to allow installation of top of pipe below frost line.
- B. Excavate trenches to uniform widths to provide the following clearance on each side of pipe or conduit. Excavate trench walls vertically from trench bottom to 12 inches higher than top of pipe or conduit unless otherwise indicated.
  - 1. Clearance: minimum 12 inches each side of pipe or conduit.
- C. Trench Bottoms: Excavate and shape trench bottoms to provide uniform bearing and support of pipes and conduit. Shape subgrade to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits. Remove projecting stones and sharp objects along trench subgrade.
  - 1. For pipes and conduit 4 inches or larger in nominal diameter, shape bottom of trench to support bottom 90 degrees of pipe or conduit circumference. Fill depressions with tamped sand backfill.
  - 2. For flat-bottomed, multiple-duct conduit units, hand-excavate trench bottoms and support conduit on an undisturbed subgrade.
  - 3. Excavate trenches 6 inches deeper than elevation required in rock or other unyielding bearing material to allow for bedding course.
- D. Trench Bottoms: Excavate trenches 4 inches deeper than bottom of pipe and conduit elevations to allow for bedding course. Hand-excavate deeper for bells of pipe.
  - 1. Excavate trenches 6 inches deeper than elevation required in rock or other unyielding bearing material to allow for bedding course.
- E. Trenches in Tree- and Plant-Protection Zones:
  - 1. Hand-excavate to indicated lines, cross sections, elevations, and subgrades. Use narrow-tine spading forks to comb soil and expose roots. Do not break, tear, or chop exposed roots. Do not use mechanical equipment that rips, tears, or pulls roots.
  - 2. Do not cut main lateral roots or taproots; cut only smaller roots that interfere with installation of utilities.

### 3.6 UNAUTHORIZED EXCAVATION

- A. Fill unauthorized excavation under foundations or wall footings by extending bottom elevation of concrete foundation or footing to excavation bottom, without altering top elevation. Lean concrete fill, with 28-day compressive strength of 2500 psi, may be used when approved by Engineer.
  - 1. Fill unauthorized excavations under other construction, pipe, or conduit as directed by Engineer.

### 3.7 STORAGE OF SOIL MATERIALS

- A. Stockpile borrow soil materials and excavated satisfactory soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
  - 1. Stockpile soil materials away from edge of excavations. Do not store within drip line of remaining trees.

### 3.8 BACKFILL

- A. Place and compact backfill in excavations promptly, but not before completing the following:
  - 1. Construction below finish grade including, where applicable, subdrainage, dampproofing, waterproofing, and perimeter insulation.
  - 2. Surveying locations of underground utilities for Record Documents.
  - 3. Testing and inspecting underground utilities.
  - 4. Removing trash and debris.
  - 5. Removing temporary shoring, bracing, and sheeting.
  - 6. Installing permanent or temporary horizontal bracing on horizontally supported walls.
- B. Place backfill on subgrades free of mud, frost, snow, or ice.

### 3.9 UTILITY TRENCH BACKFILL

- A. Place backfill on subgrades free of mud, frost, snow, or ice.
- B. Place and compact bedding course on trench bottoms and where indicated. Shape bedding course to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits.
- C. Backfill voids with satisfactory soil while removing shoring and bracing.
- D. Initial Backfill:
  - 1. Soil Backfill: Place and compact initial backfill of subbase material, free of particles larger than 1 inch in any dimension, to a height of 12 inches over the pipe or conduit.
    - a. Carefully compact initial backfill under pipe haunches and compact evenly up on both sides and along the full length of piping or conduit to avoid damage or displacement of piping or conduit. Coordinate backfilling with utilities testing.
- E. Final Backfill:
  - 1. Soil Backfill: Place and compact final backfill of satisfactory soil to final subgrade elevation.
- F. Warning Tape: Install warning tape directly above utilities, 12 inches below finished grade, except 6 inches below subgrade under pavements and slabs.

### 3.10 SOIL FILL

- A. Plow, scarify, bench, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing material.
- B. Place and compact fill material in layers to required elevations as follows:
  - 1. Under grass and planted areas, use satisfactory soil material.
  - 2. Under walks and pavements, use satisfactory soil material.
  - 3. Under steps and ramps, use engineered fill.
  - 4. Under building slabs, use engineered fill.
  - 5. Under footings and foundations, use engineered fill.
- C. Place soil fill on subgrades free of mud, frost, snow, or ice.

### 3.11 SOIL MOISTURE CONTROL

- A. Uniformly moisten or aerate subgrade and each subsequent fill or backfill soil layer before compaction to within 2 percent of optimum moisture content.
  - 1. Do not place backfill or fill soil material on surfaces that are muddy, frozen, or contain frost or ice.
  - 2. Remove and replace, or scarify and air dry, otherwise satisfactory soil material that exceeds optimum moisture content by 2 percent and is too wet to compact to specified dry unit weight.

### 3.12 COMPACTION OF SOIL BACKFILLS AND FILLS

- A. Place backfill and fill soil materials in layers not more than 12 inches in loose depth for material compacted by heavy compaction equipment and not more than 4 inches in loose depth for material compacted by hand-operated tampers.
- B. Place backfill and fill soil materials evenly on all sides of structures to required elevations and uniformly along the full length of each structure.
- C. Compact soil materials to not less than the following percentages of maximum dry unit weight according to ASTM D 698:
  - 1. Under structures, building slabs, steps, and pavements, scarify and recompact top 12 inches of existing subgrade and each layer of backfill or fill soil material at 95 percent.
  - 2. Under walkways, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill soil material at 92 percent.
  - 3. Under turf or unpaved areas, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill soil material at 90 percent.
  - 4. For utility trenches, compact each layer of initial and final backfill soil material at 90 percent.

### 3.13 GRADING

- A. General: Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.
  - 1. Provide a smooth transition between adjacent existing grades and new grades.
  - 2. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.
  - 3. Existing drainage courses shall be maintained and/or restored, unless otherwise shown on the drawings.
- B. Site Rough Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to elevations required to achieve indicated finish elevations, within the following subgrade tolerances:
  - 1. Turf or Unpaved Areas: Plus or minus 1 inch.
  - 2. Walks: Plus or minus 1 inch.
  - 3. Pavements: Plus or minus 1/2 inch.
- C. Grading inside Building Lines: Finish subgrade to a tolerance of 1/2 inch when tested with a 10-foot straightedge.

### 3.14 FIELD QUALITY CONTROL

- A. Special Inspections: Owner will engage a qualified special inspector to perform the following special inspections:
  - 1. Determine prior to placement of fill that site has been prepared in compliance with requirements.
  - 2. Determine that fill material classification and maximum lift thickness comply with requirements.
  - 3. Determine, during placement and compaction, that in-place density of compacted fill complies with requirements.
- B. Testing Agency: Owner will engage a qualified geotechnical engineering testing agency to perform tests and inspections.
- C. Allow testing agency to inspect and test subgrades and each fill or backfill layer. Proceed with subsequent earth moving only after test results for previously completed work comply with requirements.
- D. Testing agency will test compaction of soils in place according to ASTM D 1556, ASTM D 2167, ASTM D 2937, and ASTM D 6938, as applicable. Tests will be performed at the following locations and frequencies:
  - 1. Trench Backfill: At each compacted initial and final backfill layer, at least one test for every 150 feet or less of trench length but no fewer than two test.



- E. When testing agency reports that subgrades, fills, or backfills have not achieved degree of compaction specified, scarify and moisten or aerate, or remove and replace soil materials to depth required; recompact and retest until specified compaction is obtained.

### 3.15 PROTECTION

- A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.
- B. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.
  - 1. Scarify or remove and replace soil material to depth as directed by Engineer; reshape and recompact.
- C. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.
  - 1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

### 3.16 DISPOSAL OF SURPLUS AND WASTE MATERIALS

- A. Remove surplus satisfactory soil and waste materials, including unsatisfactory soil, trash, and debris, and legally dispose of them off Owner's property.
- B. Transport surplus satisfactory soil to designated storage areas on Owner's property. Stockpile or spread soil as directed by Engineer.
  - 1. Remove waste materials, including unsatisfactory soil, trash, and debris, and legally dispose of them off Owner's property.

END OF SECTION 31 20 00

## SECTION 31 23 16 - EXCAVATION

### PART 1 - GENERAL

#### 1.1 SUMMARY

A. Section Includes:

1. Soil densification.
2. Excavating for building foundations.
3. Excavating for Site structures.

B. Related Requirements:

1. Section 31 23 23 - Fill: Backfilling at Site structures and fill under slabs on grade and pavement.

#### 1.2 REFERENCE STANDARDS

- A. Local utility standards when working within 24 inches of utility lines.

#### 1.3 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.

B. Shop Drawings:

1. Indicate soil densification grid for each size and configuration footing requiring soil densification.
2. Excavation Protection Plan:
  - a. Describe sheeting, shoring, and bracing materials and installation, as required, to protect excavations and adjacent structures and property.
  - b. Submit signed and sealed Shop Drawings with design calculations and assumptions to support plan.

- C. Field Quality-Control Submittals: Indicate results of Contractor-furnished tests and inspections.

D. Qualifications Statement:

1. Submit qualifications for licensed professional.

## PART 2 - PRODUCTS

2.1 Not Used.

## PART 3 - EXECUTION

### 3.1 PREPARATION

- A. Section 01 73 00 - Execution and Section 01 77 00 - Closeout Procedures: Requirements for installation preparation.
- B. Utility Service Locator:
  - 1. Call local utility service-line information at 811 not less than three working days before performing Work.
  - 2. Request that underground utilities be located and marked within and immediately surrounding construction areas.
  - 3. Identify required lines, levels, contours, and data.
- C. Existing Utilities:
  - 1. Protect from damage utilities indicated to remain.
- D. Protect plant life, lawns and other features designated to remain as portion of final landscaping.
- E. Protect benchmarks, survey control points, existing structures, fences from excavating equipment and vehicular traffic.
- F. Do not close or obstruct roadways or hydrants without permits.

### 3.2 SOIL DENSIFICATION BY VIBRO-COMPACTION

- A. Description:
  - 1. Vibro-compact substrates below footing bearing surfaces for footings as indicated on Drawings before excavating Site.
  - 2. Densify existing subsoils with existing relative density rating of "compact to dense" to attain relative density rating of "very dense."
  - 3. Densify subsoils to depth of 3 feet.
- B. Equipment:
  - 1. Depth Vibrator:
    - a. Type: Poker.
    - b. Follower Tubes: Furnish visible marking every 12 inches to enable insertion depth measurement.
  - 2. Motion: Radial in horizontal plane.

3. Data Acquisition System: Record amps or pressure of vibrator motor over time and depth.

C. Procedure:

1. Perform densification in presence of Engineer.
2. Perform densification directly under each footing, with vibrator inserted in grid pattern at maximum 6 feet o.c.
3. Arrange compaction grid for each footing for maximum number of insertion points, and with outermost insertion points within bearing area of footings.
4. Adjust compaction grid arrangement and spacing as directed by Engineer to achieve required densification.
5. Insert vibrator to maximum specified depth, densify soils for 30 seconds or other time as directed by Engineer, and withdraw vibrator every 12 inches while repeating densification at each increment.
6. If subsurface obstruction prevents vibrator insertion to specified depth, request instructions from Engineer to compensate for obstruction.

D. Tolerances:

1. Maximum Deviation from Center of Completed Compaction: 8 inches from indicated position.
2. Maximum Deviation from Vertical: 4 degrees during vibrator insertion.

### 3.3 EXCAVATION

- A. Underpin adjacent structures which may be damaged by excavation Work.
- B. Excavate subsoil to accommodate building foundations.
- C. Compact disturbed load-bearing soil in direct contact with foundations to original bearing capacity, as specified in Section 31 23 23 – Fill.
- D. Slope banks with machine to angle of repose or less until shored.
- E. Do not interfere with 45 -degree bearing splay of foundations.
- F. Grade top perimeter of excavation to prevent surface water from draining into excavation.
- G. Trim excavation and remove loose matter.
- H. Notify Engineer of unexpected subsurface conditions.
- I. Correct over-excavated areas with structural fill as specified in Section 31 23 23 - Fill as directed by Engineer.
- J. Remove excavated material from Site.
- K. Repair or replace items indicated to remain that have been damaged by excavation.

### 3.4 FIELD QUALITY CONTROL

- A. Section 01 73 00 - Execution and Section 01 77 00 - Closeout Procedures: Requirements for testing, adjusting, and balancing.
- B. Inspecting: Request visual inspection of bearing surfaces by Engineer before installing subsequent Work.

### 3.5 PROTECTION

- A. Section 01 73 00 - Execution and Section 01 77 00 - Closeout Procedures: Requirements for protecting finished Work.
- B. Prevent displacement or loose soil from falling into excavation and maintain soil stability.
- C. Protect bottom of excavations and soil adjacent to and beneath foundation from freezing.
- D. Protect structures, utilities, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards that may be created by earth operations.

END OF SECTION 31 23 16

## SECTION 31 23 18 - DEWATERING

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section includes construction dewatering.

#### 1.3 ALLOWANCES

- A. Dewatering observation wells are part of dewatering bid item.

#### 1.4 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.
  1. Verify availability of Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
  2. Review condition of site to be dewatered including coordination with temporary erosion-control measures and temporary controls and protections.
  3. Review proposed site clearing and excavations.
  4. Review existing utilities and subsurface conditions.
  5. Review observation and monitoring of dewatering system.

#### 1.5 ACTION SUBMITTALS

- A. Shop Drawings: For dewatering system, prepared by or under the supervision of a qualified professional engineer.
  1. Include plans, elevations, sections, and details.
  2. Show arrangement, locations, and details of wells and well points; locations of risers, headers, filters, pumps, power units, and discharge lines; and means of discharge, control of sediment, and disposal of water.
  3. Include layouts of piezometers and flow-measuring devices for monitoring performance of dewatering system.
  4. Include written plan for dewatering operations including sequence of well and well-point placement coordinated with excavation shoring and bracings and control procedures to be adopted if dewatering problems arise.

## 1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer land surveyor and professional engineer.
- B. Field quality-control reports.
- C. Existing Conditions: Using photographs or video recordings, show existing conditions of adjacent construction and site improvements that might be misconstrued as damage caused by dewatering operations. Submit before Work begins.
- D. Record Drawings: Identify locations and depths of capped wells and well points and other abandoned-in-place dewatering equipment.

## 1.7 QUALITY ASSURANCE

- A. Installer Qualifications: An experienced installer that has specialized in design of dewatering systems and dewatering work.

## 1.8 FIELD CONDITIONS

- A. Survey Work: Engage a qualified land surveyor or professional engineer to survey adjacent existing buildings, structures, and site improvements; establish exact elevations at fixed points to act as benchmarks. Clearly identify benchmarks and record existing elevations.

## PART 2 - PRODUCTS

### 2.1 PERFORMANCE REQUIREMENTS

- A. Dewatering Performance: Design, furnish, install, test, operate, monitor, and maintain dewatering system of sufficient scope, size, and capacity to control hydrostatic pressures and to lower, control, remove, and dispose of ground water and permit excavation and construction to proceed on dry, stable subgrades.
  - 1. Design dewatering system, including comprehensive engineering analysis by a qualified professional engineer.
  - 2. Continuously monitor and maintain dewatering operations to ensure erosion control, stability of excavations and constructed slopes, prevention of flooding in excavation, and prevention of damage to subgrades and permanent structures.
  - 3. Prevent surface water from entering excavations by grading, dikes, or other means.
  - 4. Accomplish dewatering without damaging existing buildings, structures, and site improvements adjacent to excavation.
  - 5. Remove dewatering system when no longer required for construction.
- B. Regulatory Requirements: Comply with governing EPA notification regulations before beginning dewatering. Comply with water- and debris-disposal regulations of authorities having jurisdiction.

## PART 3 - EXECUTION

### 3.1 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by dewatering operations.
  - 1. Prevent surface water and subsurface or ground water from entering excavations, from ponding on prepared subgrades, and from flooding site or surrounding area.
  - 2. Protect subgrades and foundation soils from softening and damage by rain or water accumulation.
- B. Install dewatering system to ensure minimum interference with roads, streets, walks, and other adjacent occupied and used facilities.
  - 1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by authorities having jurisdiction.
- C. Provide temporary grading to facilitate dewatering and control of surface water.
- D. Protect and maintain temporary erosion and sedimentation controls, which are shown on the Drawings.

### 3.2 INSTALLATION

- A. Install dewatering system utilizing wells, well points, or similar methods complete with pump equipment, standby power and pumps, filter material gradation, valves, appurtenances, water disposal, and surface-water controls.
  - 1. Space well points or wells at intervals required to provide sufficient dewatering.
  - 2. Use filters or other means to prevent pumping of fine sands or silts from the subsurface.
- B. Place dewatering system into operation to lower water to specified levels before excavating below ground-water level.
- C. Provide sumps, sedimentation tanks, and other flow-control devices as required by authorities having jurisdiction.
- D. Provide standby equipment on-site, installed, and available for immediate operation, to maintain dewatering on continuous basis if any part of system becomes inadequate or fails.

### 3.3 OPERATION

- A. Operate system continuously until drains, sewers, and structures have been constructed and fill materials have been placed or until dewatering is no longer required.



- B. Operate system to lower and control ground water to permit excavation, construction of structures, and placement of fill materials on dry subgrades. Drain water-bearing strata above and below bottom of foundations, drains, sewers, and other excavations.
  - 1. Do not permit open sump pumping that leads to loss of fines, soil piping, subgrade softening, and slope instability.
  - 2. Reduce hydrostatic head in water-bearing strata below subgrade elevations of foundations, drains, sewers, and other excavations.
  - 3. Maintain piezometric water level a minimum of 24 inches below bottom of excavation.
- C. Dispose of water removed by dewatering in a manner that avoids endangering public health, property, and portions of work under construction or completed. Dispose of water and sediment in a manner that avoids inconvenience to others.
- D. Remove dewatering system from Project site on completion of dewatering. Plug or fill well holes with sand or cut off and cap wells a minimum of 36 inches below overlying construction.

### 3.4 FIELD QUALITY CONTROL

- A. Observation Wells: Provide observation wells or piezometers, take measurements, and maintain at least the minimum number indicated; additional observation wells may be required by authorities having jurisdiction.
  - 1. Observe and record daily elevation of ground water and piezometric water levels in observation wells.
  - 2. Repair or replace, within 24 hours, observation wells that become inactive, damaged, or destroyed. In areas where observation wells are not functioning properly, suspend construction activities until reliable observations can be made. Add or remove water from observation-well risers to demonstrate that observation wells are functioning properly.
  - 3. Fill observation wells, remove piezometers, and fill holes when dewatering is completed.
- B. Survey-Work Benchmarks: Resurvey benchmarks monthly during dewatering and maintain an accurate log of surveyed elevations for comparison with original elevations. Promptly notify Architect if changes in elevations occur or if cracks, sags, or other damage is evident in adjacent construction.
- C. Provide continual observation to ensure that subsurface soils are not being removed by the dewatering operation.
- D. Prepare reports of observations.

### 3.5 PROTECTION

- A. Protect and maintain dewatering system during dewatering operations.
- B. Promptly repair damages to adjacent facilities caused by dewatering.

END OF SECTION 31 23 18

## SECTION 31 23 23 - FILL

### PART 1 GENERAL

#### 1.1 SUMMARY

##### A. Section Includes:

1. Backfilling building perimeter to subgrade elevations.
2. Backfilling site structures to subgrade elevations.
3. Fill under slabs-on-grade.
4. Fill under paving.
5. Fill for over-excavation.

#### 1.2 REFERENCES

##### A. American Association of State Highway and Transportation Officials:

1. AASHTO T180 - Standard Specification for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop.

##### B. ASTM International:

1. ASTM D698 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft<sup>3</sup> (600 kN-m/m<sup>3</sup>)).
2. ASTM D1556 - Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method.
3. ASTM D1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft<sup>3</sup> (2,700 kN-m/m<sup>3</sup>)).
4. ASTM D2167 - Standard Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method.
5. ASTM D2922 - Standard Test Method for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
6. ASTM D3017 - Standard Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth).

#### 1.3 SUBMITTALS

##### A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.

##### B. Product Data: Submit data for geotextile fabric indicating fabric and construction.

##### C. Samples: Submit, in air-tight containers, 10 lb sample of each type of fill to testing laboratory.

- D. Materials Source: Submit name of imported fill materials suppliers.
- E. Manufacturer's Certificate: Certify Products meet or exceed specified requirements.

#### 1.4 QUALITY ASSURANCE

- A. Perform Work in accordance with City of Callaway standard.
- B. Maintain one copy of each document on site.

### PART 2 PRODUCTS

#### 2.1 FILL MATERIALS

- A. Subsoil Fill: Per Geotechnical report.
- B. Structural Fill: Per Geotechnical report.
- C. Granular Fill: Per Geotechnical report.
- D.

### PART 3 EXECUTION

#### 3.1 EXAMINATION

- A. Verify subdrainage, dampproofing, or waterproofing installation has been inspected.
- B. Verify underground tanks are anchored to their own foundations to avoid flotation after backfilling.
- C. Verify structural ability of unsupported walls to support loads imposed by fill.

#### 3.2 PREPARATION

- A. Compact subgrade to density requirements for subsequent backfill materials.
- B. Cut out soft areas of subgrade not capable of compaction in place. Backfill with structural fill and compact to density equal to or greater than requirements for subsequent fill material.
- C. Scarify subgrade surface to depth of 6 inch.
- D. Proof roll to identify soft spots; fill and compact to density equal to or greater than requirements for subsequent fill material.

### 3.3 BACKFILLING

- A. Backfill areas to contours and elevations with unfrozen materials.
- B. Systematically backfill to allow maximum time for natural settlement. Do not backfill over porous, wet, frozen or spongy subgrade surfaces.
- C. Place geotextile fabric over fill prior to placing next lift of fill.
- D. Place material in continuous layers as follows:
  - 1. Subsoil Fill: Maximum 12 inches compacted depth.
  - 2. Structural Fill: Maximum 8 inches compacted depth.
  - 3. Granular Fill: Maximum 8 inches compacted depth.
- E. Employ placement method that does not disturb or damage other work.
- F. Maintain optimum moisture content of backfill materials to attain required compaction density.
- G. Backfill against supported foundation walls. Do not backfill against unsupported foundation walls.
- H. Backfill simultaneously on each side of unsupported foundation walls until supports are in place.
- I. Slope grade away from building minimum 2 percent slope for minimum distance of 10 ft, unless noted otherwise.
- J. Make gradual grade changes. Blend slope into level areas.
- K. Remove surplus backfill materials from site.
- L. Leave fill material stockpile areas free of excess fill materials.

### 3.4 TOLERANCES

- A. Top Surface of Backfilling Within Building Areas: Plus or minus 1/2 inch from required elevations.
- B. Top Surface of Backfilling Under Paved Areas: Plus or minus 1/2 inch from required elevations.
- C. Top Surface of General Backfilling: Plus or minus 1/2 inch from required elevations.

### 3.5 FIELD QUALITY CONTROL

- A. Perform laboratory material tests in accordance with ASTM D1557.
- B. Perform in place compaction tests in accordance with the following:

1. Density Tests: ASTM D1556, ASTM D2167, or ASTM D2922.
2. Moisture Tests: ASTM D3017.

- C. When tests indicate Work does not meet specified requirements, remove Work, replace and retest.
- D. Frequency of Tests: One every 2,000 square feet, but never less than three per site.
- E. Proof roll compacted fill surfaces under slabs-on-grade, pavers, paving.

### 3.6 PROTECTION OF FINISHED WORK

- A. Reshape and re-compact fills subjected to vehicular traffic.

### 3.7 SCHEDULE

A. Interior Crawl Spaces:

1. Fill Type per Geotechnical report, 8 inches thick, compact uniformly to 90 percent of maximum density.
2. Cover with Fill Type per Geotechnical report, 2 inches thick, compact uniformly to 95 percent of maximum density.

B. Interior Slab-On-Grade:

1. Fill Type per Geotechnical report, 8 inches thick, compacted to 95 percent.
2. Cover with Fill Type per Geotechnical report, 2 inches thick, compact uniformly to 95 percent of maximum density.

C. Exterior Side of Foundation Walls Retaining Walls and Over Granular Filter Material and Foundation Perimeter Drainage:

1. Fill Type per Geotechnical report, to subgrade elevation, each lift, compact uniformly to 90 percent of maximum density.

D. Underground Tanks:

1. Initial fill of Fill Type per Geotechnical report, 8 inches thick, compacted to 95 percent.
2. Remaining fill of Fill Type per Geotechnical report, to subgrade elevation, compact uniformly to 95 percent of maximum density.

E. Fill Under Grass Areas:

1. Fill Type per Geotechnical report, to 6 inches below finish grade, compact uniformly to 90 percent of maximum density.

F. Fill Under Landscaped Areas:

1. Fill Type per Geotechnical report, to 12 inches below finish grade, compact uniformly to 90 percent of maximum density.
- G. Fill For Berming:
1. Fill Type per Geotechnical report, to 12 inches below finish grade, compact uniformly to 90 percent of maximum density.
- H. Fill for French Drains or Well Points:
1. Fill Type per Geotechnical report, to 12 inches below finish grade, compact uniformly to 90 percent of maximum density.
- I. Fill Under Interlocking Pavers:
1. Fill Type per Geotechnical report, to underside of sand leveling bed, compact uniformly to 95 percent of maximum density.
- J. Fill Under Asphalt and Concrete Paving:
1. Compact subsoil to 95 percent of its maximum dry density.
  2. Fill Type per Geotechnical report, to 6 inches below finish paving elevation, compact uniformly to 95 percent of maximum density.
- K. Planter Boxes:
1. Fill Type per Geotechnical report, lightly tamped.
- L. Fill to Correct Over-excavation:
1. Lean concrete to minimum compressive strength of 1000 psi.
  2. Fill Type per Geotechnical report, flush to required elevation, compact uniformly to 95 percent of maximum density.

END OF SECTION 31 23 23

## SECTION 31 25 01 - SEDIMENTATION AND EROSION CONTROL

### PART 1 - GENERAL

#### 1.1 SCOPE OF WORK

- A. The CONTRACTOR shall furnish all labor, materials, equipment, and incidentals necessary to perform all installation, maintenance, removal, and area cleanup related to sedimentation control work as shown on the Drawings and as specified herein or as required to prevent the transport of silt or sediment outside the limits of construction. The work shall include, but not necessarily be limited to, installation of temporary access ways and staging areas, silt fences, temporary seeding, turbidity barriers, sediment removal and disposal, device maintenance, removal of temporary devices, temporary mulching, and final cleanup.
- B. The CONTRACTOR shall prepare a Sedimentation and Erosion Control Plan. This plan shall be used as a minimum in developing the Pollution Prevention Plan for the NPDES permit application (notification) to be filed by the CONTRACTOR.

#### 1.2 SUBMITTALS

- A. Within 10 days after award of Contract, the CONTRACTOR shall submit to the ENGINEER for approval, technical product literature for all commercial products to be used for sedimentation and erosion control.

#### 1.3 QUALITY ASSURANCE

- A. The CONTRACTOR shall be responsible for the timely installation and maintenance of all sedimentation control devices necessary to prevent the movement of sediment from the construction site to off-site areas, via surface runoff or underground drainage systems. Measures in addition to those shown on the Drawings necessary to prevent the movement of sediment outside the limits of construction shall be installed, maintained, removed, and cleaned up at the expense of the CONTRACTOR. No additional charges to the OWNER will be considered.
- B. Sedimentation and erosion control measures shall conform to the Best Management Practices outlined in the Drawings and in the Florida Development Manual.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

#### A. Silt Fence

1. Steel posts shall be a minimum of 5 feet in length, 2-1/2-in by 2-1/2-in by 1/4-in angle post with self-fastening tabs and a 5-in by 4-in (nominal) steel anchor plate at bottom.
2. Welded wire fabric shall be 4-in by 4-in mesh of 12 gauge by 12-gauge steel wire.
3. Silt fence fabric shall be a woven, polypropylene, ultraviolet resistant material such as Mirafi 100X as manufactured by Mirafi, Inc., Charlotte, NC or equal.
4. Tie wires for securing silt fence fabric to wire mesh shall be light gauge metal clips (hog rings), or 1/32-in diameter soft aluminum wire.
5. Prefabricated commercial silt fence may be substituted for built-in-field fence. Pre-fabricated silt fence shall be "Envirofence" as manufactured by Mirafi Inc., Charlotte, NC or approved equal.

- B. Turbidity Barriers: Turbidity barriers meeting FDOT Type I and Type II requirements shall be provided. Turbidity barrier may be floating or staked, based on the conditions at the location for installation. Turbidity barrier shall be capable of functioning properly for flow conditions up to a 5 year/24-hour storm event. Turbidity barriers shall be constructed of PVC or polypropylene material, all portions which will be exposed to direct sunlight shall be ultraviolet resistant. All metal components shall be corrosion resistant. Woven materials may be acceptable for installations where high flow conditions may exist during storm events. Turbidity barriers shall be "Mark I", "Mark II", or "PC-2" as manufactured by American Boom & Barrier Corporation, Cape Canaveral, FL or approved equal.

- C. Straw mulch shall be utilized on all newly graded areas to protect areas against washouts and erosion. Straw mulch shall be comprised of threshed straw of oats, wheat, barley, rye, or hay that is free from noxious weeds, mold or other objectionable material. The straw mulch shall contain at least 50 percent by weight of material to be 10-in or longer. Straw shall be in an air-dry condition and suitable for placement with blower equipment.

- D. Latex acrylic copolymer, such as Soil Sealant with coalescing agent as manufactured by Soil Stabilization Co., Merced, CA or approved equivalent shall be used as straw mulch tackifier.

- E. An asphalt tackifier may be used in place of a latex acrylic copolymer with prior written approval from the ENGINEER.

- F. Temporary Grassing: Certain areas of Grassing may be designated by the ENGINEER as temporary erosion control features. The ENGINEER may determine that permanent type grass seed be omitted from Grassing and the specified rate of spread for fertilizer used in conjunction with grassing operations be reduced when such work is designated as a temporary erosion control feature.



- G. Baled Hay or Straw: This work shall consist of construction of baled hay or straw dams to protect against downstream accumulations of silt. The baled hay or straw dams shall be constructed in accordance with the details in the FDOT Roadway and Traffic Design Standards. All baled hay or straw utilized shall comply with the provisions of FDOT Specification Section 104 for dry mulch.
- H. Erosion control matting shall be installed as shown on the drawings or as approved by the Engineer. Erosion control matting shall be North American Green P300 or approved equal.
- I. Excelsior matting shall be installed as shown on the drawings or as approved. Excelsior matting shall be North American Green SC150 or approved equal.
- J. Fabric formed concrete erosion protection shall be Armorform as manufactured by Nicolon, or equal. Material shall correspond to the 4-inch thick Uniform Section Mat (USM) or approved equal.

### PART 3 - EXECUTION

#### 3.1 LOCATION OF SEDIMENT/EROSION CONTROL AND TURBIDITY BARRIERS

- A. At a minimum, sediment/erosion control devices shall be installed at all locations shown on the plans and specified herein.
- B. Sediment/erosion control devices shall be installed at 500 feet intervals along all swales and ditches constructed and around all installed drainage structures prior to placement of sod.
- C. Sediment/erosion control shall be installed along all limits of construction.
- D. CONTRACTOR shall provide additional sediment/erosion control and turbidity barriers as needed to control the transport of silt and sediments outside of the limits of construction.
- E. Sediment/erosion control shall be installed around the base of all soil stockpile areas.
- F. Sediment/erosion control devices shall be installed along the perimeter of all staging areas.
- G. All disturbed areas, greater than one (1) acre, in which construction activities have stopped and are not anticipated to resume for a period of three months or longer shall be temporarily seeded, within five days of stoppage of construction.
- H. All disturbed areas, greater than one (1) acre, in which construction activities have been stopped and are not anticipated to resume for a period of 21 days, but not longer than

three months shall be temporarily mulched, within five days of stoppage of construction in accordance with Paragraph 3.4.

## 3.2 INSTALLATION

### A. Silt Fence Installation

1. Silt fences shall be positioned as specified indicated on the Drawings and as necessary to prevent movement of sediment produced by construction activities outside of the limits of construction or as approved.
2. Dig trench approximately 6-in wide and 6-in deep along proposed fence lines.
3. Drive metal-stakes, 8 feet on center (maximum) at back edge of trenches. Stakes shall be driven 2 feet (minimum) into ground.
4. Hang 4 by 4 woven wire mesh on posts, setting bottom of wire in bottom of trench. Secure wire to posts with self-fastening tabs.
5. Hang filter fabric on wire carrying to bottom of trench with about 4-in of fabric laid across bottom of trench. Stretch fabric fairly taut along fence length and secure with tie wires 12-in O.C. both ways.
6. Backfill trench with excavated material and tamp.
7. Install pre-fabricated silt fence according to MANUFACTURER's instructions.

### B. Hay Bale Barrier

1. Bales shall be either wire-bound or string-tied with the bindings oriented around the sides rather than over and under the bales.
2. Bales shall be placed lengthwise in a single row with the ends of adjacent bales tightly abutting one another.
3. The barrier shall be entrenched and backfilled. A trench shall be excavated the width of a bale and the length of the proposed barrier to a minimum depth of 4 inches. After bales are staked and chinked, the excavated soil shall be backfilled against the barrier. Backfilled material shall conform to the ground level on the downhill side and shall be built up to 2 inches against the uphill side.
4. Each bale shall be securely anchored by at least two stakes or rebars driven through the bale. The first stake shall be driven toward the previously laid bale to force the bales together. Stakes shall be driven deep enough into the ground to securely anchor the bales.
5. The gaps between each bale shall be chinked (filled by wedging) with straw to prevent water from escaping between the bales.

### C. Turbidity Barriers

1. Turbidity barriers should extend the entire depth of the water.
2. Turbidity barriers should not be placed perpendicular to flow. Barriers should be installed at an angle to the flow. Angle should be determined on the amount of flow in the waterway and the MANUFACTURER's recommendation.
3. Turbidity barrier should be 10 to 20 percent longer than the straight line measurement.
4. Joints between panels should be kept to a minimum.

5. Barrier should extend to the top of bank. All ends should be secured firmly to the shoreline.
6. Where significant flow is anticipated, a heavy woven pervious filter fabric may be substituted.

D. Inlet Protection

1. Inlet protection shall be installed for all catch basins, drop inlets, drop structures, inlets to drainage pipes, or other structures.
2. A 5-foot strip of sod shall be laid surrounding the perimeter of each structure.
3. A silt fence or haybale barrier shall be installed around the perimeter of the sodded area.

E. Fabric Formed Concrete Erosion Protection

1. Fabric formed concrete erosion protection shall be installed as shown on the drawings and in accordance with MANUFACTURER's recommendations.

F. Erosion Control and Excelsior Matting

1. Erosion control and excelsior matting blankets shall be installed as shown on the drawings and as approved in accordance with MANUFACTURER's instructions. The area to be covered shall be properly prepared before the blanket is applied. When the blanket is unrolled, the netting shall be on top and the fibers in contact with the soil over the entire area. The blankets shall be applied in the direction of water flow, and stapled. Blankets shall be placed a minimum of three rows (of 4-ft) wide (total approx. 12-ft width) and stapled together in accordance with MANUFACTURER's instructions. Side overlaps shall be 6-in minimum. The staples shall be made of wire, 0.091-in in diameter or greater, "U" shaped with legs 10-in in length and a 1-1/2-in crown. The staples shall be driven vertically into the ground, spaced approximately 2 linear feet apart, on each side, and one row in the center alternately spaced between each side. Upper and lower ends of the matting shall be buried to a depth of 4-in in a trench. The bottom of the fold shall be 4-in below the ground surface. Staple on both sides of fold. Where the matting must be cut or more than one roll length is required, turn down upper end of downstream roll into a trench to a depth of 4-in. Overlap lower end of upstream roll 4-inches past edge of downstream roll and staple.
2. To ensure full contact with soil surface, roll matting with a roller weighing 100 pounds per foot of width perpendicular to flow direction after placing matting, stapling and seeding and sodding. Thoroughly inspect channel after completion. Correct any areas where matting does not present a smooth surface in full contact with the soil below.

### 3.3 MAINTENANCE AND INSPECTIONS

A. Inspections

1. CONTRACTOR shall make a visual inspection of all sedimentation and erosion control devices (including turbidity barriers) once per week and promptly after every rainstorm. If such inspection reveals that additional measures are needed to

prevent movement of sediment to areas outside the limits of construction, CONTRACTOR shall promptly install additional devices as needed. Sediment controls in need of maintenance shall be repaired promptly.

2. CONTRACTOR shall keep a log of all inspections indicating the following:
  - a. Date and time of inspection
  - b. Inspector
  - c. Amount of rainfall
  - d. Erosion and sediment control devices inspected
  - e. Condition of sediment and erosion control devices
  - f. Repairs needed
  - g. Date repair is completed

**B. Device Maintenance**

1. Silt Fences
  - a. Remove accumulated sediment once it builds up to one-half of the height of the fabric.
  - b. Replace damaged fabric, or patch with a 2-ft minimum overlap.
  - c. Make other repairs as necessary to ensure that the fence is filtering all runoff directed to the fence.
2. Hay Bale Barriers
  - a. Remove accumulated sediment once it builds up to one-half of the height of the hay bales.
  - b. Replace damaged hay bales.
  - c. Make other repairs as necessary to ensure that the hay bales are filtering all runoff directed to the barrier.
3. Inlet Protection
  - a. Remove accumulated sediment once it builds up to one-half of the height of the barrier.
  - b. Remove all sediment accumulated within the barrier and replace damaged sod.
  - c. Make other repair as necessary to ensure that the inlet protection device is operating properly.
4. Turbidity Barriers
  - a. Turbidity barriers shall be inspected on a daily basis.
  - b. Replace damaged fabric, or patch with a 2 foot minimum overlap.
  - c. Make other repairs as necessary to ensure barriers are effectively maintaining turbidity levels outside of the barrier within regulatory limits.

**3.4 TEMPORARY MULCHING**

- A. Apply temporary mulch to areas where rough grading has been completed but final grading is not anticipated to begin within 21 days of the completion of rough grading. If construction activities are not planned to resume for three months or longer, the temporary seeding requirements shall be followed.

- B. Straw mulch shall be applied at rate of 2,000 lbs/acre and tackified with latex acrylic copolymer at a rate of 1 gal/1000 ft<sup>2</sup> diluted in a ratio of 30 parts water to 1 part latex acrylic copolymer mix.
- C. After temporary mulching, traffic should be kept to a minimum, except for designated temporary access roads.

### 3.5 REMOVAL AND FINAL CLEANUP

- A. Once the site has been fully stabilized against erosion, remove sediment control devices and all accumulated silt. Dispose of silt and waste materials in proper manner. Regrade all areas disturbed during this process and stabilize against erosion with surfacing materials as indicated on the Drawings or specified herein.

END OF SECTION 31 25 01

## SECTION 31 50 00 - EXCAVATION SUPPORT AND PROTECTION

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section includes temporary excavation support and protection systems.
- B. Related Requirements:
  - 1. Section 31 20 00 "Earth Moving" for excavating and backfilling and for controlling surface-water runoff and ponding.

#### 1.3 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.
  - 1. Review existing utilities and subsurface conditions.
  - 2. Review coordination for interruption, shutoff, capping, and continuation of utility services.
  - 3. Review proposed excavations.
  - 4. Review proposed equipment.
  - 5. Review monitoring of excavation support and protection system.
  - 6. Review coordination with waterproofing.
  - 7. Review abandonment or removal of excavation support and protection system.

#### 1.4 INFORMATIONAL SUBMITTALS

- A. Existing Conditions: Using photographs or video recordings, show existing conditions of adjacent construction and site improvements that might be misconstrued as damage caused by inadequate performance of excavation support and protection systems. Submit before Work begins.

#### 1.5 FIELD CONDITIONS

- A. Interruption of Existing Utilities: Do not interrupt any utility serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility according to requirements indicated:
  - 1. Notify Engineer no fewer than two days in advance of proposed interruption of utility.
  - 2. Do not proceed with interruption of utility without Engineer's written permission.

- B. Survey Work: Engage a qualified land surveyor or professional engineer to survey adjacent existing buildings, structures, and site improvements; establish exact elevations at fixed points to act as benchmarks. Clearly identify benchmarks and record existing elevations.

## PART 2 - PRODUCTS

### 2.1 PERFORMANCE REQUIREMENTS

- A. Provide, design, monitor, and maintain excavation support and protection system capable of supporting excavation sidewalls and of resisting earth and hydrostatic pressures and superimposed and construction loads.
  - 1. Contractor Design: Design excavation support and protection system, including comprehensive engineering analysis by a qualified professional engineer.
  - 2. Prevent surface water from entering excavations by grading, dikes, or other means.
  - 3. Install excavation support and protection systems without damaging existing buildings, structures, and site improvements adjacent to excavation.
  - 4. Continuously monitor vibrations, settlements, and movements to ensure stability of excavations and constructed slopes and to ensure that damage to permanent structures is prevented.

### 2.2 MATERIALS

- A. General: Provide materials that are either new or in serviceable condition.
- B. Structural Steel: ASTM A 36/A 36M, ASTM A 690/A 690M, or ASTM A 992/A 992M.
- C. Steel Sheet Piling: ASTM A 328/A 328M, ASTM A 572/A 572M, or ASTM A 690/A 690M; with continuous interlocks.
  - 1. Corners: Roll-formed corner shape with continuous interlock.
- D. Reinforcing Bars: ASTM A 615/A 615M, Grade 60, deformed.
- E. Tiebacks: Steel bars, ASTM A 722/A 722M.
- F. Tiebacks: Steel strand, ASTM A 416/A 416M.

## PART 3 - EXECUTION

### 3.1 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards that could develop during excavation support and protection system operations.
  - 1. Shore, support, and protect utilities encountered.

- B. Install excavation support and protection systems to ensure minimum interference with roads, streets, walks, and other adjacent occupied and used facilities.
  - 1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by authorities having jurisdiction.
- C. Locate excavation support and protection systems clear of permanent construction so that construction and finishing of other work is not impeded.

### 3.2 SHEET PILING

- A. Before starting excavation, install one-piece sheet piling lengths and tightly interlock vertical edges to form a continuous barrier.
- B. Accurately place the piling, using templates and guide frames unless otherwise recommended in writing by the sheet piling manufacturer. Limit vertical offset of adjacent sheet piling to 60 inches. Accurately align exposed faces of sheet piling to vary not more than 2 inches from a horizontal line and not more than 1:120 out of vertical alignment.
- C. Cut tops of sheet piling to uniform elevation at top of excavation.

### 3.3 TIEBACKS

- A. Drill, install, grout, and tension tiebacks.
- B. Test load-carrying capacity of each tieback and replace and retest deficient tiebacks.
  - 1. Have test loading observed by a qualified professional engineer responsible for design of excavation support and protection system.
- C. Maintain tiebacks in place until permanent construction is able to withstand lateral earth and hydrostatic pressures.

### 3.4 BRACING

- A. Bracing: Locate bracing to clear columns, floor framing construction, and other permanent work. If necessary to move brace, install new bracing before removing original brace.
  - 1. Do not place bracing where it will be cast into or included in permanent concrete work unless otherwise approved by Engineer.
  - 2. Install internal bracing if required to prevent spreading or distortion of braced frames.
  - 3. Maintain bracing until structural elements are supported by other bracing or until permanent construction is able to withstand lateral earth and hydrostatic pressures.



### 3.5 FIELD QUALITY CONTROL

- A. Survey-Work Benchmarks: Resurvey benchmarks weekly during installation of excavation support and protection systems, excavation progress, and for as long as excavation remains open. Maintain an accurate log of surveyed elevations and positions for comparison with original elevations and positions. Promptly notify Engineer if changes in elevations or positions occur or if cracks, sags, or other damage is evident in adjacent construction.
- B. Promptly correct detected bulges, breakage, or other evidence of movement to ensure that excavation support and protection system remains stable.
- C. Promptly repair damages to adjacent facilities caused by installation or faulty performance of excavation support and protection systems.

### 3.6 REMOVAL AND REPAIRS

- A. Remove excavation support and protection systems when construction has progressed sufficiently to support excavation and earth and hydrostatic pressures. Remove in stages to avoid disturbing underlying soils and rock or damaging structures, pavements, facilities, and utilities.
  - 1. Remove excavation support and protection systems to a minimum depth of 48 inches below overlying construction and abandon remainder.
  - 2. Fill voids immediately with approved backfill compacted to density specified in Section 31 20 00 "Earth Moving."
  - 3. Repair or replace, as approved by Engineer, adjacent work damaged or displaced by removing excavation support and protection systems.
- B. Leave excavation support and protection systems permanently in place.

END OF SECTION 31 50 00

## SECTION 33 05 07.13 - HDPE PIPE INSTALLATION BY HORIZONTAL DIRECTIONAL DRILL (HDD)

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

#### 1.2 DESCRIPTION OF WORK

- A. The extent of directional boring is shown on the drawings.
- B. The work included in this section covers the installation of carrier pipe for water mains by the directional boring (trenchless installation) method as described herein, within the limits indicated on the drawings. In general, include bore pit, pilot hole (as required), drilling fluids, carrier pipe, removal and disposal of drilling fluids and soil cuttings, soil reports as required by jurisdictional agencies, siltation and sediment control, and other work required to install the carrier pipe as specified herein and as shown on the drawings.
- C. Contractor shall furnish labor, equipment, materials, and supplies, and shall perform the work necessary to provide Owner with a complete, finished force main crossing via horizontal directional drilling.
- D. The proposed alignment length, profile and grade to which the water main shall be installed are noted on the applicable drawings. This profile indicates the minimum grade to which the pipe shall be installed.

#### 1.3 DESIGN/PERFORMANCE REQUIREMENTS

- A. Provide design engineering for the work as described in paragraph 1.2 and as described herein and on the contract drawings, including, but not limited to, the following elements:
  - 1. Bore hole diameter and length,
  - 2. Location of borehole entry and exit points,
  - 3. Drilling procedures,
  - 4. Pipeline pulling operations,
  - 5. Method of drilling fluid disposal,
  - 6. Area required for drilling operations and storage of pipe,
  - 7. Drilling fluids management plan, and

8. Review of plan and profile drawings and proposed horizontal and vertical alignment of the pipeline, with written certification of agreement with them, or recommended departure from them.
- B. Contractor's submitted design shall be signed and sealed by a Professional Engineer whose specialty includes design of horizontal drilling operations. The cost of these engineering services shall be included in the bid price.
- C. Contractor shall be responsible for conducting the job in accordance with applicable federal, state, and local permits, codes, and statutes.
- D. Contractor shall be responsible for keeping driveways and roadways accessible to traffic during the pipe joining and pulling operations by bridging over the area, providing ramps or other acceptable means approved by Engineer. This work shall be at no additional cost to Owner.

#### 1.4 SUBMITTALS

- A. Drawings: Working drawings showing in detail the size and location of boring pits together with sheeting and shoring to be used in supporting embankments and trench walls, and any other details of the proposed methods of installation required to allow adequate review by the Engineer. Contractor shall prepare a drilling plan indicating equipment proposed for each location, pull-back forces anticipated, and shall verify that the DR of the pipe specified is adequate to withstand the anticipated pull-back forces in addition to the earth, line, and groundwater loads.
- B. Shop Drawings: Complete layout and details for fabrication and installation of pipeline; including design data and calculations. Submittal shall include, but not be limited to, elements listed in paragraph 1.2 A.
- C. Task Schedule: Detailed schedule of tasks for each stage or operation involved in the work of this section. Include as a minimum the following major tasks:
  1. Preparatory earthwork operations,
  2. Drilling rig mobilization and set-up,
  3. Pipe delivery and on-site pipe joining operations,
  4. Pilot hole drilling and reaming operations,
  5. Pipeline pulling operations,
  6. Pipeline hydrostatic testing,
  7. Drilling fluid disposal, and
  8. Restoration and demobilization.
- D. Task Schedule shall conform to contract schedule as outlined in the General Provisions.
- E. On completion of pilot hole phase of each drill site, a complete set of "as-built" records shall be submitted in duplicate to the Engineer. Include copies of the plan and profile drawing, as well as directional survey reports as recorded during the drilling operation.

Upon completion, drawings shall be submitted to the Engineer in a CAD 2020 file format.

- F. Provide technical data of equipment to be utilized.
- G. Prior to approval, submit the names of supervisory field personnel and historical information of directional boring experience.
- H. Submit MSDS (Material Safety Data Sheets) information for the drilling slurry compounds.
- I. Disposal Plan: Describe Contractor's plans for disposal of the drilling fluid and the names, addresses, and telephone numbers of subcontractors who will be performing any portion of the disposal activities. At a minimum the plan shall include:
  - 1. Disposal method,
  - 2. Disposal hauler(s),
  - 3. Disposal locations,
  - 4. Estimated quantity to be disposed,
  - 5. Type of vehicle hauling drilling fluids,
  - 6. Signed statement that hauling equipment (ie., vehicle, tanker, dump truck, trailer, etc.) meets requirements of state agencies, and
  - 7. Letter from proposed disposal site(s) accepting material.
- J. Erosion Control Plan: Submit prior to the preconstruction conference. It shall be a written, detailed plan for the accomplishment of acceptable erosion control on the project. The plan shall describe necessary temporary measures to be implemented for preventing soil erosion from the construction site until permanent erosion control and finished surfaces are installed. The plan shall comply with federal (if applicable), state and local requirements.
- K. Pipe Connection Procedures: Submit to the Engineer prior to connecting any pipe. For plastic (HDPE) pipe, submit the pipe manufacturer's representative's written approval of his procedures.

## 1.5 PERMITS

- A. All work shall be performed according to the approved U.S. Army Corps permit and technical specifications. If additional permits are required, it will be the responsibility of the Contractor to obtain necessary permits prior to construction. Keep copies of the permits on site during construction operations.
- B. The cost for permits shall be included in the bid price.

## 1.6 QUALITY ASSURANCE

- A. Crossings must conform to applicable requirements of utility companies affected, State Highway Department, and environmental agencies.
- B. Qualifications: Contractor shall be thoroughly experienced in the type construction contemplated herein.
- C. Demonstrate expertise in trenchless methods by providing a list of five references for whom similar work has been performed within the last two years. Two of the references shall be from projects where the **SAME SIZE OR LARGER** pipe than the largest carrier pipe specified in the contract documents was successfully installed at a linear distance greater than or equal to the longest bore required by the contract documents. The references shall include a name and telephone number where contact can be made to verify capability. The subcontractor shall provide documentation showing successful completion of projects used for reference. Conventional trenching experience shall not be considered applicable.
- D. Upon completion of carrier pipe installation, pass a mandrel through the entire length of the bore in the presence of Owner's representative to inspect for roughness and necking. Mandrel shall not be more than two inches in diameter smaller than the ID of the carrier pipe installed. Mandrel and towrope shall be constructed of materials that will not scar or harm the carrier pipe in any manner.
- E. Pipe Manufacturer's Quality Control: The pipe manufacturer shall have an ongoing Quality Control program for incoming and outgoing materials. High-density polyethylene (HDPE) resins for manufacturing of pipe shall be checked for density, melt flow rate, and contamination. NSF shall approve these incoming resins before being converted to pipe. Pipe shall be checked for outside diameter, wall thickness, length, roundness, and surface finish on the inside and outside and end cut.
- F. Fittings Manufacturer's Quality Control: The fitting manufacturer shall have an ongoing quality control program for incoming and outgoing materials. Molded fittings shall be inspected for voids and knit lines. Fabricated fittings shall be inspected for joint quality and alignment. Fabricated fitting welds shall be made using a Data Logger. The fitting manufacturer shall maintain a record of the temperature, pressure, and graph of the fusion cycle.

## 1.7 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. The pipe and fitting manufacturer shall package products for shipment in a manner suitable for safe transport on commercial carriers. When delivered, a receiving inspection shall be performed, and any shipping damage reported to the pipe and fittings manufacturer. Pipe and fittings shall be handled, installed, and tested in accordance with manufacturer's recommendations and the requirements of this specification.
- B. Deliver and store materials as directed by Owner.

- C. Secure project materials and bear the cost of replacing any materials that may become misplaced or stolen.

## 1.8 JOB CONDITIONS

- A. Protect against surface subsidence, damage, or disturbance of adjacent property and facilities from construction methods.
- B. Each directional boring crew shall have a reasonable proportion of experienced men. A superintendent and/or engineer experienced in directional boring methods and techniques, and who represents the boring contractor, shall be present at all times while work is proceeding. He shall also be responsible for the frequent checking of line and grade, if needed. Tolerances should be agreed to in the light gradient and easement requirements.
- C. Coordinate and schedule construction work.

## 1.9 SAFETY

- A. Drilling equipment shall have a permanent inherent alarm system capable of detecting an electrical current. Ground system shall be equipped with an audible alarm to warn the operator when the drill head nears electrified cable.
- B. Crews shall be provided with grounded safety mats, heavy gauge ground cables with connectors, and hot boots and gloves.
- C. Supervisory personnel shall be adequately trained and have direct supervisory experience in directional boring.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. Drilling fluid shall be a gel-forming colloidal fluid consisting of at least 10% of high-grade bentonite, which is totally inert and contains no environmental risk, or equal.
- B. Carrier Pipe for Water Main:
  - 1. Pipe and fittings shall be high-density polyethylene manufactured from NSF approved PLEXCO P34CH compound, PE 4710, or equal.
  - 2. Pipe shall meet AWWA C-906, PE Pressure Pipe and Fittings 4" – 53" for Distribution and shall be marked with the NSF-pw logo. Water main shall be impregnated with three, 1" blue stripes the length of the pipe, equally spaced around the pipe.
  - 3. Hydrostatic design stress (HDS) shall be 1600 psi at 73.4°F as determined in accordance with ASTM 02837.

4. Pipe and fittings shall be produced by the same manufacturer from identical materials meeting the requirements of this specification.
5. Molded fittings shall meet the requirements of ASTM D-3261 and this specification. At the point of fusion, the outside diameter and minimum wall thickness of fitting butt fusion outlets shall meet the outside diameter and minimum wall thickness specifications of ASTM F-714 for the same size of pipe.
6. Pipe shall be manufactured in accordance with ASTM F-714, ASTM D-3035, or the applicable dedicated service specification. Print line markings shall include a production code from which the location and date of manufacture can be identified. Upon request, the manufacturer shall provide an explanation of his production code.
7. Pipe Marking: HDPE color coding shall be in accordance with the marking requirements specified herein.

<b>Base Bid – High Density Polyethylene Pipe (HDPE) Pipe</b>						
<b><u>Pipe Description</u></b>	<b><u>AWWA</u></b>	<b><u>Outside Di- ameter (in.)</u></b>	<b><u>DR</u></b>	<b><u>Color</u></b>	<b><u>Pressure Class (psig)</u></b>	<b><u>Inner Diameter (in.)</u></b>
<b>6” HDPE WM</b>	<b>C-906</b>	<b>6.90</b>	<b>11</b>	<b>Blue</b>	<b>200</b>	<b>5.57</b>

**C. ACCEPTABLE PIPE MANUFACTURER**

1. Performance Pipe, Driscoplex 4000, PE 3408, AWWA C-906, DIPS sizing, Richardson TX, (800) 527-0662; Supplier: ISCO Industries, Grand Bay, AL, 1-800-345-4726
2. JM Eagle, 5200 West Century Blvd, Los Angeles, CA 90045, 1-800-621-4404
3. Engineer approved equal.

D. Butt fusion Fittings: HDPE fittings shall be PE 4710 HDPE, Cell Classification of 345464C as determined by ASTM D3350-99 and approved for AWWA use. Butt fusion fittings shall have a manufacturing standard of ASTM D3261. Molded and fabricated fittings shall have a pressure rating equal to the pipe unless otherwise specified in the plans. Fabricated fittings shall be manufactured using Data Loggers. Temperature, fusion pressure, and a graphic representation of the fusion cycle shall be part of the Quality Control records. Fittings shall be suitable for use as pressure conduits, and per AWWA C906, shall have nominal burst values of three and one-half times the working pressure rating of the fitting.

E. Transition Fittings: Terminate HDPE pipe with fusion welded flanges (125 lb bolt pattern). See below for alternate fusion procedures.

F. Tracer wire shall be two strands of 6ga. Copper with green insulation.

**2.2 EQUIPMENT**

**A. Directional Drilling Equipment**

1. General: The directional drilling equipment shall consist of a directional drilling rig of sufficient capacity to perform the bore and pull back the pipe, a drilling fluid mixing, delivery and recovery system of sufficient capacity to successfully complete the installation, a drilling fluid recycling system to remove solids from the drilling fluid so that the fluid can be reused (if required), a magnetic guidance system or walk over system to accurately guide boring operations, a vacuum truck of sufficient capacity to handle the drilling fluid volume, and trained and competent personnel to operate the system. Equipment shall be in good, safe condition with sufficient supplies, materials, and spare parts on hand to maintain the system in good working order for the duration of the project.
2. Drilling Rig: The directional drilling machine shall consist of a hydraulically powered system to rotate and push hollow drilling pipe into the ground at a variable angle while delivering a pressurized fluid mixture to a guidable drill (bore) head. The machine shall be anchored to the ground to withstand the pulling, pushing, and rotating pressure required to complete the installation. The hydraulic power system shall be self-contained with sufficient pressure and volume to power drilling operations. Hydraulic system shall be free of leaks. Rig shall have a system to monitor and record maximum pullback pressure during pullback operations. There shall be a system to detect electrical current from the drill string and an audible alarm that automatically sounds when an electrical current is detected.
3. Drill Head: The drill head shall be steerable by changing its rotation and shall provide necessary cutting surfaces and drilling fluid jets.

#### B. GUIDANCE SYSTEM

1. General: An electronic walkover tracking system or a Magnetic Guidance System (MGS) probe or proven gyroscopic probe and interface shall be used to provide a continuous and accurate determination of the location of the drill head during the drilling operation. The guidance shall be capable of tracking at depths up to fifty feet and in any soil condition, including hard rock. It shall enable the driller to guide the drill head by providing immediate information on the tool face, azimuth (horizontal direction), and inclination (vertical direction). The guidance system shall be accurate and calibrated to manufacturer's specifications of the vertical depth of the borehole at sensing position at depths up to fifty feet and accurate to 2-feet horizontally.
2. Components: Supply components and materials to install, operate, and maintain the guidance system.
3. Guidance System shall be of a proven type and shall be set up and operated by personnel trained and experienced with the system. Operator shall be aware of any geo-magnetic anomalies and shall consider such influences in the operation of the guidance system.

### 2.3 JOINING METHODS

- A. Butt fusion joining: Plain end pipe and fittings shall be made using butt fusion. The butt fusion procedures shall be in accordance with the manufacturer or the PPI. The fusion



equipment operator shall receive training using the recommended procedure. Contractor shall verify that the fusion equipment is in good operating condition and that the operator has been trained within the past twelve months. Fusion equipment shall be equipped with a Data Logger. Records of the welds (heater temperature, fusion pressure, and a graph of the fusion cycle) shall be maintained for five (5) years. Fusion beads shall not be removed.

- B. Mechanical Joining: Polyethylene pipe and fittings shall be joined together using flanges or mechanical joint adapters. These fittings shall be made from PE 3048 HDPE, with a Cell Classification of 345464C as determined by ASTM D3350-99. Flanged and MJ adapters shall have a manufacturing standard of ASTM D3261. They shall have a pressure rating equal to the pipe unless otherwise specified on the plans.
- C. Electrofusion couplings: Polyethylene pipe and fittings shall be joined using approved electrofusion couplings. Fittings shall be PE 3408 HDPE, Cell Classification of 345464C as determined by ASTM D3350-99. Electrofusion fittings shall have a manufacturing standard of ASTM F1055. Fittings shall have a pressure rating equal to the pipe unless otherwise specified on the plans. Electrofusion fittings shall be suitable for use as pressure conduits, and per AWWA C906, shall have nominal burst values of three and one-half times the working pressure rating of the fitting.

## PART 3 - EXECUTION

### 3.1 EXECUTION

- A. Locate and confirm existing tie-in pipe dimension before submitting submittal to the Engineer.
- B. Set grade stakes, lines, and levels.
- C. Coordinate the locations of underground utilities with appropriate companies. Advise Engineer immediately if conflict exists. Locate existing utilities using ground-penetrating radar.
- D. Operate and maintain equipment as required to keep the work free from excessive spoil and environmental risks.
- E. Install siltation fences, sediment barriers, etc. as required and shown on Contractor's Erosion Control Plan drawings.
- F. Perform the necessary general earthwork operations as required for the directional drilling and pipe pulling operations.
- G. Restore to pre-work conditions the areas impacted by Contractor's work effort.
- H. Construct appropriate means of temporary access to the designated work sites.

- I. Accept liability for damages caused as a result of the work.

### 3.2 INSTALLATION

- A. Installation shall be in a trenchless manner producing continuous bores. The entry point shall be where shown on the plan submitted as required in 1.2 above. The exit point for the drilled hole shall be within 5 feet laterally and within 10 feet longitudinally of where shown on the plan submitted as required in 1.2 above. No exception to this requirement shall be allowed.
- B. The tunneling system shall be remotely steerable and shall permit electronic monitoring of tunnel depth and location.
- C. Tunneling shall be performed by a fluid-cutting process (high pressure-low volume) utilizing a liquid clay, i.e., bentonite. The clay lining will maintain tunnel stability and provide lubrication in order to reduce frictional drag while the pipe is being installed. In addition, the clay fluid shall be totally inert and shall contain no environmental risk.
- D. Provide a mobile vacuum spoils recovery vehicle on site to remove the drilling spoils from the access pits. The spoils shall be transported from the job site and shall be properly disposed. Under no circumstances shall drilling spoils be permitted to be disposed into sanitary, storm, or other public or private drainage systems.
- E. Mechanical, pneumatic, or water-jetting methods are unacceptable due to the possibility of surface subsidence.
- F. After an initial bore has been completed, a reamer shall be installed at the termination pit and the pipe shall be pulled back to the starting pit. The reamer shall be capable of discharging liquid clay to facilitate the installation of the pipe into a stabilized and lubricated tunnel.
- G. Provide material, equipment, and facilities required for directional drilling. Proper alignment and elevation of the borehole shall be consistently maintained throughout the directional drilling operation. The method used to complete the directional drill shall conform to the requirements of applicable permits.
- H. The entire drill path shall be accurately surveyed with entry and exit stakes placed in the appropriate locations within the areas indicated on drawings. If Contractor is using a magnetic guidance system, drill path shall be surveyed for any surface geo-magnetic variations or anomalies.
- I. Place a silt fence between drilling operations and drainage, well-fields, wetland, waterway or other area designated for such protection necessary by documents, state, federal, and local regulations. Additional environmental protection necessary to contain any hydraulic or drilling fluid spills shall be put in place, including berms, liners, turbidity curtains, and other measures. Fuel shall not be stored in bulk containers within 200 feet of any water body or wetland.

- J. Readings shall be recorded after advancement of each successive drill pipe, (no more than 15') and the readings plotted on a scaled drawing of 1" = 5', both vertical and horizontal. Access to recorded readings and plan and profile information shall be made available to the Engineer or his representative at all times. The deflection radius of the drill pipe shall not exceed the deflection limits of the carrier pipe as specified herein.
- K. A complete list of drilling fluid additives and mixtures to be used in the directional operation shall be submitted to the Engineer, along with their respective Material Safety Data Sheets. Drilling fluids and loose cuttings shall be contained in pits or holding tanks for recycling or disposal, and no fluids shall be allowed to enter any unapproved areas or natural waterways. Upon completion of the directional drill project, dispose of the drilling mud and cuttings at an approved dumpsite.
- L. The pilot hole shall be drilled on bore path with no deviations greater than 5% of depth over a length of 100-feet. In the event the pilot does deviate from the bore path more than 5-feet of depth in 100-feet, Contractor shall notify Engineer and Engineer may require Contractor to pullback and re-drill from the location along bore path before the deviation. In the event the drilling fluid fractures, inadvertent returns or returns loss occurs during pilot hole drilling operations, Contractor shall cease drilling, wait at least 30 minutes, inject a quantity of drilling fluid with a viscosity exceeding 120 seconds as measured by a March funnel, and wait another 30 minutes. If mud fracture or returns loss continues, Contractor shall discuss additional options with Engineer and work shall then proceed accordingly.
- M. Flange/MJ Adapter Installation: Flanges/MJ Adapters shall be attached to pipe and fittings using butt fusion. The flanges/MJ adapters shall be aligned and centered relative to the pipe. Flanges/MJ adapters shall be square with the valve or other flange before tightening of bolts. Bolts shall not be used to draw flanges into alignment. Bolt threads shall be lubricated, and flat washers shall be used under flange nuts. Bolts shall be tightened using a "star tightening pattern". See manufacturer's recommendations. Twenty-four hours after first tightening the flange bolts, they shall be re-tightened using the same "star tightening pattern" used above. The final tightening torque shall be as indicated by the manufacturer.
- N. Socket and saddle fusions shall be tested by a bent strap test as described by the pipe manufacturer. The pipe manufacturer shall provide visual guidelines for inspecting the butt, saddle, and socket fusions joints.
- O. Retrieve or seal any pipe that becomes lodged in the drill hole.

### 3.3 PIPE PULLING OPERATIONS

- A. The full length of the pipe to be installed shall be laid out, welded, and tested in one complete unit before being pulled back through the drilled hole. Once started, pipeline pullback shall be continuous unless approved otherwise in writing by Owner or Owner's designated representative.

- B. The pulling head shall be designed by Contractor to withstand the continuous tensile pull stresses with intermittent sudden occasional surges. Contractor shall be responsible for determining the pulling loads.
- C. The pipe shall be continuously lubricated with bentonite slurry and the assembled pipeline shall be laid on rollers, or other apparatus, to facilitate pullback and prevent damage to pipe.
- D. Tracer wire shall be pulled back with the pipe.
- E. Pull back until 10 linear feet (minimum) of pipe is above ground for the purpose of pipe inspection.
- F. A blind flange shall be bolted to the fusion-welded flange, and the pipe shall be marked and buried with a minimum cover of 36-inches. Connections will require the removal of the blind flange and a flanged ductile iron adapter shall be bolted to the fusion-welded flange suitable for the transitional material, if necessary. Provide restrained joints or Megalug joint restraint as required.

### 3.4 TESTING

- A. Conduct a low-pressure air test of the HDPE force main above ground prior to pullback as follows:
  - 1. Secure and brace ends of pipe to be tested.
  - 2. Provide calibrated low range air pressure gauge on high end of pipe.
  - 3. Fill pipe to maximum pressure of 20.0 psig. Add air as necessary to compensate for internal/external pipe temperature and initial pipe expansion. Check pipe joints and test fittings with mild soap solution. Repair or replace leaking joints, pipe and/or fittings.
  - 4. Once air pressure has stabilized, pipe should hold constant air pressure for two hours. If pipe does not hold pressure, check joints and test fittings with soap solution.
  - 5. Repair or replace sources of leakage and completely retest entire section.
- B. Conduct a hydrostatic test (in ground – after pipe pullback).
  - 1. Fill the pipe with potable water and after free air is removed from the test section, raise the pressure at a steady rate to the required pressure. Measure pressure in the section with calibrated pressure gauges at each end of the pipe section.
  - 2. Test pressure shall not exceed 1.5 times the rated operating pressures (100 psi) of the pipe or the lowest rated component in the system. Apply initial pressure test and allow to stand without makeup water for a sufficient time to allow for diametric expansion or pipe stretching to stabilize. This usually occurs within 2-3 hours. After this equilibrium period, the test section can be returned to the 1.5 times operating pressure, the pump turned off, and a final test pressure held for three hours.

3. Immediately following the pressure test, the results shall be furnished to the Engineer or Inspector. Leaking pipes that cannot be repaired to meet pressure test shall be removed, filled with concrete, or otherwise placed out of service.

### 3.5 DAMAGED OR IMPROPERLY INSTALLED PIPE

- A. If the pipe is damaged before installation, or does not meet the specifications, it shall be replaced at no expense to Owner. If the pipe is damaged during installation by Contractor's operations, placed at the improper grade or line, or cannot be advanced because of an unseen obstruction or any other reason, it shall, at the discretion of the Engineer, be retrieved or abandoned in place and the void filled with concrete by pressure grouting as soon as possible. If it becomes necessary to drill another hole, an alternate installation shall be made as directed by the Engineer. Contractor shall re-drill the hole and furnish additional labor and materials required to complete the job as indicated on the plans and specifications at no additional cost to Owner. The cost for retrieval or abandonment of pipe shall be at the expense of Contractor. No additional payment shall be made for pipe which is retrieved, abandoned, or damaged beyond use, including dewatering, excavation, drilling, backfilling, etc.
- B. Sections of pipe having been discovered with cuts or gouges in excess of 10% of the pipe wall thickness shall be cut out and removed. Undamaged portions of the pipe shall be rejoined using one of the joining methods allowed in the Section.

END OF SECTION 33 05 07.13

## SECTION 33 11 16 - SITE WATER UTILITY DISTRIBUTION PIPING

### PART 1 - GENERAL

#### 1.1 SUMMARY

##### A. Section Includes:

1. Pipe and fittings for Site water line, including domestic water line.
2. Tapping sleeves and valves.
3. Valves: Gate, ball, swing check, and butterfly.
4. Positive displacement meters.
5. Reduced-pressure backflow preventers.
6. Underground pipe markers.
7. Valve boxes.
8. Bedding and cover materials.

##### B. Related Requirements:

1. Section 03 30 00 - Cast-in-Place Concrete: Concrete.
2. Section 31 23 16 - Excavation: Product and execution requirements for excavation and backfill.
3. Section 31 23 23 - Fill: Requirements for backfill to be placed by this Section.

#### 1.2 REFERENCE STANDARDS

##### A. American Association of State Highway and Transportation Officials:

1. AASHTO T 180 - Standard Method of Test for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop.

##### B. American Society of Sanitary Engineering:

1. ASSE 1012 - Performance Requirements for Backflow Preventers with an Intermediate Atmospheric Vent.
2. ASSE 1013 - Performance Requirements for Reduced Pressure Principle Backflow Preventers and Reduced Pressure Principle Fire Protection Backflow Preventers.

##### C. ASTM International:

1. ASTM A48 - Standard Specification for Gray Iron Castings.
2. ASTM A48M - Standard Specification for Gray Iron Castings.
3. ASTM D698 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12 400 ft-lbf/ft<sup>3</sup> (600 kN-m/m<sup>3</sup>)).
4. ASTM D1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft<sup>3</sup> (2,700 kN-m/m<sup>3</sup>)).

5. ASTM D1785 - Standard Specification for Poly (Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120.
6. ASTM 02737 – Standard Specification for Polyethylene (PE) Plastic Tubing.
7. ASTM D2466 - Standard Specification for Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 40.
8. ASTM D2855 - Standard Practice for Making Solvent-Cemented Joints with Poly (Vinyl Chloride) (PVC) Pipe and Fittings.
9. ASTM D3035 - Standard Specification for Polyethylene (PE) Plastic Pipe (DR-PR) Based on Controlled Outside Diameter.
10. ASTM D3139 - Standard Specification for Joints for Plastic Pressure Pipes Using Flexible Elastomeric Seals.
11. ASTM D6938 - Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth).

D. American Water Works Association:

1. AWWA C500 - Metal-Seated Gate Valves for Water Supply Service.
2. AWWA C504 - Rubber-Seated Butterfly Valves, 3 In. (75 mm) Through 72 In. (1,800 mm).
3. AWWA C508 - Swing-Check Valves for Waterworks Service, 2-In. Through 24-In. (50-mm Through 600-mm) NPS.
4. AWWA C509 - Resilient-Seated Gate Valves for Water Supply Service.
5. AWWA C600 - Installation of Ductile-Iron Mains and Their Appurtenances.
6. AWWA C606 - Grooved and Shouldered Joints.
7. AWWA C700 - Cold-Water Meters - Displacement Type, Bronze Main Case.
8. AWWA C701 - Cold-Water Meters - Turbine Type, for Customer Service.
9. AWWA C702 - Cold-Water Meters - Compound Type.
10. AWWA C706 - Direct-Reading, Remote-Registration Systems for Cold-Water Meters.
11. AWWA C900 - Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, 4 In. Through 12 In. (100 mm Through 300 mm), for Water Transmission and Distribution.
12. AWWA C901 - Polyethylene (PE) Pressure Pipe and Tubing, 1/2 In. (13 mm) Through 3 In. (76 mm) for Water Service.
13. AWWA M6 - Water Meters - Selection, Installation, Testing, and Maintenance.

E. Manufacturers Standardization Society of the Valve and Fittings Industry:

1. MSS SP-60 - Connecting Flange Joints between Tapping Sleeves and Tapping Valves.

### 1.3 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.
- B. Product Data: Submit data on pipe materials, pipe fittings, valves, and accessories.
- C. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
- D. Field Quality-Control Submittals: Indicate results of Contractor-furnished tests and inspections.

#### 1.4 CLOSEOUT SUBMITTALS

- A. Section 01 73 00 - Execution and Section 01 77 00 - Closeout Requirements: Requirements for submittals.
- B. Project Record Documents: Record actual locations of piping mains, valves, connections, thrust restraints, and invert elevations.
- C. Identify and describe unexpected variations to subsoil conditions or discovery of uncharted utilities.

#### 1.5 QUALITY ASSURANCE

- A. Perform Work according to City of Callaway standards.
- B. Maintain 1 copy of each standard affecting Work of this Section on Site.
- C. All items in Part 2 – Products shall meet the NSF-61 requirement.

#### PART 2 - PRODUCTS

- A. HDPE Pipe:
  - 1. Pipe: Comply with AWWA C901 and ASTM 02737.
    - a. Comply with AWWA C901.
    - b. Type: Molded or fabricated.
  - 2. Joints: Butt fusion.
- B. PVC Pipe:
  - 1. ASTM D1785, Schedule 40.
  - 2. Fittings: ASTM D2466, PVC.
  - 3. Joints:
    - a. Comply with ASTM D2855.
    - b. Type: Solvent weld.

#### 2.2 SERVICE SADDLE

- A. Approved Manufacturer/Style:
  - 1. Ford F202.
  - 2. Romac 202NS.
- B. Service Saddle:



1. Saddles shall have two stainless steel 2-inch straps.

C. Description:

1. Material: Ductile or cast iron.
2. Coating: Epoxy Nylon.

## 2.3 GATE VALVES

- A. Approved Manufacturer: American Darling or M&H.
- B. Furnish materials according to City of Callaway standards.
- C. 2-1/2 Inch and Smaller: Brass or bronze body, non-rising stem, inside screw, single wedge or disc, IPS ends, with control rod, valve box, and valve key.
- D. Mark manufacturer's name and pressure rating on valve body.

## 2.4 BALL VALVES

- A. Approved Manufacturer: Ford #B-11-77W or A.Y. McDonald #4134-135.
- B. Furnish materials according to City of Callaway standards.
- C. 2 Inch and Smaller: Brass body, TEFC-coated brass ball, rubber seats and stem seals, tee stem pre-drilled for control rod, FIP inlet end, FIP outlet with electrical ground connector, with control rod, valve box, and valve key.
- D. Mark manufacturer's name and pressure rating on valve body.

## 2.5 SWING CHECK VALVES

- A. Furnish materials according to City of Callaway standards.
- B. 2 Inches to 24 Inches: AWWA C508, iron body, bronze trim, 45-degree swing disc, renewable disc and seat, and flanged ends.
- C. Mark manufacturer's name and pressure rating on valve body.

## 2.6 BUTTERFLY VALVES

- A. Furnish materials according to City of Callaway standards.
- B. 2 Inches to 24 Inches: AWWA C504, iron body, bronze disc, resilient replaceable seat, water or lug ends, 10-position lever handle.
- C. Mark manufacturer's name and pressure rating on valve body.

## 2.7 POSITIVE DISPLACEMENT METERS

A. Furnish materials according to City of Callaway standards.

B. Description:

1. Comply with AWWA C700 C701 or C702.
2. Type: Positive displacement disc.
3. Case Material: Bronze.
4. Bottom Cap:
  - a. Material: Cast iron.
  - b. Type: Frost-proof, breakaway.
5. Register: Hermetically sealed.
6. Remote Reading: Comply with AWWA C706.

C. Meter:

1. Description: Brass body turbine meter with magnetic drive register.
2. Service: Cold water, 122 degrees F.

## 2.8 REDUCED-PRESSURE BACKFLOW PREVENTERS

A. Furnish materials according to City of Callaway standards.

B. Description:

1. Comply with ASSE 1013.
2. Materials:
  - a. Body: Bronze.
  - b. Internal Parts: Bronze.
  - c. Springs: Stainless steel.
3. Check Valves:
  - a. Quantity: Two.
  - b. Description: Independently operating, spring-loaded.
  - c. Type: Diaphragm type, differential pressure relief, located between check valves.
  - d. Provide third check valve opening under back pressure in case of diaphragm failure.
  - e. Vent Outlet: Non-threaded.
4. Provide two gate valves, one strainer, and four test cocks.

C. Double Check Valve Assemblies:

1. Comply with ASSE 1012.

2. Description: Two independently operating check valves, with intermediate atmospheric vent.
3. Materials:
  - a. Body: Bronze.
  - b. Internal Parts: Corrosion resistant.
  - c. Springs: Stainless steel.

## 2.9 UNDERGROUND PIPE MARKERS

- A. Pipe markers shall be per City of Callaway standard detail.
- B. Polyethylene Tape:
  1. Conform to ASTM D1248 – Type I Class A, Grade E-1 for polyethylene plastic molding and extrusion material.
  2. Brightly colored, continuously printed.
  3. Minimum 6 inches wide by 4 mil thick.
  4. Manufactured for direct burial service.

## 2.10 VALVE BOXES

- A. Approved Manufacturer: Clow, Mueller, Tyler or Baileyor.
- B. Furnish materials according to City of Callaway standards.
- C. Description:
  1. Valve boxes and covers, including position indicators and valve extensions, and as indicated on Drawings.
  2. Material: Cast iron with a minimum diameter of 4.5 inches.
  3. Type: Extension, with slide adjustment.
  4. Covers marked water to indicate utility.

## 2.11 MATERIALS

- A. Bedding and Cover:
  1. Bedding: Fill Type A1 A2 or A3, as specified in Section.
  2. Cover: Fill Type A1 A2 or A3, as specified in Section.
  3. Soil Backfill from Above Pipe to Finish Grade:
    - a. Soil Type S1, as specified in Section.
    - b. Subsoil with no rocks over 6 inches in diameter, frozen earth, or foreign matter.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Section 01 73 00 - Execution and Section 01 77 00 - Closeout Requirements: Requirements for installation examination.
- B. Verify the existing utility water main sizes, locations, and elevations are as indicated on Drawings. Water main valve size shall be verified before product submittals are submitted to the Engineer.

### 3.2 PREPARATION

- A. Section 01 73 00 - Execution and Section 01 77 00 - Closeout Requirements: Requirements for installation preparation.
- B. Cut pipe ends square, ream pipe and tube ends to full pipe diameter, and remove burrs.
- C. Remove scale and dirt on inside and outside before assembly.
- D. Prepare pipe connections to equipment with flanges or unions.
- E. Protect and support existing distribution piping and appurtenances as Work progresses.

### 3.3 INSTALLATION

- A. Piping:
  - 1. Maintain separation of water main from sewer piping according to code.
  - 2. Group piping with other Site piping work whenever practical.
  - 3. Install pipe to elevations indicated on Drawings.
  - 4. Install piping and fittings according to AWWA C600.
  - 5. Route pipe in straight line.
  - 6. Install access fittings to permit disinfection of water system.
  - 7. Establish elevations of buried piping with not less than 3 feet of cover.
  - 8. Pipe Markers:
    - a. Install plastic ribbon tape and trace wire continuous over top of pipe.
    - b. Coordinate with trench Work.
  - 9. Installation Standards: Install Work according to City of Callaway standards.
- B. Meters:
  - 1. Install positive displacement meters according to AWWA M6 with isolating valves on inlet and outlet.
  - 2. Installation Standards: Install Work according to City of Callaway standards.

C. Service Connections:

1. Install water service according to utility company requirements with reduced-pressure backflow preventer double check valve backflow preventer, and water meter with bypass valves as required.
2. Install water meter and backflow preventer in concrete vault located on Site as specified in Section as shown on drawings.
3. Installation Standards: Install Work according to City of Callaway standards.

3.4 TOLERANCES

- A. Section 01 40 00 - Quality Requirements: Requirements for tolerances.
- B. Install pipe within tolerance of 5/8 inch.

3.5 FIELD QUALITY CONTROL

- A. Section 01 40 00 - Quality Requirements: Requirements for inspecting and testing.
- B. Pressure test system according to AWWA C600 and following:
  1. Test Pressure: Not less than 150 psig or 50 psi in excess of maximum static pressure, whichever is greater.
  2. Conduct hydrostatic test for at least two hours.
  3. Slowly fill with water section to be tested and expel air from piping by installing corporation cocks at high points.
  4. Close air vents and corporation cocks after air is expelled and raise pressure to specified test pressure.
  5. Observe joints, fittings, and valves under test. Remove and renew cracked pipes, joints, fittings, and valves showing visible leakage and retest.
  6. Correct visible deficiencies and continue testing at same test pressure for additional two hours to determine leakage rate.
  7. Maintain pressure within plus or minus 5 psi of test pressure.
  8. Leakage is defined as quantity of water supplied to piping necessary to maintain test pressure during period of test.
  9. Compute maximum allowable leakage using following formula:

$L = SD \times \sqrt{P}/C$
L = testing allowance, in gph
S = length of pipe tested, in feet
D = nominal diameter of pipe, in inches
P = average test pressure during hydrostatic test, in psig
C = 148,000
When pipe under test contains sections of various diameters, calculate allowable leakage from sum of computed leakage for each size.

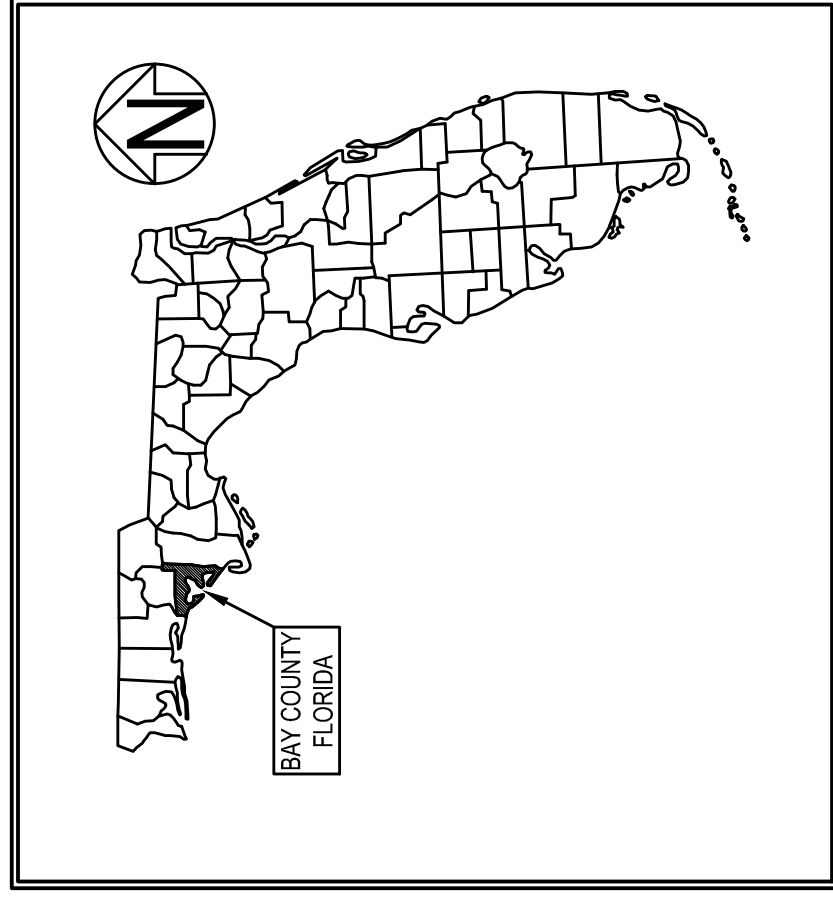
10. When test of pipe indicates leakage greater than allowed, locate source of leakage, make corrections, and retest until leakage is within allowable limits.
11. Correct visible leaks regardless of quantity of leakage.
12. Testing shall be in accordance with City of Callaway standards.

- C. Compaction Testing for Bedding: Comply with ASTM D1557.
- D. When tests indicate Work does not meet specified requirements, remove Work, replace, and retest.
- E. Frequency of Compaction Tests: 1 every 2,000 Sq. Ft but not less than three.

END OF SECTION 33 11 16

# CONSTRUCTION PLANS FOR

# THE CITY OF CALLAWAY BERTHE BRIDGE & ASSOCIATED INFRASTRUCTURE



PREPARED FOR:  
**CITY OF CALLAWAY**

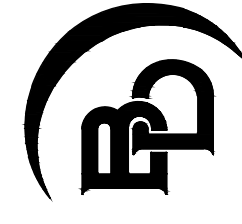
JULY 2022



CITY OF CALLAWAY  
CITY COMMISSION

PAMN HENDERSON	MAYOR
SCOTT DAVIS	WARD I COMMISSIONER
DAVID GRIGGS	WARD II COMMISSIONER
BOB PELLETIER	WARD III COMMISSIONER
FRANK MANCINELLI	WARD IV COMMISSIONER
EDDIE COOK	CITY MANAGER
BILL FRYE	PUBLIC WORKS DIRECTOR

PREPARED BY:



**BASKERVILLE-DONOVAN, INC.**  
ENGINEERING THE SOUTH SINCE 1927

14101 PANAMA CITY BEACH PARKWAY, SUITE 110  
PANAMA CITY BEACH, FLORIDA 32413 (850) 230-6150

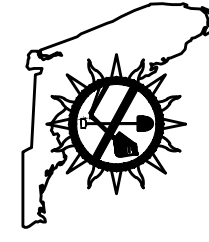
PENSACOLA - PANAMA CITY BEACH - TALLAHASSEE - MOBILE

ENGINEERING BUSINESS: EB-0000340

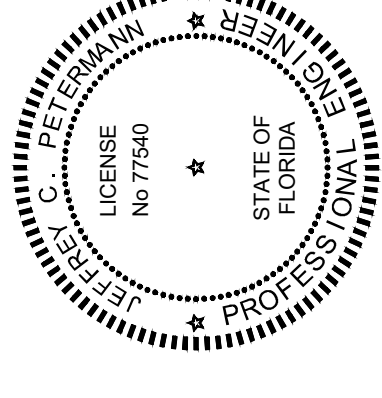
ENGINEER'S PROJECT NO.: 27653.01



LOCATION MAP  
NOT TO SCALE



48 HOURS BEFORE YOU DIG  
CALL SUNSHINE  
1-800-432-4770  
IT'S THE LAW IN FLORIDA  
FL STATUTE 553.851 (1979) REQUIRES  
MIN. OF 2 DAYS AND MAX. OF 5 DAYS  
NOTICE BEFORE YOU EXCAVATE.



THIS ITEM HAS BEEN DIGITALLY SIGNED AND  
SEALED BY JEFFREY C. PETERMANN ON THE  
DATE ADJACENT TO THE SEAL. PRINTED COPIES  
OF THIS DOCUMENT ARE NOT CONSIDERED  
SIGNED AND SEALED AND THE SIGNATURE  
MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

## SHEET INDEX

CIVIL DRAWING (BASKERVILLE-DONOVAN)
G-000 COVER SHEET
G-001 GENERAL NOTES AND LEGEND
C-100 EXISTING CONDITIONS PLAN
C-101 DEMOLITION & EROSION CONTROL PLAN
C-102 OVERALL PLAN
C-103 CONTROL PLAN
C-104 ROADWAY PLAN AND PROFILE
C-105 ROADWAY PLAN AND PROFILE
C-106 GRADING PLAN
C-107 TYPICAL ROADWAY SECTION
C-108 R/W TO R/W CROSS-SECTIONS
C-109 R/W TO R/W CROSS-SECTIONS
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C-111 R/W TO R/W CROSS-SECTIONS
C-112 R/W TO R/W CROSS-SECTIONS
C-113 DRIVEWAY/MINNEOLA ST PLAN AND PROFILE
C-114 WATER MAIN DIRECTIONAL DRILL PLAN AND PROFILE
C-900 DETAILS
C-901 DETAILS

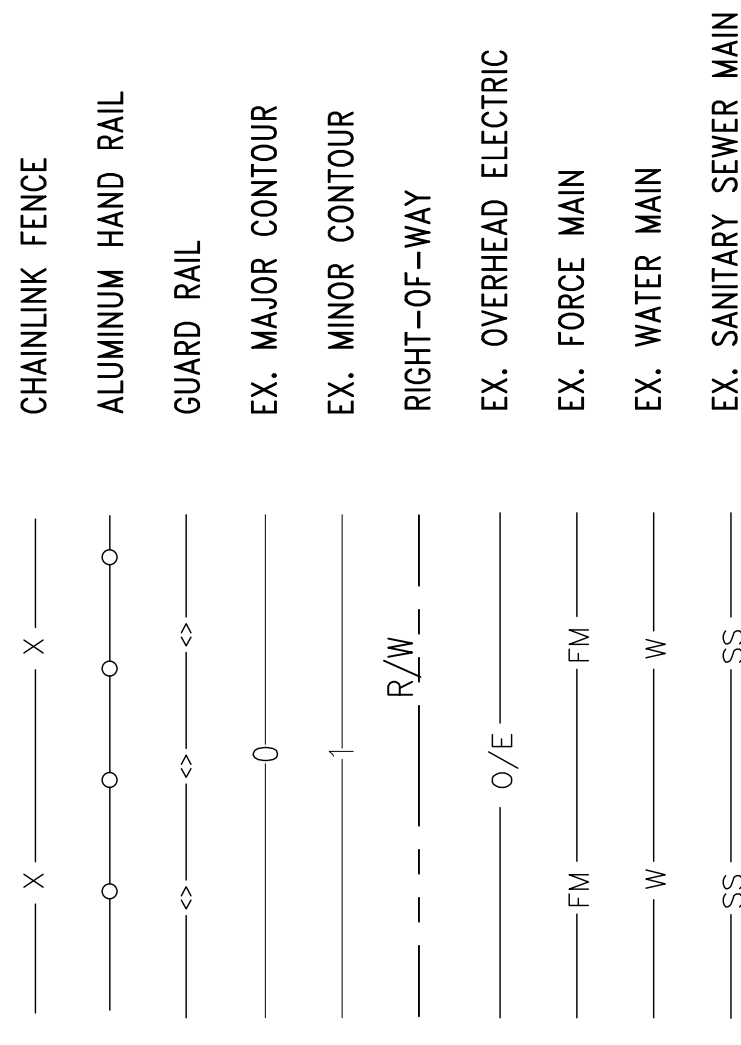
## BERTHE AVE BRIDGE-BRIDGE REPLACEMENT STRUCTURAL BRIDGE DRAWINGS (WOOLPERT)

B1-1 PLAN AND ELEVATION
B1-2 STRUCTURAL NOTES
B1-3 FOUNDATION PLAN
B1-4 BEGIN BENT PLAN AND ELEV.
B1-5 END BENT PLAN AND ELEVATION
B1-6 END BENT SECTION DETAIL
B1-7 END BENT SECTION DETAIL
B1-8 WINGWALL LAYOUT
B1-9 FRAMING PLAN
B1-10 BEAM DETAILS
B1-11 TRANSVERSE SECTION
B1-12 DECK PLAN
B1-13 GRADE ELEVATIONS
B1-14 PARAPET DETAILS
B1-15 APPROACH SLAB
B1-16 STEEL LIST
W1-1 PLAN AND ELEVATION
W1-2 PLAN AND ELEVATION
W1-3 WALL SECTION DETAIL

100% PLANS - RELEASED FOR BID

UTILITY CONTACT INFORMATION	
UTILITY	CONTACT
WATER - CITY OF CALLAWAY	DAVID KUBAN 850-871-1033
SEWER - CITY OF CALLAWAY	JOHN FRANKLIN 850-215-7232 JEFFREY SMITH 850-770-8056
COMCAST	4001 W. 23RD ST, SUITE A, PANAMA CITY, FL 32405
GULF POWER	SANDRA PERRY 850-872-3315
AT&T DISTRIBUTION	12425 HUTCHINSON BLVD, PANAMA CITY BEACH, FL 32407
TECO	AL RUDOLPH 850-436-1488 MIKE MCQUIRE 850-914-6104 3706 W. 23RD ST., PANAMA CITY, FL 32405

**LEGEND**



TO BE REMOVED

TO BE REMOVED

BENCH MARK

EX. POWER POLE

EX. GUY WIRE

EX. WATER METER

EX. WATER VALVE

EX. BACKFLOW DEVICE

EX. FIRE HYDRANT

EX. SANITARY SEWER MANHOLE

EX. SANITARY SEWER VALVE

EX. STORM DRAINAGE MANHOLE

EX. MAILBOX

EX. ASPHALT PAVEMENT

EX. CONCRETE

EX. SIGN

SILT FENCE

FLOATING TURBIDITY BARRIER

SET CAPPED IRON ROD #0340

EX. CAPPED IRON ROD

PROPOSED ASPHALT PAVEMENT

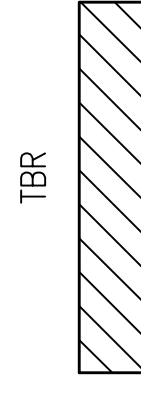
PROPOSED CONCRETE

PROPOSED SPOT ELEVATION

PROPOSED HAND RAIL

PROPOSED GUARD RAIL

EX. SPOT ELEVATION



TBR

EX. POWER POLE

EX. GUY WIRE

EX. WATER METER

EX. WATER VALVE

EX. BACKFLOW DEVICE

EX. FIRE HYDRANT

EX. SANITARY SEWER MANHOLE

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EX. CAPPED IRON ROD

PROPOSED ASPHALT PAVEMENT

PROPOSED CONCRETE

PROPOSED SPOT ELEVATION

PROPOSED HAND RAIL

PROPOSED GUARD RAIL

EX. SPOT ELEVATION

5.30

5.30

**GENERAL NOTES:**

- THE CONTRACTOR IS CAUTIONED TO VISIT THE SITE AND FAMILIARIZE HIMSELF WITH THE PROJECT PRIOR TO BIDDING.
- B.M. DATUM IS 1988 NAVD.
- THE CONTRACTOR IS RESPONSIBLE TO DETERMINE THE EXACT LOCATIONS AND DEPTHS OF ALL UTILITIES INCLUDING, BUT NOT LIMITED TO, WATER LINES, FOREMANS, BURIED TELEPHONE LINES, BURIED ELECTRICAL LINES AND GAS MAINS PRIOR TO COMMENCEMENT OF CONSTRUCTION. CONTRACTOR IS TO COORDINATE WITH UTILITY COMPANIES FOR REMOVAL AND/OR RELOCATION OF EXISTING UTILITY POLES, AERIAL LINES, BURIED CABLE AND OTHER UTILITIES.
- THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY CONFLICTS BETWEEN CONTRACT DOCUMENTS AND EXISTING CONDITIONS. THESE DRAWINGS REPRESENT KNOWN STRUCTURES AND UTILITIES LOCATED IN THE PROJECT AREA. THE CONTRACTOR IS CAUTIONED THAT OTHER STRUCTURES AND UTILITIES, ABOVE OR BELOW GROUND, MAY BE ENCOUNTERED DURING THE COURSE OF THE PROJECT. THE CONTRACTOR SHOULD NOTIFY THE UTILITY, THEN THE ENGINEER, IMMEDIATELY UPON ENCOUNTERING ANY UNEXPECTED STRUCTURE, UTILITY LINE, OR OTHER UNUSUAL CONDITION.
- CONTRACTOR SHALL SAFETY-BARRICADE ALL EXCAVATIONS AND OTHER HAZARDS.
- CONTRACTOR SHALL PROVIDE ACCESS TO PROPERTIES ADJACENT TO THE CONSTRUCTION AREAS. ADEQUATE BARRICADES, CONSTRUCTION SIGNAGE AND OTHER TRAFFIC CONTROL DEVICES SHALL BE PROVIDED IN ACCORDANCE WITH FDOT CONSTRUCTION STANDARDS.
- THE CONTRACTOR SHALL EMPLOY THE USE OF SILT FENCES, HAY BALES, DITCHES OR WHATEVER MEANS NECESSARY TO CONTROL EROSION AND SEDIMENTATION AT ALL TIMES. WATERS OF THE STATE, ADJACENT PROPERTIES, AND ANY NEW DRAINAGE CONSTRUCTION SHALL BE PROTECTED DURING THE CONSTRUCTION PERIOD. EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO THE START OF CONSTRUCTION AND SHALL REMAIN UNTIL THE COMPLETION OF CONSTRUCTION AND ACCEPTANCE BY THE OWNER.
- ADEQUATE PROVISIONS SHALL BE MADE FOR THE FLOW OF SEWERS, DRAINS, WATER COURSES AND OTHER UTILITIES ENCOUNTERED DURING CONSTRUCTION.
- ALL PAVEMENT CUTS SHALL BE SAW CUT.
- ALL NEW CONCRETE FOR SITE WORK SHALL ACHIEVE A 28 DAY STRENGTH OF 3000 PSI (MIN.), UNLESS OTHERWISE SPECIFIED.
- ALL ON-SITE GRADING, DRAINAGE AND PAVEMENT WORK SHALL BE IN ACCORDANCE WITH FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION.
- THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DUST CONTROL.
- THE CONTRACTOR SHALL RESTORE ALL DISTURBED RIGHTS-OF-WAY IN ACCORDANCE WITH THE EDITION OF THE FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS.
- THE CONTRACTOR SHALL HIRE A SURVEYOR LICENSED IN THE STATE OF FLORIDA IN ACCORDANCE WITH SECTION 12.0 OF THE GENERAL CONDITIONS.
- THE CONTRACTOR SHALL ENSURE THAT ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL LAWS.
- CONTRACTOR SHALL COMPLY FULLY WITH ALL PERMIT REQUIREMENTS IMPOSED BY THE REGULATORY AUTHORITIES.
- NOTIFY SUNSHINE UTILITIES TWO FULL BUSINESS DAYS IN ADVANCE PRIOR TO DIGGING WITHIN THE RIGHT-OF-WAY; 1-800-432-4770. CONTRACTOR SHALL VERIFY DEPTH AND LOCATION AND IMMEDIATELY NOTIFY ENGINEER OF CONFLICTS.
- THE CONTRACTOR SHALL NOTIFY THE CITY OF CALLAWAY 48 HOURS PRIOR TO INITIATING ANY WORK IN THE CITY OF CALLAWAY RIGHTS-OF-WAY.
- TYPE B STABILIZATION IS INCIDENTAL TO EARTHWORK.
- ALL PIPE JOINTS, INCLUDING CONNECTIONS TO STRUCTURES, SHALL BE WRAPPED WITH FILTER FABRIC IN ACCORDANCE WITH FDOT DESIGN STANDARDS AND THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.

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14101 PANAMA CITY BEACH PARKWAY, SUITE 110 PANAMA CITY BEACH, FL 32413 (850) 230-6150  
ENGINEERING BUSINESS: EB-0000340  
Pensacola - Panama City Beach - Tallahassee - Mobile

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FL Reg. Engineer #77540  
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**BERTHE BRIDGE & ASSOCIATED INFRASTRUCTURE**

PROJECT NO.	NO.	DATE	APPR.	REVISION/ACTION TAKEN
27653.01				
DESIGNED BY: JCP				
DRAWN BY: RGG				
CHK'D BY: BAH				
PROJ. MGR: JCP				
DATE: JULY 2022				
NOT RELEASED FOR CONSTRUCTION BY				
DATE				

**GENERAL NOTES AND LEGEND**



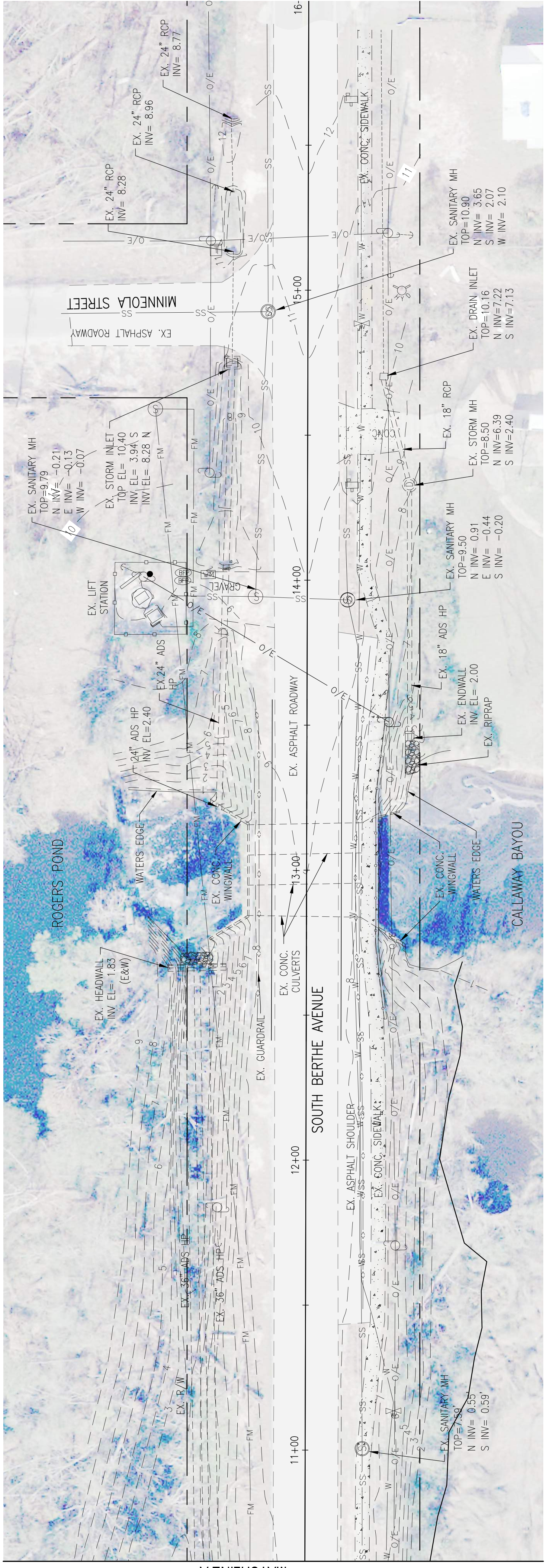
EXISTING CONDITIONS PLAN

PROJECT NO:	27653.01
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DRAWN BY:	RCG
CHK'D BY:	BAH
PRJ. MGR:	JCP
DATE:	JULY 2022
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APPR.	REVISION/ACTION TAKEN

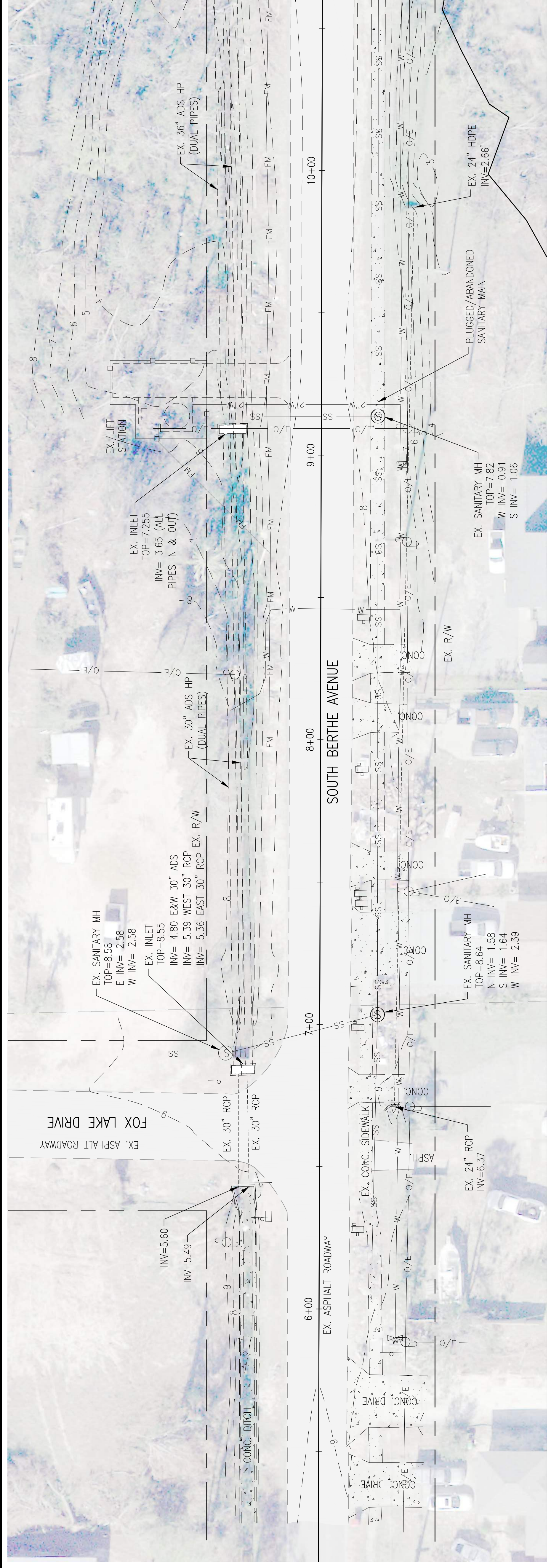
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FL Reg. Engineer #77540

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MATCHLINE A



MATCHLINE A

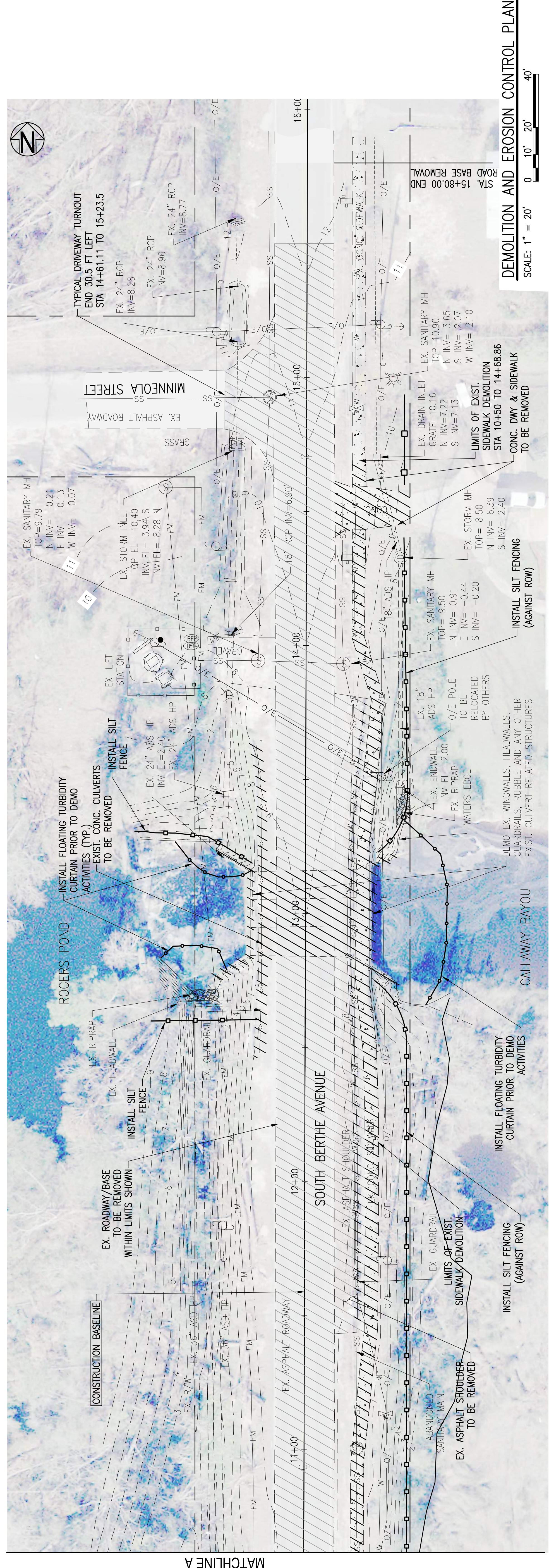
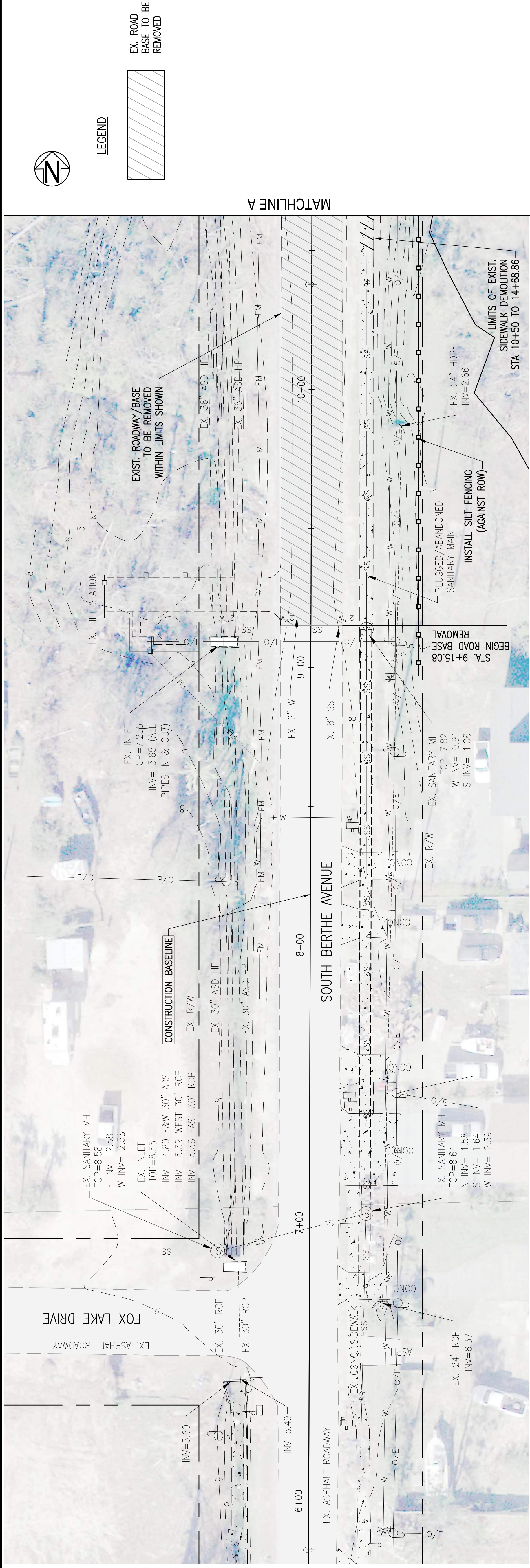
DEMOLITION AND EROSION CONTROL PLAN

PROJECT NO:	27653.01
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CHK'D BY:	BAH
PROJ. MGR:	JCP
DATE:	JULY 2022
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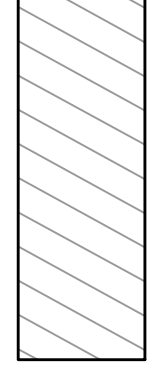
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LEGEND



DEMOLITION AND EROSION CONTROL PLAN  
SCALE: 1" = 20'

MATCHLINE A

MATCHLINE A

OVERALL PLAN

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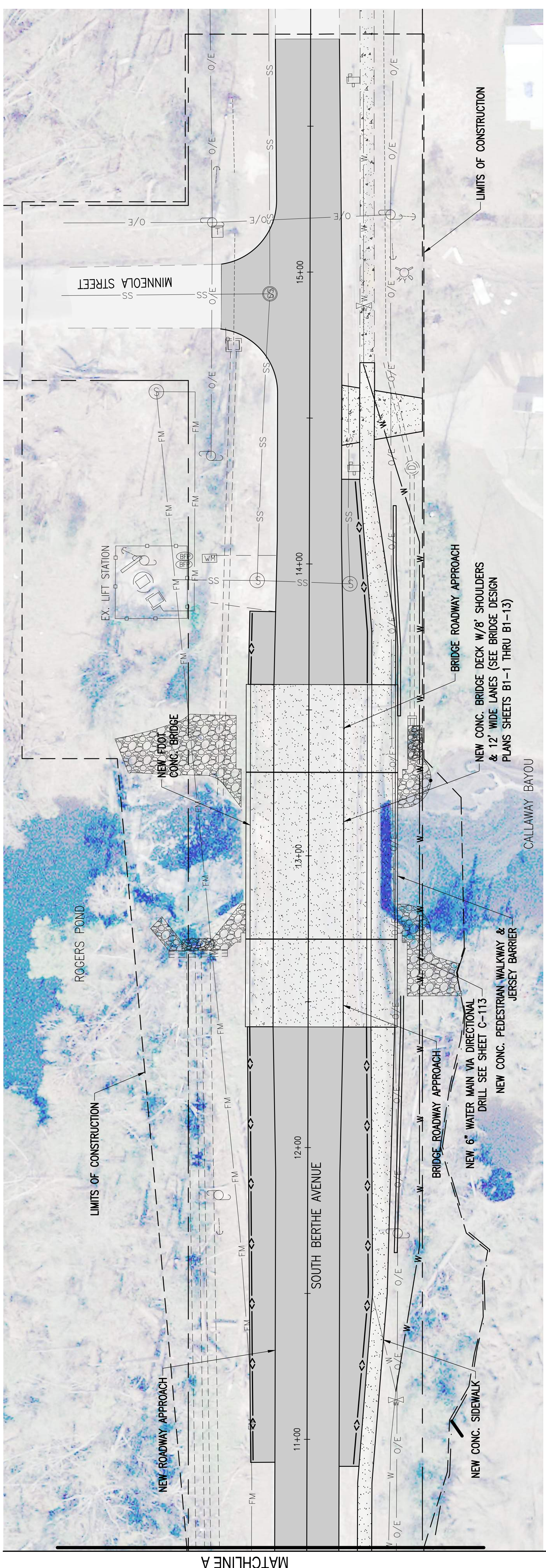
BERTHE BRIDGE & ASSOCIATED INFRASTRUCTURE

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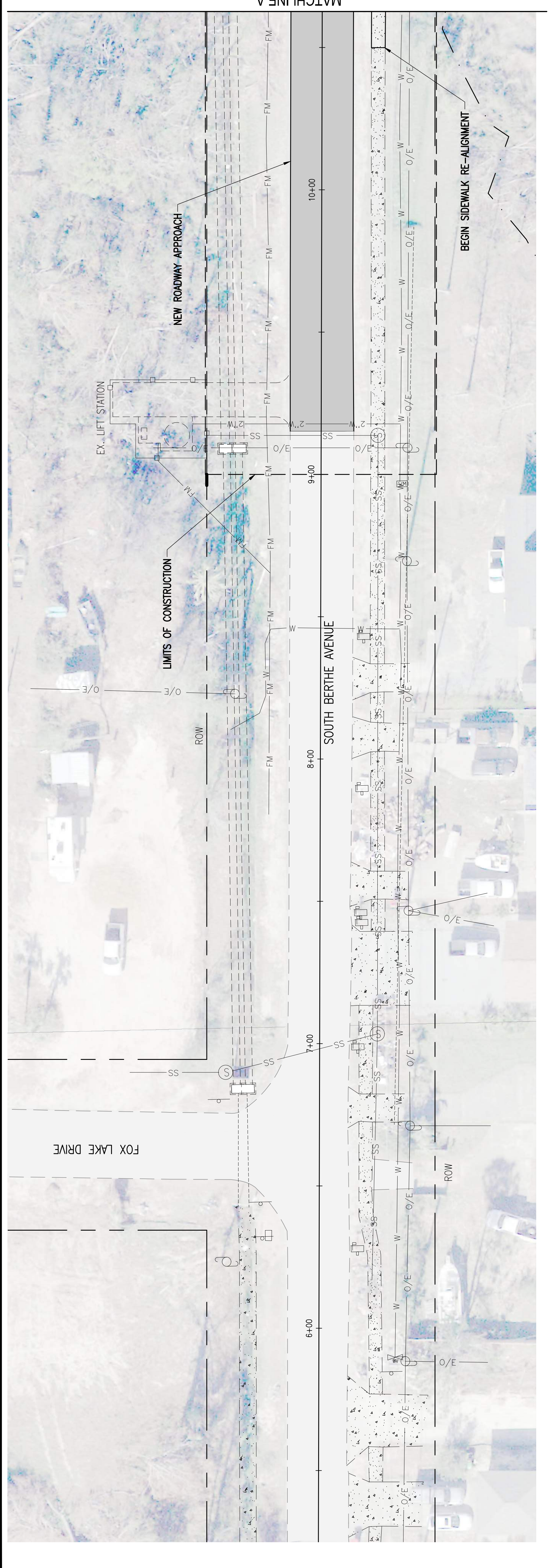
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OVERALL PLAN  
SCALE: 1" = 20' 0" 10' 20' 40'



MATCHLINE A



MATCHLINE A

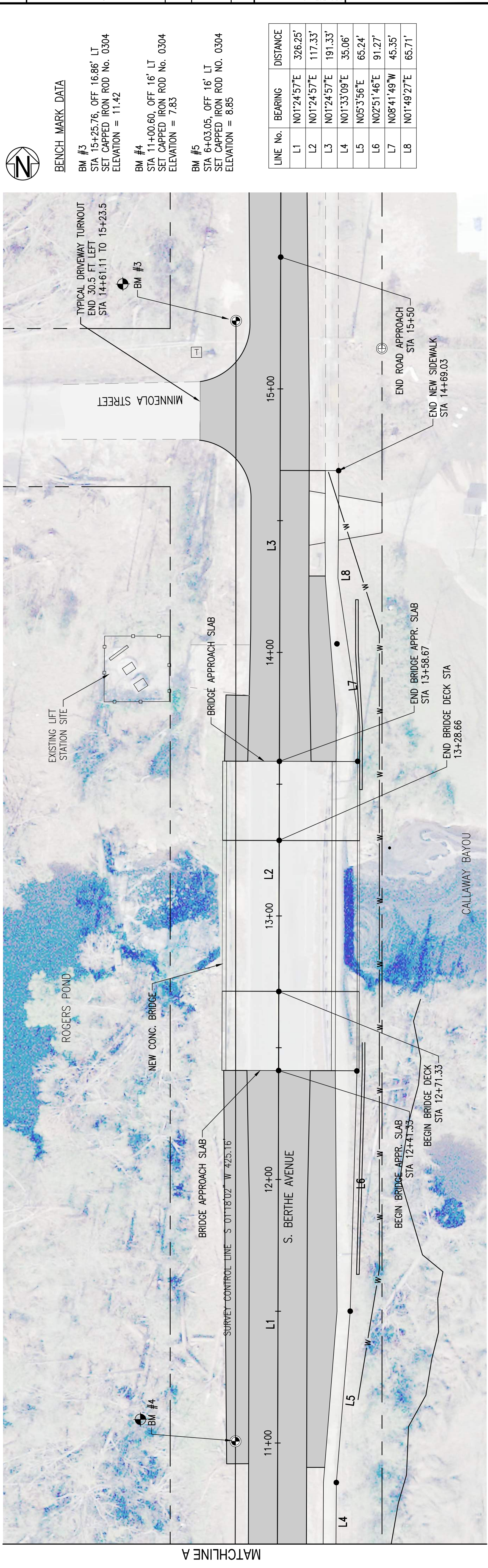
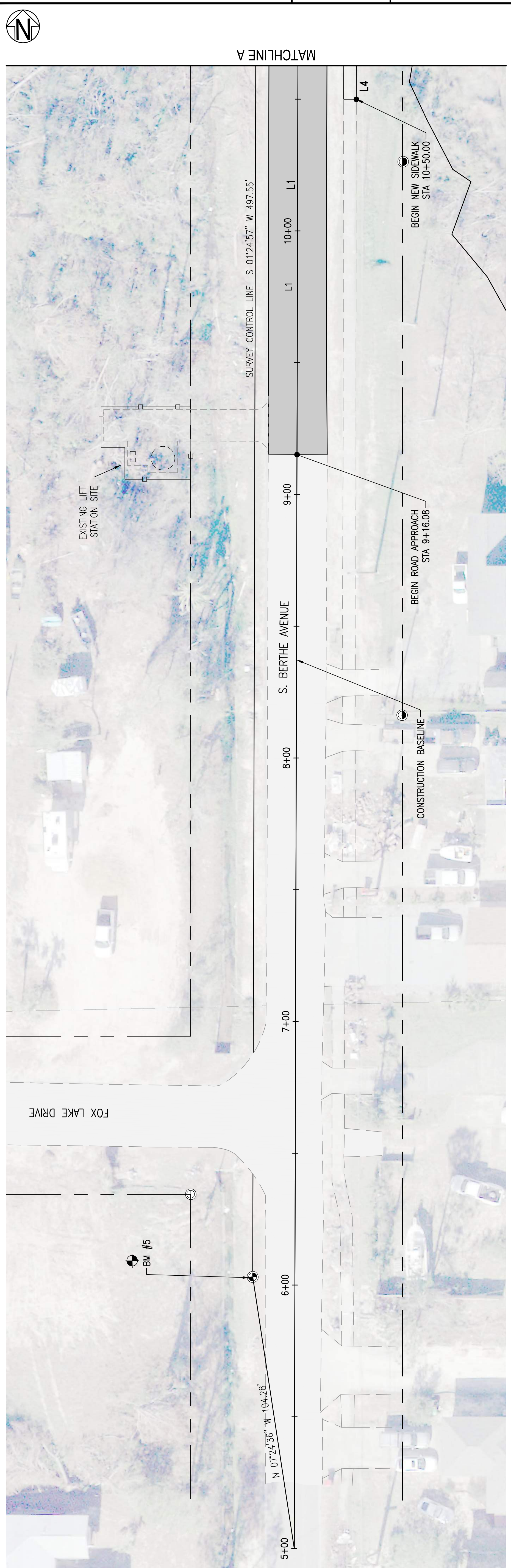
CONTROL PLAN

PROJECT NO:	27653.01
DESIGNED BY:	JCP
DRAWN BY:	RGG
CHK'D BY:	GDM
PROJ. MGR:	JCP
DATE:	JULY 2022
NOT RELEASED FOR CONSTRUCTION BY	DATE
REVISION/ACTION TAKEN	
NO.	DATE
APPR.	

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LINE No.	BEARING	DISTANCE
L1	N01°24'57"E	326.25'
L2	N01°24'57"E	117.33'
L3	N01°24'57"E	191.33'
L4	N01°33'09"E	35.06'
L5	N05°3'56"E	65.24'
L6	N02°51'46"E	91.27'
L7	N08°41'49"W	45.35'
L8	N01°49'27"E	65.71'

**BENCH MARK DATA**

**BM #3**  
STA 15+25.76, OFF 16.86' LT  
SET CAPPED IRON ROD No. 0304  
ELEVATION = 11.42

**BM #4**  
STA 11+00.60, OFF 16' LT  
SET CAPPED IRON ROD No. 0304  
ELEVATION = 7.83

**BM #5**  
STA 6+03.05, OFF 16' LT  
SET CAPPED IRON ROD No. 0304  
ELEVATION = 8.65

CONTROL PLAN  
SCALE: 1" = 20' 0' 10' 20' 40'



ROADWAY  
PLAN AND PROFILE

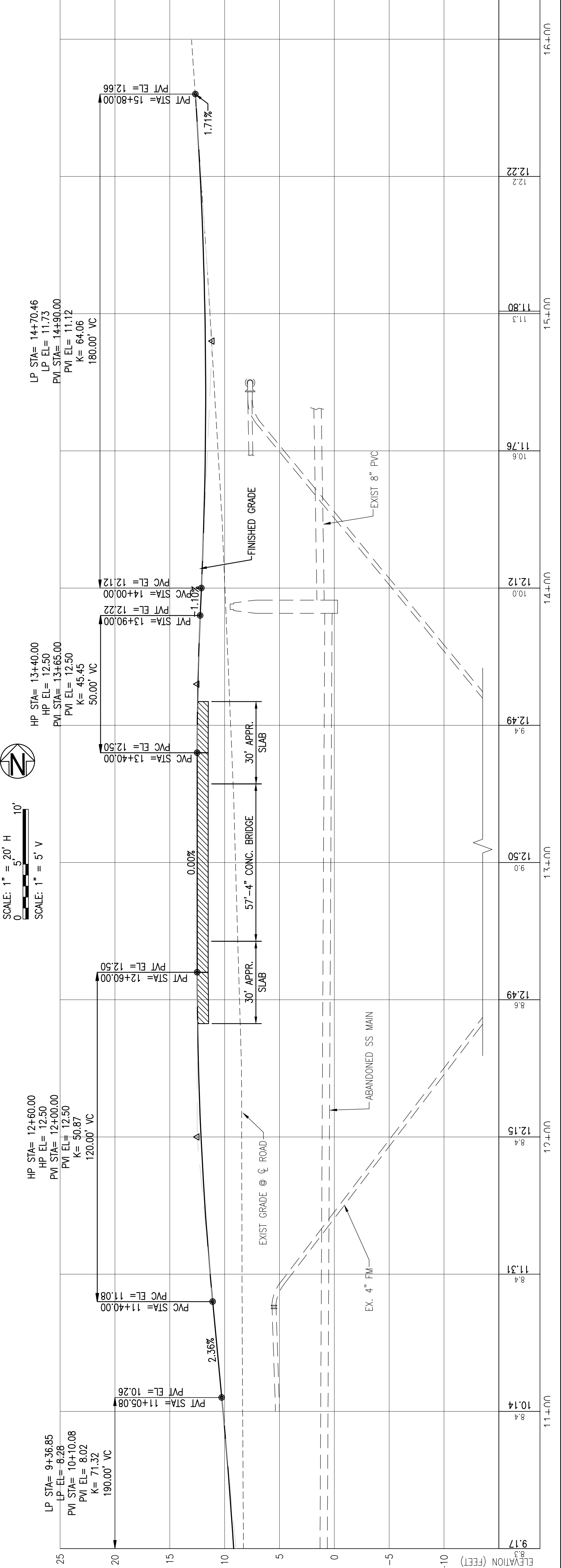
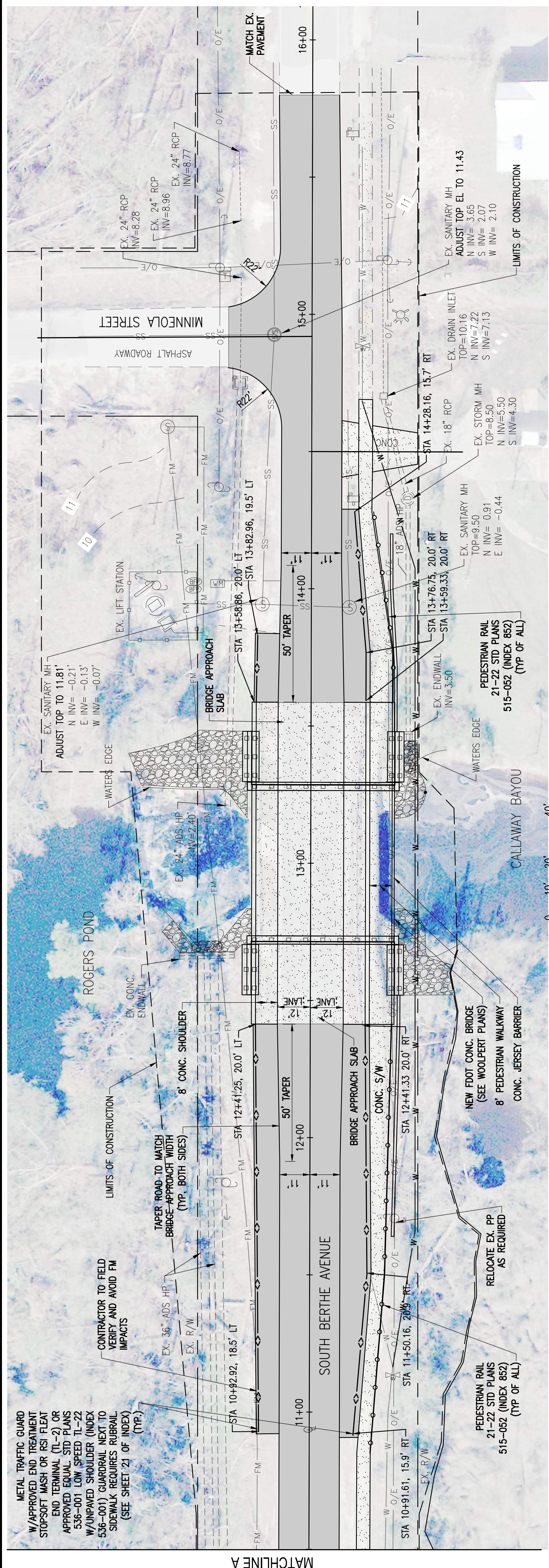
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GRADING PLAN

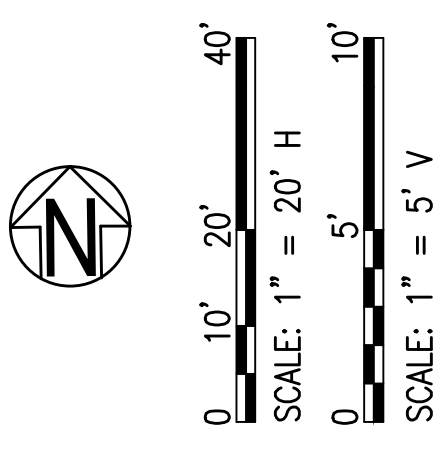
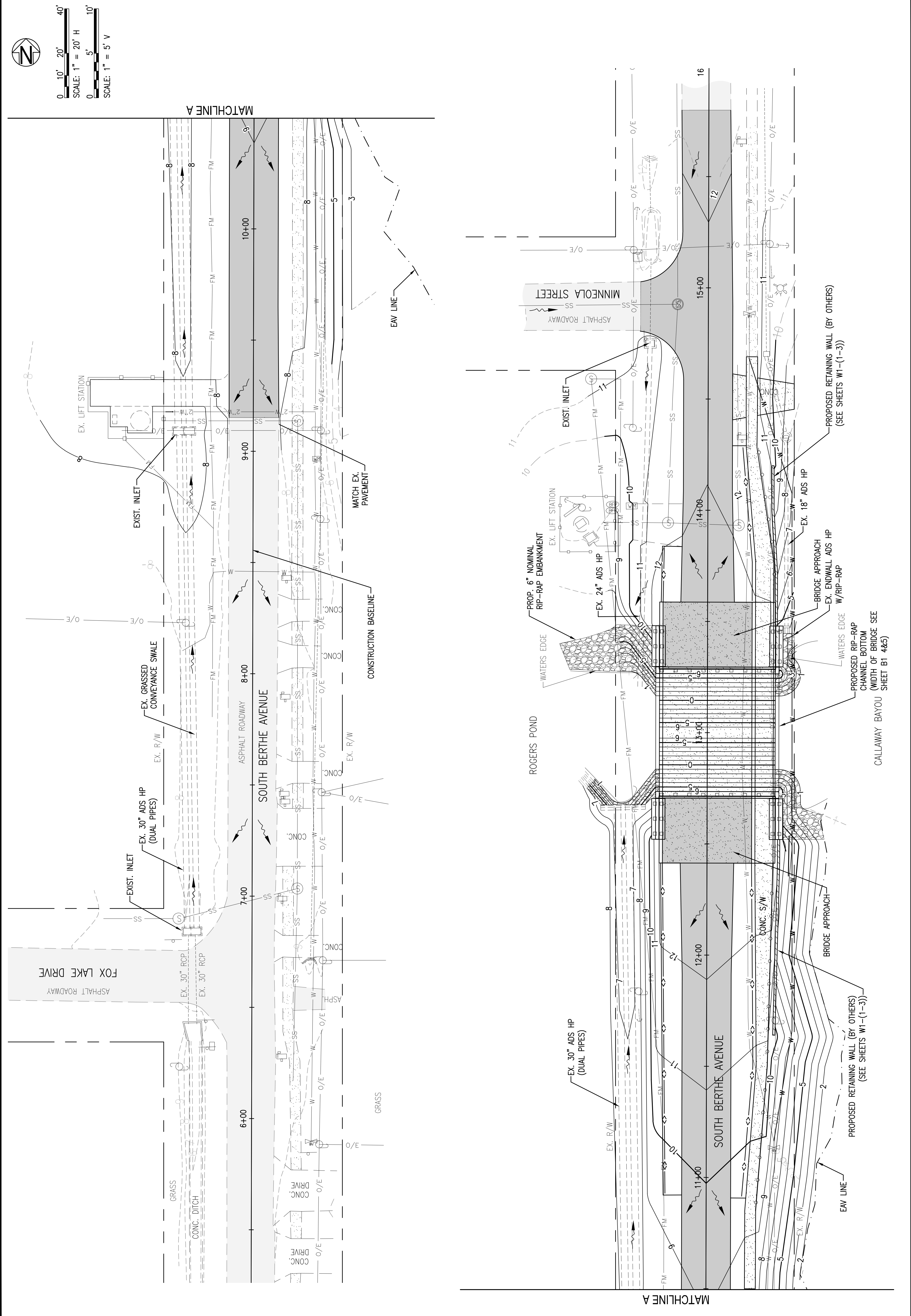
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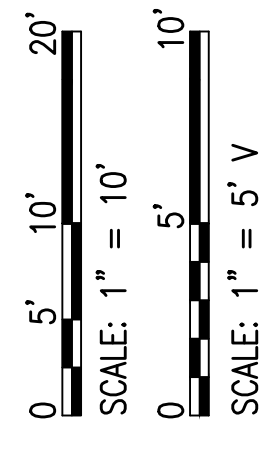
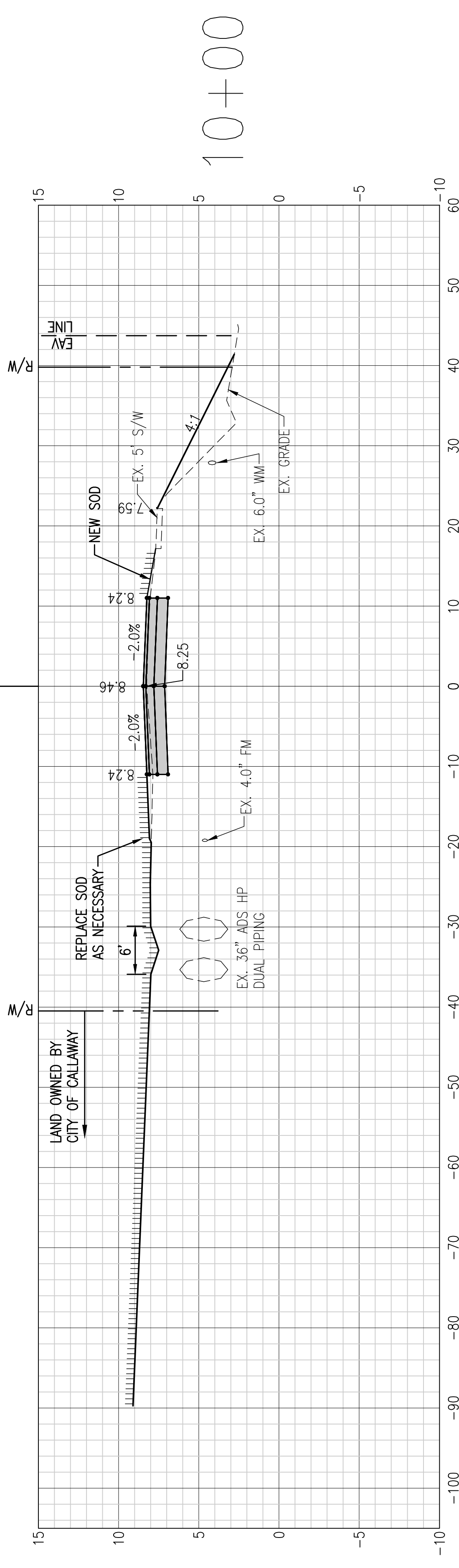
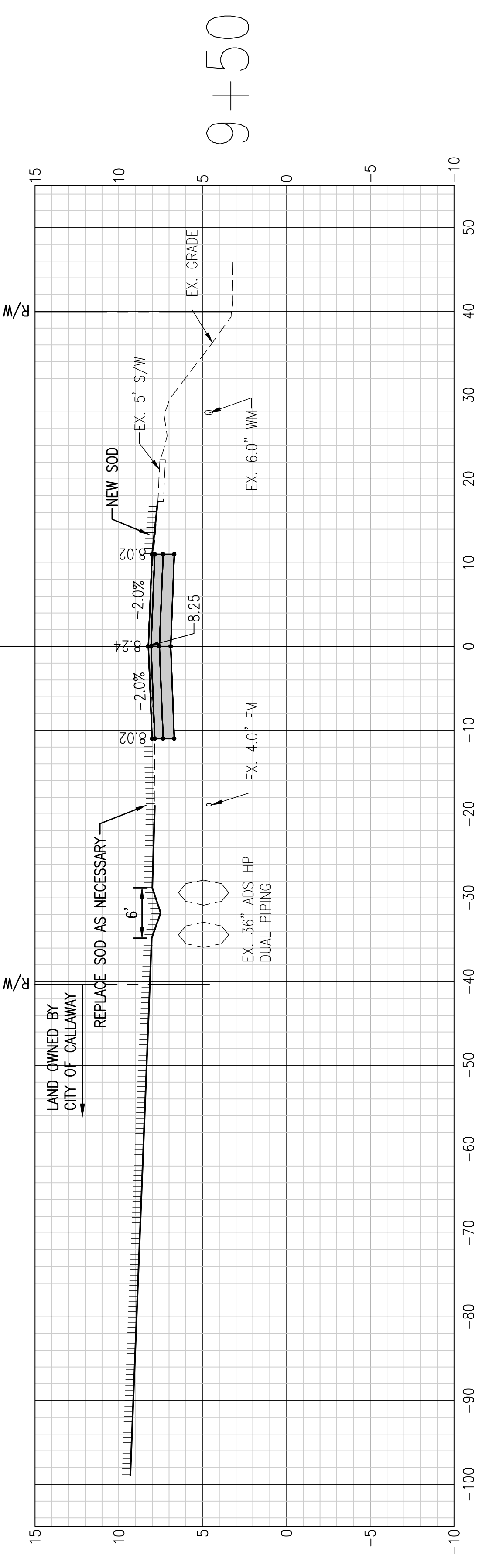
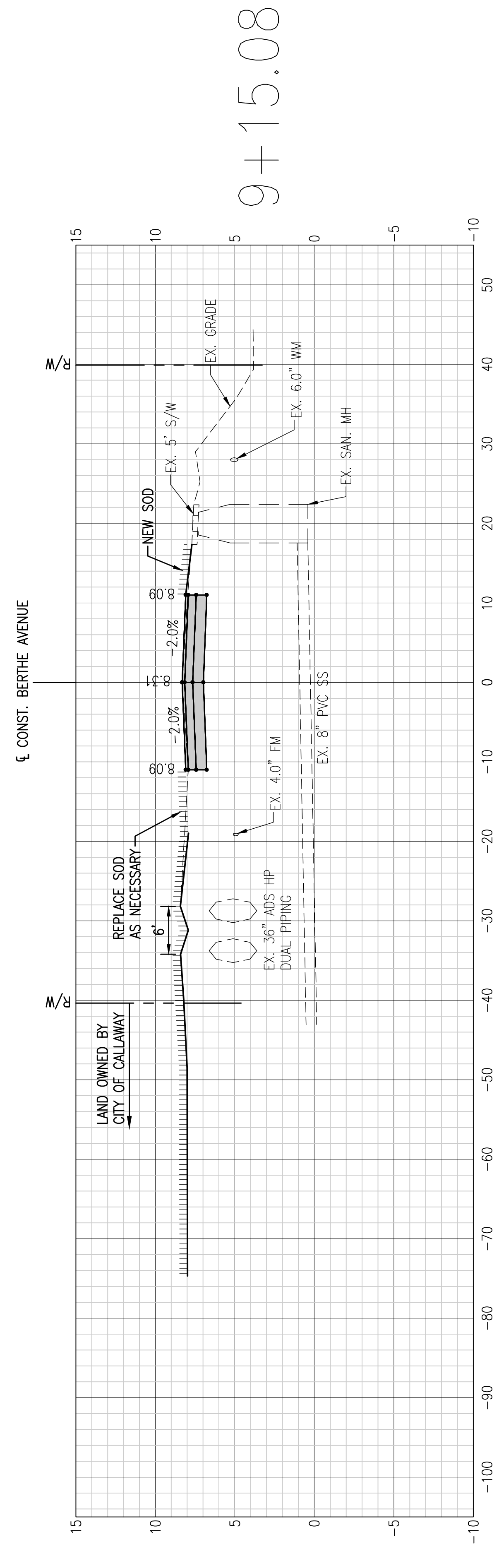
R/W TO R/W  
CROSS-SECTIONS

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R/W TO R/W  
CROSS-SECTIONS

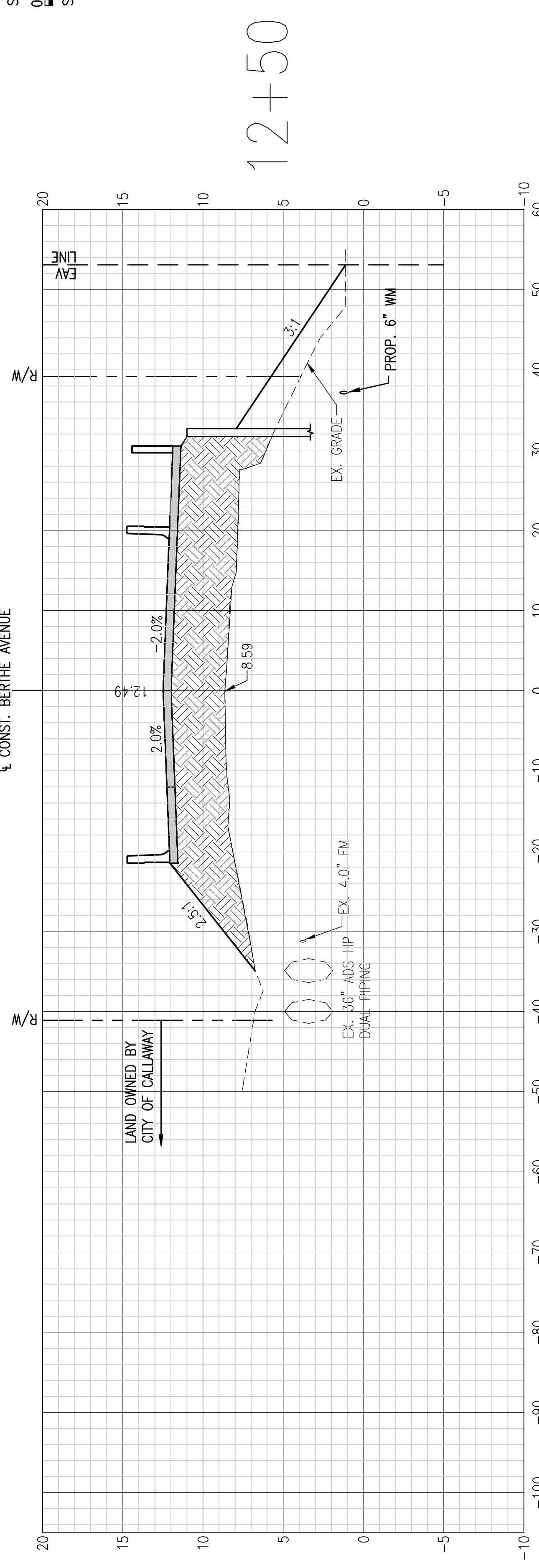
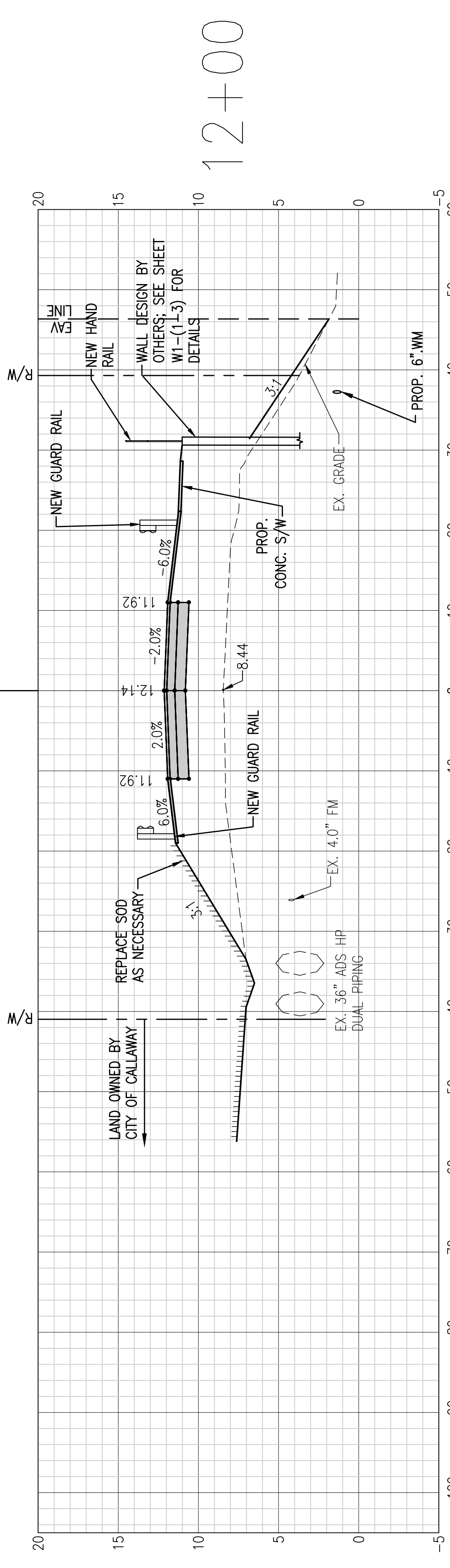
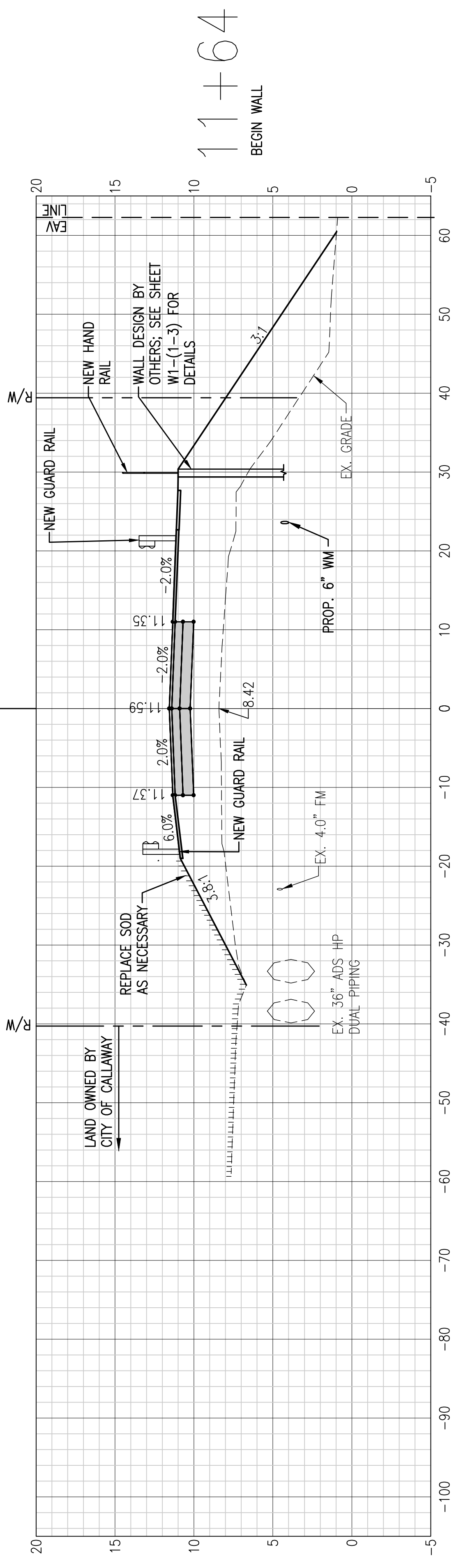
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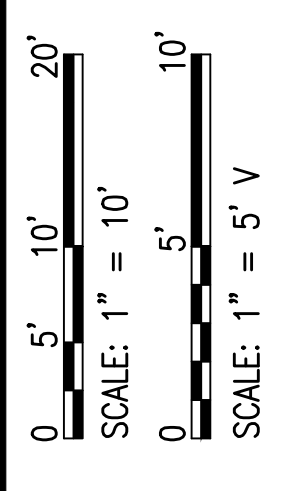
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11+64  
BEGIN WALL

12+00

12+50



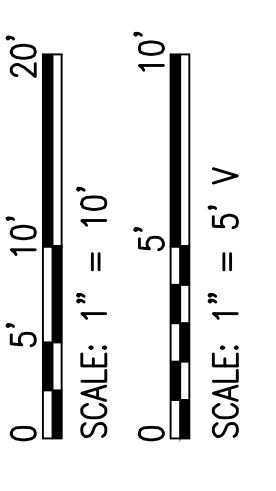
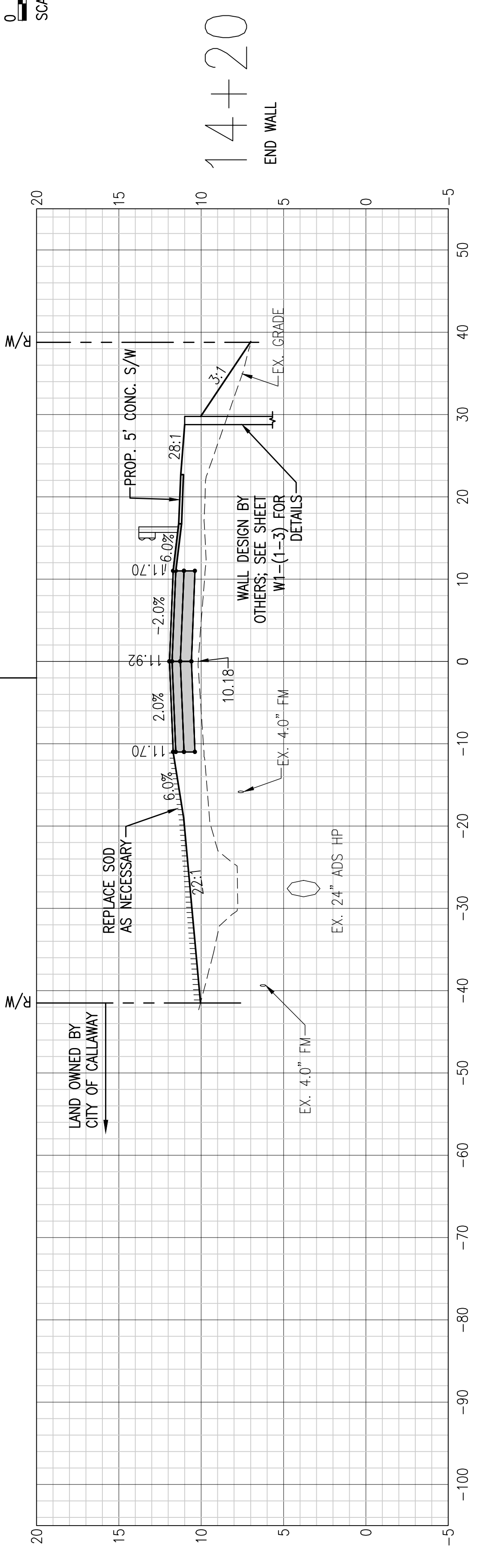
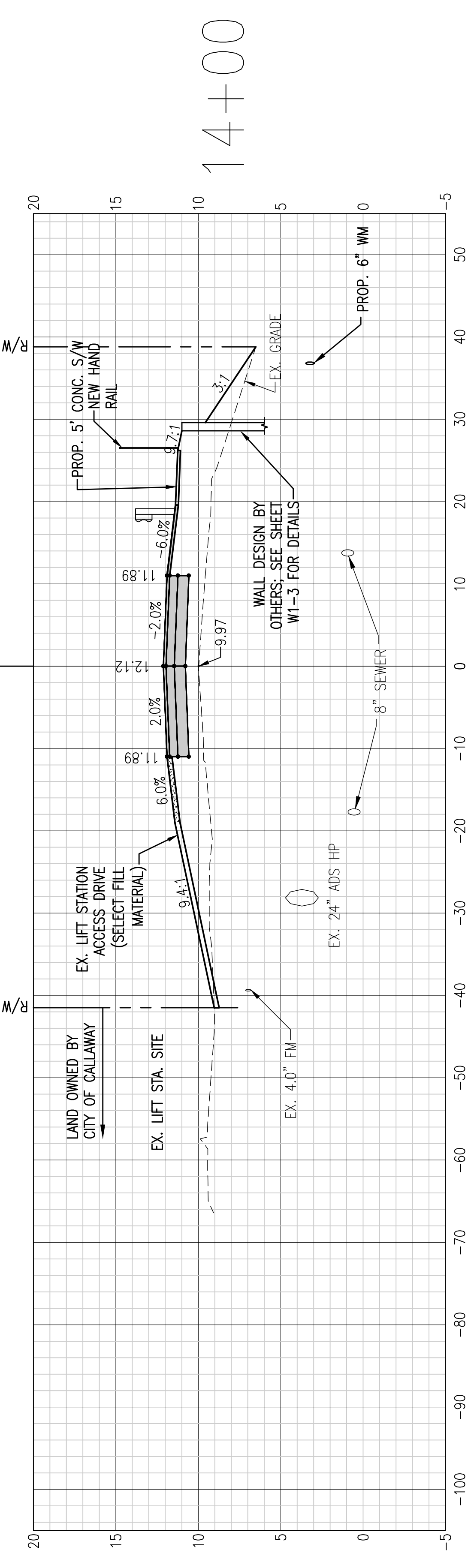
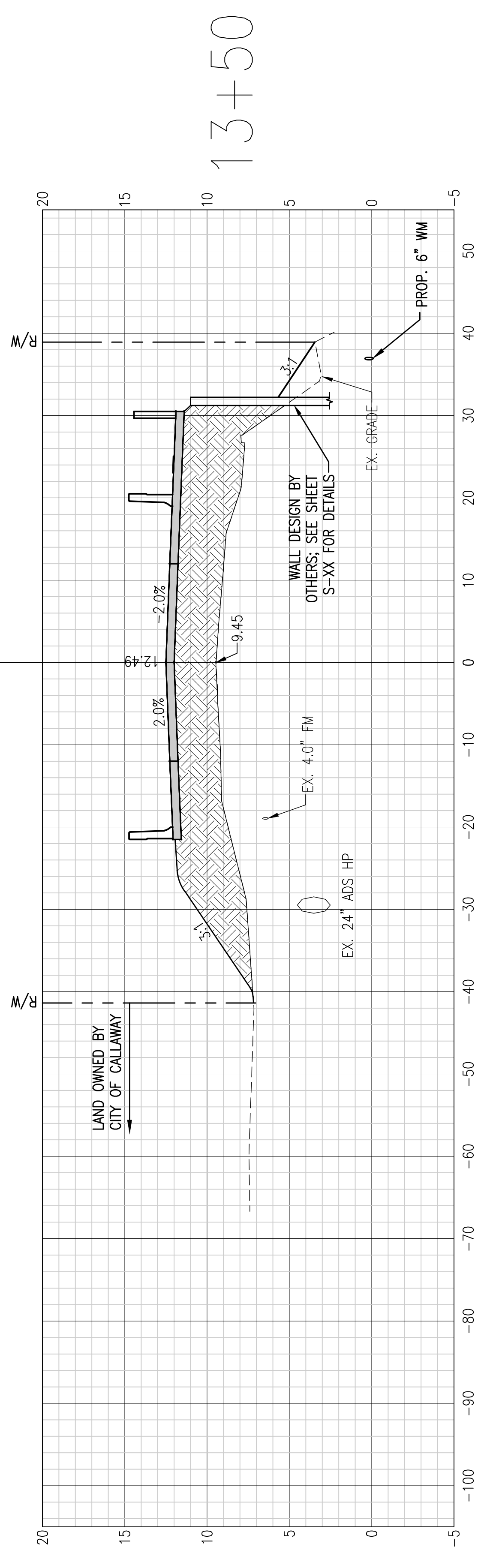
R/W TO R/W  
CROSS-SECTIONS

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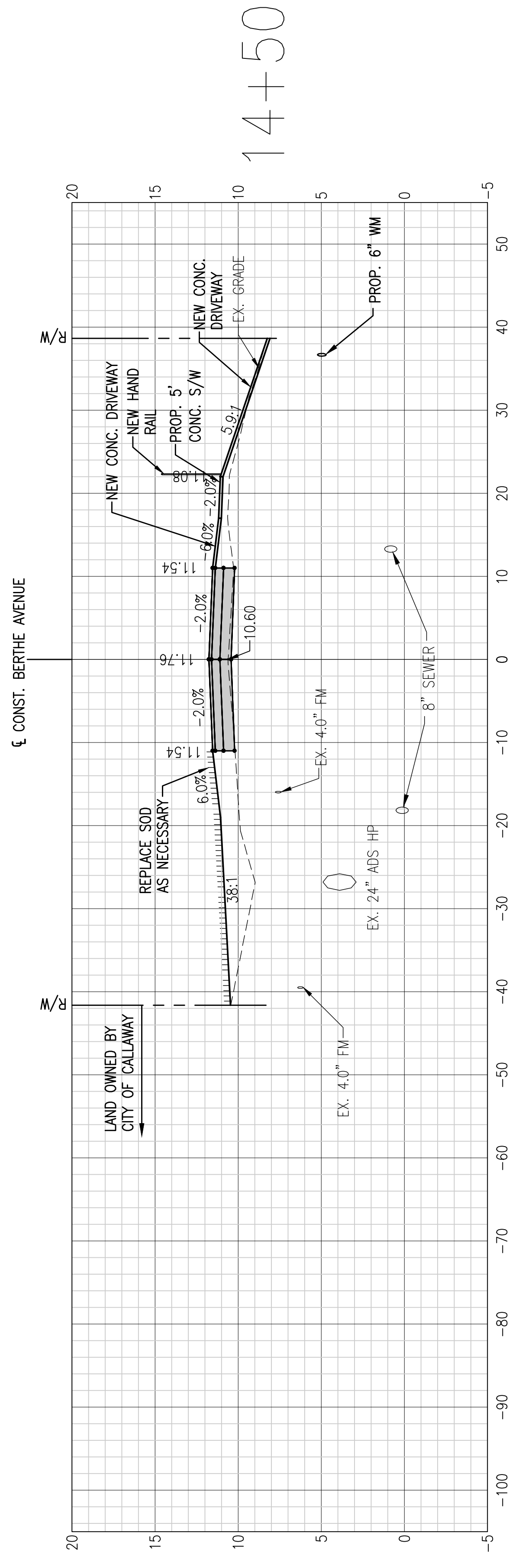
R/W TO R/W  
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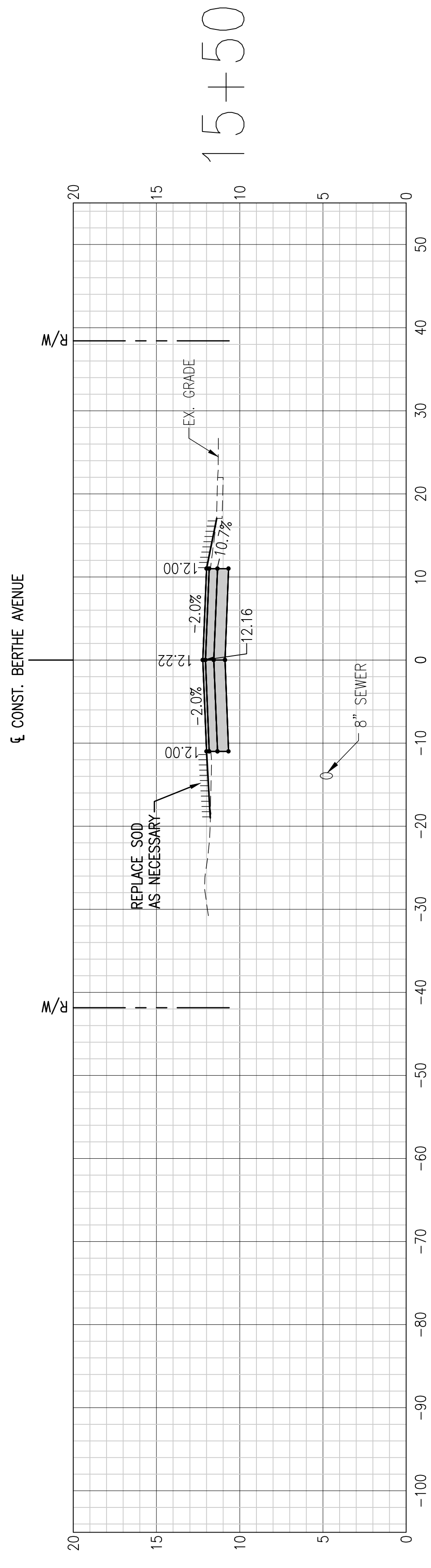
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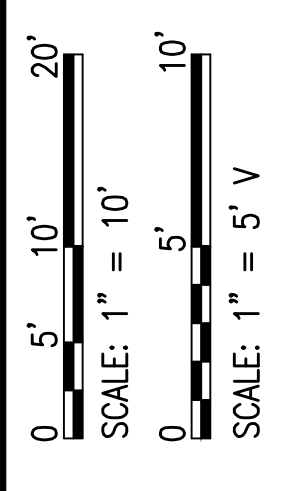
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14+50



15+50



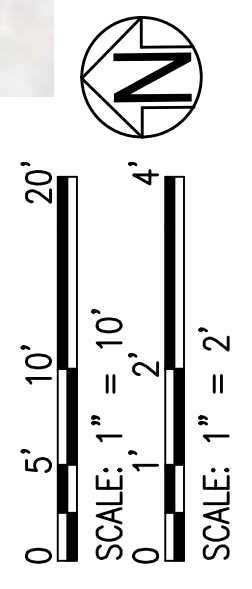
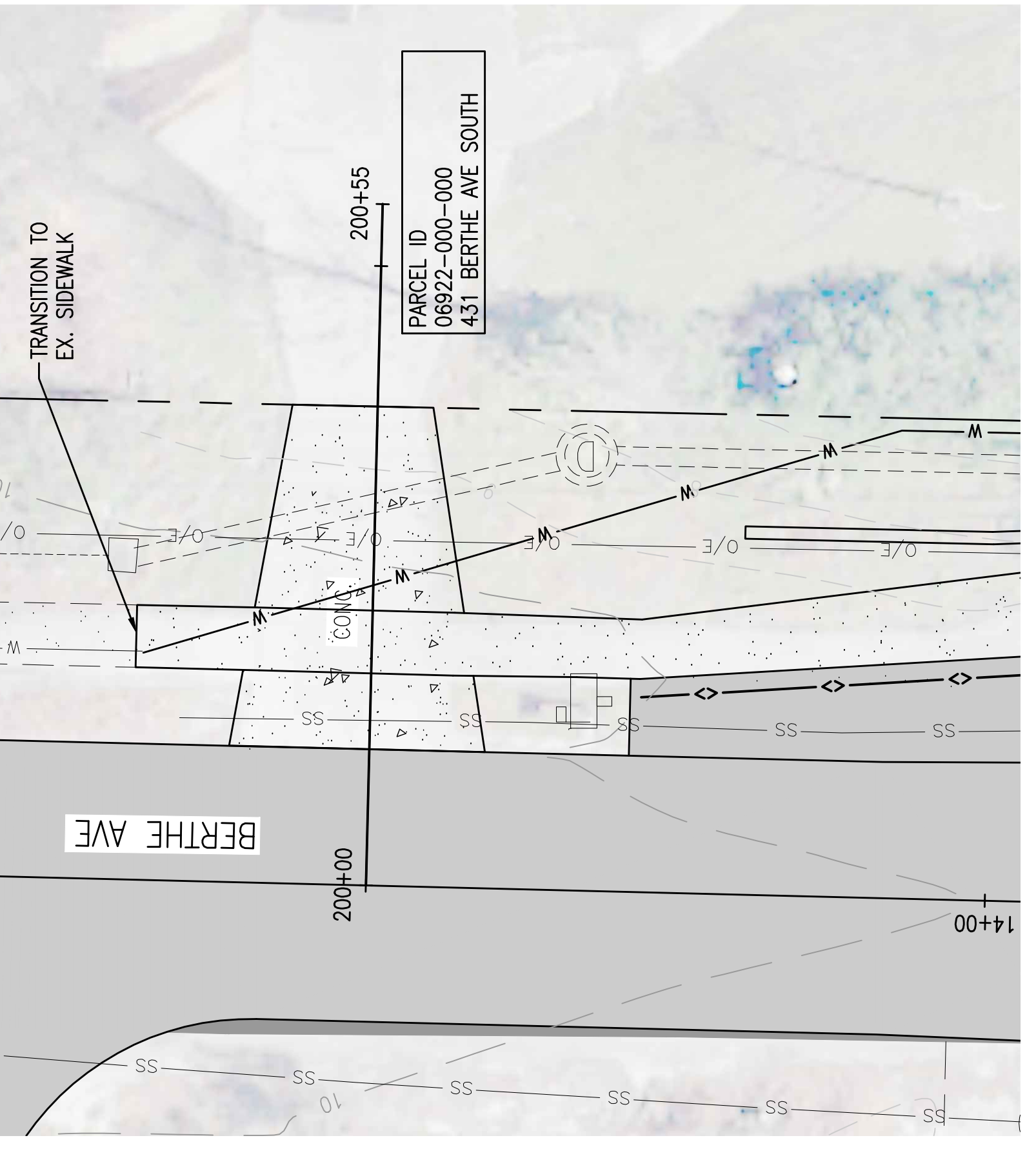
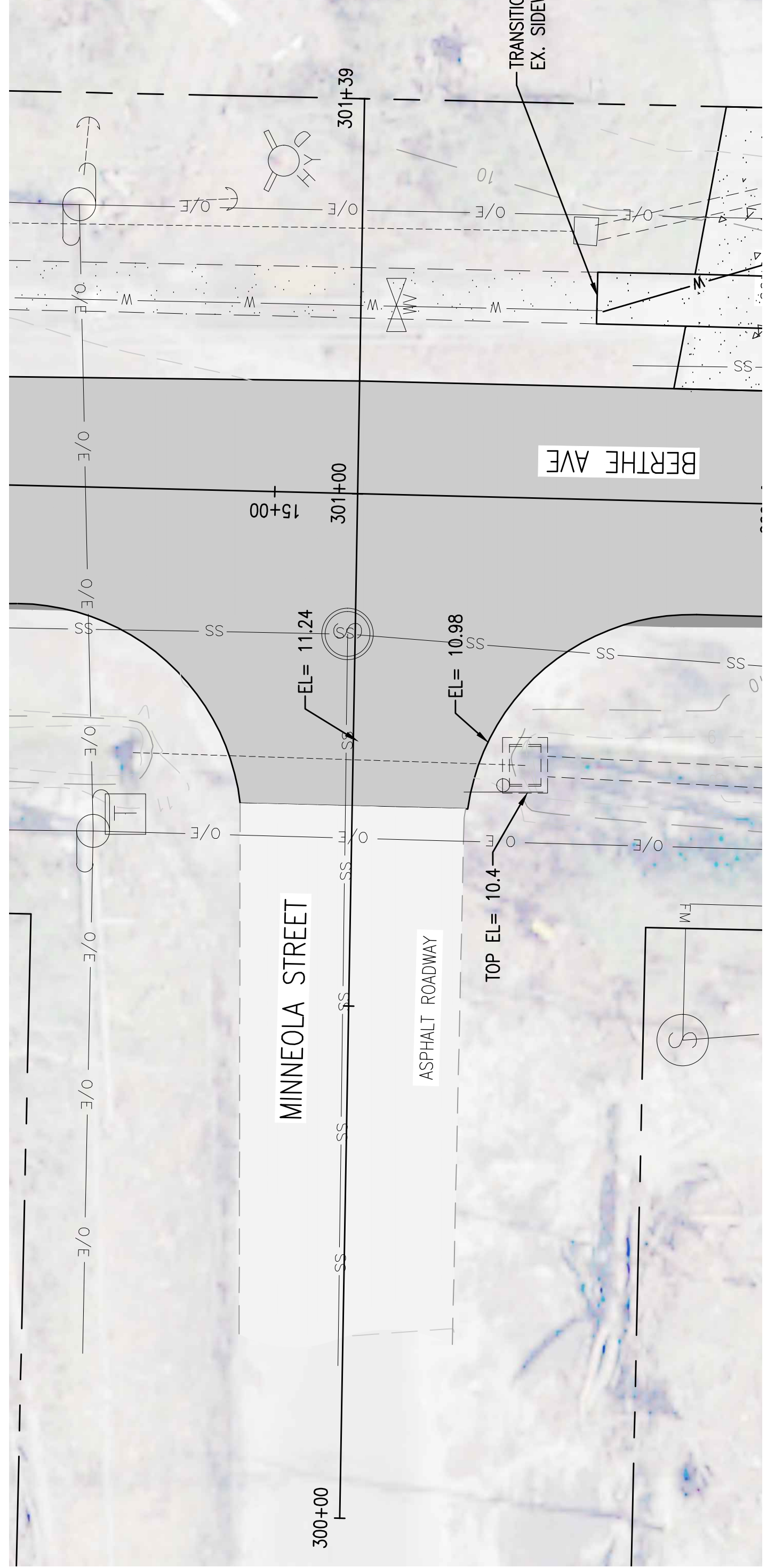
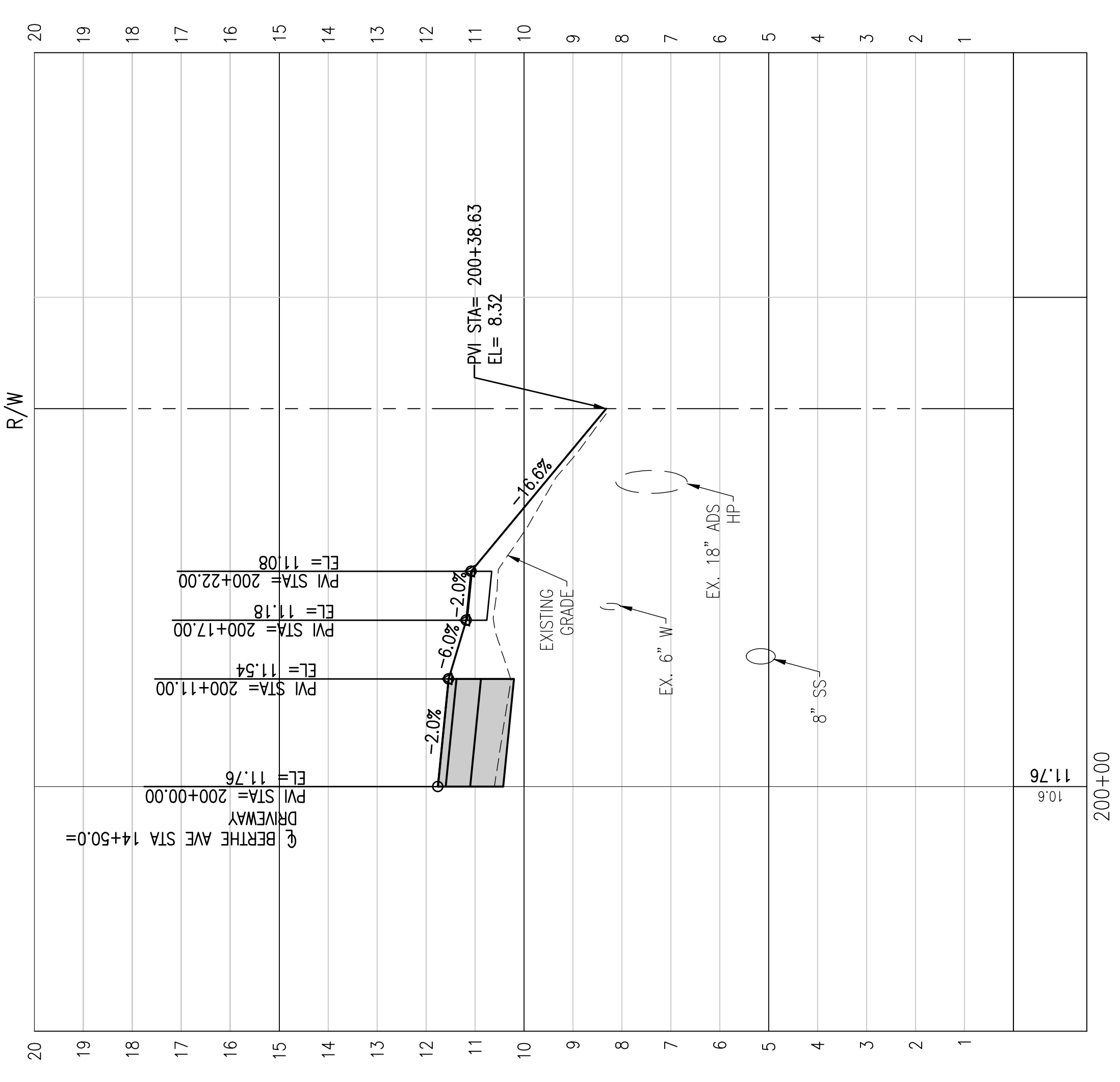
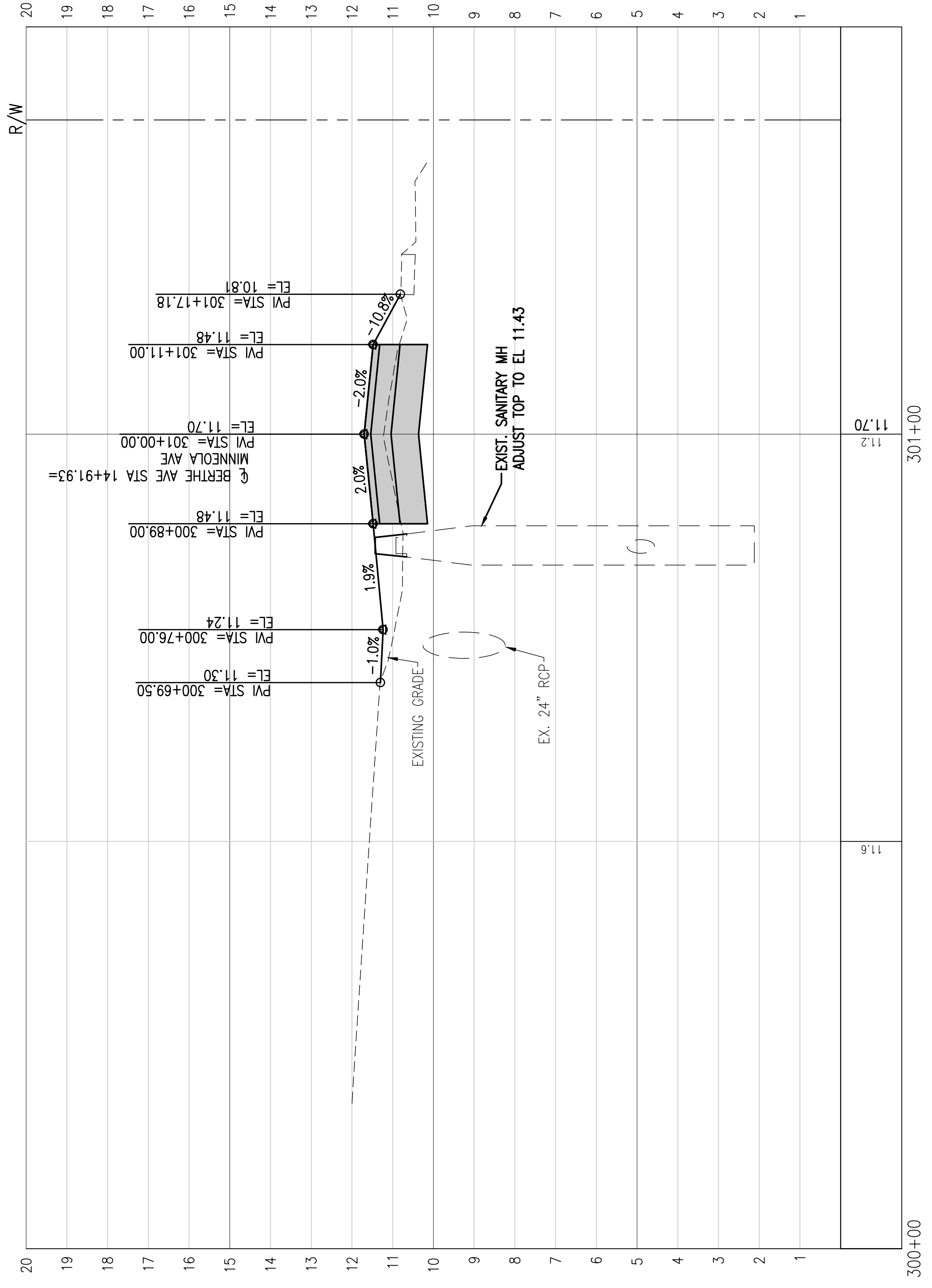
DRIVEWAY/MINNEOLA ST  
PLAN AND PROFILE

PROJECT NO:	27653.01	
DESIGNED BY:	JCP	
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CHK'D BY:	BAH	
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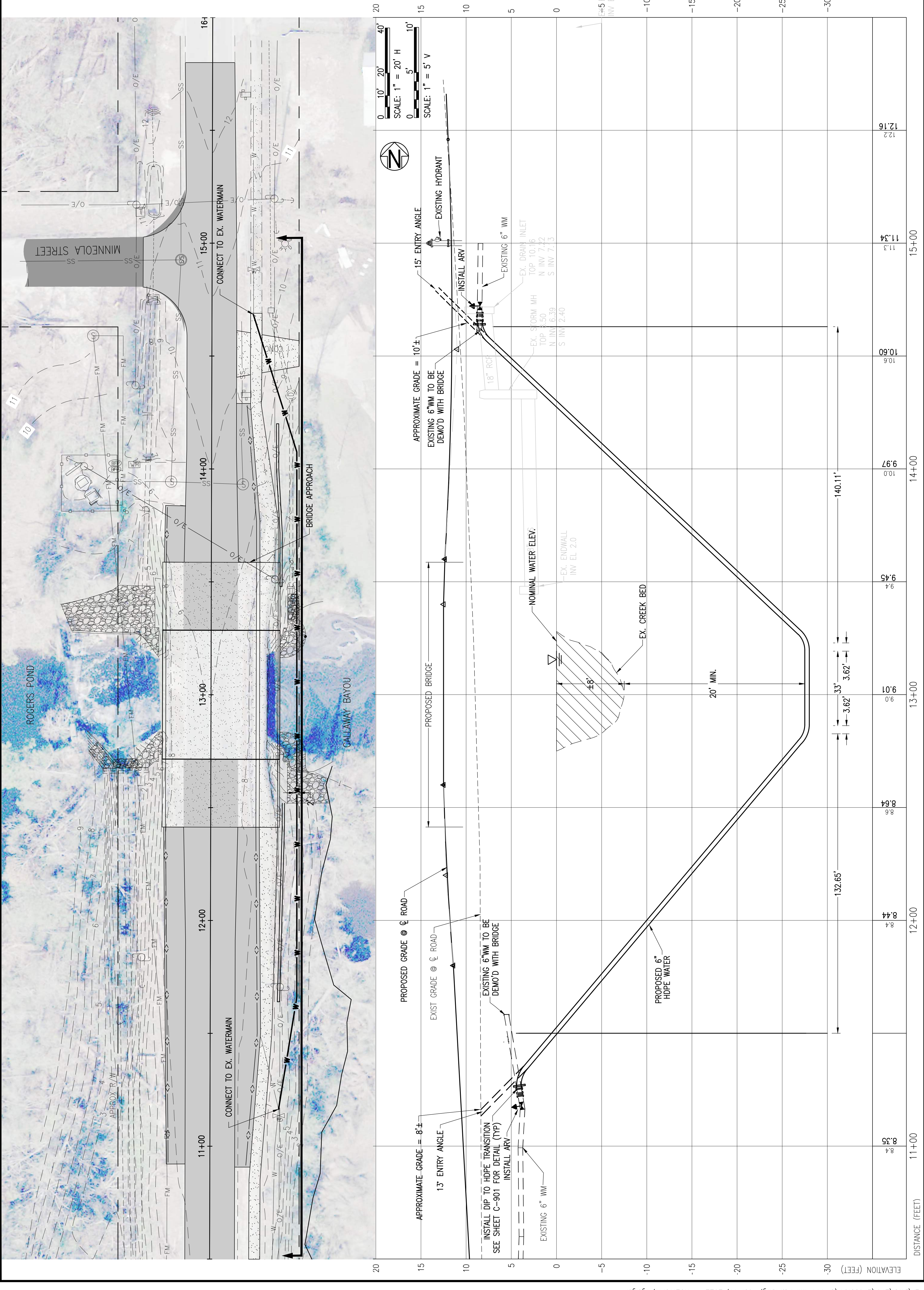
WATER MAIN  
DIRECTIONAL DRILL  
PLAN AND PROFILE

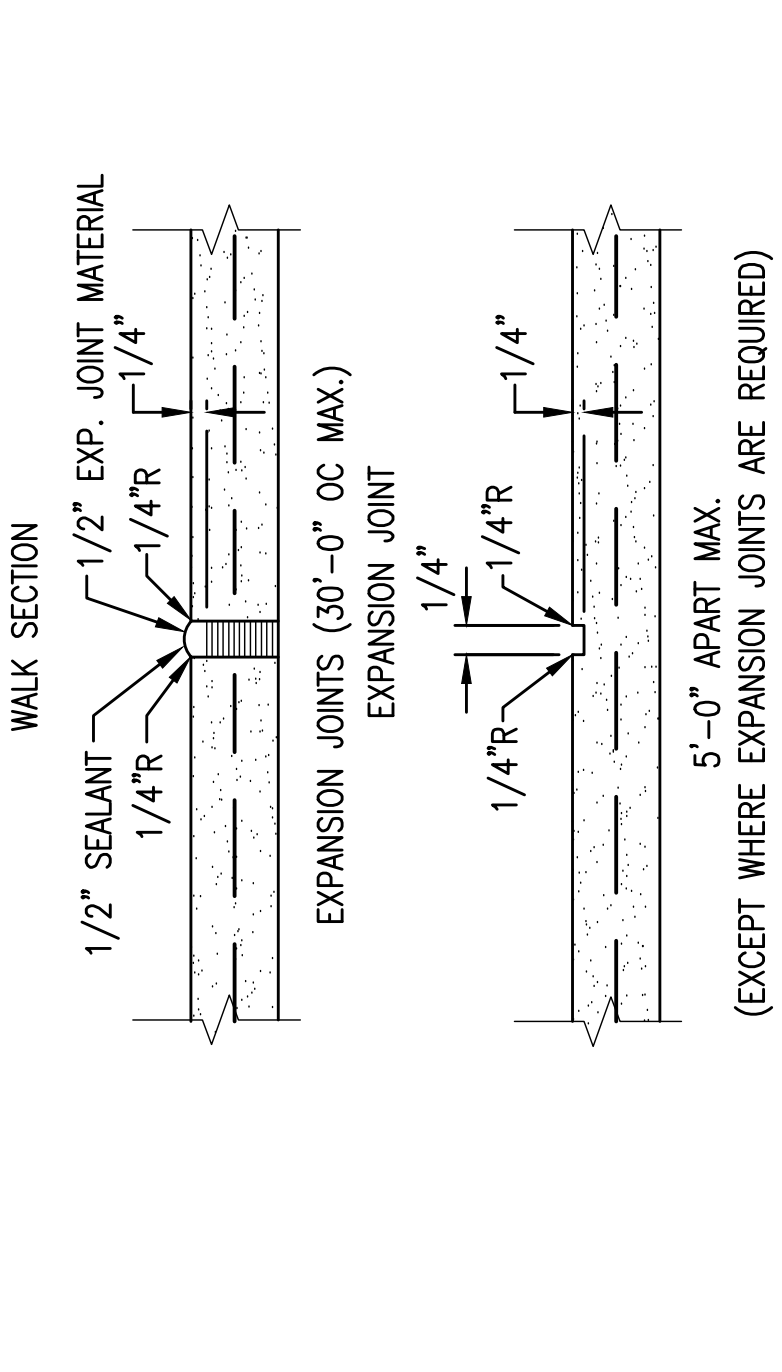
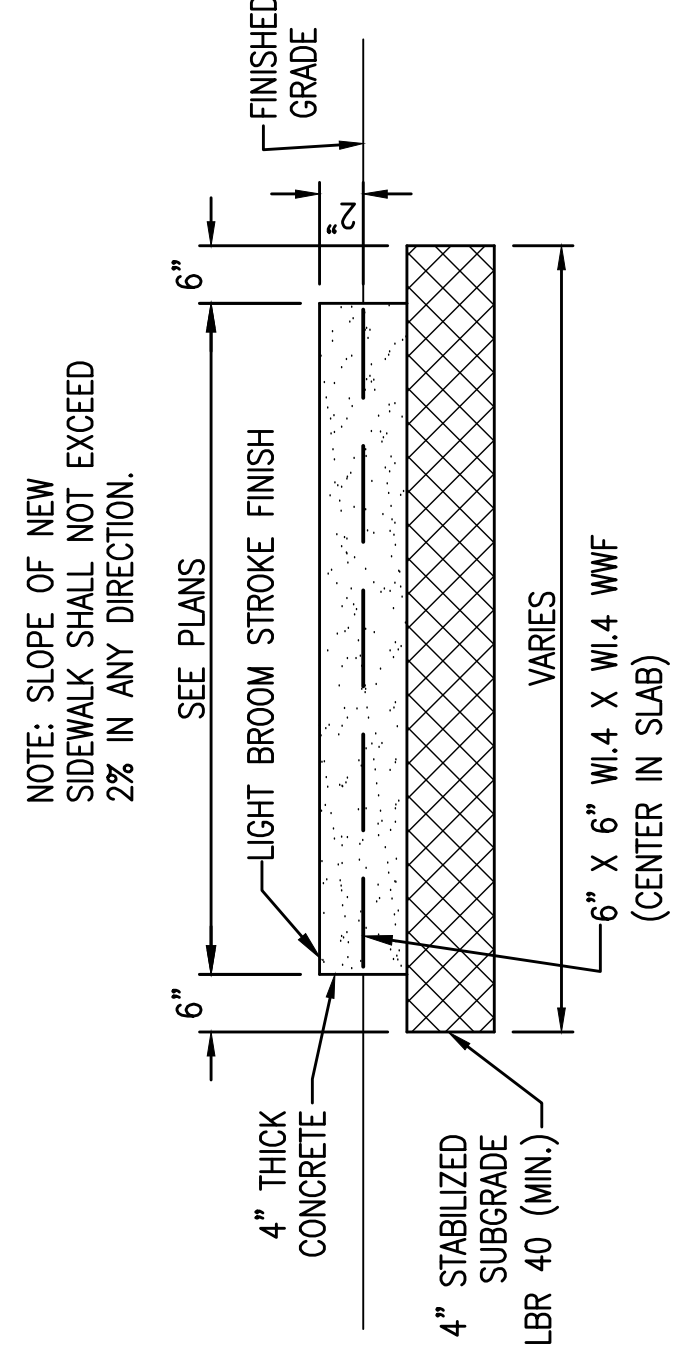
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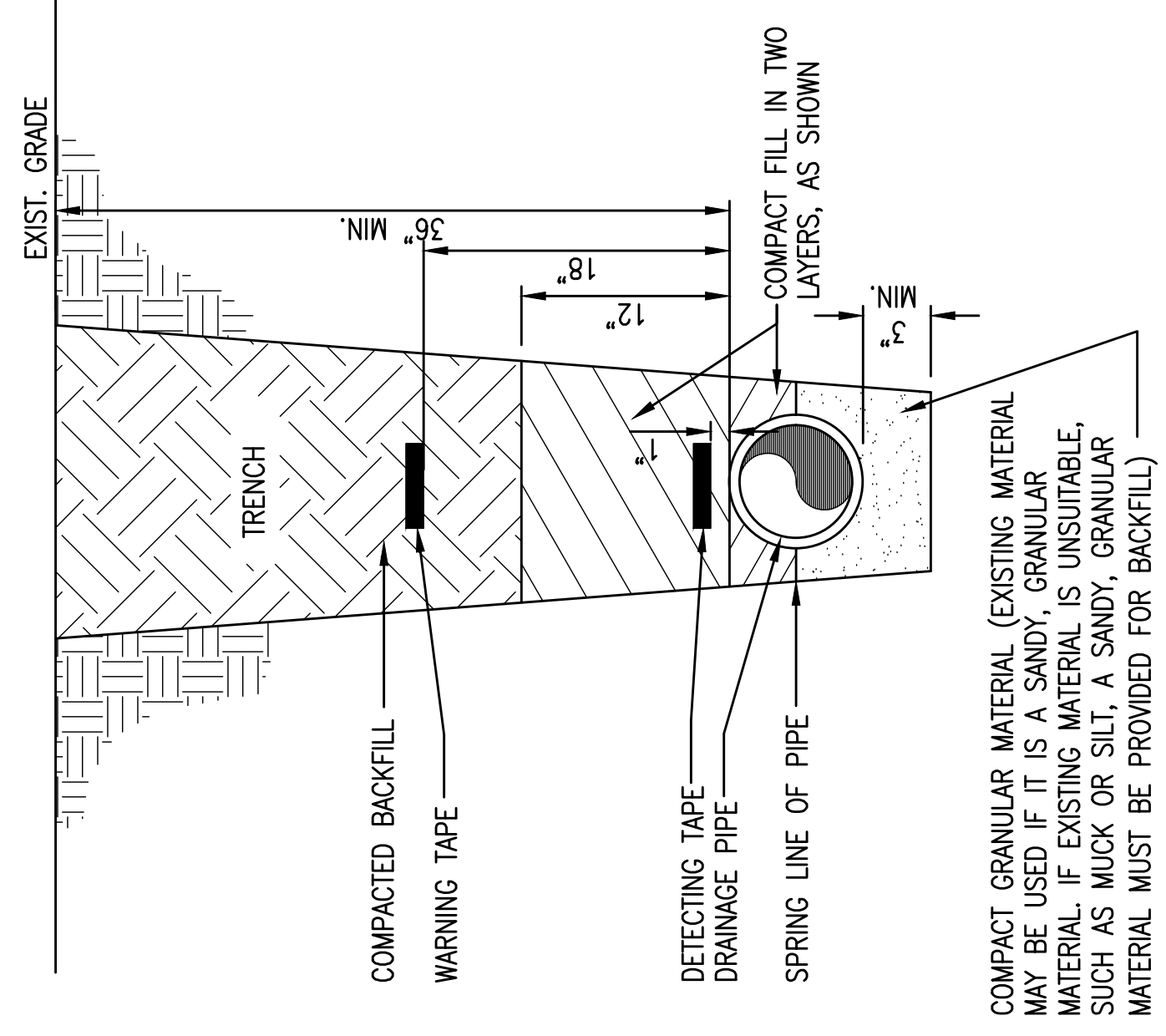
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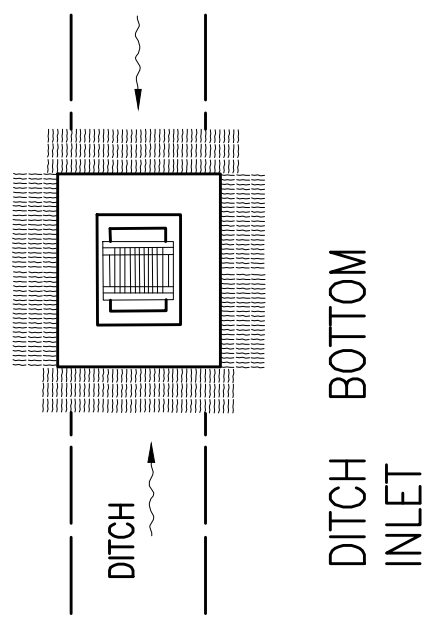




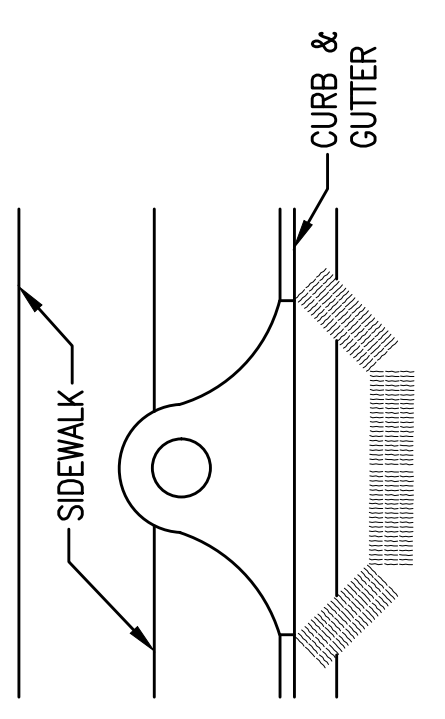
CONTRACTION JOINT  
**SIDEWALK DETAIL**  
NOT TO SCALE



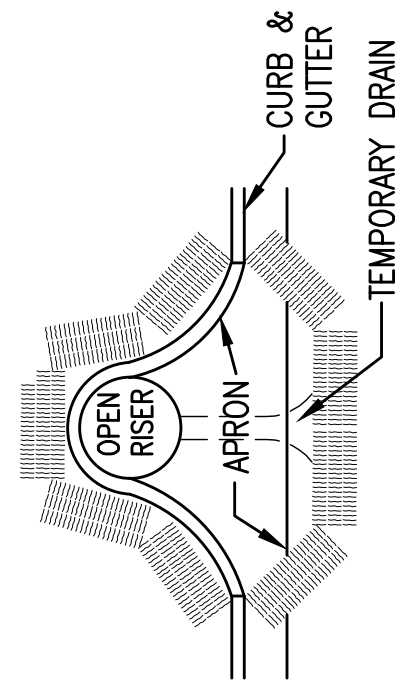
**TYPICAL PIPE BEDDING**  
NOT TO SCALE



**DITCH INLET**



**COMPLETED INLET**  
ANCHOR BALES WITH 2 - 2" X 2" X 4' STAKES PER BALE.



**PARTIAL INLET**

**PROTECTION AROUND INLETS OR SIMILAR STRUCTURES**  
NOT TO SCALE

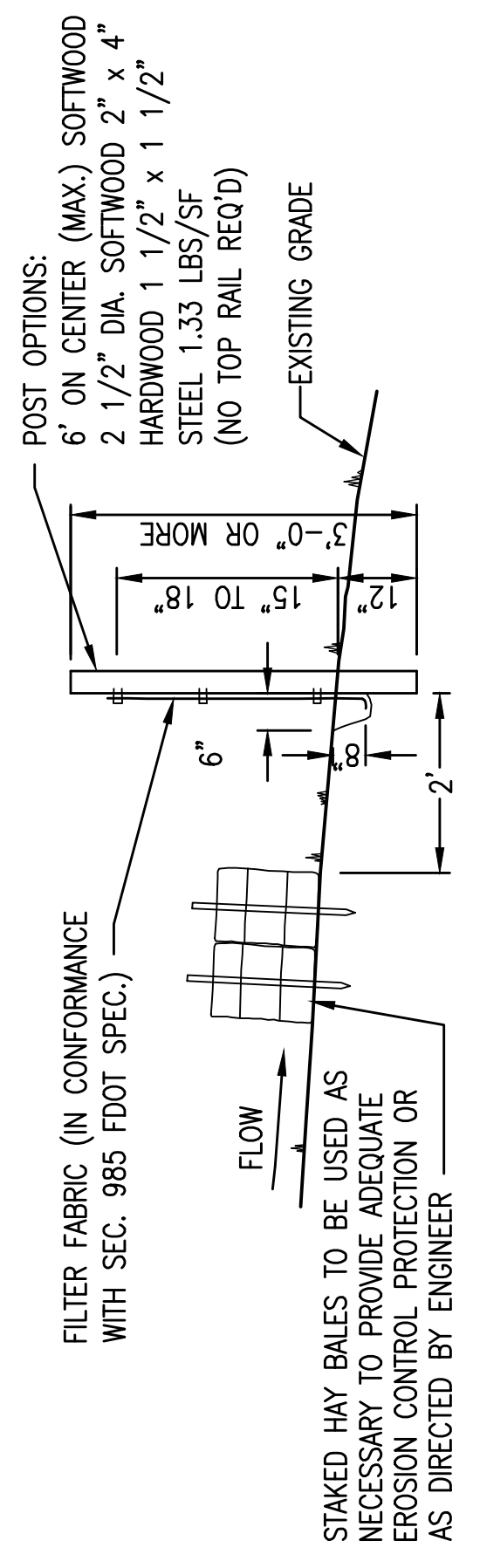
**PIPE JOINT RESTRAINT TABULATION**

SHOWING DISTANCES IN FEET FROM THE FITTING TO BE RESTRAINED TO THE LAST RESTRAINING GLAND REQUIRED

PIPE SIZE AND TYPE	HORIZONTAL BENDS				DEAD ENDS	EQUAL TEES SEE NOTE 3	TRANSITION TO HDPE SEE NOTE 4
	90°	45°	22.5°	11.25°			
3" DI	18	8	4	2	33	1	33
4" DI	22	9	4	2	39	1	39
6" DI	31	13	6	3	55	1	55
8" DI	40	17	8	4	72	1	72
10" DI	48	20	9	5	86	1	86
12" DI	56	23	11	5	101	1	101
16" DI	70	29	14	7	129	1	129
20" DI	84	35	17	8	156	1	156
24" DI	96	40	19	9	181	1	181
4" PVC	28	12	6	3	62	1	62
6" PVC	39	16	8	4	87	1	87
8" PVC	50	21	10	5	114	1	114
10" PVC	60	25	12	6	136	1	136
12" PVC	70	29	14	7	160	1	160
16" PVC	88	36	17	9	205	1	205
20" PVC	105	43	21	10	247	1	247
24" PVC	120	50	24	12	287	1	287

- NOTES: 1. TEST PRESSURE = 150 PSI, SOIL GROUP = SM, TRENCH TYPE = 3 DEPTH = 2.5', SAFETY FACTOR = 2  
2. RESTRAINED LENGTHS FOR VERTICAL OFFSETS, REDUCERS & UNEQUAL SIZE TEES MUST BE INDIVIDUALLY CALCULATED.  
3. WITH EQUAL TEES, THE DISTANCES SHOWN ARE WITH A RUN LENGTH OF 40' AS AN EXAMPLE ONLY. FOR OTHER LENGTHS AND FOR UNEQUAL TEES, INDIVIDUAL CALCULATIONS MUST BE MADE.  
4. HDPE PIPE TO BE TERMINATED WITH A FUSED FLANGE. TRANSITION WITH FLANGE BY MJ FITTING AND PROVIDE RESTRAINED JOINTS ON PVC OR DI AS NOTED IN TABLE.

**PIPE RESTRAINT JOINT DETAIL**  
NOT TO SCALE



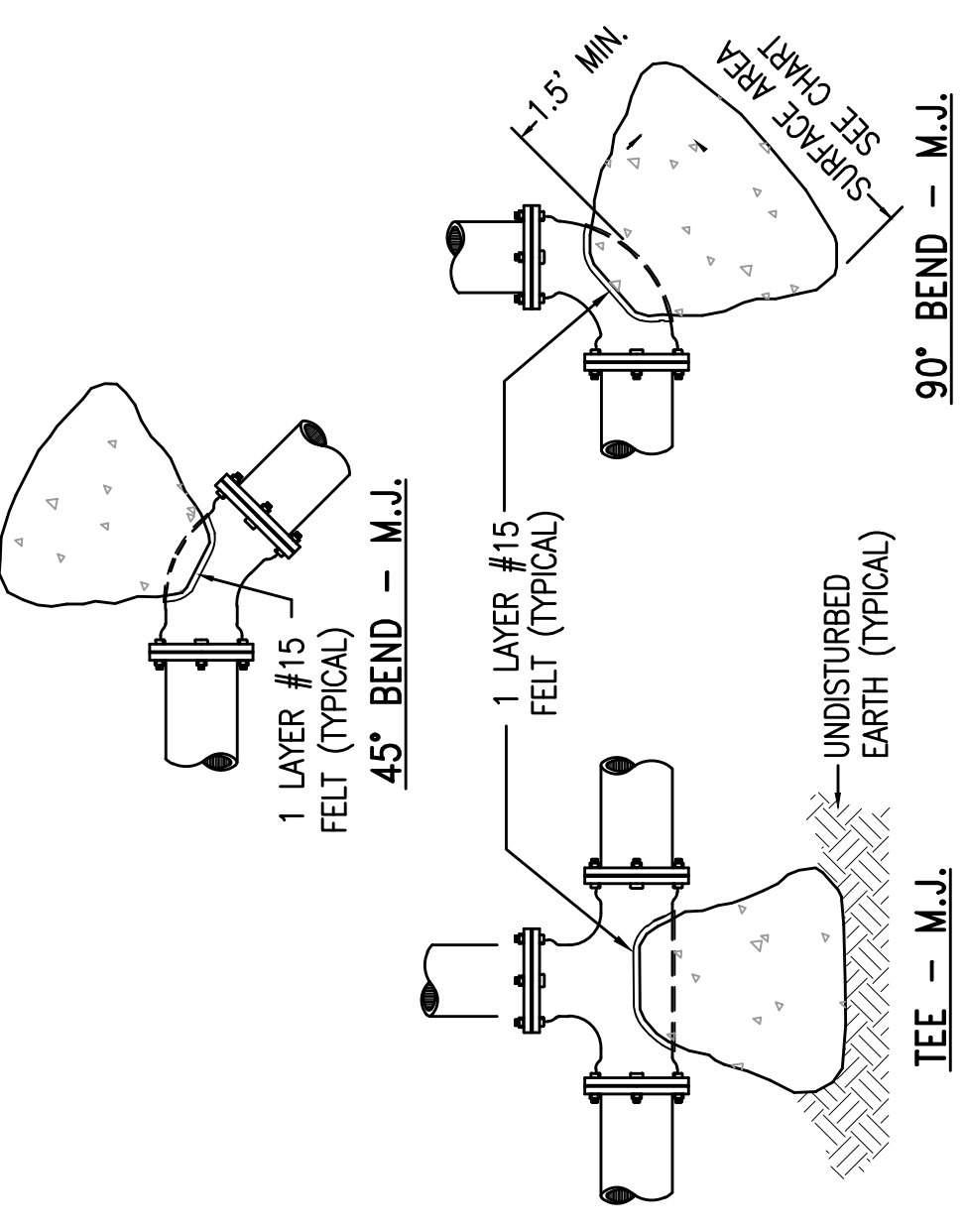
- SILT FENCE NOTES:**  
1. FABRIC TO BE PLACED FACING DRAINAGE FLOW  
2. FABRIC TO BE PLACED IN A 6" WIDE X 8" DEEP CONTINUOUS TRENCH, THEN BACKFILLED  
3. ALL LUMBER TO BE PRESSURE/PRESERVATIVE TREATED  
4. SILT FENCE TO BE INSTALLED PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION ACTIVITIES. SILT FENCE TO REMAIN UNTIL 100% PROJECT GRASSING (STABILIZATION) IS ACHIEVED  
5. PREFABRICATED SILT FENCES ARE PERMITTED AS LONG AS THEY MEET OR EXCEED FDOT SPECIFICATIONS.

**TYPE III SILT FENCE DETAIL**  
NOT TO SCALE

**MINIMUM THRUST BLOCK DIMENSIONS:  
SURFACE AREA AGAINST UNDISTURBED SOIL**

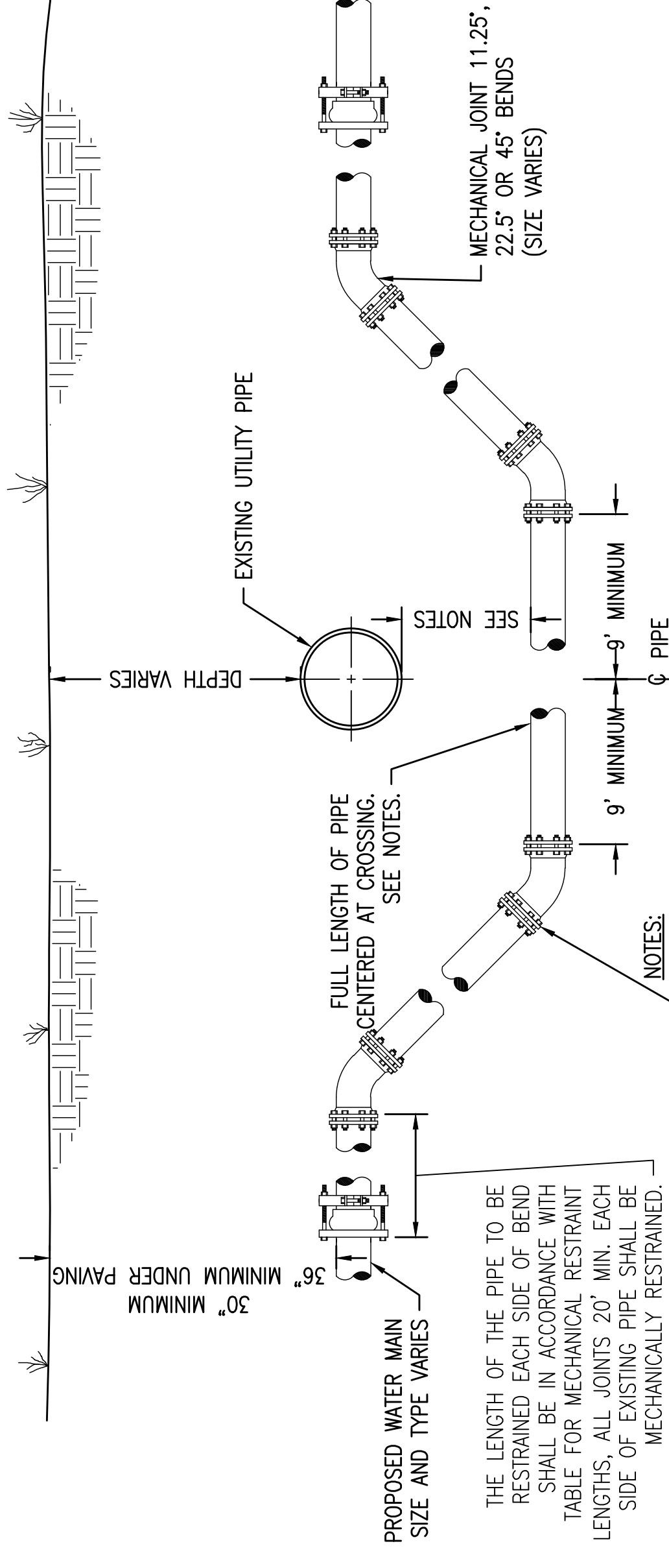
PIPE SIZE	DEAD END OR TEE	90° BEND	45° BEND	22.5° BEND	11.25° BEND
4"	1' X 2'	1.5' X 1.5'	1' X 1.5'	1' X 1.5'	1' X 1.5'
6"	2' X 2'	2.5' X 2.5'	2' X 1.5'	1' X 1.5'	1' X 1.5'
8"	2.25' X 3'	3' X 3'	2' X 2.5'	1.5' X 1.5'	1.5' X 1.5'
10"	3.5' X 3'	4' X 3.75'	2.75' X 3'	2' X 2'	2' X 2.5'
12"	4' X 4'	4' X 5'	3' X 4'	2' X 3'	2' X 2.5'
20"	8' X 9'	9' X 11'	6' X 7'	4.5' X 5'	3.5' X 4'
24"	9' X 11'	11.5' X 12'	7.5' X 8'	5' X 6'	4' X 4'
30"	12' X 12.5'	14.5' X 15'	9.5' X 10'	6' X 8'	5' X 5'

- NOTES:  
1. ONE LAYER OF #15 FELT TO BE USED TO PREVENT ADHESION OF CONCRETE TO FITTING.  
2. ALL THRUST BLOCKS TO BE BACKED AGAINST UNDISTURBED SOIL.  
3. THRUST BLOCK DIMENSIONS BASED ON SM SOIL CLASSIFICATION.  
4. CONCRETE MIN. 2,500 PSI.  
5. JOINT RESTRAINTS ARE TO BE USED ON ALL FITTINGS, THRUST BLOCKS REQUIRED ON 90° BENDS, 45° BENDS, TEES, TAPPING SLEEVES, AND DEAD ENDS.



**TYPICAL THRUST BLOCK INSTALLATIONS**  
NOT TO SCALE

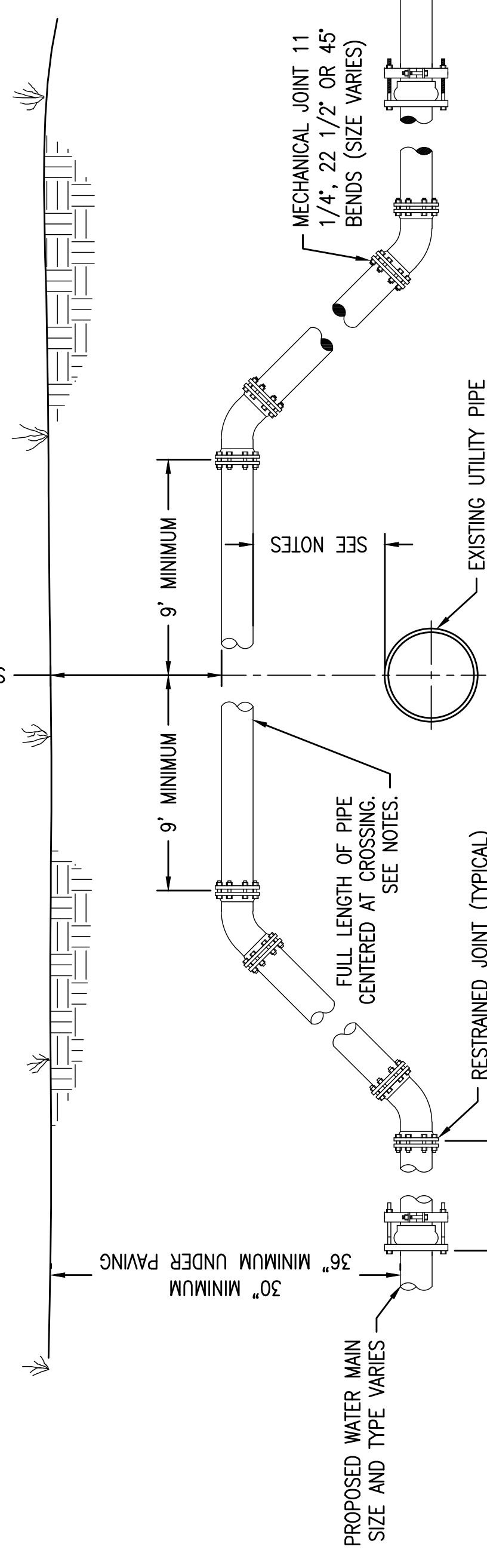




- NOTES:**
1. IF EXISTING UTILITY PIPE IS A WATER MAIN, 6-INCHES OF SEPARATION IS REQUIRED.
  2. IF EXISTING UTILITY PIPE IS A FORCE MAIN, SANITARY SEWER, RECLAIMED WATER MAIN OR STORM SEWER, 18 INCHES OF SEPARATION IS REQUIRED. IF THIS IS IMPRACTICAL AND EXISTING UTILITY MAIN IS C900, C905 OR D.I. PIPE, SEPARATION CAN BE REDUCED TO 6-INCHES. A FULL LENGTH OF PIPE SHALL BE CENTERED UNDER EXISTING UTILITY MAIN TO PROVIDE MAXIMUM JOINT SPACING FOR ALL CROSSINGS.
  3. LOCATING WIRING REQUIRED.

**ADJUSTMENT UNDER EXISTING UTILITIES**

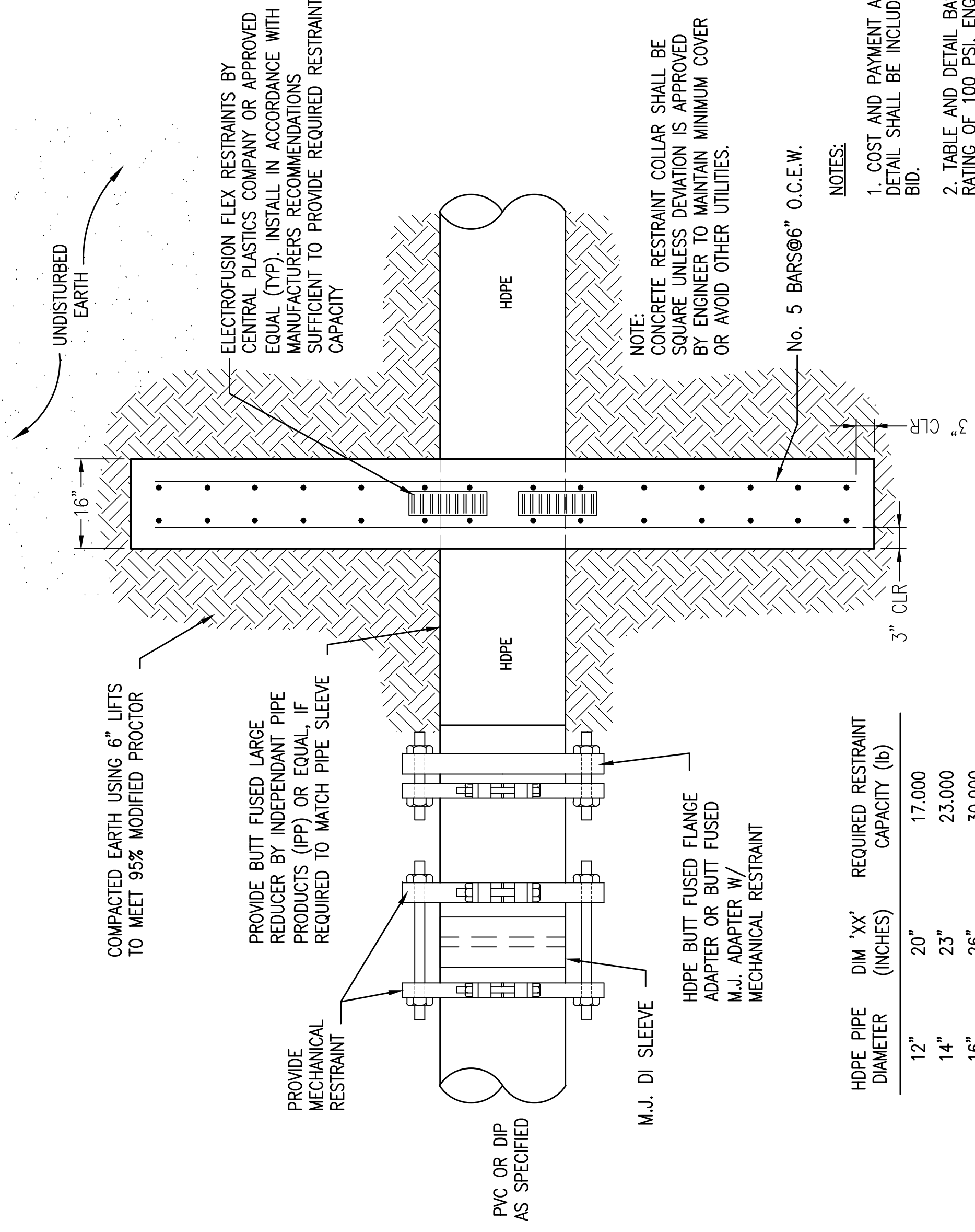
NOT TO SCALE



- NOTES:**
1. IF EXISTING UTILITY PIPE IS A WATER MAIN, 6-INCHES OF SEPARATION IS REQUIRED.
  2. IF EXISTING UTILITY PIPE IS A FORCE MAIN, SANITARY SEWER, RECLAIMED WATER MAIN OR STORM SEWER, 18 INCHES OF SEPARATION IS REQUIRED. IF THIS IS IMPRACTICAL AND EXISTING UTILITY MAIN IS C900, C905 OR D.I. PIPE, SEPARATION CAN BE REDUCED TO 6-INCHES. A FULL LENGTH OF PIPE SHALL BE CENTERED OVER EXISTING UTILITY MAIN TO PROVIDE MAXIMUM JOINT SPACING FOR ALL CROSSINGS.
  3. LOCATING WIRING REQUIRED.
  4. DEPTH OF BURY TO BE 36" MINIMUM IN PAVED AREAS MEASURED FROM FINISHED GRADE. DEPTH OF BURY TO BE 30" MINIMUM IN UNPAVED AREAS.

**ADJUSTMENT OVER EXISTING UTILITIES**

NOT TO SCALE



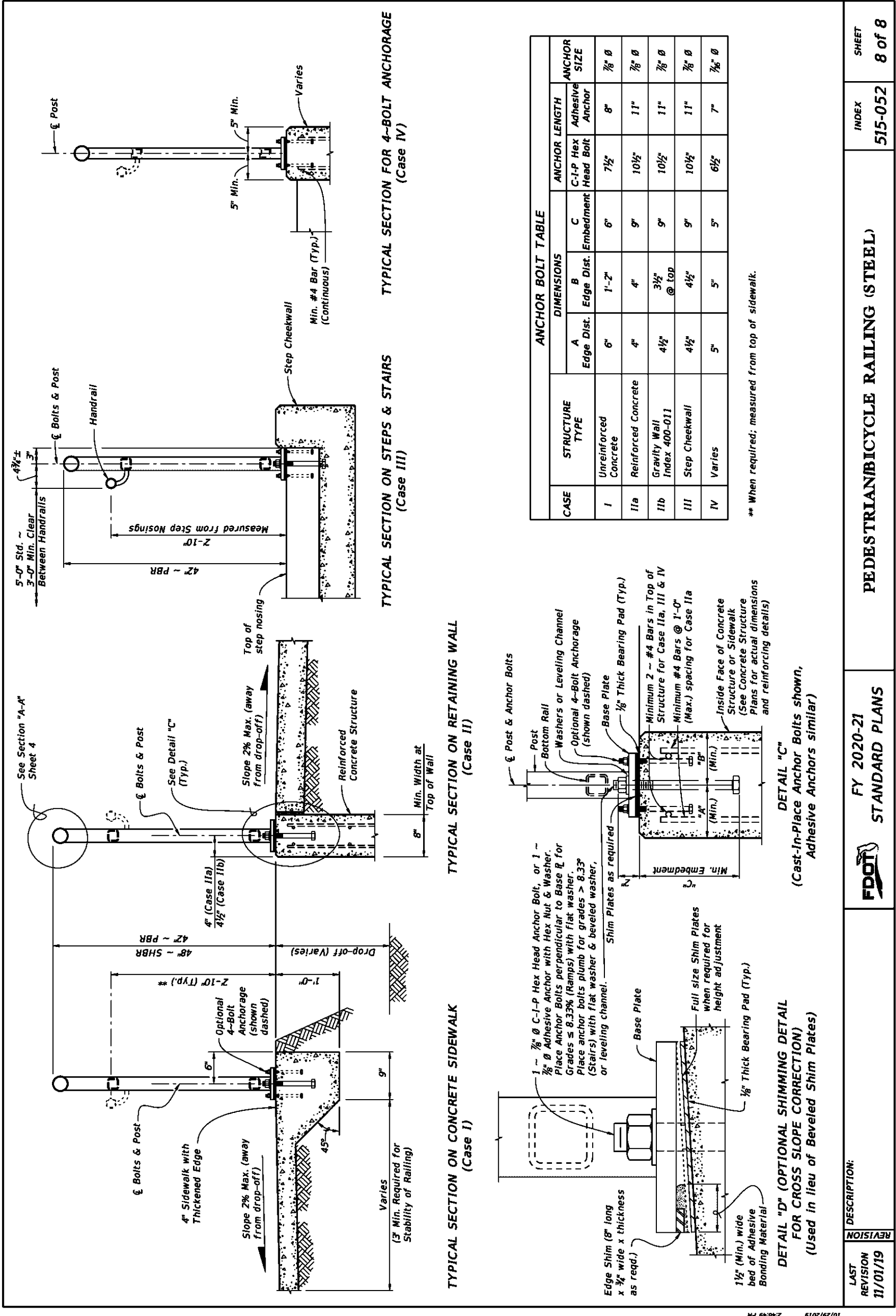
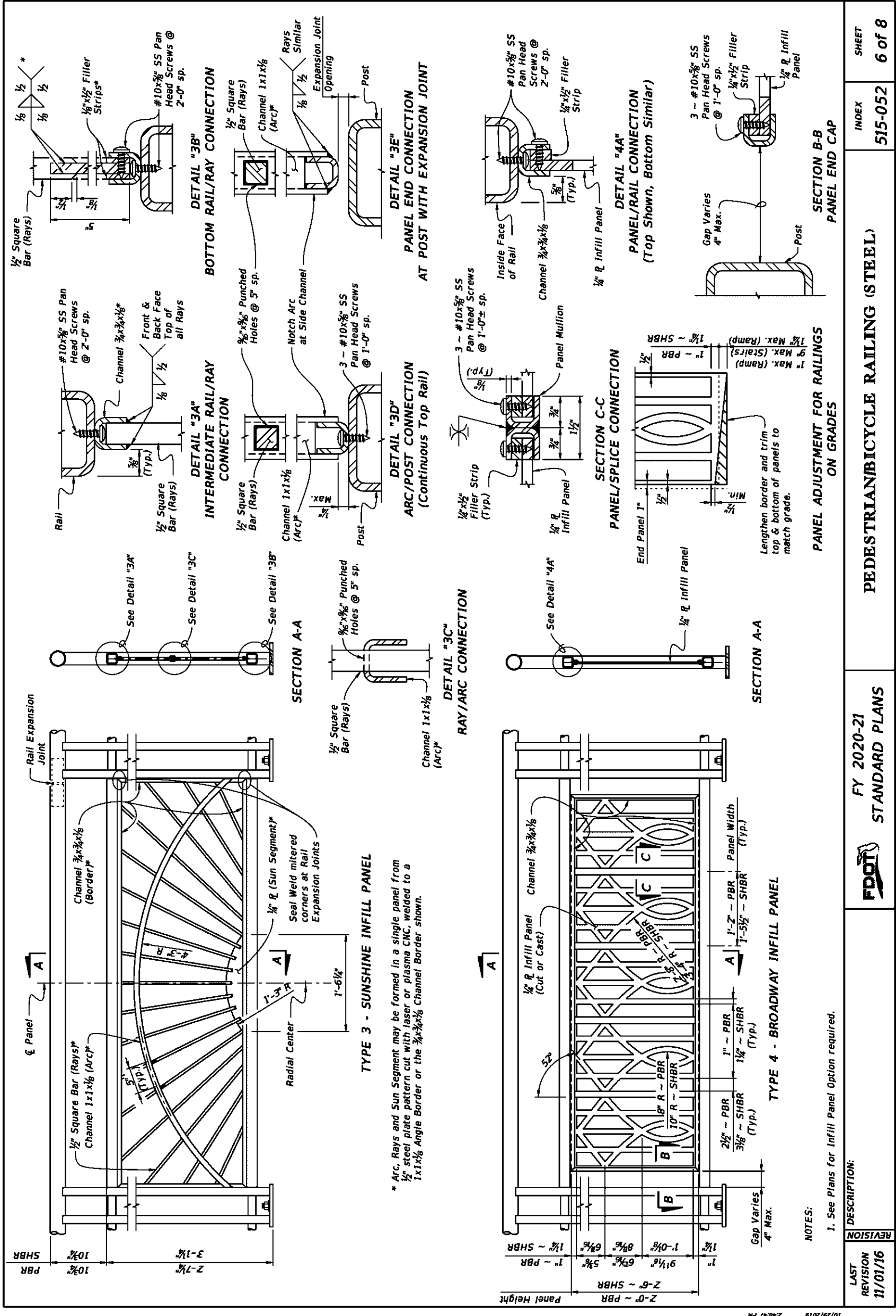
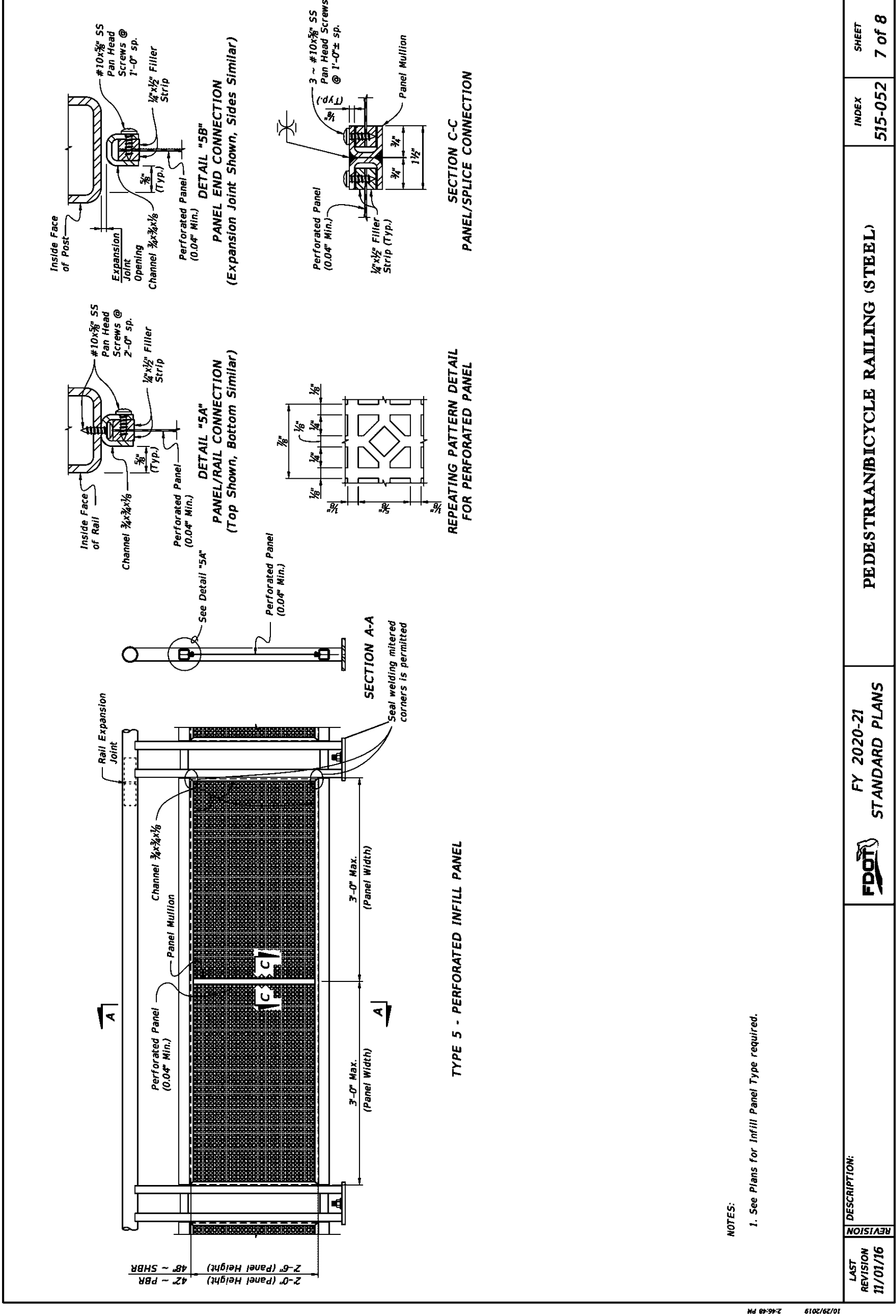
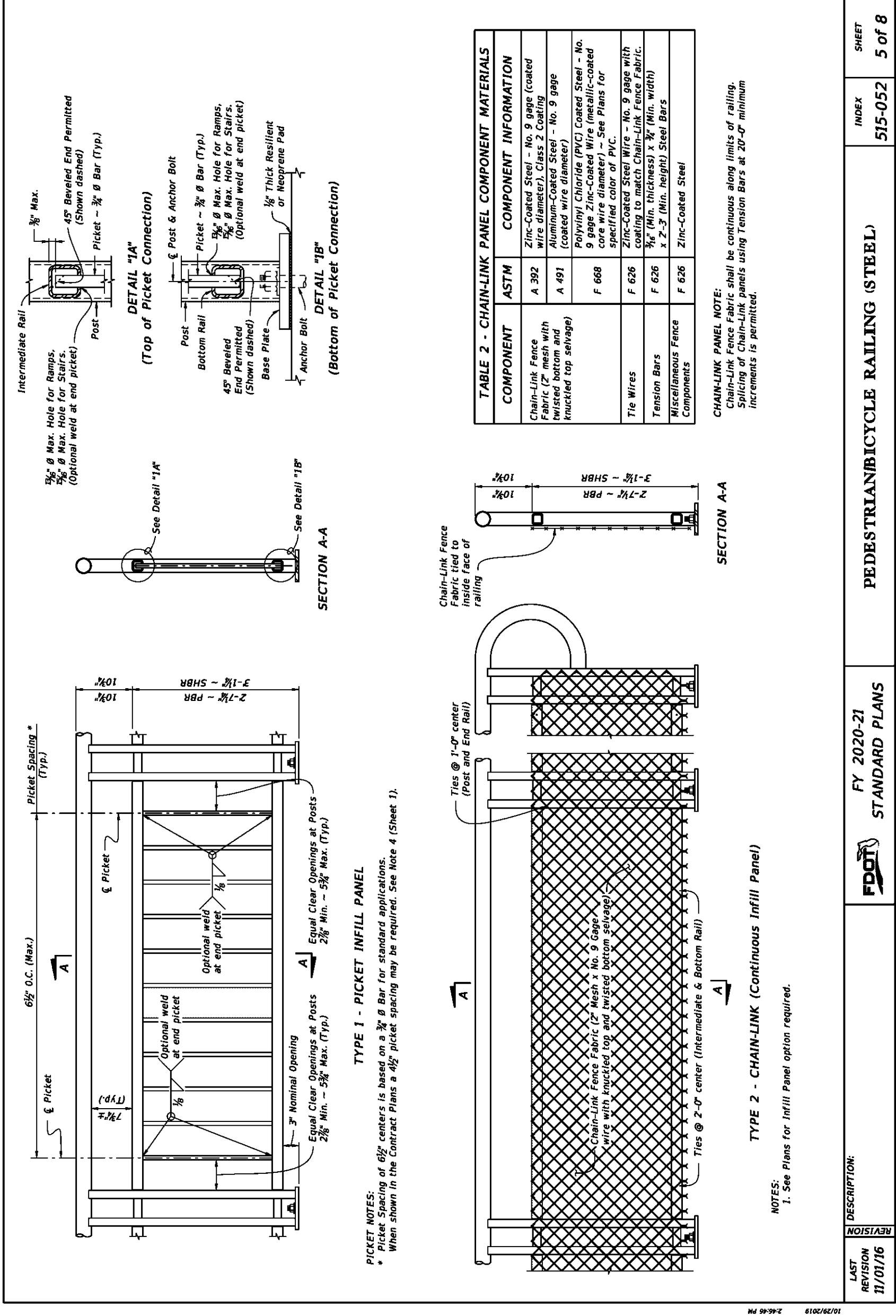
- NOTES:**
1. COST AND PAYMENT ASSOCIATED WITH THIS DETAIL SHALL BE INCLUDED IN DIRECTIONAL DRILL BID.
  2. TABLE AND DETAIL BASED ON PRESSURE RATING OF 100 PSI. ENGINEER SHOULD BE CONTACTED PRIOR TO INSTALLATION IF A PIPE WITH A DIFFERENT PRESSURE RATING IS USED.

HDPE PIPE DIAMETER (INCHES)	DIM 'XX' (INCHES)	REQUIRED RESTRAINT CAPACITY (lb)
12"	20"	17,000
14"	23"	23,000
16"	26"	30,000

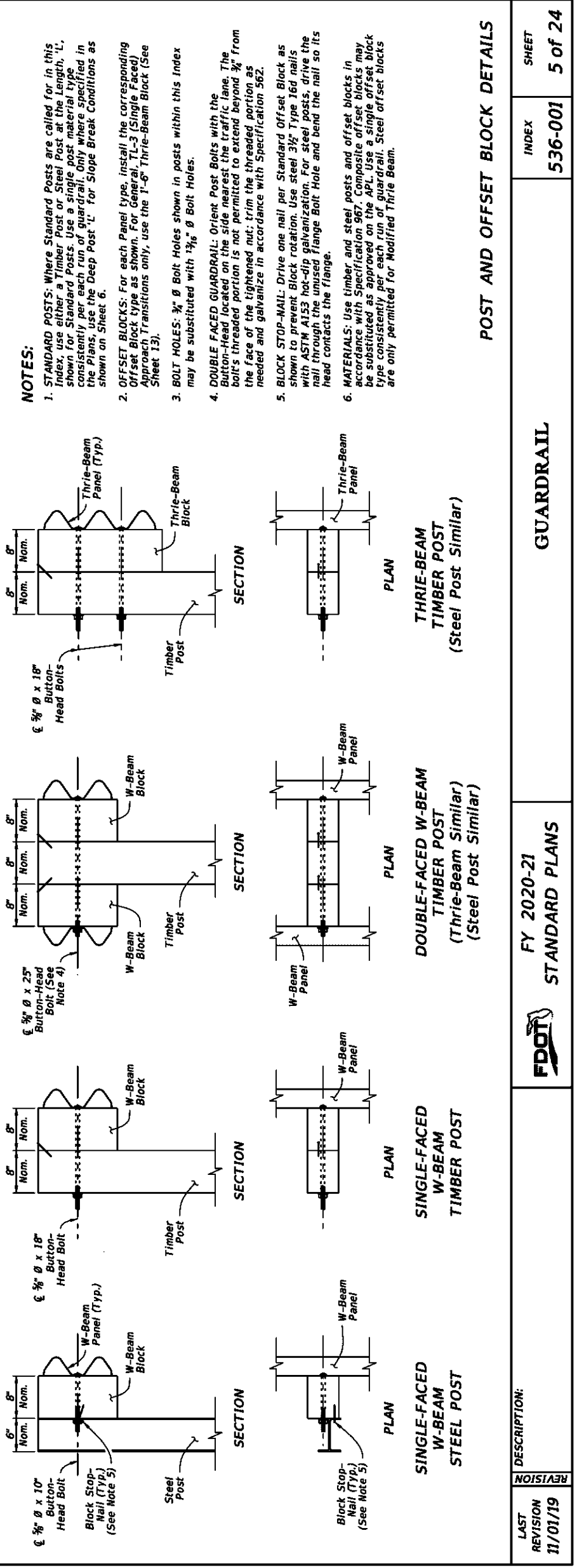
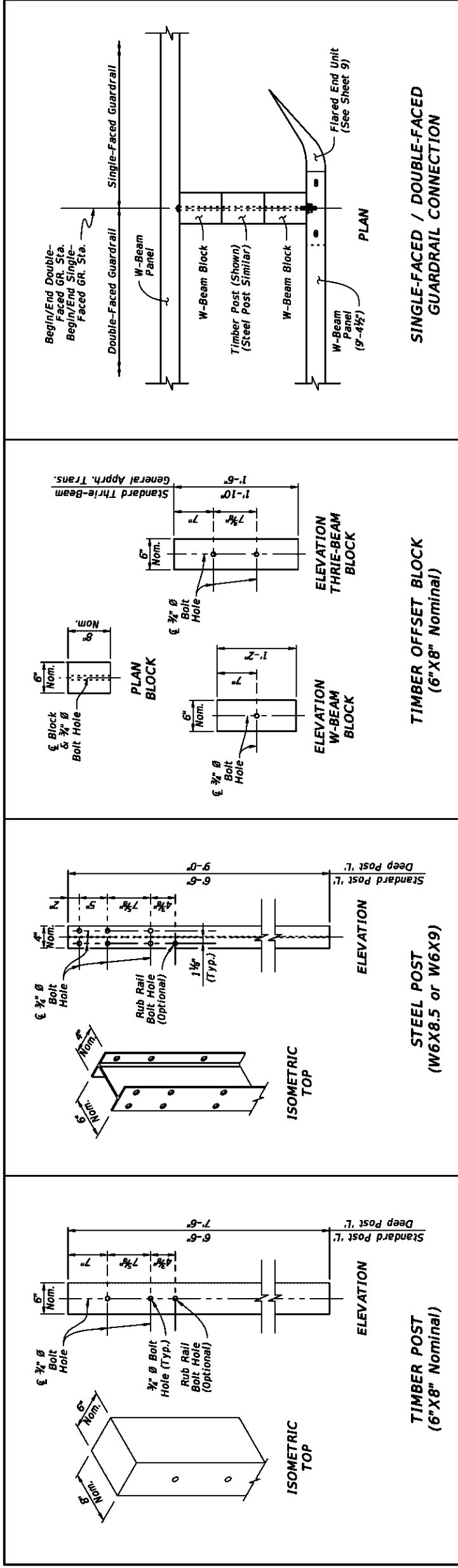
**PVC TO HDPE TRANSITION CONNECTION DETAIL**

NOT TO SCALE







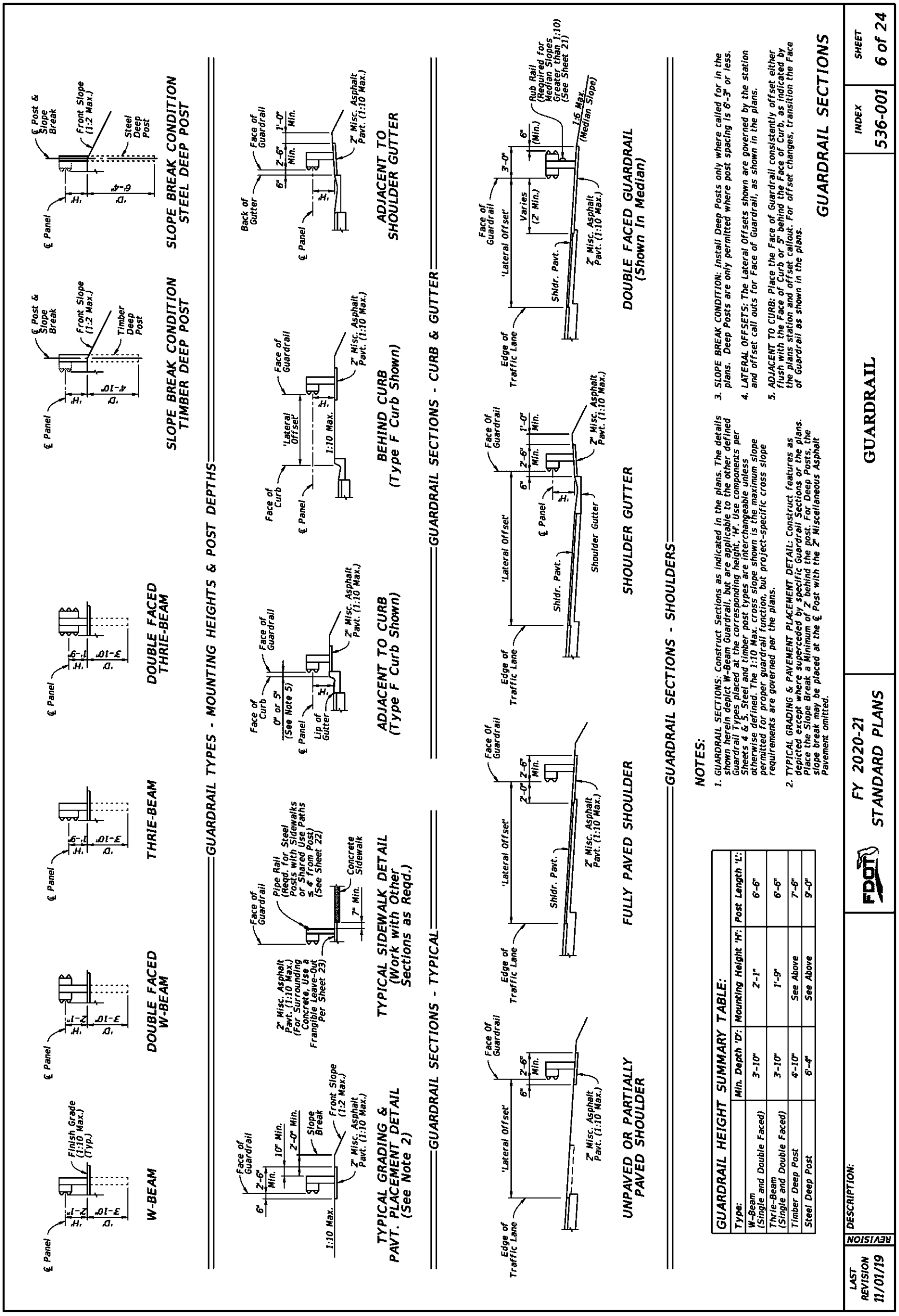


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**POST AND OFFSET BLOCK DETAILS**

**NOTES:**

1. **POSTS:** Posts shall be fabricated from steel or timber. Posts shall be installed in the center of the guardrail section. Posts shall be installed in the center of the guardrail section. Posts shall be installed in the center of the guardrail section.
2. **OFFSET BLOCKS:** For each post type, install the corresponding offset block. Offset blocks shall be installed in the center of the guardrail section. Offset blocks shall be installed in the center of the guardrail section.
3. **DOUBLE-FACED GUARDRAIL:** Double-faced guardrail shall be installed in the center of the guardrail section. Double-faced guardrail shall be installed in the center of the guardrail section.
4. **TRIPLE-BEAM GUARDRAIL:** Triple-beam guardrail shall be installed in the center of the guardrail section. Triple-beam guardrail shall be installed in the center of the guardrail section.
5. **BLOCK SPACING:** Block spacing shall be in accordance with the manufacturer's drawings. Block spacing shall be in accordance with the manufacturer's drawings.
6. **GENERAL GUARDRAIL:** General guardrail shall be installed in the center of the guardrail section. General guardrail shall be installed in the center of the guardrail section.



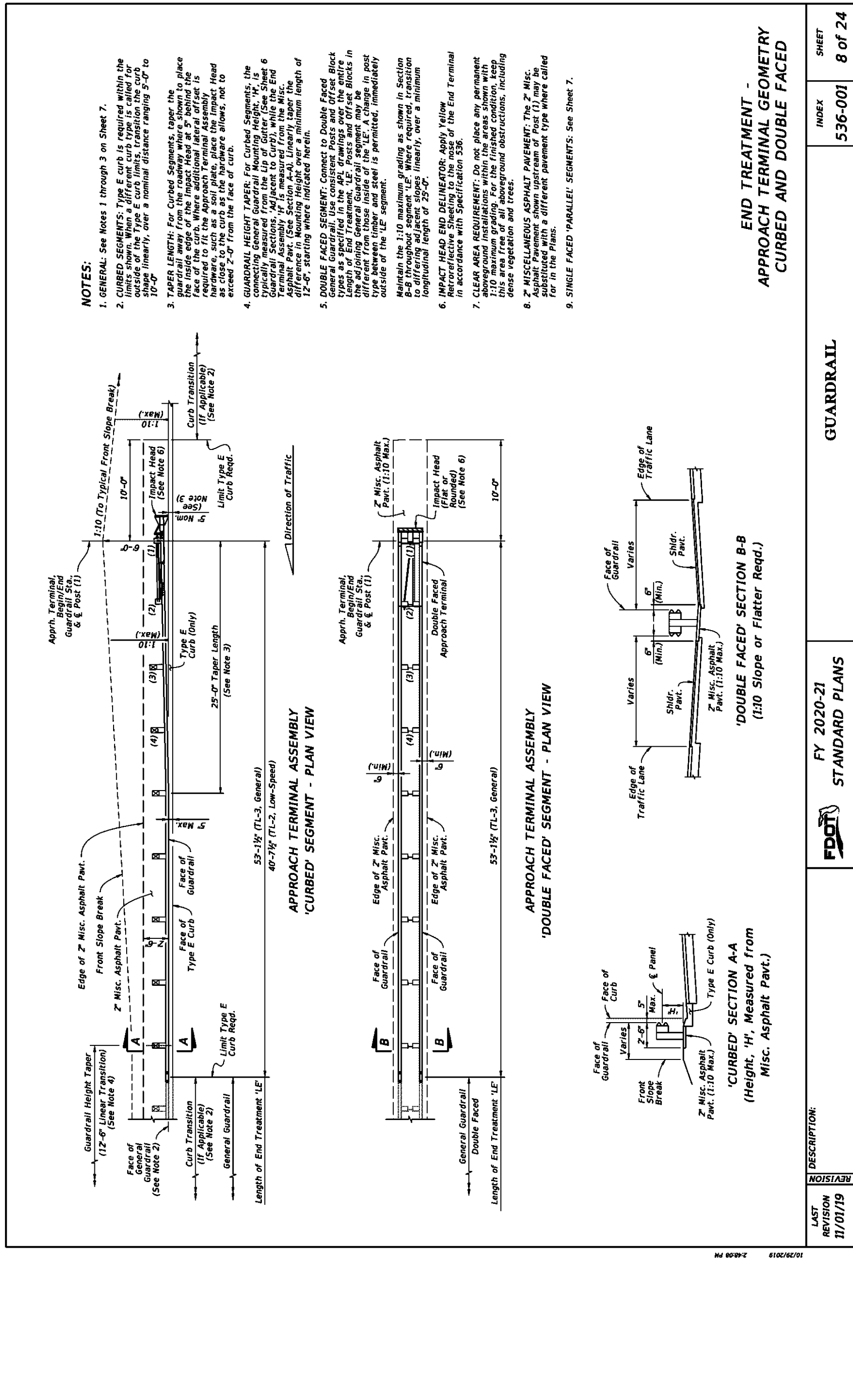
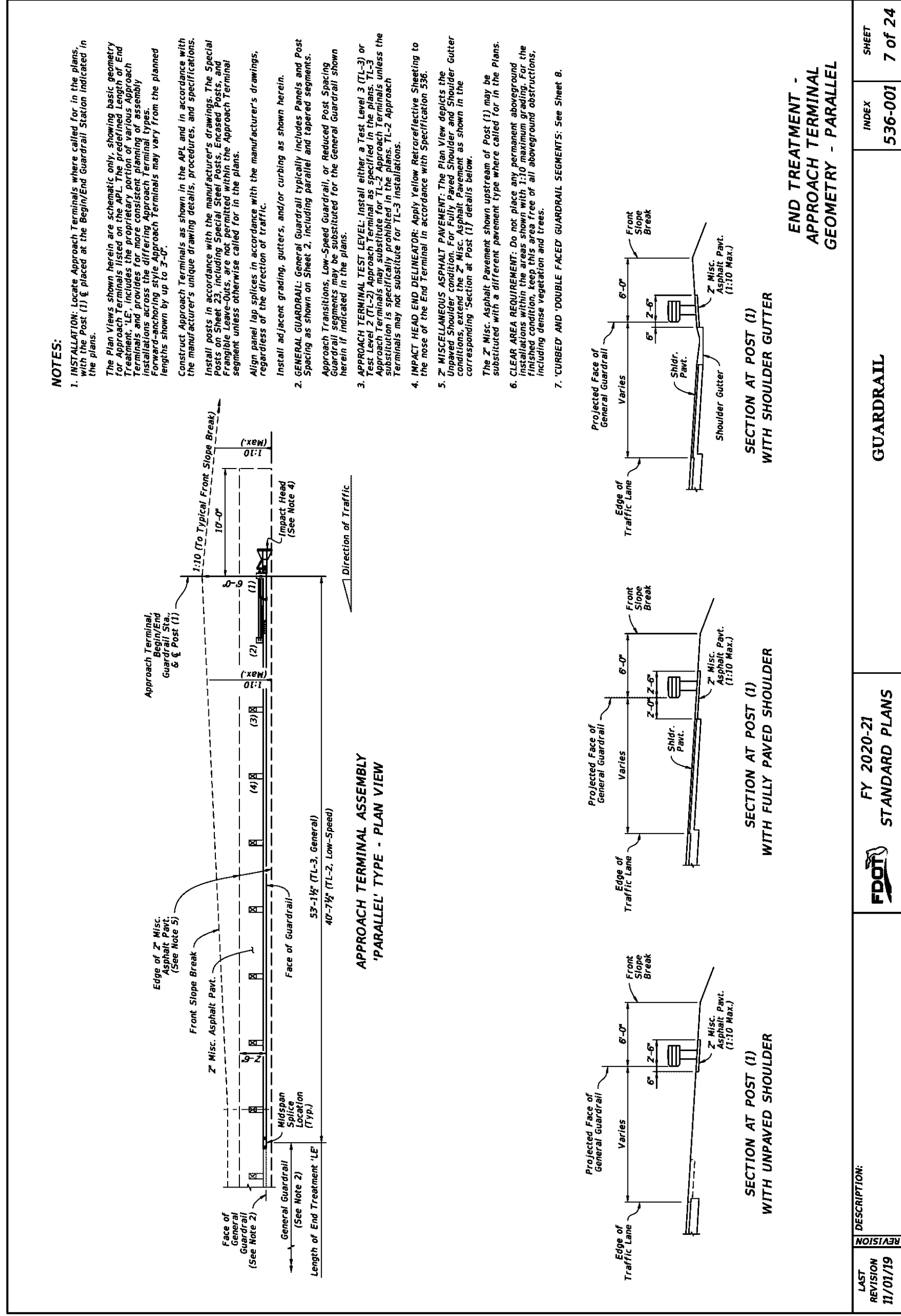
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**GUARDRAIL HEIGHT SUMMARY TABLE:**

Beam Type	Min. Depth (D)	Mounting Height (H): Post Length (L)	Post Length (L)
W-Beam	3'-0"	2'-1"	6'-0"
Double-Faced W-Beam	3'-0"	2'-1"	6'-0"
Thrie-Beam	3'-0"	1'-0"	6'-0"
Double-Faced Thrie-Beam	3'-0"	1'-0"	6'-0"
Steel Deep Post	6'-0"	See Above	9'-0"

**NOTES:**

1. **GUARDRAIL SECTIONS:** Guardrail sections are indicated in the plans. The details shown are for the standard guardrail section. The details shown are for the standard guardrail section.
2. **TYPICAL GRADING & PAVEMENT PLACEMENT DETAIL:** Typical grading and pavement placement details are shown in the plans. Typical grading and pavement placement details are shown in the plans.
3. **SLOPE BREAK CONDITION:** Slope break condition details are shown in the plans. Slope break condition details are shown in the plans.
4. **ADJACENT TO CURB:** Adjacent to curb details are shown in the plans. Adjacent to curb details are shown in the plans.
5. **ADJACENT TO SHOULDER:** Adjacent to shoulder details are shown in the plans. Adjacent to shoulder details are shown in the plans.

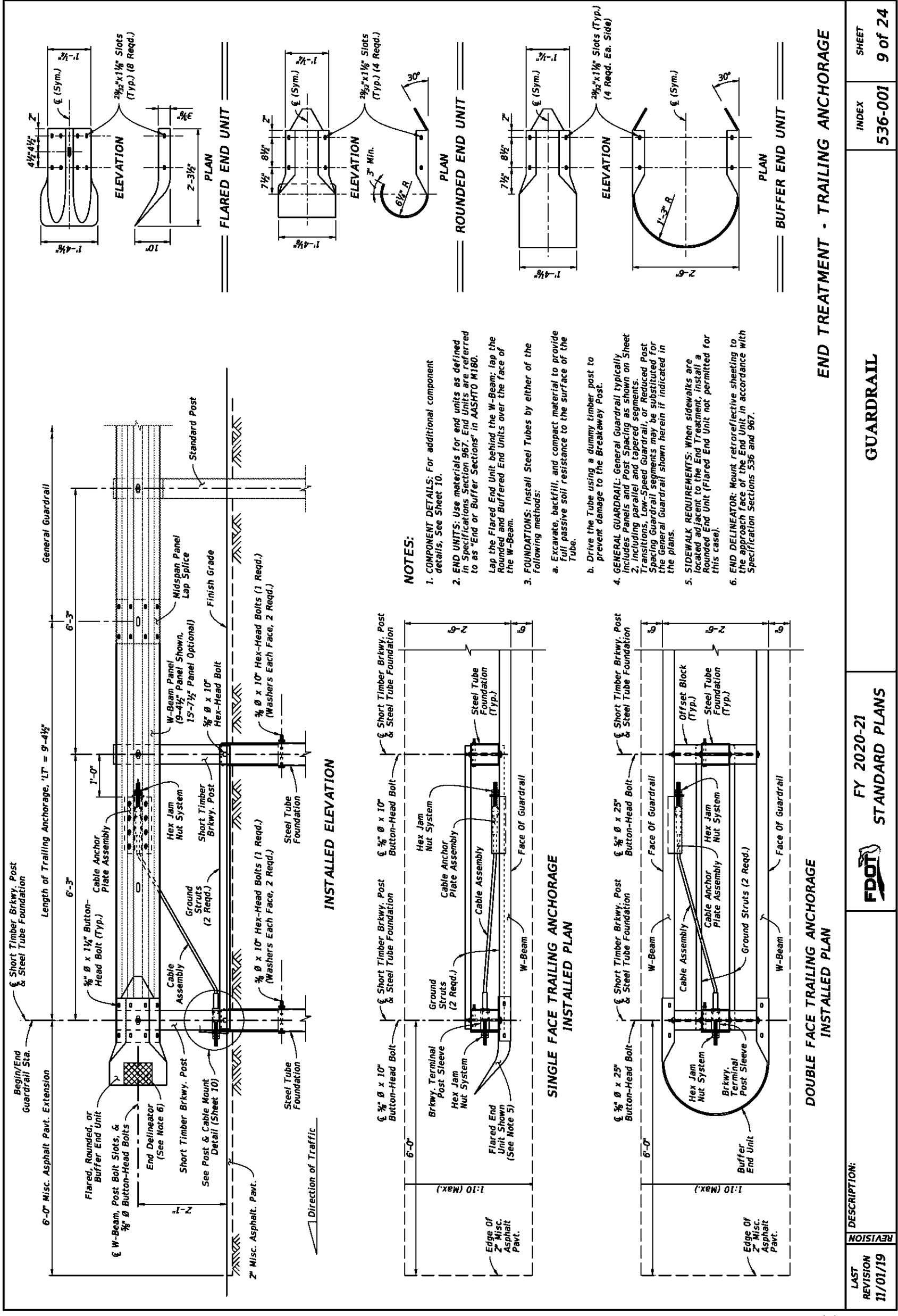


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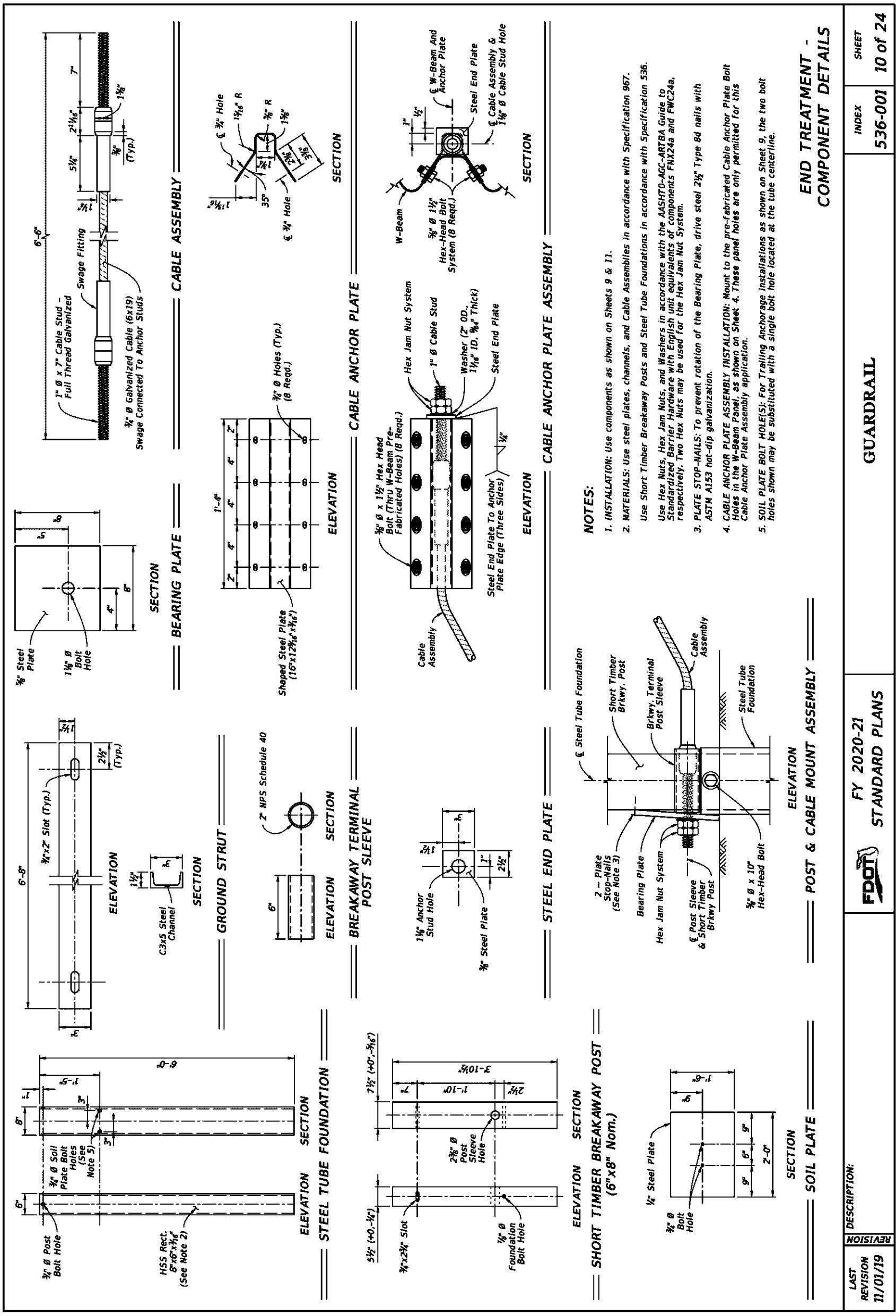
**END TREATMENT - APPROACH TERMINAL GEOMETRY - PARALLEL**

**NOTES:**

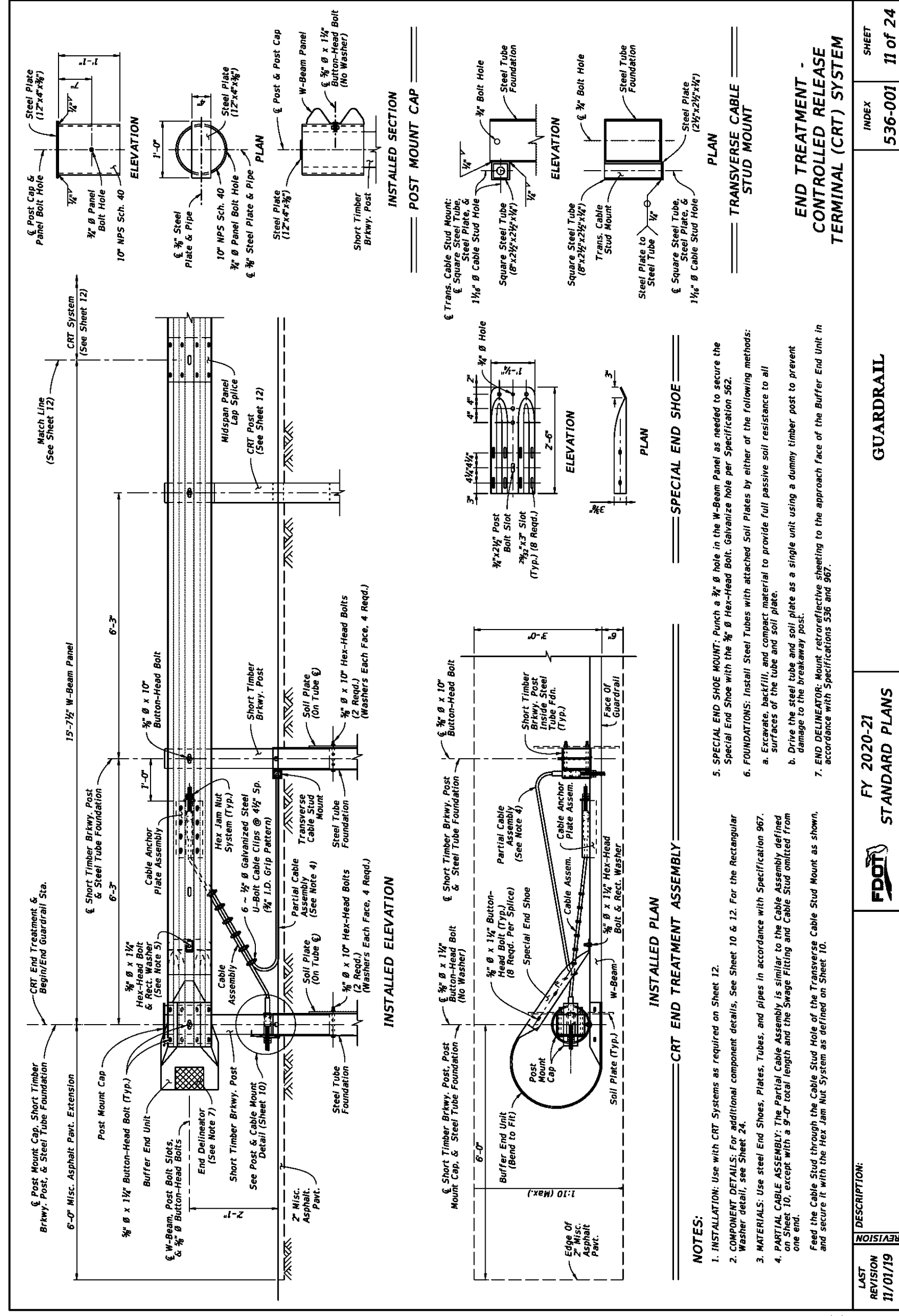
1. **GENERAL:** See Notes 1 through 3 on Sheet 7.
2. **APPROACH TERMINAL ASSEMBLY:** Approach terminal assembly details are shown in the plans. Approach terminal assembly details are shown in the plans.
3. **DOUBLE FACED SEGMENT:** Double-faced segment details are shown in the plans. Double-faced segment details are shown in the plans.
4. **END TREATMENT:** End treatment details are shown in the plans. End treatment details are shown in the plans.
5. **MISCELLANEOUS ASPHALT PAVEMENT:** Miscellaneous asphalt pavement details are shown in the plans. Miscellaneous asphalt pavement details are shown in the plans.
6. **CLEAR AREA REQUIREMENT:** Clear area requirement details are shown in the plans. Clear area requirement details are shown in the plans.
7. **CURBED AND DOUBLE FACED GUARDRAIL SEGMENTS:** Curbed and double-faced guardrail segment details are shown in the plans. Curbed and double-faced guardrail segment details are shown in the plans.



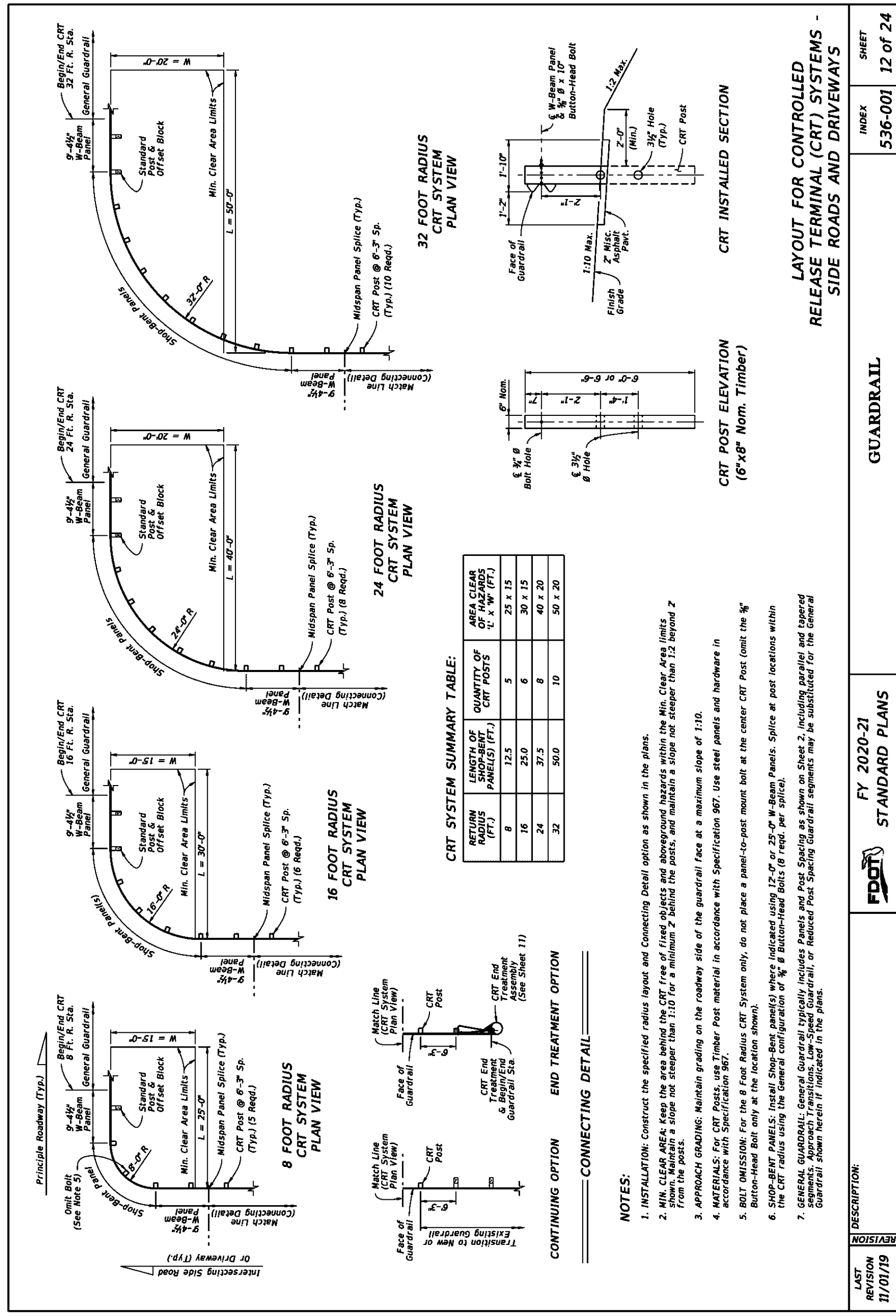
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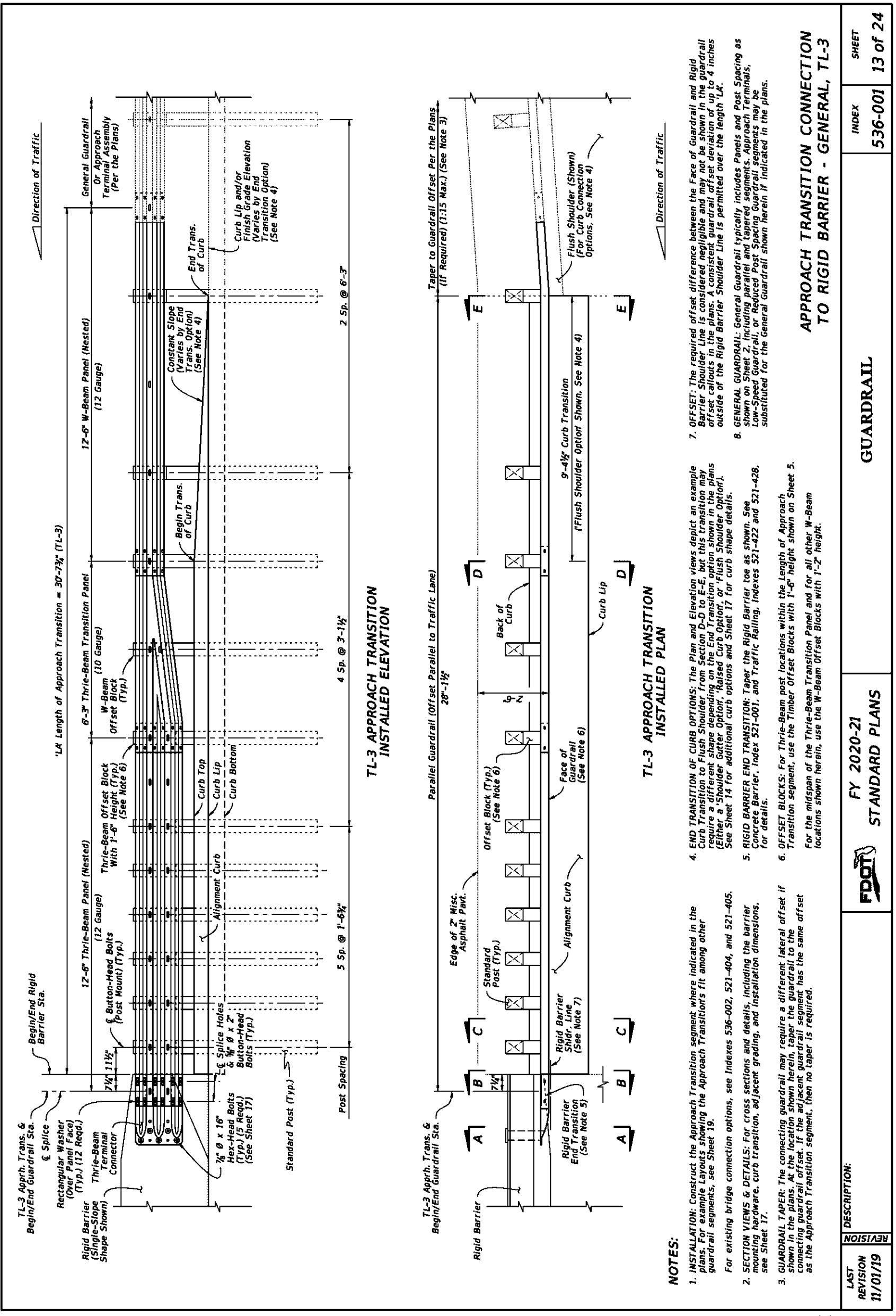
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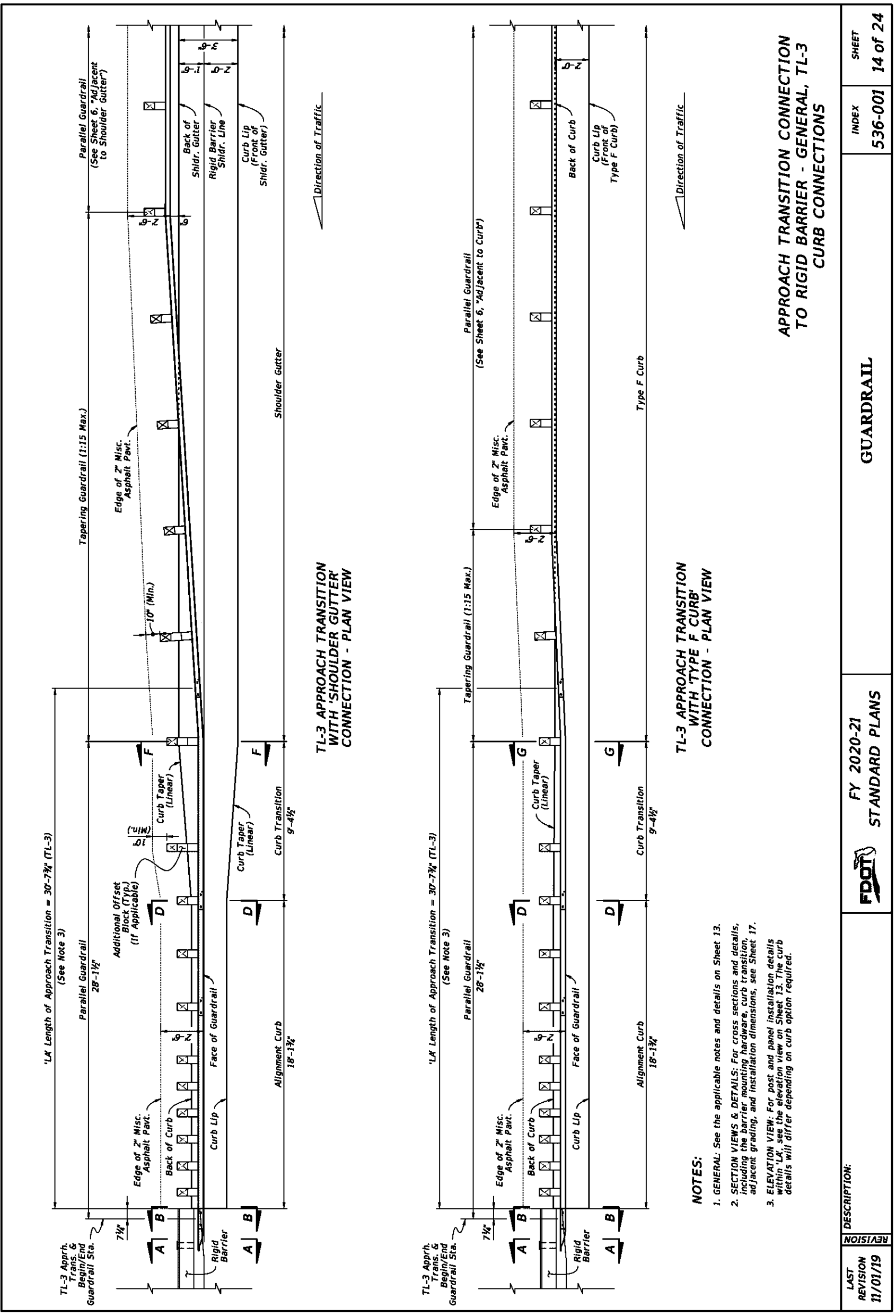
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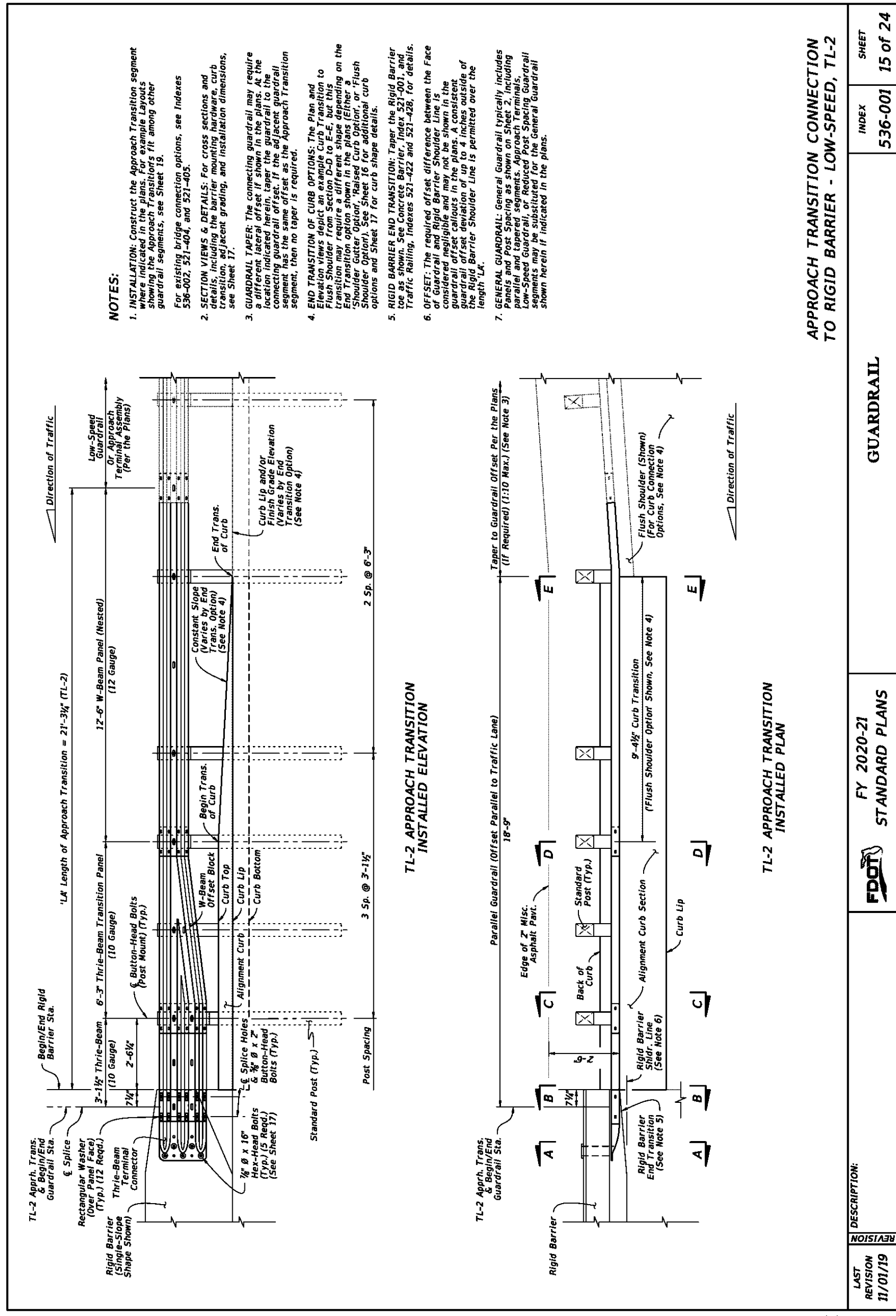
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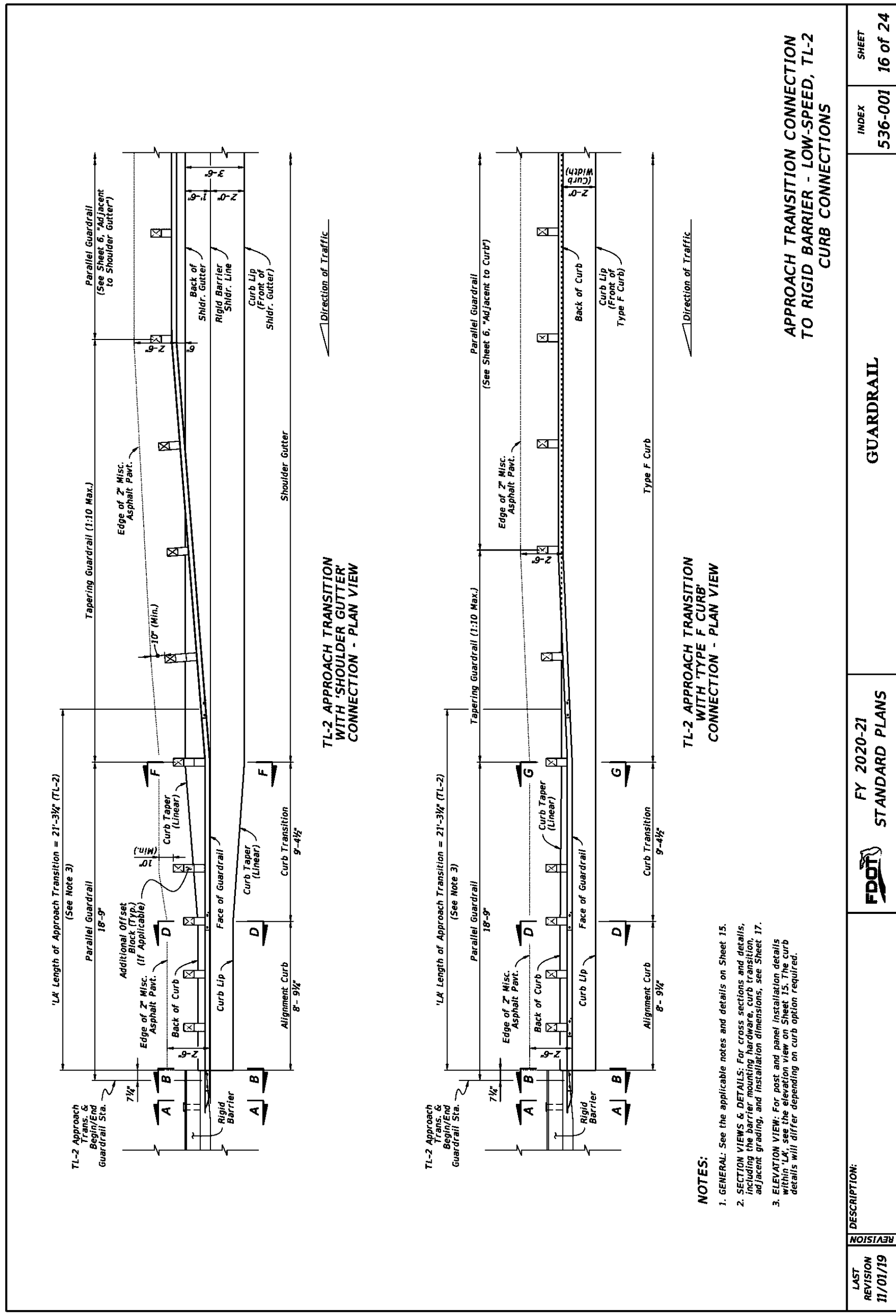
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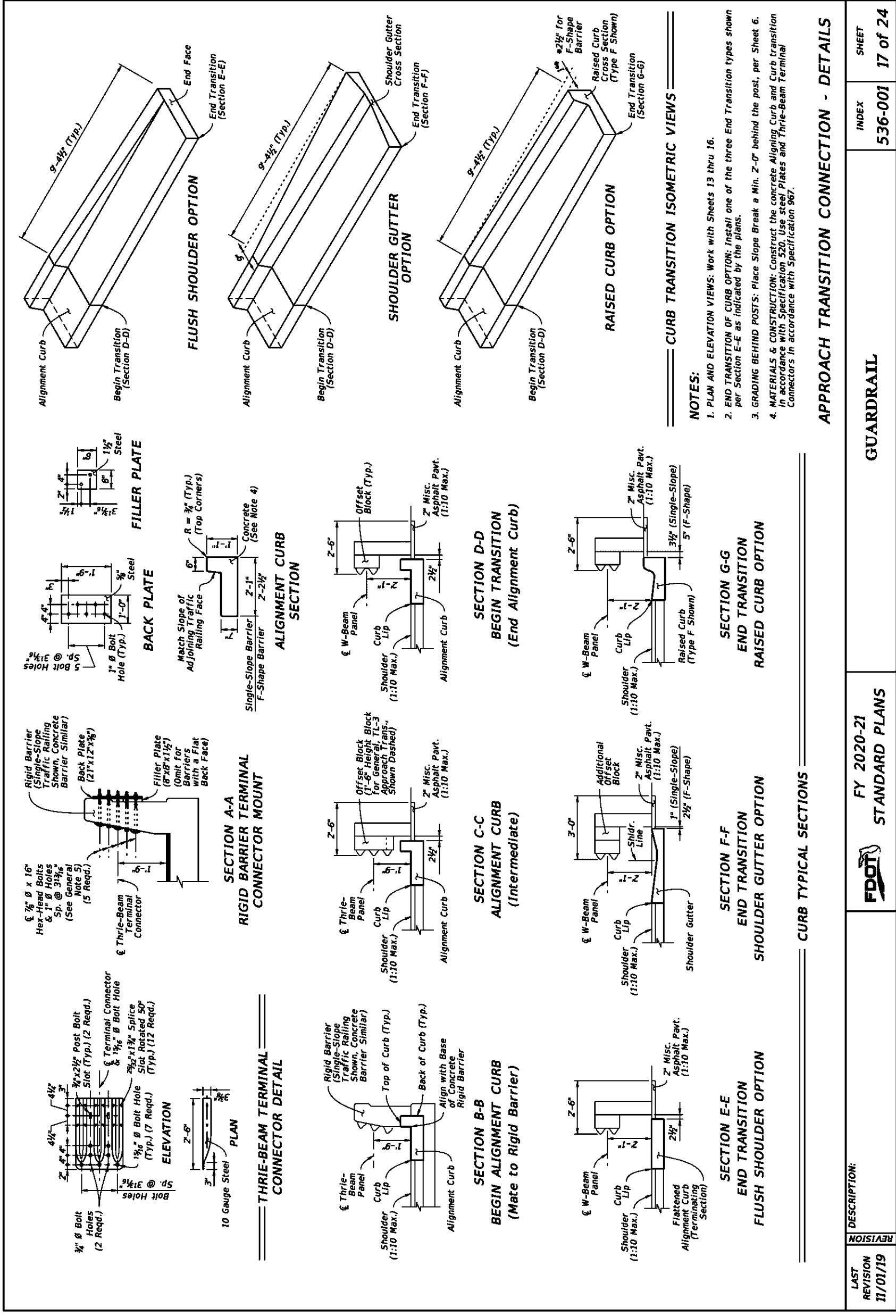
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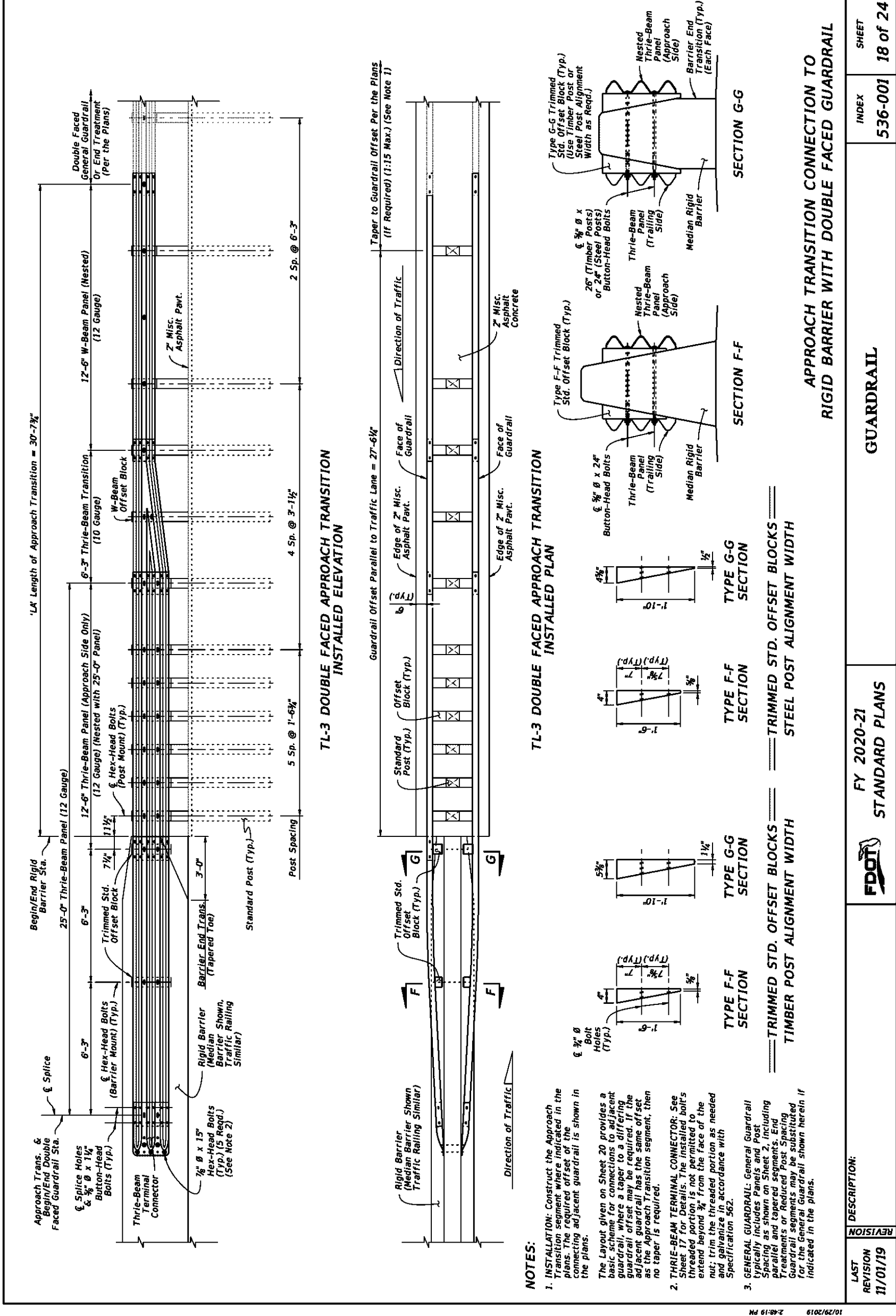


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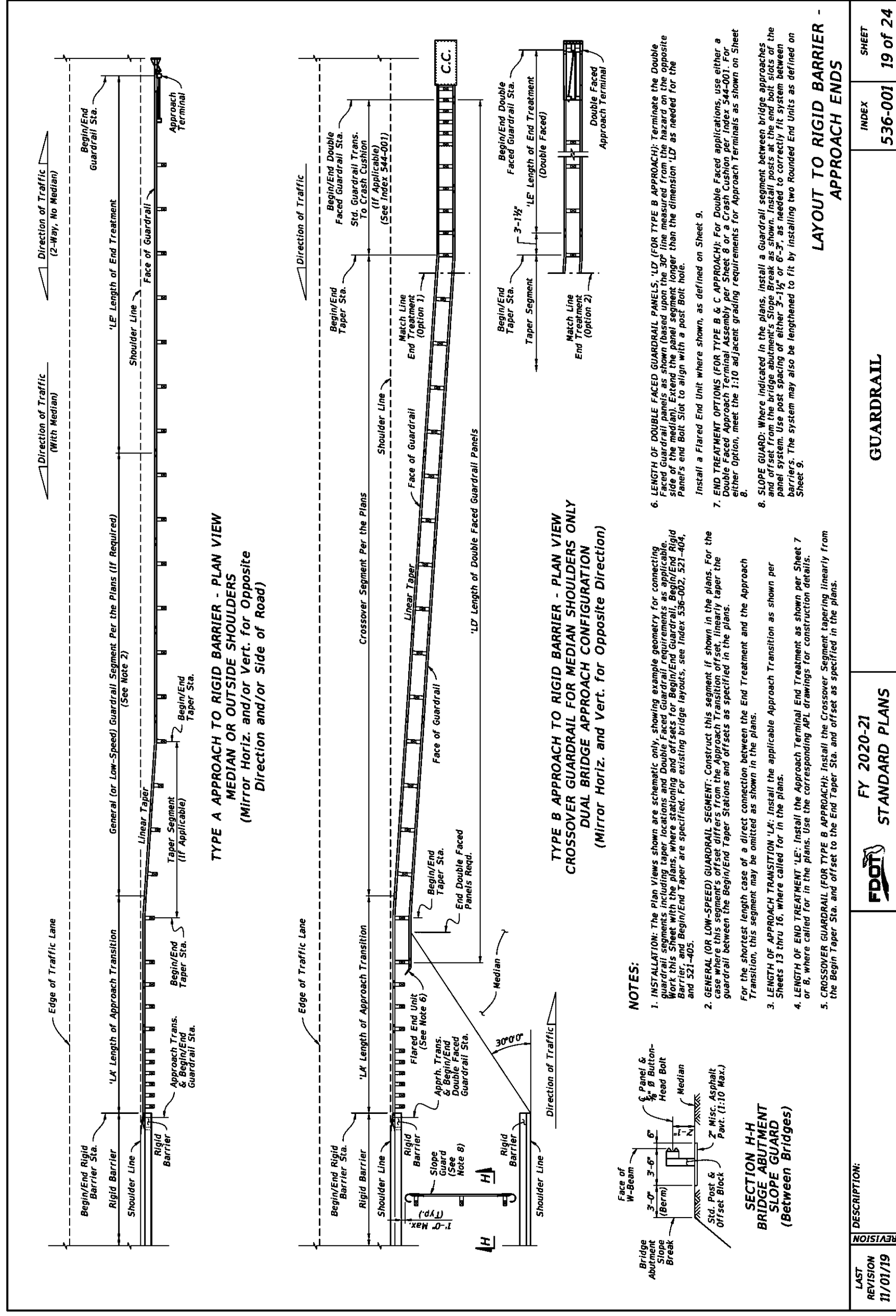
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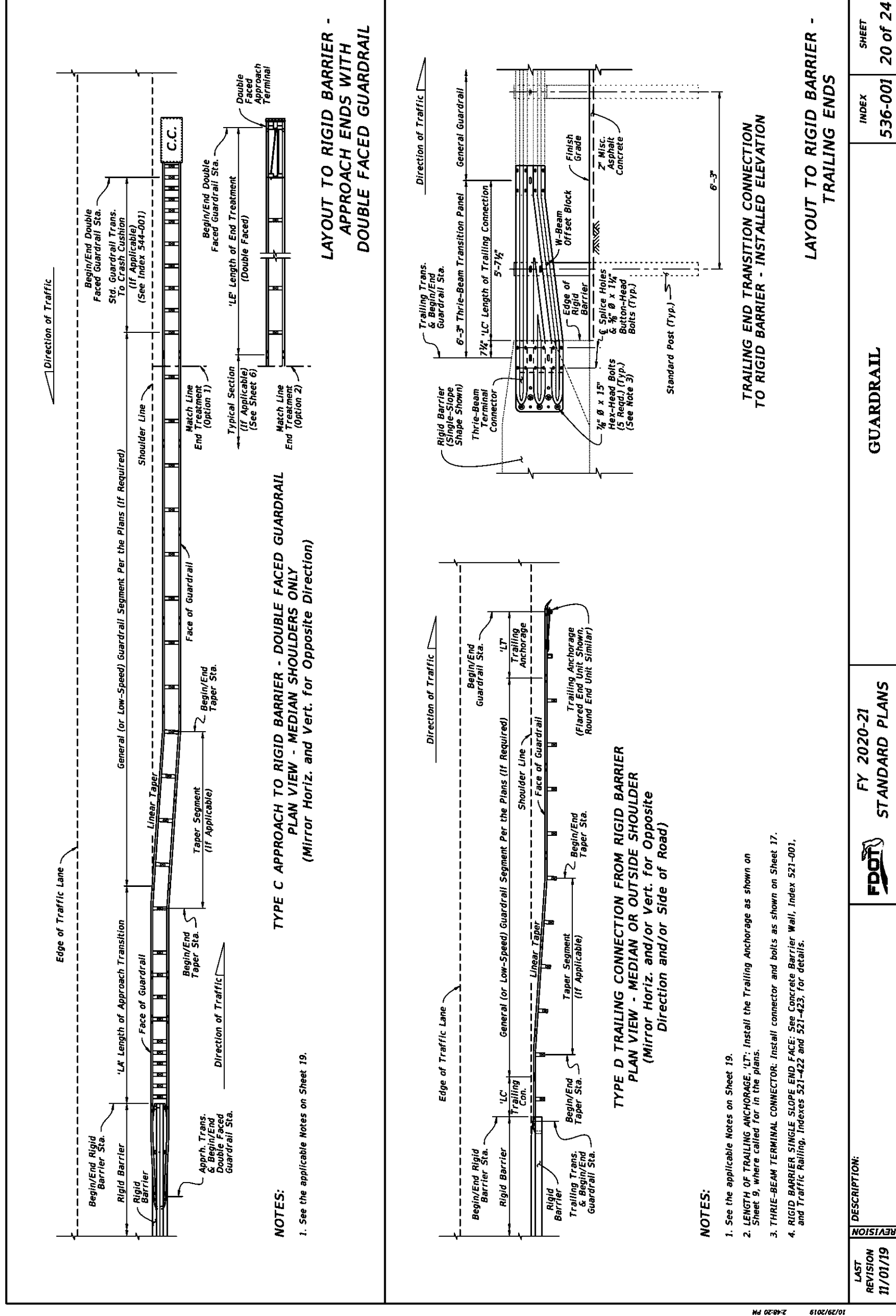
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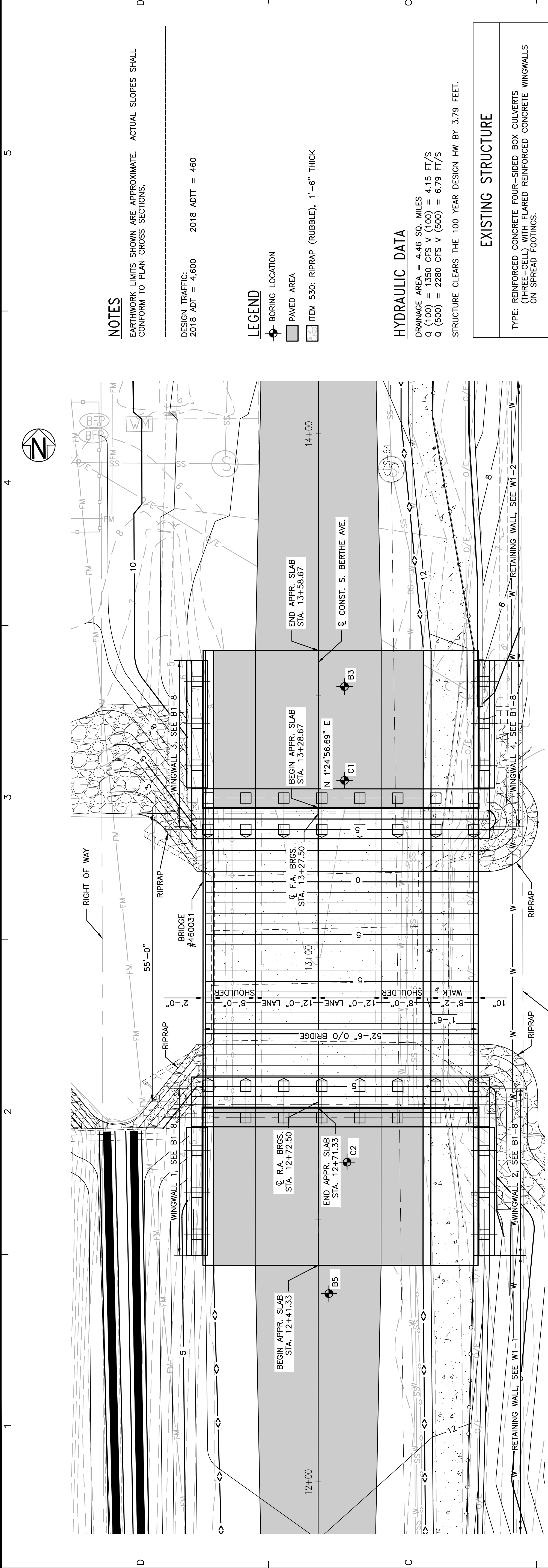


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**NOTES**  
EARTHWORK LIMITS SHOWN ARE APPROXIMATE. ACTUAL SLOPES SHALL CONFORM TO PLAN CROSS SECTIONS.

DESIGN TRAFFIC: 2018 ADT = 4,600      2018 ADTT = 460

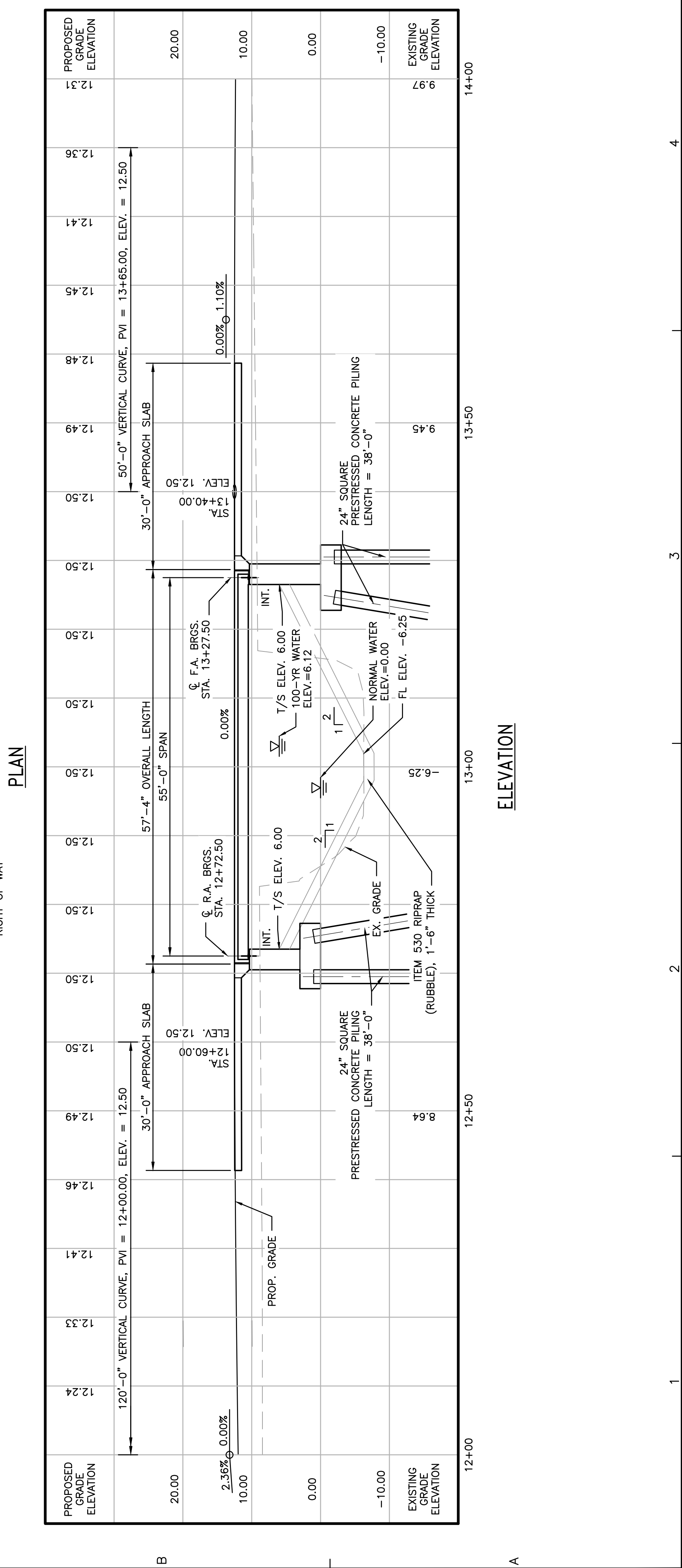
**LEGEND**

- BORING LOCATION
- PAVED AREA
- ITEM 530: RIPRAP (RUBBLE), 1'-6" THICK

**HYDRAULIC DATA**  
DRAINAGE AREA = 4.46 SQ. MILES  
Q (100) = 1350 CFS V (100) = 4.15 FT/S  
Q (500) = 2280 CFS V (500) = 6.79 FT/S  
STRUCTURE CLEARS THE 100 YEAR DESIGN HW BY 3.79 FEET.

**EXISTING STRUCTURE**  
TYPE: REINFORCED CONCRETE FOUR-SIDED BOX CULVERTS (THREE-CELL) WITH FLARED REINFORCED CONCRETE WINGWALLS ON SPREAD FOOTINGS.  
SPANS: 3 @ 10'-9" ± = 32'-3" ±  
ROADWAY: 30'-6" ± F/F GUARDRAIL  
LOADING: UNKNOWN  
SKEW: NONE  
APPROACH SLABS: NONE  
ALIGNMENT: TANGENT  
CROWN: NORMAL  
STRUCTURAL FILE NUMBER: 460031  
DATE BUILT: 1959  
DISPOSITION: TO BE REPLACED

**PROPOSED STRUCTURE**  
TYPE: COMPOSITE REINFORCED CONCRETE DECK ON PRESTRESSED CONCRETE BOX BEAM (FDOT FSB) SUPERSTRUCTURE SUPPORTED ON STUB ABUTMENTS ON PRESTRESSED CONCRETE PILING.  
SPANS: 55'-0" C/C BRGS.  
ROADWAY: 40'-0" TOE/TOE PARAPET  
LOADING: HL-93 AND PEDESTRIAN LOAD = 90 PSF  
SKEW: NONE  
APPROACH SLABS: 30'-0" LONG  
ALIGNMENT: TANGENT  
CROWN: 0.02 FT/FT  
COORDINATES:  
LATITUDE: 30° 08' 18.09" N  
LONGITUDE: 85° 34' 28.07" W



REFER TO THE FOLLOWING STANDARD PLANS FOR BRIDGE CONSTRUCTION:

Table with 2 columns: Reference Number and Description. Includes items like 400-090 REVISED 11/01/2017 (DESIGN STANDARD) and 415-001 REVISED 11/01/2020.

DESIGN SPECIFICATIONS:

FOOT STRUCTURES MANUAL DATED JANUARY 2022. AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO) LOAD AND RESISTANCE FACTOR (LRFD) BRIDGE DESIGN SPECIFICATIONS, 9TH EDITION WITH 2021 ERRATA.

FOOT DESIGN MANUAL DATED JANUARY, 2022.

GOVERNING STANDARDS AND CONSTRUCTION SPECIFICATIONS:

FLORIDA DEPARTMENT OF TRANSPORTATION, FY 2022 STANDARD PLANS AND REVISED INDEX DRAWINGS AS APPENDED HEREIN, AND JANUARY 2022 STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, AS AMENDED BY CONTRACT DOCUMENTS.

VERTICAL DATUM:

THE PROJECT USES THE FOLLOWING VERTICAL DATUM: NAVD 88.

ENVIRONMENTAL CLASSIFICATION:

Table with 3 columns: NAME, NUMBER, and DESCRIPTION. Entry: BERTHE AVE BRIDGE, 460031, SUPERSTRUCTURE EXTREMELY AGGRESSIVE, SUBSTRUCTURE (CONCRETE) EXTREMELY AGGRESSIVE.

GOVERNING CRITERIA: CI CONTENT = 6,800-15,000 PPM

DESIGN METHODOLOGY:

LOAD AND RESISTANCE FACTOR DESIGN (LRFD) METHOD USING STRENGTH, SERVICE, AND FATIGUE LIMIT STATES. OPERATIONAL IMPORTANCE FACTOR = 1.00 (ALL BRIDGES)

STRUCTURAL ANALYSIS PROGRAMS:

THE FOLLOWING PROGRAMS WERE USED IN THE DESIGN OF THE BRIDGE: CUSTOM MICROSOFT EXCEL SPREADSHEETS (2016), FOOT MATHCAD PRESTRESSED BEAM VERSION 5.2, FOOT CANTILEVER RETAINING WALL PROGRAM VERSION 4.0, LEAP BRIDGE CONCRETE CONNECT EDITION VERSION 21.00.00.24, RSPILE PILE CAPACITY AND LOADING ANALYSIS VERSION 3.009

DESIGN LOADINGS:

LIVE LOADS: HL-93 WITH DYNAMIC LOAD ALLOWANCE, PEDESTRIAN LOAD = 0.090 KSF

DEAD LOADS: 32 INCH F-SHAPE TRAFFIC RAILING, 471 PLF, REINFORCED CONCRETE, 150 PCF, FUTURE WEARING SURFACE, 15 PSF

CONSTRUCTION LOADS: FINISHING MACHINE WHEEL LOAD: 2.96 KIPS, FINISHING MACHINE WHEEL LOCATION BEYOND THE EDGE OF DECK OVERHANG: 6 INCHES, CONSTRUCTION LIVE LOAD: 20 PSF EXTENDED OVER THE ENTIRE BRIDGE WIDTH AND 50- FEET IN LONGITUDINAL LENGTH CENTERED ON THE FINISHING MACHINE, REMOVABLE DECK CANTILEVER TIMBER FORMS WITH OVERHANG BRACKETS: 15 PSF, LIVE LOAD AT OR NEAR THE OUTSIDE EDGE OF DECK DURING DECK CASTING: 75 PLF APPLIED AS A MOVING LOAD OVER A LENGTH OF 20 FEET, CONSTRUCTION INACTIVE DESIGN WIND SPEED: 90 MPH, VELOCITY PRESSURE EXPOSURE COEFFICIENT (KZ): 0.85, CONSTRUCTION ACTIVE DESIGN WIND SPEED: 30 MPH

VEHICLE COLLISION FORCE: NONE

UTILITIES: NO ALLOWANCE FOR UTILITY LOADS HAS BEEN INCLUDED IN THE DESIGN.

THERMAL: THE DESIGN TEMPERATURE RANGE IS 35 °F TO 105 °F. THE MEAN SETTING TEMPERATURE IS ASSUMED AT 70 °F.

WIND:

EXPOSURE CATEGORY C, GUST FACTOR G = 0.85, V (SER I) = 70 MPH, V (STR V) = 80 MPH, V (STR IV) = 112.5 MPH, V (STR III) = 150 MPH

SEISMIC:

NO SEISMIC LOAD WAS INCLUDED.

MATERIALS:

REINFORCING STEEL: GRADE 60 CARBON STEEL PER SPECIFICATIONS SECTION 931. ALL BAR DIMENSIONS ARE OUT-TO-OUT.

CONCRETE:

CONCRETE CLASS IV - COMPRESSIVE STRENGTH 5.5 KSI (SUPERSTRUCTURE, SUBSTRUCTURE, AND RETAINING WALLS) CONCRETE CLASS V (SPECIAL) - COMPRESSIVE STRENGTH 6.0 KSI WITH HIGHLY REACTIVE POZZOLANS (PILING)

CONCRETE FOR PRESTRESSED SLAB BEAMS: COMPRESSIVE STRENGTH (FINAL) = 8.5 KSI, COMPRESSIVE STRENGTH (RELEASE) = 6 KSI

PRESTRESSING STRAND:

AREA = 0.217 SQ. IN., ULTIMATE STRENGTH = 270 KSI, INITIAL STRESS = 202.5 KSI (LOW RELAXATION STRANDS), CUT STRANDS 1 IN. BEYOND THE FACE OF THE SLAB UNIT.

Table with 2 columns: Description and Dimension. Includes items like CAST-IN-PLACE SUPERSTRUCTURE (TOP OF DECK) 2", PRECAST PRESTRESSED BEAMS (EXCEPT TOP SURFACE) 2", etc.

CONCRETE COVER DIMENSIONS SHOWN IN THE PLANS DO NOT INCLUDE PLACEMENT AND FABRICATION TOLERANCES UNLESS SHOWN AS "MINIMUM COVER". SEE SPECIFICATIONS SECTION 415 FOR ALLOWABLE TOLERANCES. ALL DIMENSIONS PERTAINING TO THE LOCATION OF REINFORCING STEEL ARE TO CENTERLINE OF BAR EXCEPT WHERE CLEAR DIMENSION IS NOTED TO FACE OF CONCRETE.

PLAN DIMENSIONS:

ALL DIMENSIONS IN THESE PLANS ARE MEASURED IN FEET EITHER HORIZONTALLY OR VERTICALLY UNLESS OTHERWISE NOTED.

UTILITIES:

FOR PLAN LOCATIONS OF EXISTING UTILITIES, SEE PLAN AND ELEVATION SHEET. LOCATIONS OF UTILITIES SHOWN IN THE PLANS ARE APPROXIMATE. FOR DISPOSITION OF UTILITIES, SEE THE ROADWAY PLANS.

BRIDGE NAME AND NUMBER:

PLACE THE FOLLOWING BRIDGE NAME AND NUMBER ON THE TRAFFIC RAILINGS IN ACCORDANCE WITH THE TRAFFIC RAILING STANDARD PLANS: NAME: BERTHE AVE BRIDGE, NUMBER: 460031

SCREENING DECKS:

SCREEN THE RIDING SURFACE OF THE BRIDGE DECK AND APPROACH SLABS TO ACHIEVE THE FINISH GRADE ELEVATIONS SHOWN IN THE PLANS. ACCOUNT FOR THEORETICAL DEFLECTIONS DUE TO SELF WEIGHT, DECK CASTING SEQUENCE, DECK FORMING SYSTEMS, CONSTRUCTION LOADS, OVERLAYS AND TEMPORARY SHORING, ETC. AS REQUIRED.

STAY-IN-PLACE DECK FORMS:

STAY IN PLACE DECK FORMS WILL NOT BE PERMITTED ON THIS PROJECT.

JOINTS IN CONCRETE:

CONSTRUCTION JOINTS WILL BE PERMITTED ONLY AT THE LOCATIONS INDICATED IN THE PLANS. ADDITIONAL CONSTRUCTION JOINTS OR ALTERATIONS TO THOSE SHOWN SHALL REQUIRE APPROVAL OF THE ENGINEER.

EXISTING STRUCTURE VERIFICATION:

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO THE "FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" SECTIONS 2-4 AND 5-1. BASE CONTRACT BID PRICES UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE. HOWEVER, THE DEPARTMENT WILL PAY FOR ALL PROJECT WORK BASED UPON ACTUAL DETAILS AND DIMENSIONS THAT HAVE BEEN VERIFIED IN THE FIELD.

ABBREVIATIONS:

- ABUT. - ABUTMENT, APP. - AS PER PLAN, APPR. - APPROACH, B.F. - BACK FACE, BRG(S) - BEARING(S), B.T.A. - BRIDGE TERMINAL ASSEMBLY, C - CENTERLINE, C/C - CENTER TO CENTER, C.-J. - CONSTRUCTION JOINT, CLR. - CLEAR, CONST. - CONSTRUCTION, CPP - CORRUGATED PLASTIC PIPE, DIA. - DIAMETER, DND - DO NOT DISTURB, E.F. - EACH FACE, ELEV. - ELEVATION, EX. - EXISTING, F - FLOWLINE, F.A. - FORWARD ABUTMENT, F/F - FACE TO FACE, F.F. - FAR FACE, FWD. - FORWARD, MAX. - MAXIMUM, MIN. - MINIMUM, N.F. - NEAR FACE, PEJF - PREFORMED EXPANSION JOINT FILLER, R.A. - REAR ABUTMENT, SER. - SERIES, SPA. - SPACES, STA. - STATION, TBR - TO BE RELOCATED, TYP. - TYPICAL

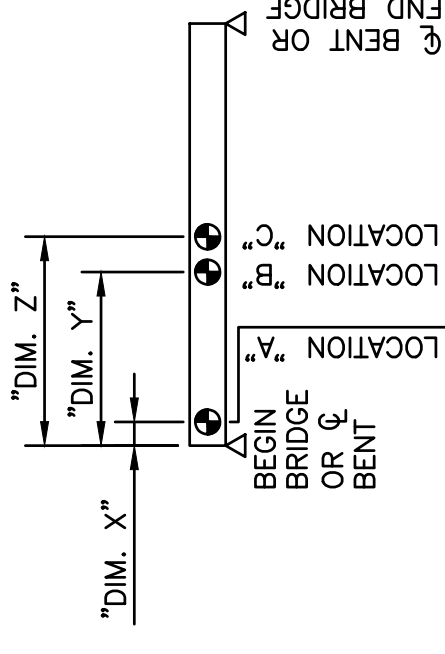
ITEM 0110 - REMOVAL OF STRUCTURES/BRIDGES

REMOVE EXISTING CULVERT AND HEADWALLS IN THEIR ENTIRETY. THIS WORK SHALL BE PAID FOR AT THE CONTRACT SQUARE FOOT PRICE FOR ITEM 0110 - REMOVAL OF STRUCTURES/BRIDGES.

FOUNDATION BEARING RESISTANCE:

RETAINING WALL FOOTINGS, AS DESIGNED, PRODUCE A MAXIMUM STRENGTH LIMIT STATE BEARING PRESSURE OF 1.84 KIPS PER SQUARE FOOT. THE FACTORED BEARING RESISTANCE IS 2.00 KIPS PER SQUARE FOOT. TWO FEET OF LIVE LOAD SURCHARGE HAS BEEN INCLUDED IN THE CALCULATION OF THE LOADS. BACKFILL IS ASSUMED TO HAVE AN EFFECTIVE FRICTION ANGLE OF 30 DEGREES, NO COHESION, AND 105 PCF UNIT WEIGHT.

THE CONTRACTOR SHALL RETAIN THE SERVICES OF A GEOTECHNICAL ENGINEER OR TECHNICIAN TRAINED AND QUALIFIED FOR THE FIELD EVALUATION OF SOIL (GEOTECHNICAL FIELD REVIEWER). THE GEOTECHNICAL FIELD REVIEWER SHALL INSPECT THE SUBGRADE AFTER EXCAVATION AND CONFIRM THE SOIL HAS ADEQUATE CAPACITY TO CARRY THE DESIGN LOADING. IF INADEQUATE MATERIAL IS IDENTIFIED, THE SOIL SHALL BE UNDERCUT UNTIL SUITABLE BEARING MATERIAL IS ENCOUNTERED, AND BACKFILLED WITH FLOWABLE FILL (FOOT 121) TO THE ELEVATION OF THE BOTTOM OF FOOTING. IF UNSUITABLE MATERIAL IS ENCOUNTERED IN EXCESS OF 3 FEET THE ENGINEER SHALL BE CONTACTED FOR ADDITIONAL DIRECTION PRIOR TO PROCEEDING WITH THE WORK. THE GEOTECHNICAL FIELD REVIEWER SHALL DOCUMENT THE FIELD CONDITIONS WITH PHOTOGRAPHS AND SUBMIT A WRITTEN AND SIGNED STATEMENT AS TO THE CAPACITY OF THE UNDERLYING SOIL FOR ATTACHMENT TO THE PROJECT RECORD.



RATING LOCATIONS

Table with columns: SPAN LENGTH, LEVEL, RATING, LIMIT STATE, VEHICLE WEIGHT (TONS), MOMENT (STRENGTH) OR STRESS (SERVICE), LOAD FACTORS (LL, DC, DW), DISTRIBUTION (F), RATING FACTOR, TONS, DIMENSION (FT), DIMENSION (FT), SHEAR STRENGTH (TONS, LOCATION), COMMENTS: INTERIOR/EXTERIOR BEAM OF METHOD, IF OTHER THAN LRD, OTHER APPROPRIATE COMMENTS.

NOTES: 1. PERMIT CAPACITY IS DETERMINED BY USING THE PERMIT VEHICLE IN ALL LANES.

2. SERVICE III DESIGN INVENTORY TENSILE STRESS LIMITS = 3/7c. 3. HAS THE AASHTO LRFD SPECIFICATIONS ARTICLE 5.8.35 LONGITUDINAL REINFORCEMENT BEEN SATISFIED? YES [ ] NO [X]

ABBREVIATIONS: INV - INVENTORY, OP - OPERATING

Project information header including PROJECT NO: 27653.01, DESIGNER: BASKERVILLE-DONOVAN ENGINEERING, and various revision/contract dates.

Structural notes and abbreviations section, including 'STRUCTURAL NOTES' and 'ABBREVIATIONS:'.

Main body of the drawing containing technical specifications, material requirements, design details, and rating tables.

Footer area containing project title 'BERTHE AVE BRIDGE BRIDGE REPLACEMENT', company logo 'WOOLPERT', and contact information.

**BERTHE AVE BRIDGE  
BRIDGE REPLACEMENT  
FOUNDATION PLAN**

PROJECT NO:	27653.01
DESIGNED BY:	PAG
DRAWN BY:	CML
CHK'D BY:	TML
PROJ. MGR:	PJP
DATE:	AUGUST, 2021
NOT RELEASED FOR CONSTRUCTION BY DATE	
NO.	DATE
APPR.	REVISION/ACTION TAKEN

**BERTHE AVENUE  
BRIDGE REPLACEMENT  
ENGINEERING**  
BASKERVILLE-DONOVAN

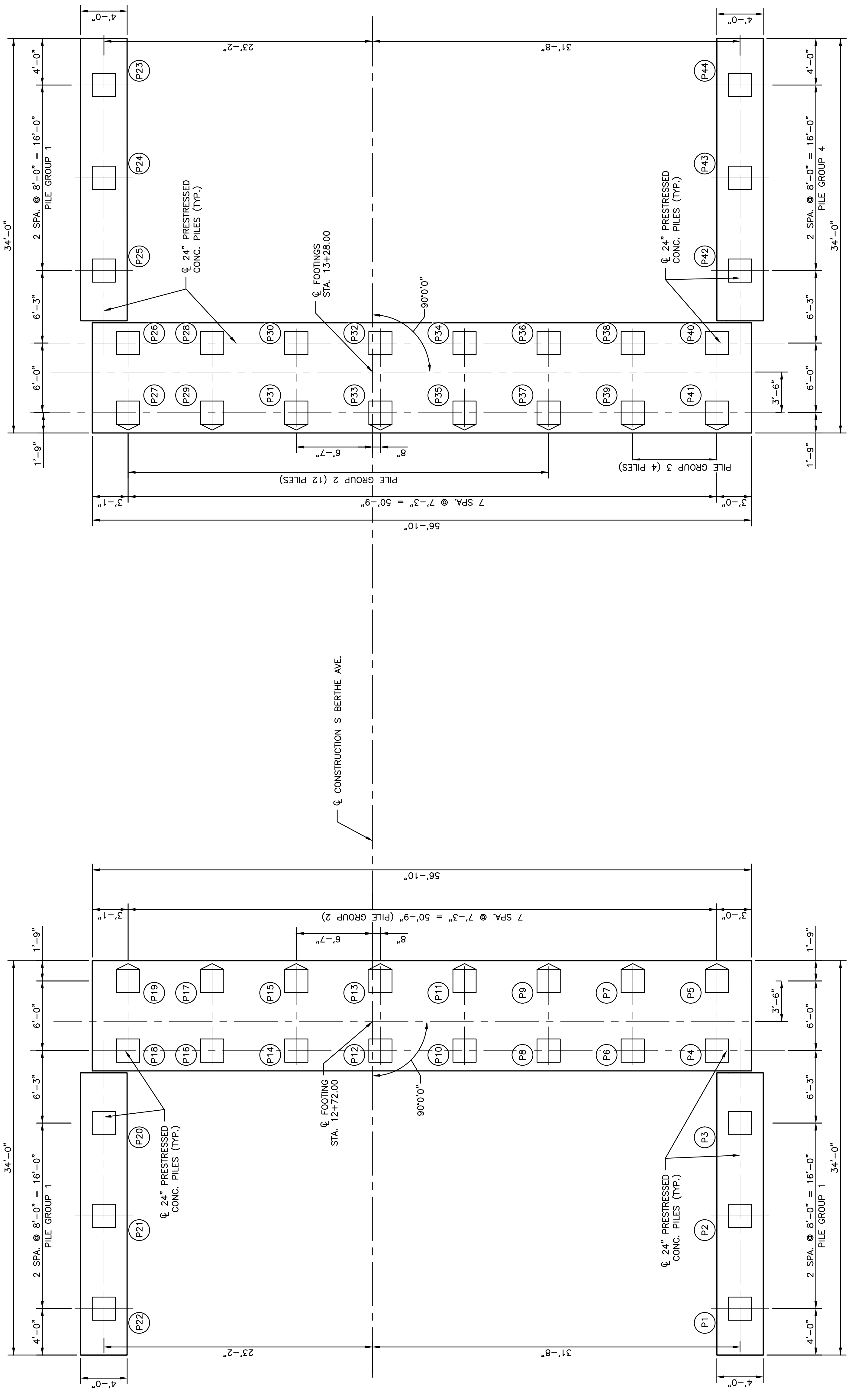


**WOOLPERT**  
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Miami, FL 33126  
305.418.9377  
FAX: 937.461.0743  
6100 Blue Lagoon Drive

**NOTES:**  
1. ALL PILE LENGTHS = 38'-0"

**LEGEND:**  
 = 24" PRESTRESSED CONCRETE PILE  
 = 24" PRESTRESSED CONCRETE PILE (BATTERED, 1H:6V)

**NOTES:**  
1. ALL PILE LENGTHS = 38'-0"

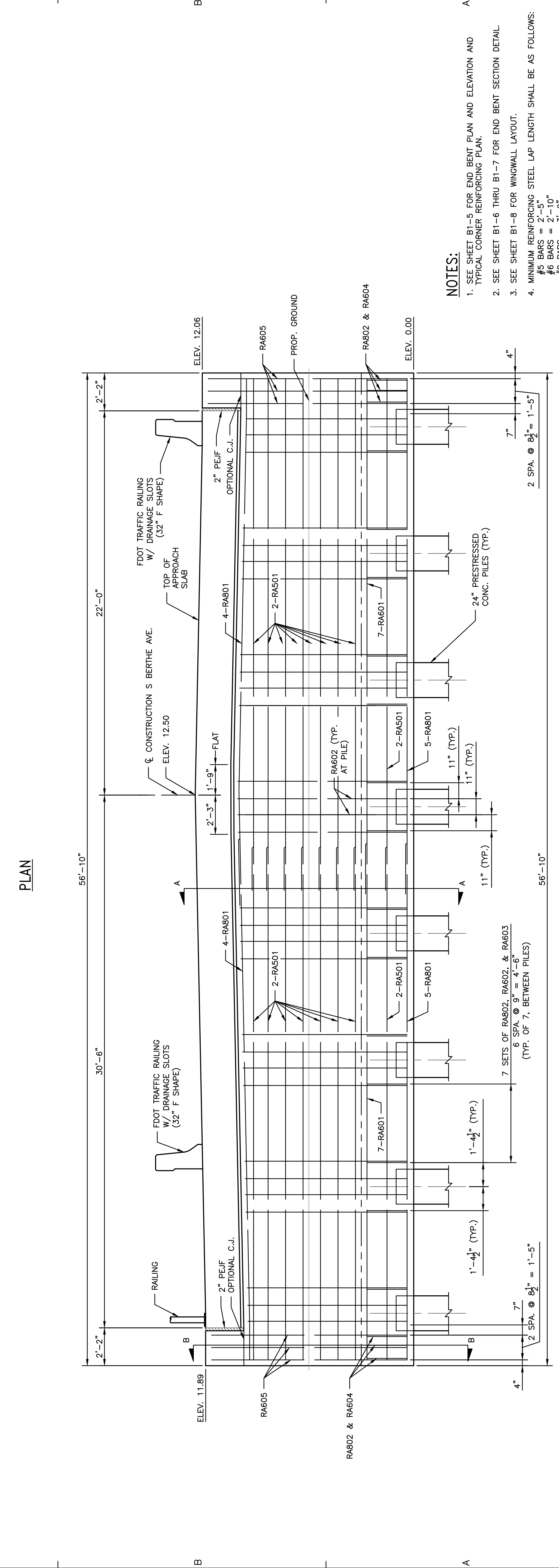
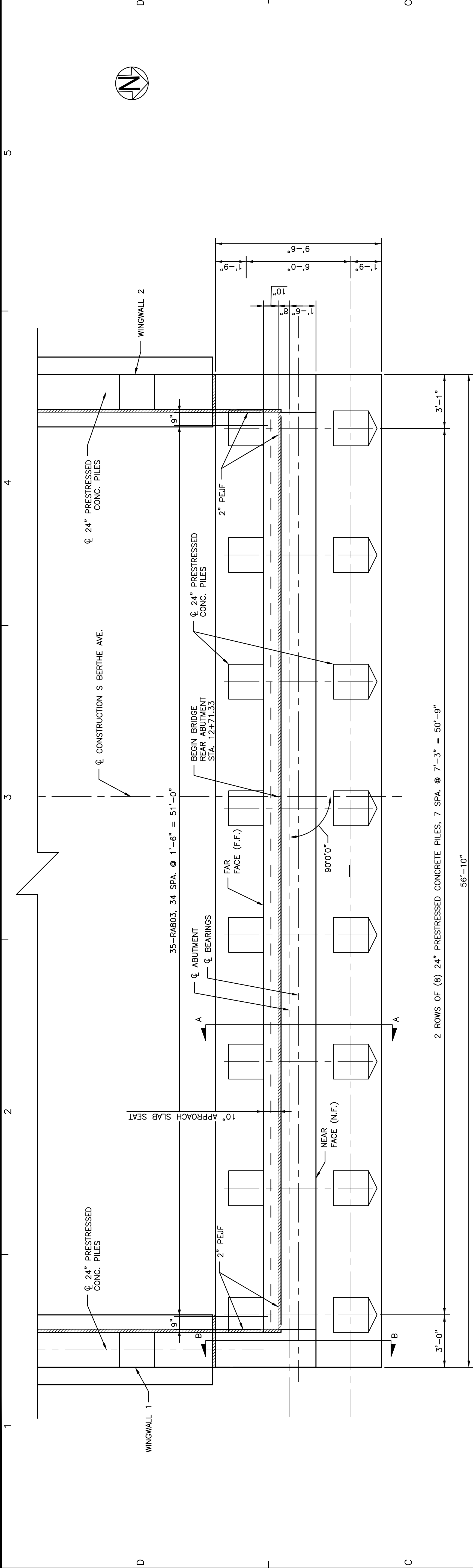


**NOTES:**  
1. ONE DYNAMIC LOAD TEST PILE AT EACH ABUTMENT IS REQUIRED.  
2. NO SCOUR REDUCTION IN PILE CAPACITY HAS BEEN INCORPORATED. SCOUR PROTECTION HAS BEEN PROVIDED.

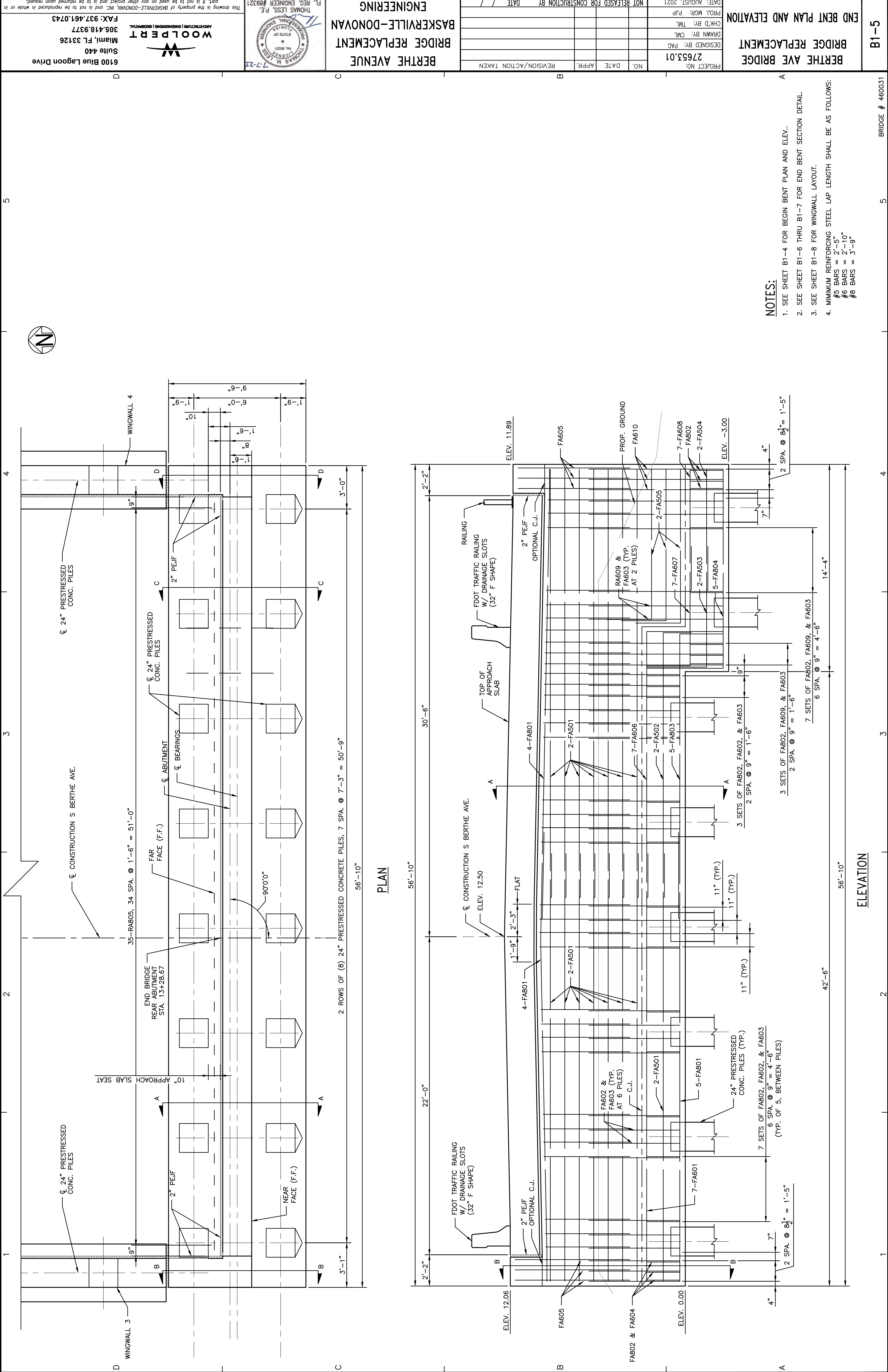
PILE GROUP	NO. PILES	PILE SIZE	NOMINAL BEARING RESISTANCE (KIP)		TENSION RESISTANCE (KIPS)		MINIMUM TIP ELEVATION (FT.)	TEST PILE LENGTH (FT.)	REQUIRED JET ELEVATION (FT.)	REQUIRED PREFORM ELEVATION (FT.)	REQUIRED ELEVATION (FT.)	FACTORED DESIGN LOAD (KIP)		DOWNDRAG (KIP)	TOTAL SCOUR RESISTANCE (KIP)	NET SCOUR RESISTANCE (KIP)	100-YEAR SCOUR ELEVATION (FT.)	LONG-TERM SCOUR ELEVATION (FT.)	RESISTANCE FACTOR	PILE CUT-OFF ELEVATIONS (FT.)
			CONC.	RESTRT.	RESISTANCE	TENSION						FACTORED DESIGN LOAD (KIP)	RESISTANCE (KIP)							
1	9	24" SQ. PRESTRESS.	143	465	214	214	-35.0	55.0	N/A	N/A	N/A	93	0	0	N/A	N/A	N/A	N/A	0.65	2.00
2	28	24" SQ. PRESTRESS.	465	465	214	214	-35.0	55.0	N/A	N/A	N/A	302	0	0	N/A	N/A	N/A	N/A	0.65	1.00
3	4	24" SQ. PRESTRESS.	465	465	214	214	-38.0	55.0	N/A	N/A	N/A	302	0	0	N/A	N/A	N/A	N/A	0.65	-2.00
4	3	24" SQ. PRESTRESS.	143	465	214	214	-38.0	55.0	N/A	N/A	N/A	93	0	0	N/A	N/A	N/A	N/A	0.65	-1.00



PLAN



- NOTES:**
- SEE SHEET B1-5 FOR END BENT PLAN AND ELEVATION AND TYPICAL CORNER REINFORCING PLAN.
  - SEE SHEET B1-6 THRU B1-7 FOR END BENT SECTION DETAIL.
  - SEE SHEET B1-8 FOR WINGWALL LAYOUT.
  - MINIMUM REINFORCING STEEL LAP LENGTH SHALL BE AS FOLLOWS:  
#5 BARS = 2'-5"  
#6 BARS = 2'-10"  
#8 BARS = 3'-9"



- NOTES:**
1. SEE SHEET B1-4 FOR BEGIN BENT PLAN AND ELEV.
  2. SEE SHEET B1-6 THRU B1-7 FOR END BENT SECTION DETAIL
  3. SEE SHEET B1-8 FOR WINGWALL LAYOUT.
  4. MINIMUM REINFORCING STEEL LAP LENGTH SHALL BE AS FOLLOWS:  
 #5 BARS = 2'-5"  
 #6 BARS = 2'-10"  
 #8 BARS = 3'-9"

PROJECT NO: 27653.01  
 DESIGNED BY: PAG  
 DRAWN BY: CML  
 CHK'D BY: TML  
 PROJ. MGR: PJP  
 DATE: AUGUST, 2021  
 NOT RELEASED FOR CONSTRUCTION BY DATE

REVISION/ACTION TAKEN

DATE APPR. DATE APPR.

ENGINEERING  
 BASKERVILLE-DONOVAN  
 BRIDGE REPLACEMENT  
 BERTHE AVENUE

THOMAS LESS, P.E.  
 FL. REG. ENGINEER #89321

WOLPERT  
 ARCHITECTURE | ENGINEERING | INTERIORS  
 Suite 440  
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 FAX: 937.461.0743

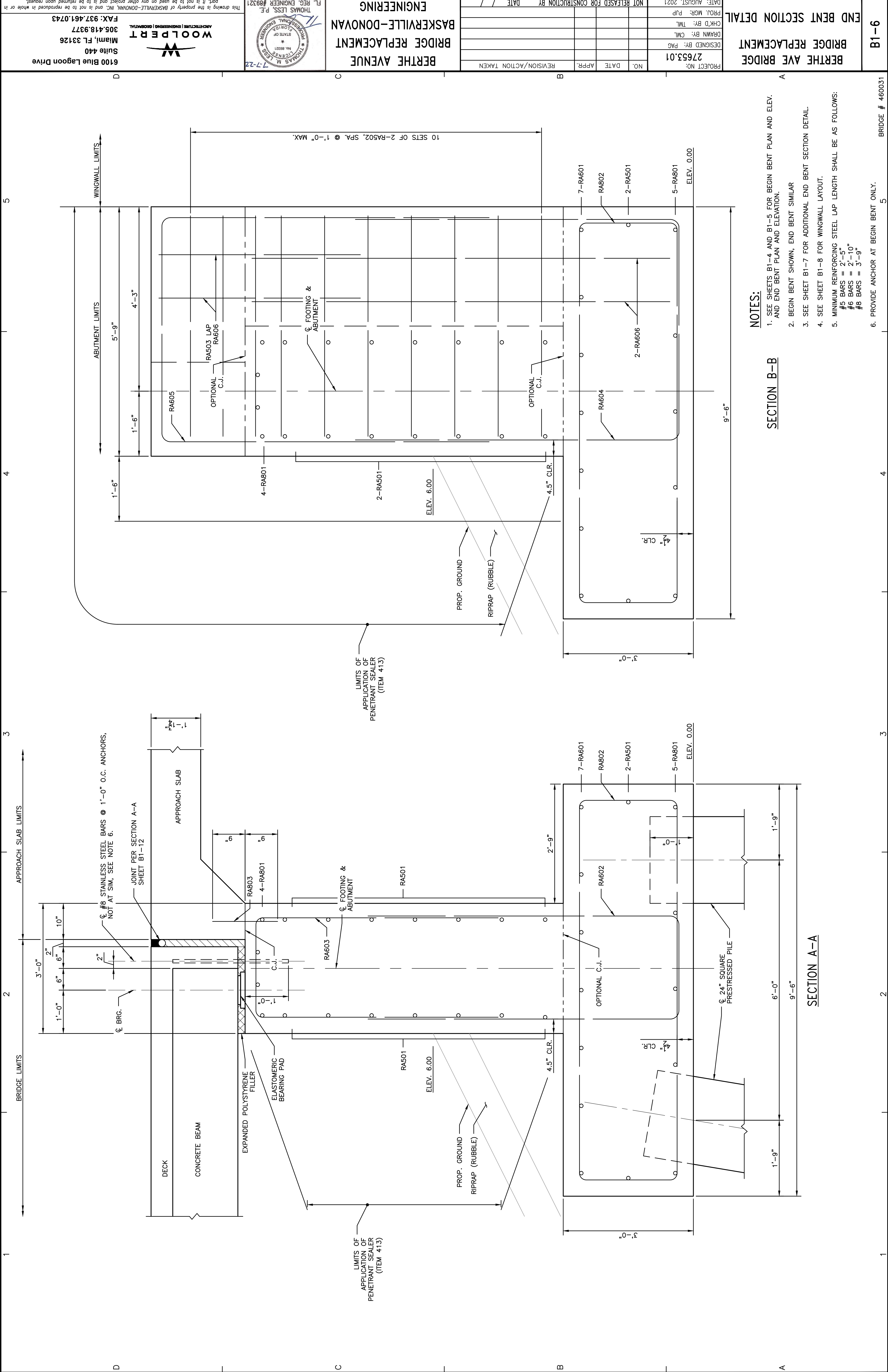
END BENT PLAN AND ELEVATION  
 BRIDGE REPLACEMENT  
 BERTHE AVE BRIDGE

B1-5  
 BRIDGE # 460031



**PLAN**

**ELEVATION**



**NOTES:**

1. SEE SHEETS B1-4 AND B1-5 FOR BEGIN BENT PLAN AND ELEV. AND END BENT PLAN AND ELEVATION.
2. BEGIN BENT SHOWN, END BENT SIMILAR
3. SEE SHEET B1-7 FOR ADDITIONAL END BENT SECTION DETAIL.
4. SEE SHEET B1-8 FOR WINGWALL LAYOUT.
5. MINIMUM REINFORCING STEEL LAP LENGTH SHALL BE AS FOLLOWS:  
 #5 BARS = 2'-5"  
 #6 BARS = 2'-10"  
 #8 BARS = 3'-9"
6. PROVIDE ANCHOR AT BEGIN BENT ONLY.

**SECTION B-B**

**SECTION A-A**

PROJECT NO: 27653.01		DESIGNED BY: PAG	CHK'D BY: TML	PROJ. MGR: PJP	DATE: AUGUST, 2021
REVISION/ACTION TAKEN		NO.	DATE	APPR.	NOT RELEASED FOR CONSTRUCTION BY DATE

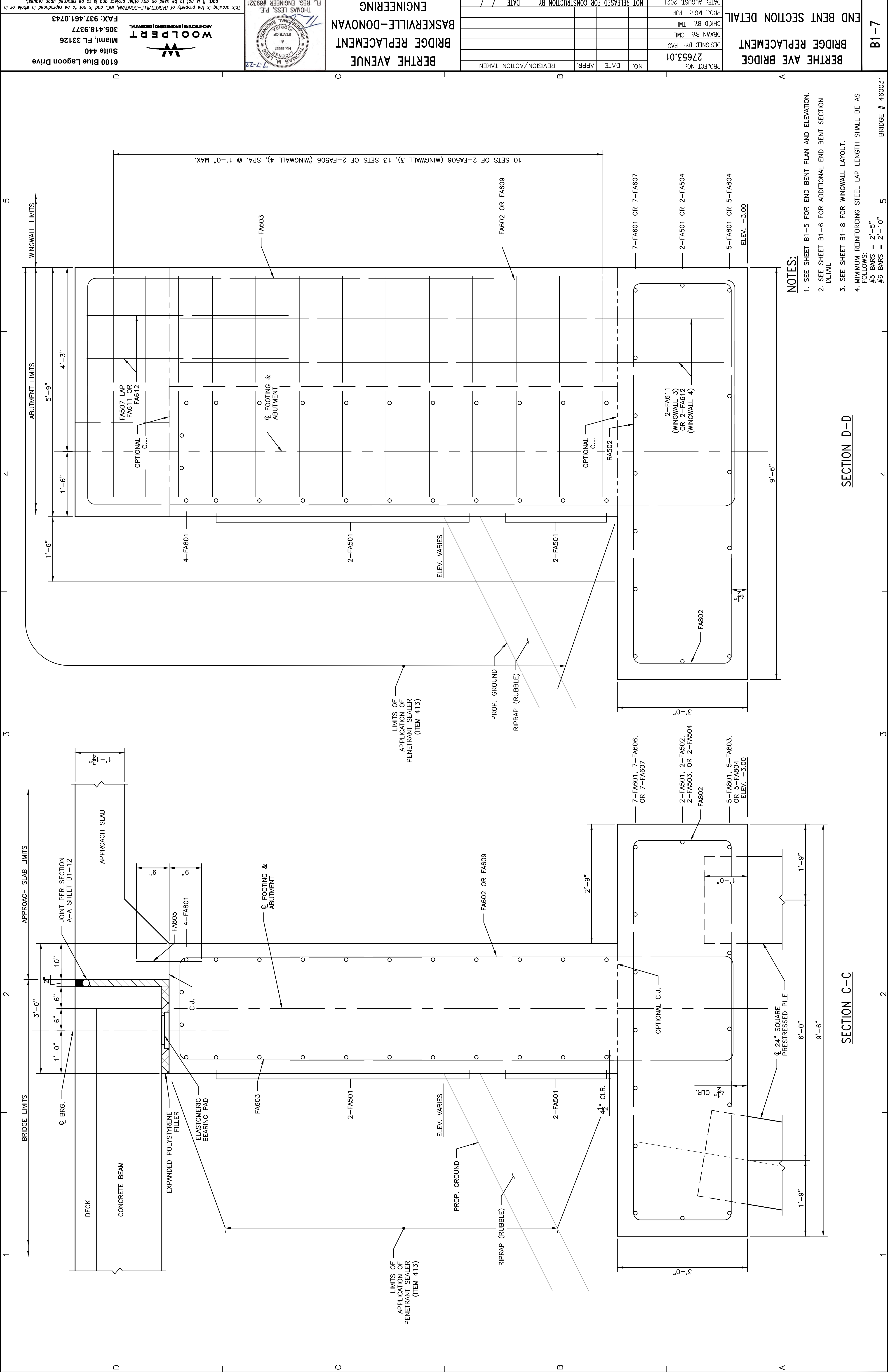
**BERTHE AVENUE  
 BRIDGE REPLACEMENT  
 BASKERVILLE-DONOVAN  
 ENGINEERING**



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**B1-6**

**BERTHE AVE BRIDGE  
 BRIDGE REPLACEMENT  
 END BENT SECTION DETAIL**



SECTION C-C

SECTION D-D

NOTES:

- SEE SHEET B1-5 FOR END BENT PLAN AND ELEVATION.
- SEE SHEET B1-6 FOR ADDITIONAL END BENT SECTION DETAIL.
- SEE SHEET B1-8 FOR WINGWALL LAYOUT.
- MINIMUM REINFORCING STEEL LAP LENGTH SHALL BE AS FOLLOWS:
  - #5 BARS = 2'-5"
  - #6 BARS = 2'-10"

BERTHE AVE BRIDGE  
BRIDGE REPLACEMENT  
END BENT SECTION DETAIL

B1-7

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PROJ. MGR:	PJP
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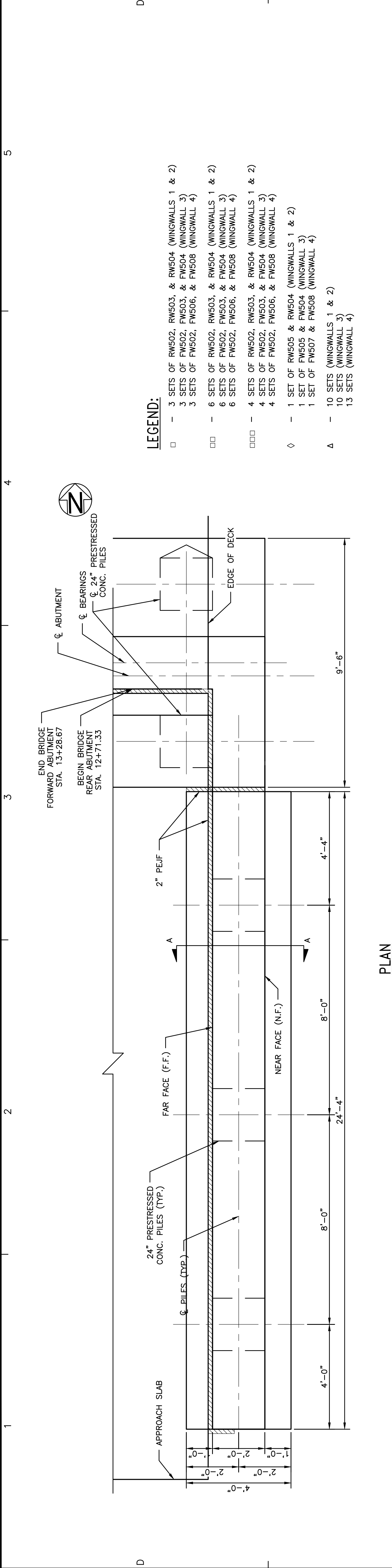


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BERTHE AVENUE  
 BRIDGE REPLACEMENT  
 BASKERVILLE-DONOVAN  
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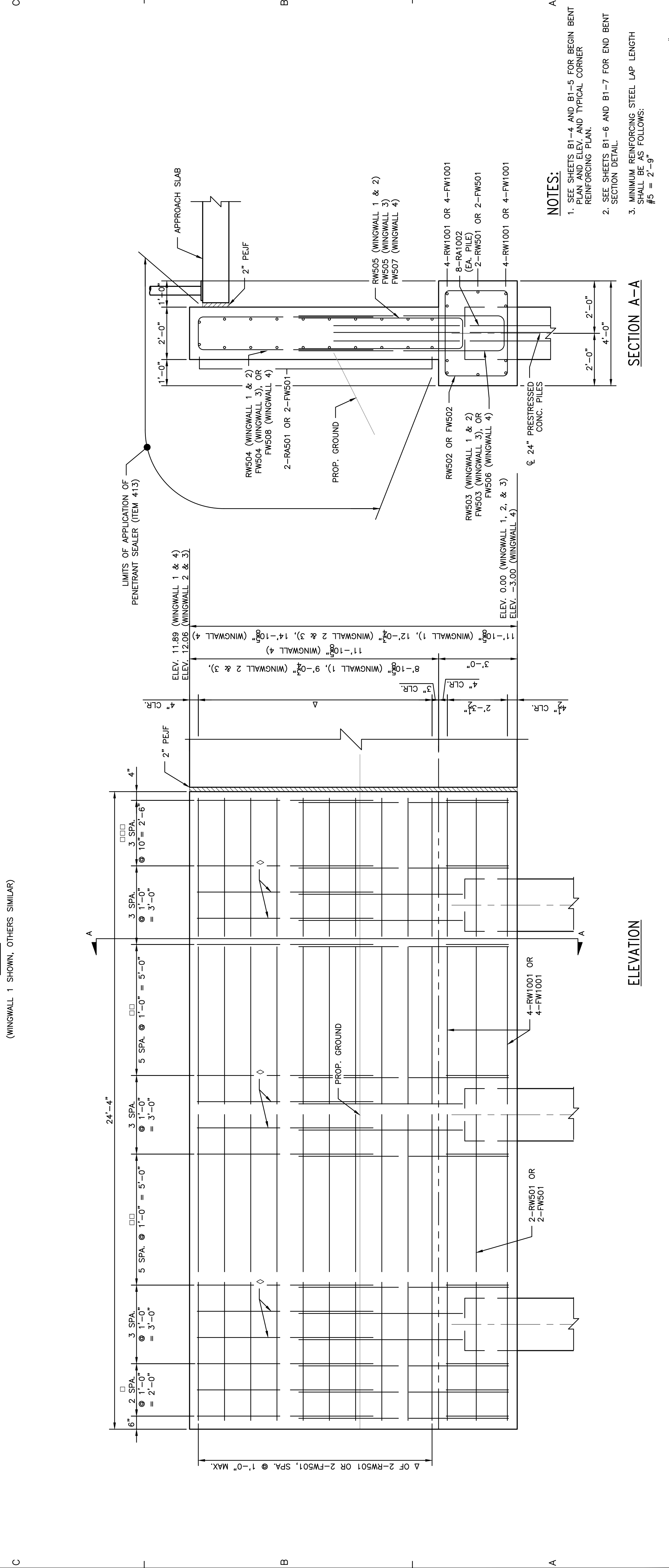


**PLAN**  
 (WINGWALL 1 SHOWN, OTHERS SIMILAR)

LEGEND:  
 □ - 3 SETS OF RW502, RW503, & RW504 (WINGWALLS 1 & 2)  
 □ - 3 SETS OF FW502, FW503, & FW504 (WINGWALL 3)  
 □ - 3 SETS OF FW502, FW506, & FW508 (WINGWALL 4)  
 □ - 6 SETS OF RW502, RW503, & RW504 (WINGWALLS 1 & 2)  
 □ - 6 SETS OF FW502, FW503, & FW504 (WINGWALL 3)  
 □ - 6 SETS OF FW502, FW506, & FW508 (WINGWALL 4)  
 □ - 4 SETS OF RW502, RW503, & RW504 (WINGWALLS 1 & 2)  
 □ - 4 SETS OF FW502, FW503, & FW504 (WINGWALL 3)  
 □ - 4 SETS OF FW502, FW506, & FW508 (WINGWALL 4)  
 ◇ - 1 SET OF RW505 & RW504 (WINGWALLS 1 & 2)  
 ◇ - 1 SET OF FW505 & FW504 (WINGWALL 3)  
 ◇ - 1 SET OF FW507 & FW508 (WINGWALL 4)  
 △ - 10 SETS (WINGWALLS 1 & 2)  
 △ - 10 SETS (WINGWALL 3)  
 △ - 13 SETS (WINGWALL 4)

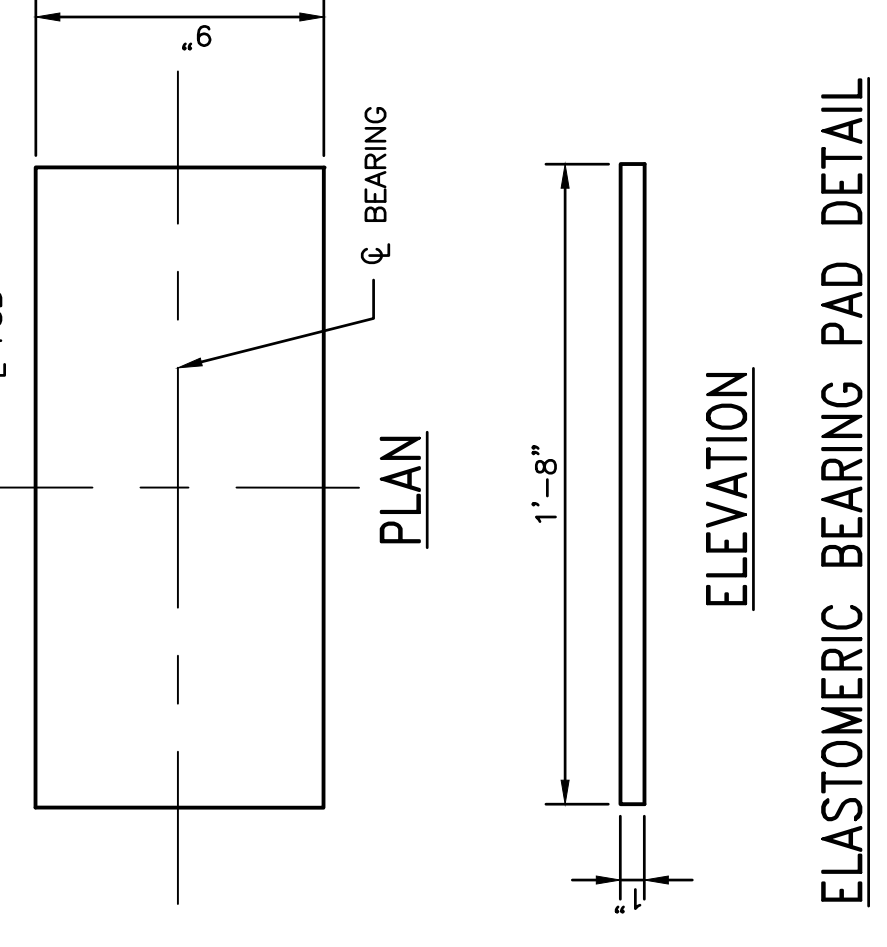
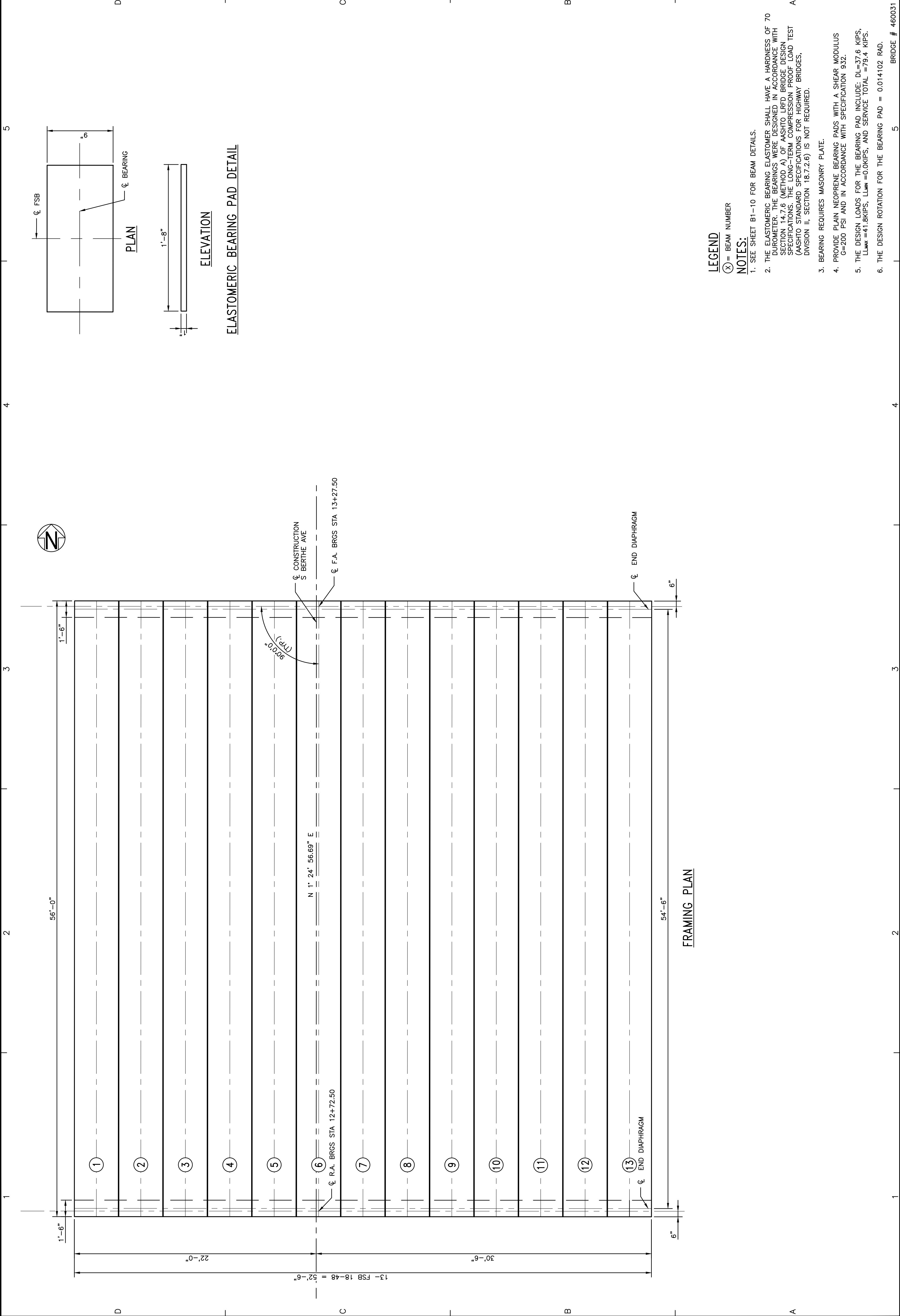


**ELEVATION**



**SECTION A-A**

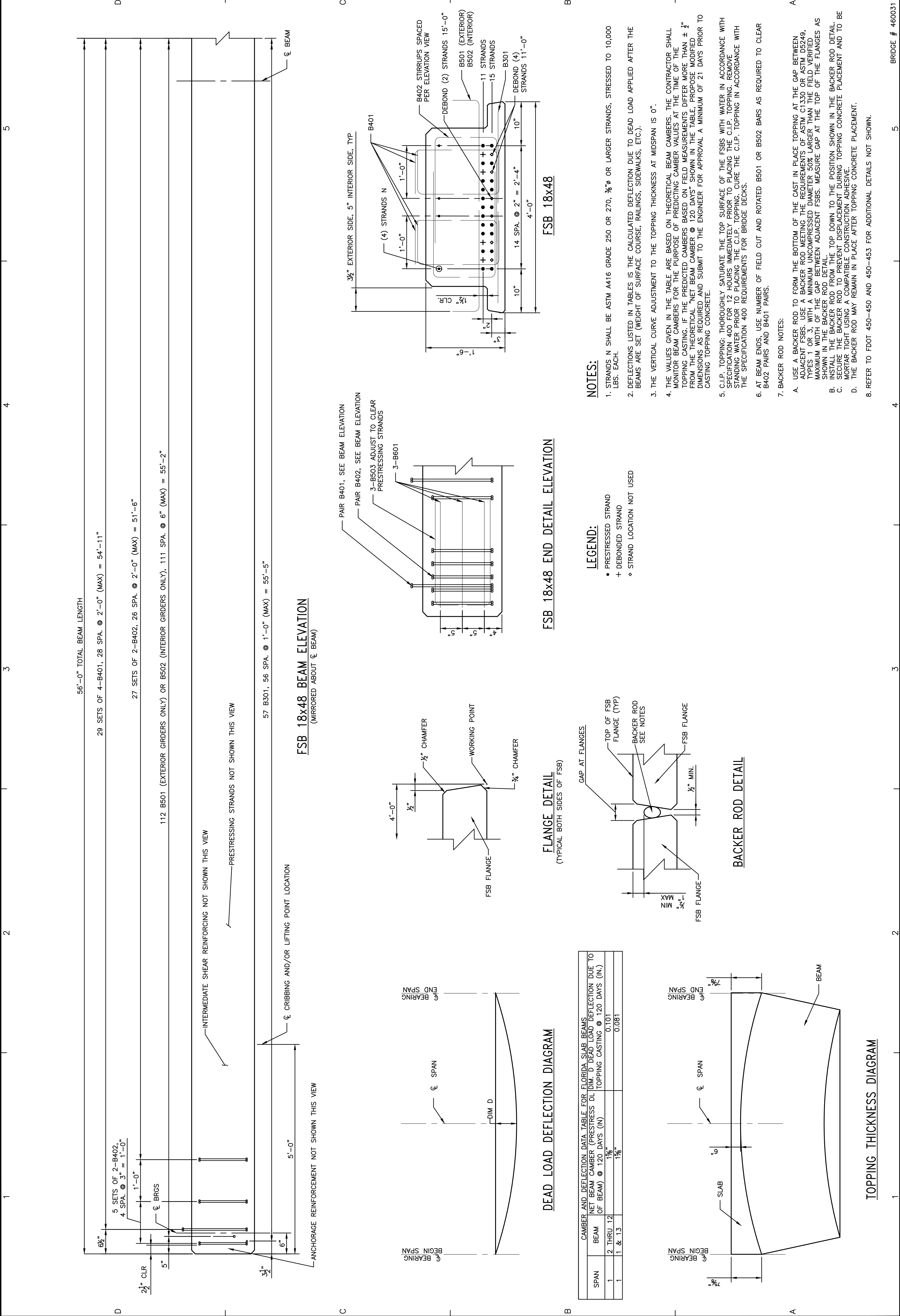
**NOTES:**  
 1. SEE SHEETS B1-4 AND B1-5 FOR BEGIN BENT PLAN AND ELEV. AND TYPICAL CORNER REINFORCING PLAN.  
 2. SEE SHEETS B1-6 AND B1-7 FOR END BENT SECTION DETAIL.  
 3. MINIMUM REINFORCING STEEL LAP LENGTH SHALL BE AS FOLLOWS:  
 #5 = 2'-9"



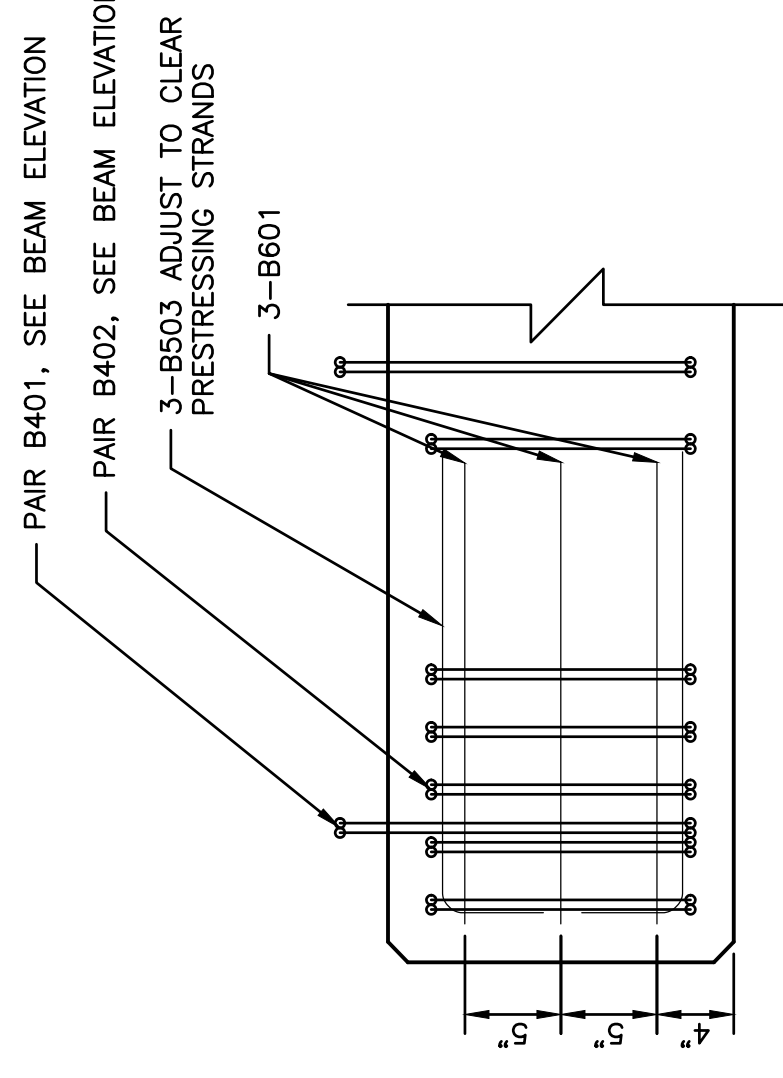
- LEGEND**  
 (X) = BEAM NUMBER
- NOTES:**
- SEE SHEET B1-10 FOR BEAM DETAILS.
  - THE ELASTOMERIC BEARING ELASTOMER SHALL HAVE A HARDNESS OF 70 DUROMETER. THE BEARINGS WERE DESIGNED IN ACCORDANCE WITH SECTION 14.7.6 (METHOD A) OF AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS. THE LONG-TERM COMPRESSION PROOF LOAD TEST (AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, DIVISION II, SECTION 18.7.2.6) IS NOT REQUIRED.
  - BEARING REQUIRES MASONRY PLATE.
  - PROVIDE PLAIN NEOPRENE BEARING PADS WITH A SHEAR MODULUS G=200 PSI AND IN ACCORDANCE WITH SPECIFICATION 932.
  - THE DESIGN LOADS FOR THE BEARING PAD INCLUDE: DL=37.6 KIPS, LL<sub>max</sub>=41.8KIPS, LL<sub>min</sub>=0.0KIPS, AND SERVICE TOTAL =79.4 KIPS.
  - THE DESIGN ROTATION FOR THE BEARING PAD = 0.014102 RAD.

**FRAMING PLAN**

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**FSB 18x48 BEAM ELEVATION**  
 (MIRRORED ABOUT  $\phi$  BEAM)



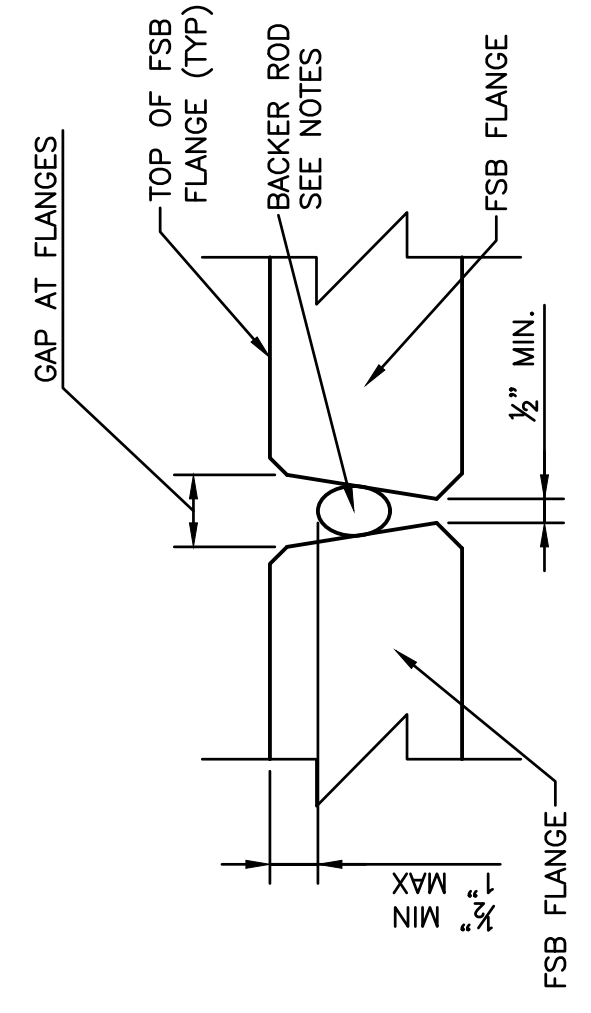
**FSB 18x48 END DETAIL ELEVATION**

- LEGEND:**
- PRESTRESSED STRAND
  - + DEBONDED STRAND
  - ◊ STRAND LOCATION NOT USED

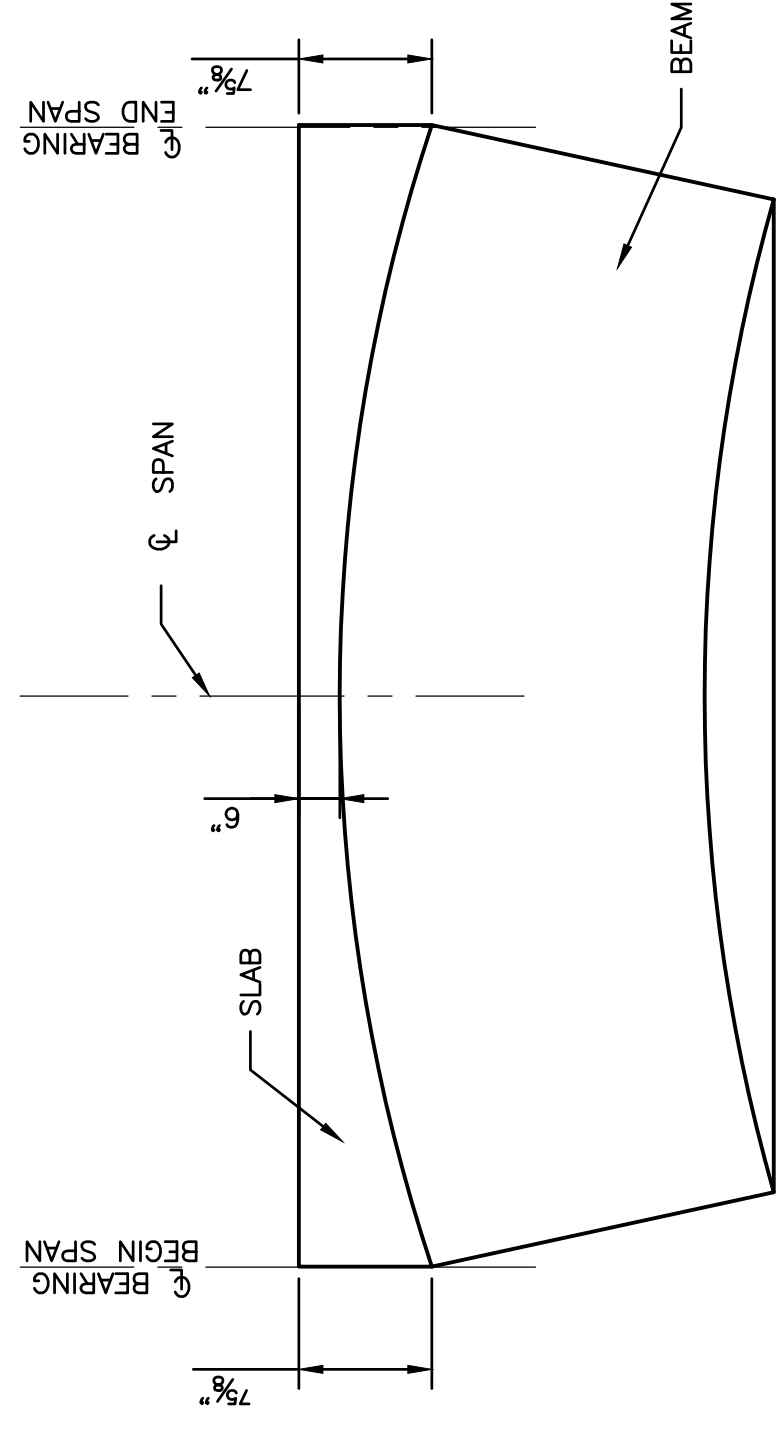
**NOTES:**

- STRANDS N SHALL BE ASTM A416 GRADE 250 OR 270,  $\frac{3}{8}$ " OR LARGER STRANDS, STRESSED TO 10,000 LBS. EACH.
- DEFLECTIONS LISTED IN TABLES IS THE CALCULATED DEFLECTION DUE TO DEAD LOAD APPLIED AFTER THE BEAMS ARE SET (WEIGHT OF SURFACE COURSE, RAILINGS, SIDEWALKS, ETC.).
- THE VERTICAL CURVE ADJUSTMENT TO THE TOPPING THICKNESS AT MIDSPAN IS 0".
- THE VALUES GIVEN IN THE TABLE ARE BASED ON THEORETICAL BEAM CAMBERS. THE CONTRACTOR SHALL MONITOR BEAM CAMBERS FOR THE PURPOSE OF PREDICTING CAMBER VALUES AT THE TIME OF THE TOPPING CASTING. IF THE PREDICTED CAMBERS BASED ON FIELD MEASUREMENTS DIFFER MORE THAN  $\pm 2$ " FROM THE THEORETICAL "NET BEAM CAMBER @ 120 DAYS" SHOWN IN THE TABLE, PROPOSE MODIFIED DIMENSIONS AS REQUIRED AND SUBMIT TO THE ENGINEER FOR APPROVAL A MINIMUM OF 21 DAYS PRIOR TO CASTING TOPPING CONCRETE.
- C.I.P. TOPPING: THOROUGHLY SATURATE THE TOP SURFACE OF THE FSBS WITH WATER IN ACCORDANCE WITH SPECIFICATION 400 FOR 12 HOURS IMMEDIATELY PRIOR TO PLACING THE C.I.P. TOPPING. REMOVE STANDING WATER PRIOR TO PLACING THE C.I.P. TOPPING. CURE THE C.I.P. TOPPING IN ACCORDANCE WITH THE SPECIFICATION 400 REQUIREMENTS FOR BRIDGE DECKS.
- AT BEAM ENDS, USE NUMBER OF FIELD CUT AND ROTATED B501 OR B502 BARS AS REQUIRED TO CLEAR B402 PAIRS AND B401 PAIRS.
- BACKER ROD NOTES:
  - USE A BACKER ROD TO FORM THE BOTTOM OF THE CAST IN PLACE TOPPING AT THE GAP BETWEEN ADJACENT FSBS. USE A BACKER ROD MEETING THE REQUIREMENTS OF ASTM C1330 OR ASTM D5249, TYPES 1 OR 3, WITH A MINIMUM UNCOMPRESSED DIAMETER 50% LARGER THAN THE FIELD VERIFIED MAXIMUM WIDTH OF THE GAP BETWEEN ADJACENT FSBS. MEASURE GAP AT THE TOP OF THE FLANGES AS SHOWN IN THE BACKER ROD DETAIL.
  - INSTALL THE BACKER ROD FROM THE TOP DOWN TO THE POSITION SHOWN IN THE BACKER ROD DETAIL. SECURE THE BACKER ROD TO PREVENT DISPLACEMENT DURING TOPPING CONCRETE PLACEMENT AND TO BE MORTAR TIGHT USING A COMPATIBLE CONSTRUCTION ADHESIVE.
  - THE BACKER ROD MAY REMAIN IN PLACE AFTER TOPPING CONCRETE PLACEMENT.
- REFER TO FDOT 450-450 AND 450-453 FOR ADDITIONAL DETAILS NOT SHOWN.

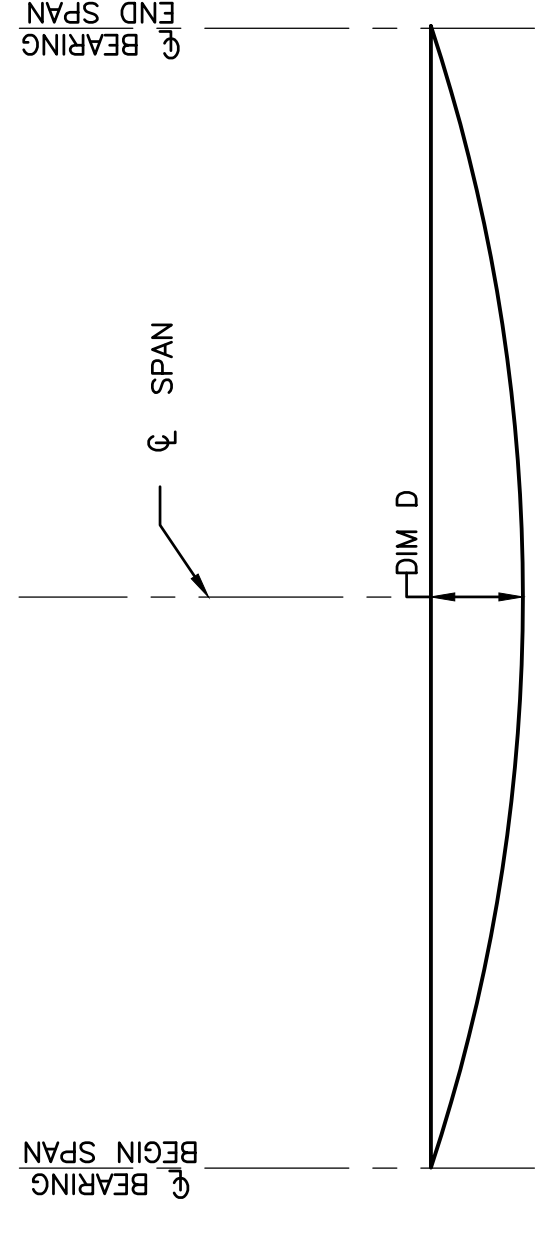
**FLANGE DETAIL**  
 (TYPICAL BOTH SIDES OF FSB)



**BACKER ROD DETAIL**

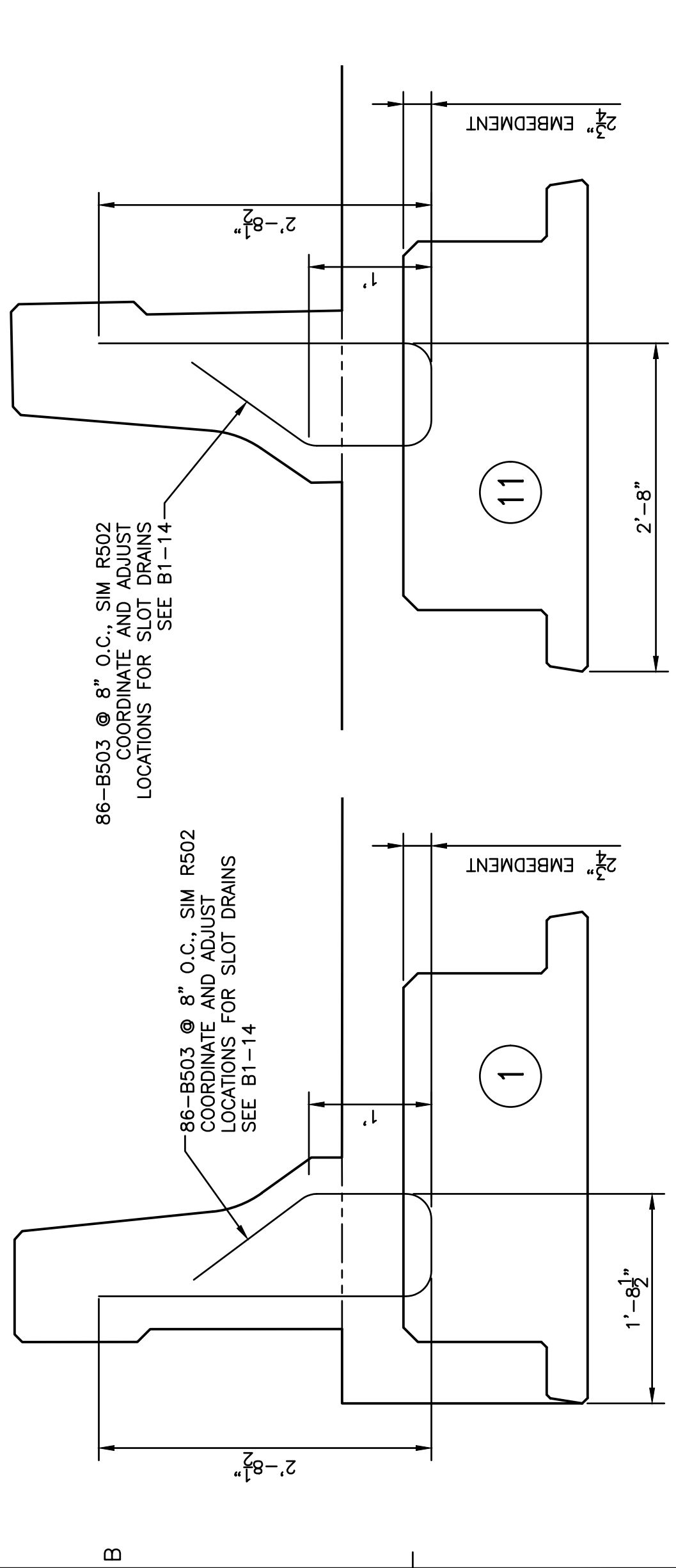
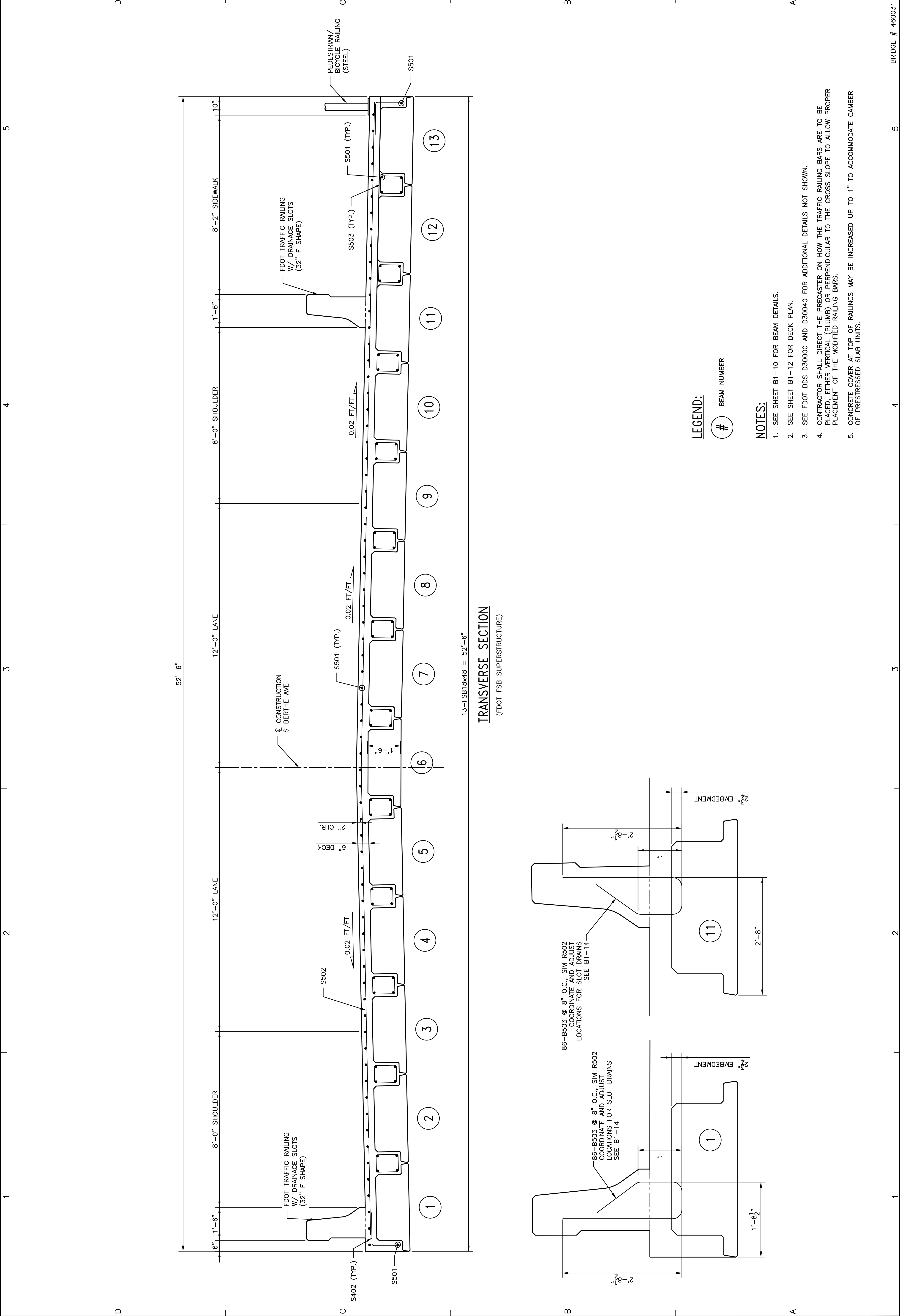


**DEAD LOAD DEFLECTION DIAGRAM**



CAMBER AND DEFLECTION DATA TABLE FOR FLORIDA SLAB BEAMS.			
SPAN	BEAM	NET BEAM CAMBER (PRESTRESS DL DIM. D DEAD LOAD DEFLECTION DUE TO TOPPING CASTING @ 120 DAYS (IN.)	TOPPING CASTING @ 120 DAYS (IN.)
1	2 THRU 12	$1\frac{3}{8}$ "	0.101
1	1 & 13	$1\frac{7}{8}$ "	0.081

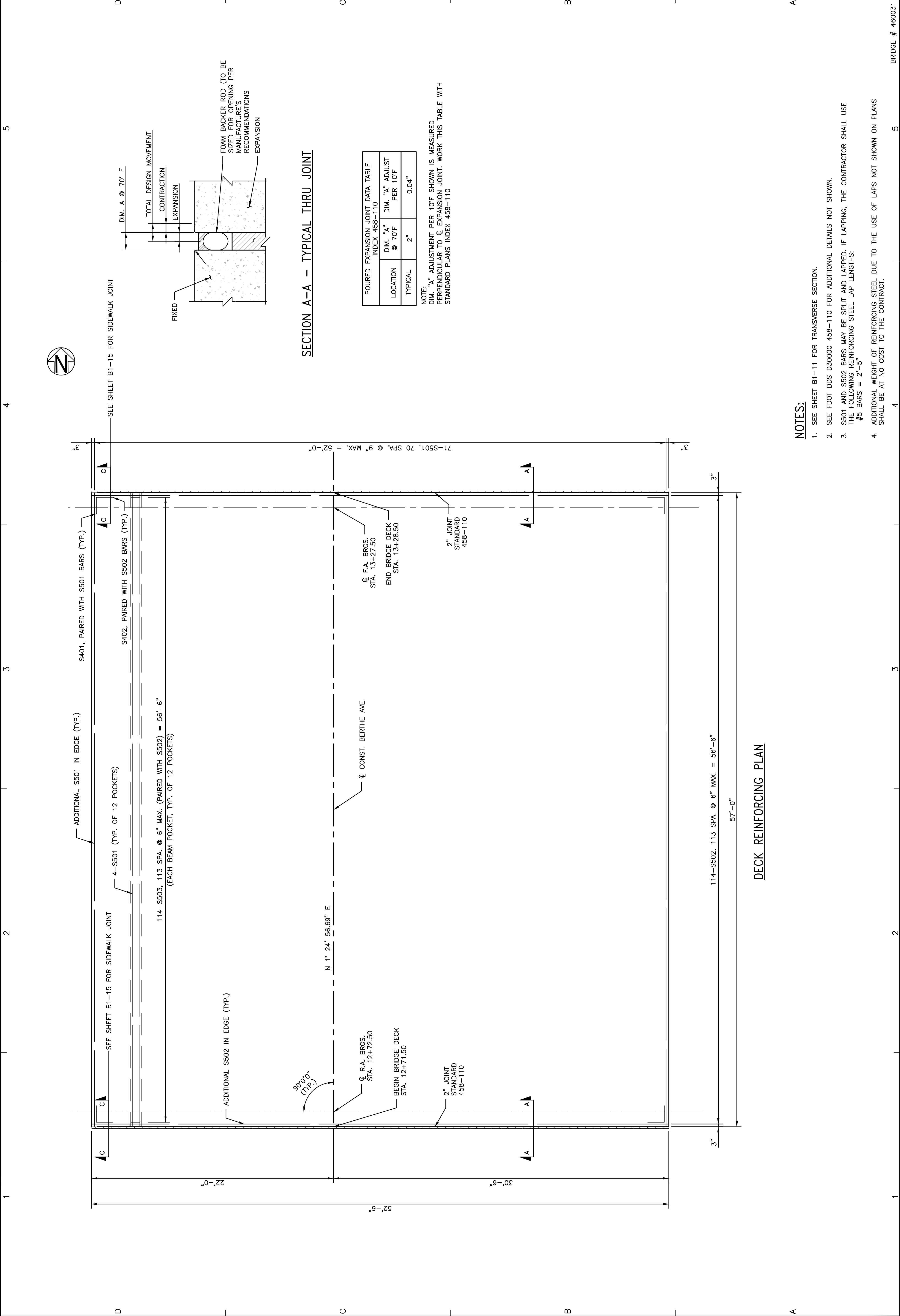
**TOPPING THICKNESS DIAGRAM**



**LEGEND:**

# BEAM NUMBER

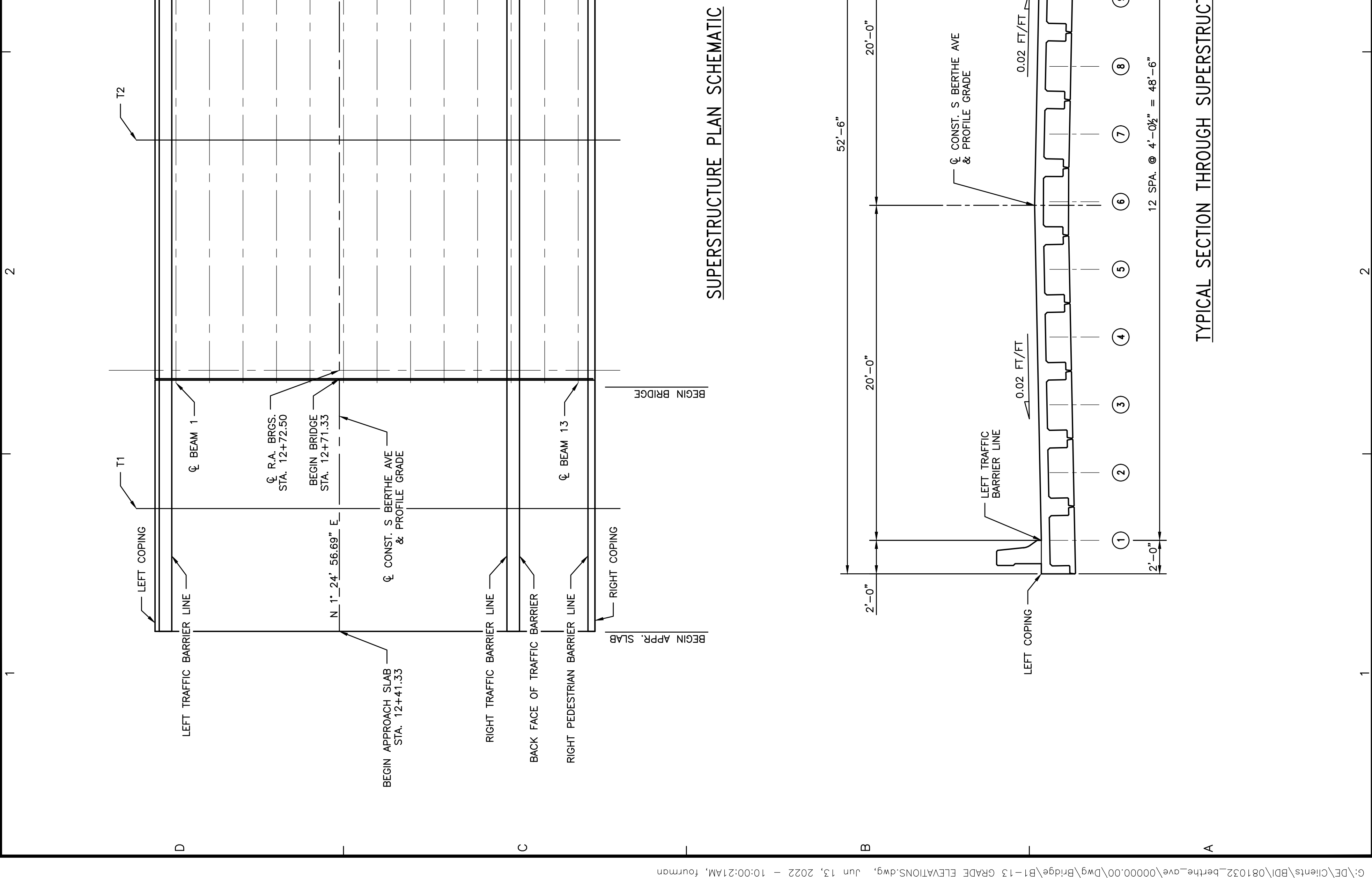
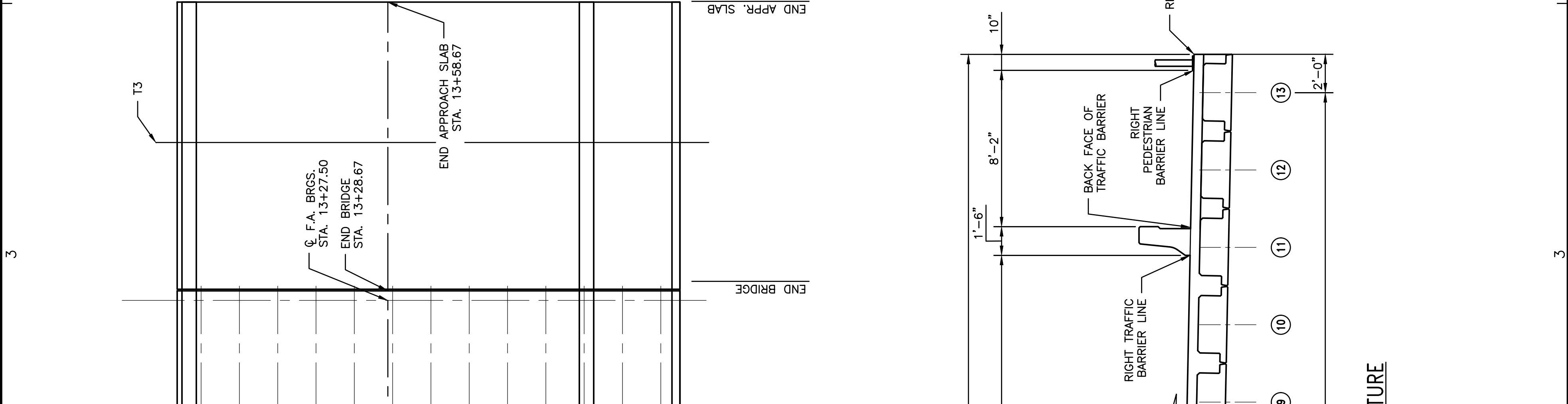
- NOTES:**
1. SEE SHEET B1-10 FOR BEAM DETAILS.
  2. SEE SHEET B1-12 FOR DECK PLAN.
  3. SEE FDOT DDS D30000 AND D30040 FOR ADDITIONAL DETAILS NOT SHOWN.
  4. CONTRACTOR SHALL DIRECT THE PRECASTER ON HOW THE TRAFFIC RAILING BARS ARE TO BE PLACED, EITHER VERTICAL (PLUMB) OR PERPENDICULAR TO THE CROSS SLOPE TO ALLOW PROPER PLACEMENT OF THE MODIFIED RAILING BARS.
  5. CONCRETE COVER AT TOP OF RAILINGS MAY BE INCREASED UP TO 1" TO ACCOMMODATE CAMBER OF PRESTRESSED SLAB UNITS.

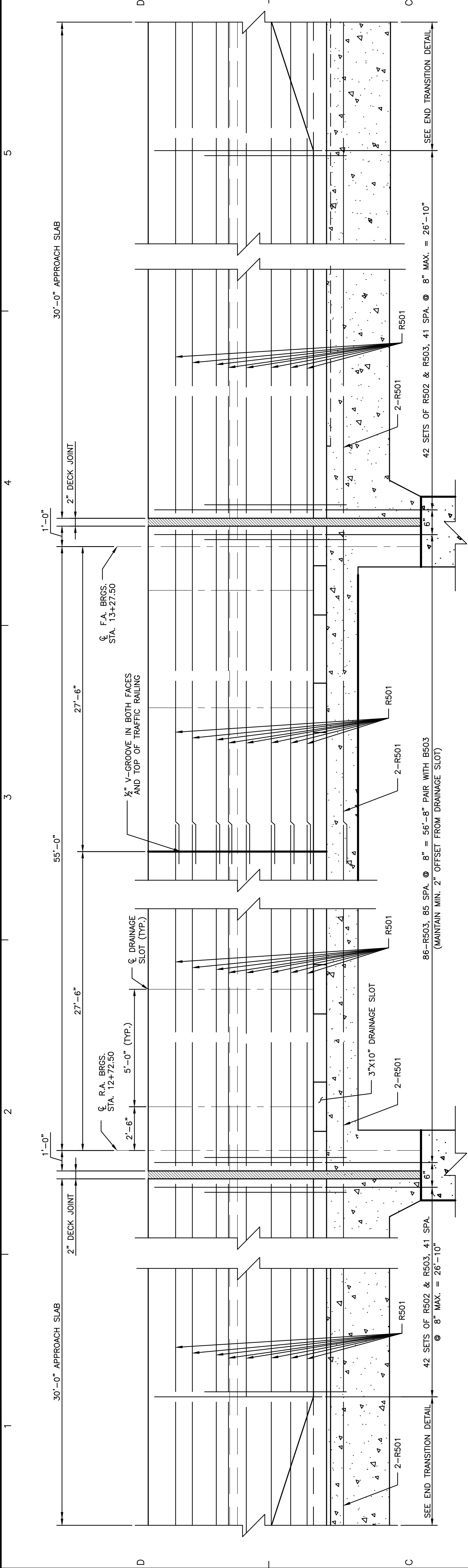


- NOTES:**
1. SEE SHEET B1-11 FOR TRANSVERSE SECTION.
  2. SEE FDOT DDS D30000 458-110 FOR ADDITIONAL DETAILS NOT SHOWN.
  3. S501 AND S502 BARS MAY BE SPLIT AND LAPPED. IF LAPPING, THE CONTRACTOR SHALL USE THE FOLLOWING REINFORCING STEEL LAP LENGTHS:  
#5 BARS = 2'-5"
  4. ADDITIONAL WEIGHT OF REINFORCING STEEL DUE TO THE USE OF LAPS NOT SHOWN ON PLANS SHALL BE AT NO COST TO THE CONTRACT.

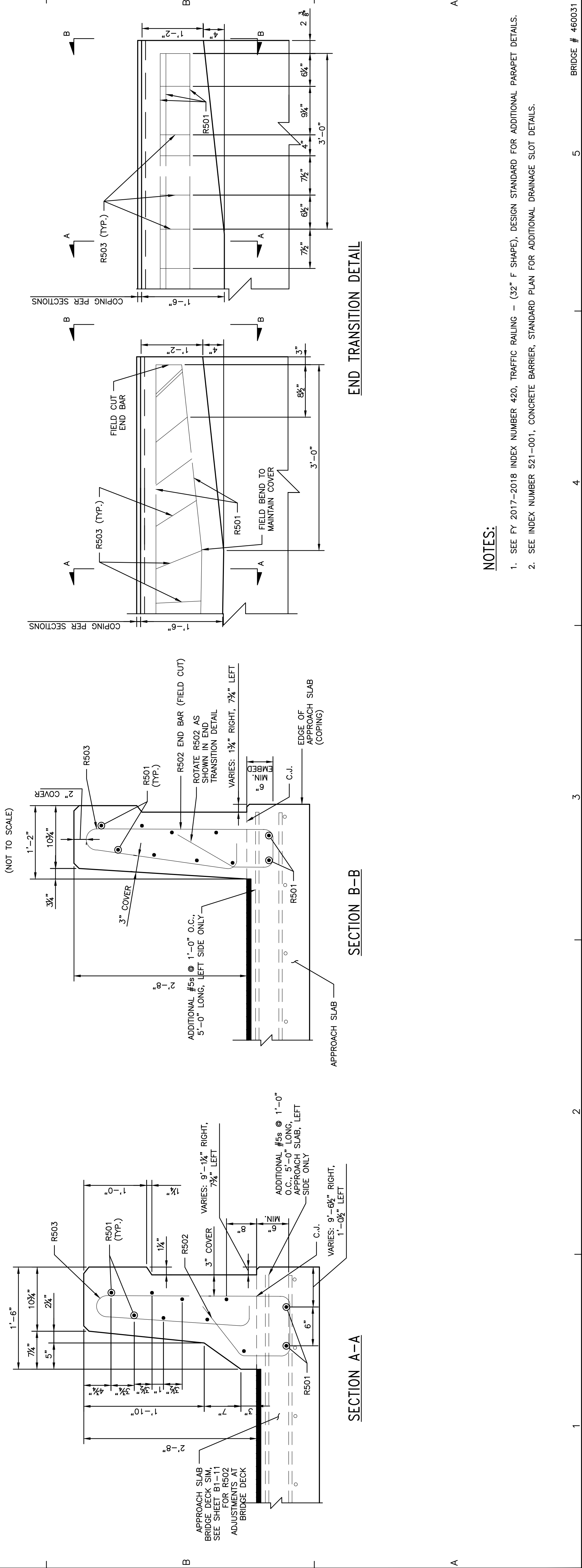
**DECK REINFORCING PLAN**

STATION	FINISH GRADE ELEVATIONS			END BRIDGE	T2	T3	END APPR. SLAB
	BEGIN APPR. SLAB	T1	BEGIN BRIDGE				
LEFT COPING	12.031	12+56.33	12+71.33	13+28.67	13+43.67	13+58.67	13+58.67
LEFT TRAFFIC BARRIER LINE	12.071	12.059	12.060	12.060	12.059	12.059	12.045
CENTERLINE BEAM 1	12.081	12.109	12.100	12.100	12.100	12.099	12.085
CENTERLINE BEAM 2	12.161	12.189	12.190	12.190	12.110	12.109	12.095
CENTERLINE BEAM 3	12.241	12.269	12.270	12.270	12.190	12.189	12.175
CENTERLINE BEAM 4	12.321	12.349	12.350	12.350	12.270	12.269	12.255
CENTERLINE BEAM 5	12.401	12.429	12.430	12.430	12.350	12.349	12.335
CENTERLINE BEAM 6	12.481	12.499	12.500	12.430	12.430	12.429	12.415
CENTERLINE BEAM 7	12.561	12.489	12.490	12.500	12.500	12.499	12.485
CENTERLINE BEAM 8	12.641	12.461	12.460	12.490	12.490	12.489	12.475
CENTERLINE BEAM 9	12.721	12.409	12.410	12.410	12.480	12.480	12.465
CENTERLINE BEAM 10	12.801	12.329	12.330	12.410	12.410	12.409	12.395
CENTERLINE BEAM 11	12.881	12.249	12.250	12.330	12.330	12.329	12.315
CENTERLINE BEAM 12	12.961	12.169	12.170	12.250	12.250	12.249	12.235
CENTERLINE BEAM 13	13.041	12.089	12.090	12.170	12.170	12.169	12.155
RIGHT PEDESTRIAN BARRIER LINE	11.901	11.929	11.930	12.090	12.090	12.089	12.075
RIGHT COPING	11.821	11.849	11.850	12.070	12.070	12.069	12.055
	11.861	11.889	11.890	12.010	12.010	12.009	11.995
	11.878	11.906	11.907	11.930	11.930	11.929	11.915
	11.861	11.889	11.890	11.907	11.907	11.906	11.891
	11.878	11.889	11.890	11.890	11.890	11.889	11.875

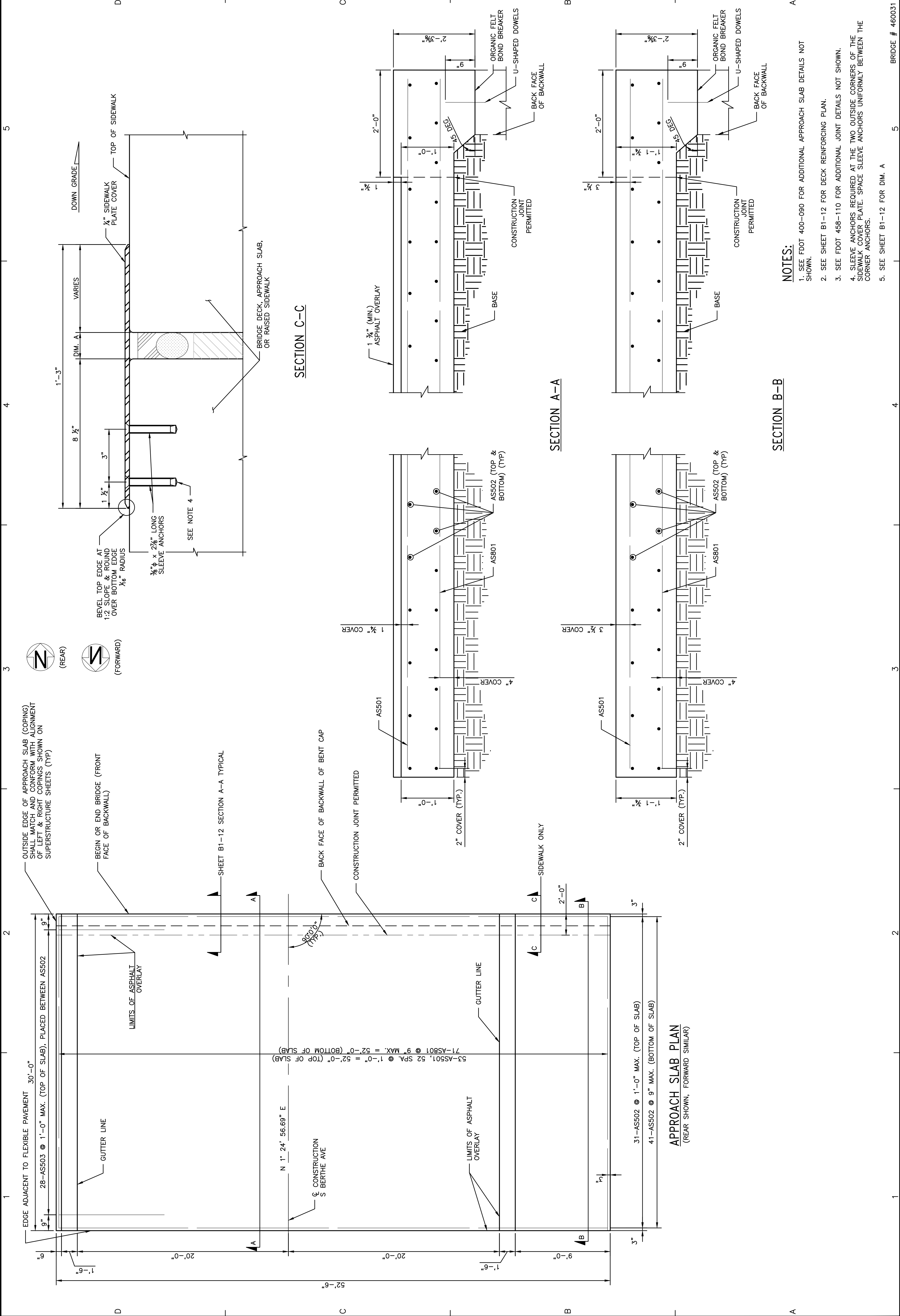




**ELEVATION OF INSIDE FACE OF RAILING**  
(NOT TO SCALE)



- NOTES:**
- SEE FY 2017-2018 INDEX NUMBER 420, TRAFFIC RAILING - (32" F SHAPE), DESIGN STANDARD FOR ADDITIONAL PARAPET DETAILS.
  - SEE INDEX NUMBER 521-001, CONCRETE BARRIER, STANDARD PLAN FOR ADDITIONAL DRAINAGE SLOT DETAILS.







BERTHE AVE BRIDGE  
BRIDGE REPLACEMENT  
PLAN AND ELEVATION

PROJECT NO: 27653.01  
DESIGNED BY: PAG  
DRAWN BY: CML  
CHK'D BY: TML  
PROJ. MGR: PJP  
DATE: AUGUST, 2021

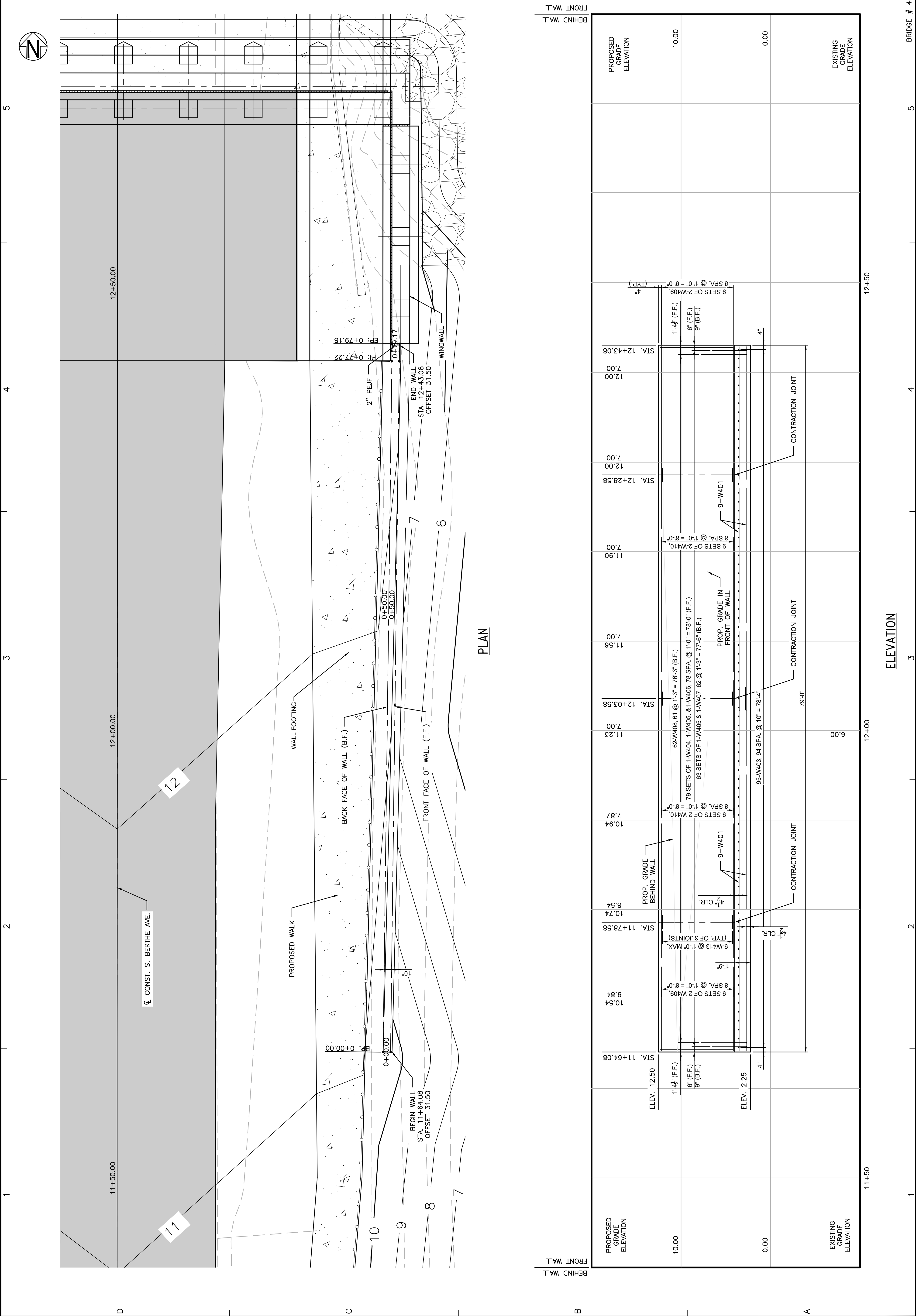
NOT RELEASED FOR CONSTRUCTION BY DATE  
REVISION/ACTION TAKEN  
NO. DATE APPR.

BERTHE AVENUE  
BRIDGE REPLACEMENT  
ENGINEERING  
BASKERVILLE-DONOVAN

THOMAS LESS, P.E.  
FL REG. ENGINEER #89321



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**BERTHE AVE BRIDGE  
BRIDGE REPLACEMENT  
WALL SECTION DETAIL**

PROJECT NO:	27653.01
DESIGNED BY:	PAG
DRAWN BY:	CML
CHK'D BY:	TML
PROJ. MGR:	PJP
DATE:	AUGUST, 2021
NOT RELEASED FOR CONSTRUCTION BY DATE	
NO.	DATE
APPR.	REVISION/ACTION TAKEN

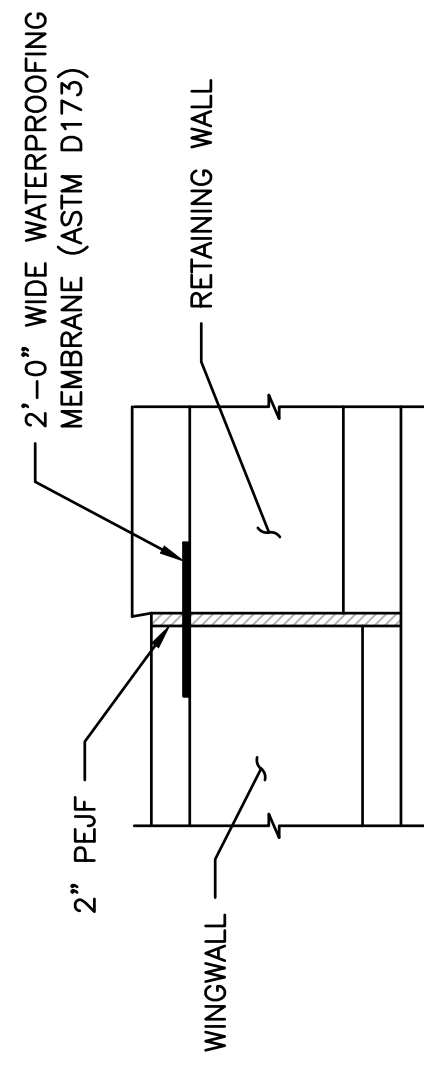
**BERTHE AVENUE  
BRIDGE REPLACEMENT  
ENGINEERING**  
BASKERVILLE-DONOVAN



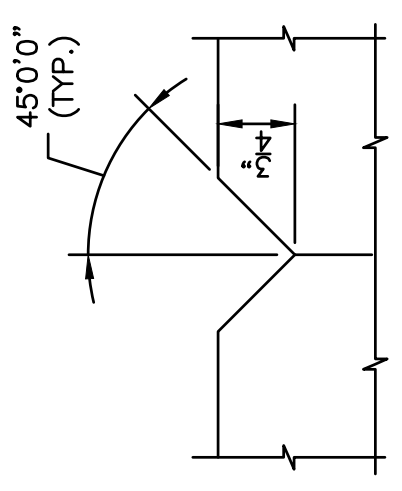
**WOOLPERT**  
ARCHITECTURE | ENGINEERING | INTERIORS  
Suite 440  
Miami, FL 33126  
305.418.9377  
FAX: 937.461.0743  
6100 Blue Lagoon Drive

- NOTES:**
1. SEE SHEETS W1-1 & W1-2 FOR RETAINING WALL PLAN AND ELEVATION.
  2. SEE FDOT STANDARD PLAN 400-010 FOR ADDITIONAL DETAILS.
  3. STAY-IN-PLACE PLASTIC PREFORMED BOND BREAKERS ARE PERMITTED TO FORM JOINTS.

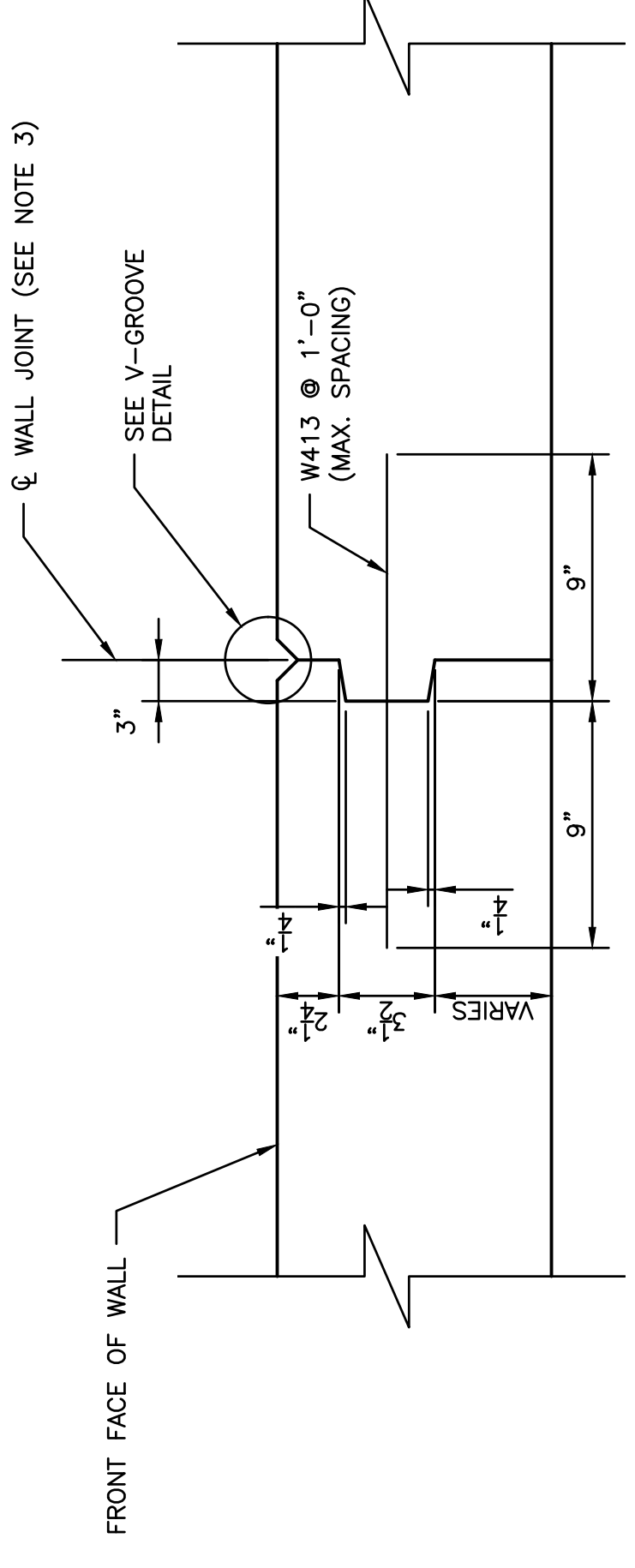
**RETAINING WALL TO WINGWALL DETAIL**



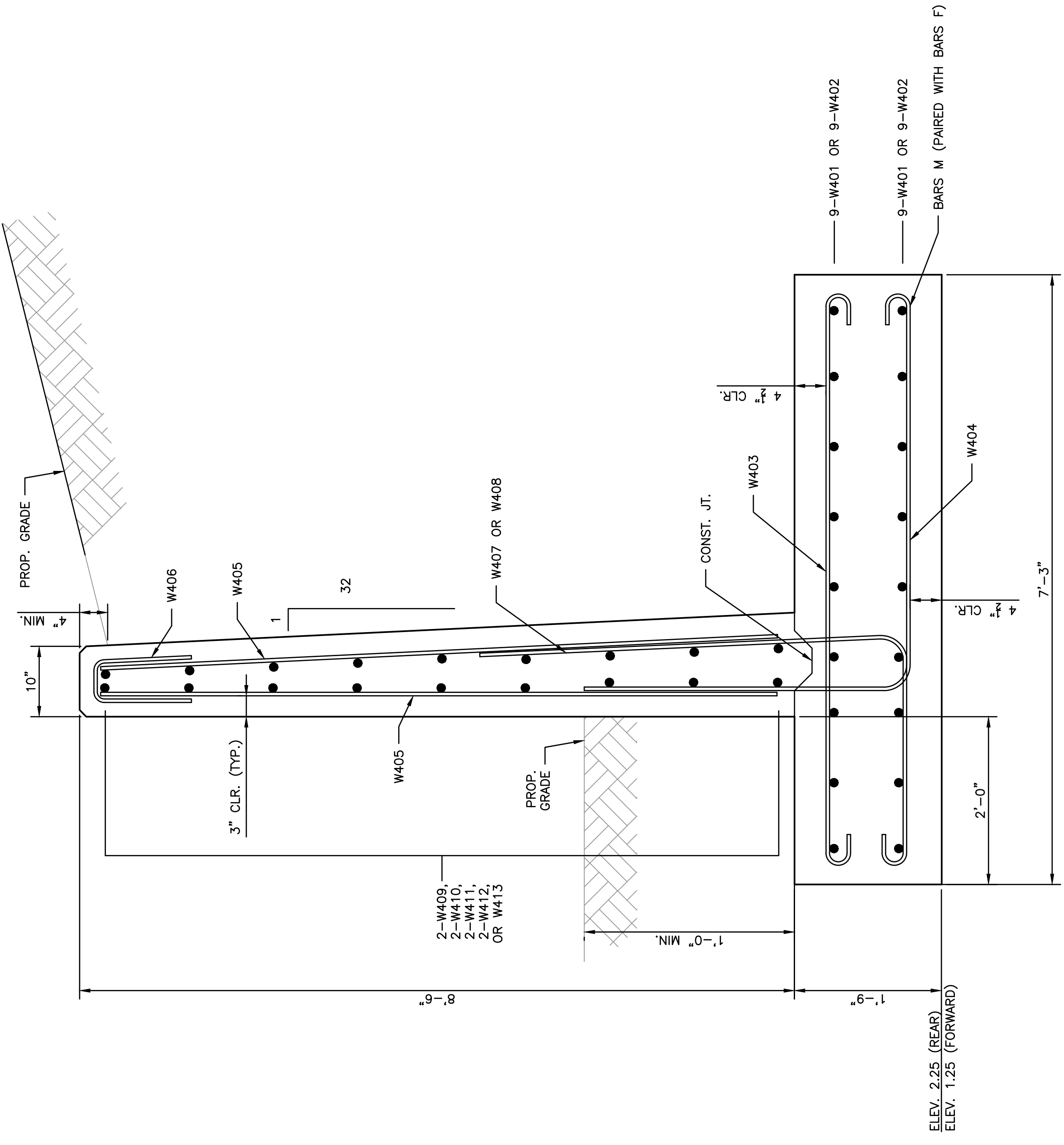
**V-GROOVE DETAIL**



**WALL JOINT DETAIL**



**SECTION A-A**



1 2 3 4 5

1 2 3 4 5