GAFFNEY BOARD OF PUBLIC WORKS

I-85 SEWER EXTENSION
CONTRACT 1C – COLLECTIONS

ADDENDUM NO. 6

1/10/2024

Prepared by

BLACK & VEATCH CORPORATION
Greenville, South Carolina

B&V Project No. 410381

January 10, 2024

Gaffney Board of Public Works
I-85 Sewer Extension
Contract 1C- Collections Bear Den
SPS to Quarry-1 SPS

ADDENDUM No. 6

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1. SCOPE. This Addendum No. 6 consists of pages AD6-1 through AD6-5 and the following attachments:

   - Revised Specification Section 00400 – Bid Form.
   - Additional Civil Drawing Sheets for Alternative 1 – SC-5 Bridge #1 Hanging:
     - C-06-103A and C-06-104A.
   - Additional Civil Drawing Sheet for Alternative 2 – SC-5 Bridge #2 Hanging:
     - C-08-102A.
   - Additional Structural Drawing Sheets for Alternatives:
     - S-00-001, S-01-101A, and S-01-102A.

   This Addendum No. 6 covers the following additions and changes to the Project Manual and Drawings:

2. PROJECT MANUAL.

   A. SECTION 00100 – INSTRUCTIONS TO BIDDERS

      i. Page 9. Article 14 – Basis of Bid, Evaluation of Bids. Delete Article 14.01 in its entirety starting with “14.01. Bids shall be priced on...” and replace with the following:

         “Bids shall be price on a lump sum and unit price basis for the base contract and the following Bid Alternatives:

         Alternative 1: Removal of Segment 6 horizontal directional drilling and 12” DR 11 HDPE force main under the railroad along N Mountain Street (SC-5). Installation of 10” DR 18 PVC force main with a 10” DIP, RJ Class 350 pipe hanging along the SC-5 bridge over the railroad.

         Alternative 2: Removal of Segment 8 horizontal directional drilling and 12” DR 11 HDPE force main under the railroad along York Road (SC-5). Installation of 10” DR 18 PVC force main with a 10”

DIP, RJ Class 350 pipe hanging along the SC-5 bridge over the railroad.

The price for each alternative shall be the amount to be added or decuted from the Base Bid if Owner selects the alternative.

Bidder shall complete the schedule of unit prices included in the Bid Form.

The total Bid will be determined as the sum of the products of the estimated quantity of each item and the unit price bid for the item. The final quantities and Contract Price wil be determined in accordance with Paragraph 13.03 of the General Conditions.

Discrepancies between the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum. Discrepancies between words and figures will be resolved in favor of the words."

B. SECTION 00400 – BID FORM

i. Remove Section 00400 from the Project Manual and replace it with attached revised Section 00400 – Bid Form.

C. SECTION 01015 – PROJECT REQUIREMENTS

i. Page 10. Paragraph 22. Delete Paragraph 22 Alternatives starting with " Not Used…" and replace with the following:

a. "The Work required under the Base Bid is indicated in the Specifications and on the Drawings. All requirements specified or indicated also apply to each alternative selected by the Owner except as otherwise provid. The following alternatives are provided for in the Bid Form.

Alternative No. 1	Remove Segment 6 horizontal directional drilling and 12" DR 11 HDPE force main under the railroad along N Mountain Street (SC-5). Install 10" DR 18 PVC force main with a 10" DIP, RJ Class 350 pipe hanging along the SC-5 bridge over the railroad.

Alternative No. 2	Remove Segment 8 horizontal directional drilling and 12” DR 11 HDPE force main under the railroad along York Road (SC-5). Install 10” DR 18 PVC force main with a 10” DIP, RJ Class 350 pipe hanging along the SC-5 bridge over the railroad.

D. SECTION 01025 – MEASUREMENT AND PAYMENT

i. Page 14. Paragraph 36. Delete Paragraph 36 Alternatives starting with “Not Used…” and replace with the following:

a. “An Alternate is an item of work or equipment that the Owner is requesting separate bids for as indicated on the Bid Form and defined in the Contract Documents. The Alternates may be “Added To” or “Deducted From” the Base Bid as indicated on the Bid Form.

Bid award will be evaluated on the total of the base bid and the alternates as selected by the Owner to the extent that project funds are available.

Following the award of the Contract, the Engineer shall prepare and distribute to each Bidder notification of the status of each Alternate. Notification shall indicate whether Alternates have been accepted, rejected or deferred for consideration at a later date. It shall also include a complete description of all negotiated modifications to Alternates.

Accepted Alternates will be identified in the Owner-Contractor Agreement.

36.01. Alternative 1. Alternative 1 includes the removal of Segment 6 horizontal directional drilling and 12” DR 11 HDPE force main under the railroad along N Mountain Street (SC-5) and replacing it with the installation of 10” DR 18 PVC force main with a 10” DIP, RJ Class 350 pipe hanging along the SC-5 bridge over the railroad. Bridge hanging installation line item shall include pipe hangers, pipe supports, removal/reinstallation of barricades/fencing and any associated appurtenences for the installation of the bridge hanging. The line items shown on the bid form shall include all unit costs for each deduction or addition of the line items in coordination with the alternative (shown as a sum of the deductions and additions).

36.02. Alternative 2. Alternative 2 includes the removal of Segment 8 horizontal directional drilling and 12” DR 11 HDPE force main under the railroad along York Road (SC-5) and replacing it with the installation of 10” DR 18 PVC force main with a 10” DIP, RJ Class 350 pipe hanging along the SC-5 bridge over the railroad. Bridge hanging installation line item shall include pipe hangers, pipe supports, removal/reinstallation of barricades/fencing and any associated appurtenences for the installation of the bridge hanging. The line items shown on the bid form shall include all unit costs for each deduction or addition of the line items in coordination with the alternative (shown as a sum of the deductions and additions).

3. DRAWINGS

A. Contract 1C – Collections: Sheet G-00-001.

i. In the sheet index for civil sheets, delete the lines for sheets 62-67. Replace with the following:

62	C-06-103A	ALTERNATIVE 1 – SC-5 BRIDGE HANGING #1
63	C-06-104A	ALTERNATIVE 1 – SC-5 BRIDGE HANGING #1
64	C-08-102A	ALTERNATIVE 2 – SC-5 BRIDGE HANGING #2
65	C-99-001	EROSION CONTROL DETAILS (1 OF 2)
66	C-99-002	EROSION CONTROL DETAILS (2 OF 2)
67	C-99-003	DETAILS (1 OF 4)
68	C-99-004	DETAILS (2 OF 4)
69	C-99-005	DETAILS (3 OF 4)
70	C-99-006	DETAILS (4 OF 4)

ii. In the sheet index for structural sheets, insert the following:

71	S-00-001	STANDARD STRUCTURAL NOTES
72	S-01-101A	ALTERNATIVE 1 – BRIDGE HANGING DETAILS
73	S-01-102A	ALTERNATIVE 2 – BRIDGE HANGING DETAILS

B. Contract 1C – Collections.

i. Insert the attached new sheets C-06-103A and C-06-104A for Segment 6 Alternative 1 and the new sheet C-08-102A for Segment 8 Alternative 2 after sheet C-16-109.

ii. Insert the attached new sheets S-00-001, S-01-101A, and S-01-102A for the Alternatives after sheet C-99-006.

End of Addendum No. 6

Section 00400

BID FORM

PROJECT IDENTIFICATION:

This Bid Form is for bids for the following Gaffney Board of Public Works project:

I-85 Sewer Extension Contract 1C: Collections Bear Den Sewage Pump Station to Quarry-1 Sewage Pump Station

ARTICLE 1 – BID RECIPIENT

1.01. This Bid is submitted to:

Mr. Steve Bratton
Gaffney Board of Public Works
210 E. Frederick Street
Gaffney, South Carolina 29340

1.02. The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

ARTICLE 2 – BIDDER'S ACKNOWLEDGEMENTS

2.01. Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for ninety (90) days after the day of Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner. Bidder will sign and submit the Agreement with the bonds and other documents required by the Bidding Documents to Engineer within fifteen (15) days after the date of Owner's Notice of Award.

ARTICLE 3 – BIDDER'S REPRESENTATIONS

3.01. In submitting this Bid, Bidder represents that:

A. Bidder has examined and carefully studied the Bidding Documents, and any data and reference items identified in the Bidding Documents, and hereby acknowledges receipt of the following Addenda:

No. _____ Dated _____

No. _____ Dated _____

No. _____ Dated _____

No. _____ Dated _____

No. _____ Dated _____

No. _____ Dated _____

B. Bidder has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and satisfied itself as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.

C. Bidder is familiar with and satisfied itself as to all Laws and Regulations that may affect cost, progress, and performance of the Work.

D. Bidder has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings.

E. Bidder has considered the information known to Bidder itself; information commonly known to Contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and any Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder; and (3) Bidder's safety precautions and programs.

F. Bidder agrees, based on the information and observations referred to in the preceding paragraph, that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid or performance of the Work at the price bid and within the times

required, and in accordance with the other terms and conditions of the Bidding Documents.

G. Bidder is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.

H. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents and confirms that the written resolution thereof by Engineer is acceptable to Bidder.

I The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance and furnishing of the Work.

J. The submission of this Bid constitutes an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article, and that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

ARTICLE 4 – BIDDER'S CERTIFICATION

4.01. Bidder certifies that:

A. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation;

B. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid;

C. Bidder has not solicited or induced any individual or entity to refrain from bidding; and

D. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 4.01.D:

1. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process;

2. “fraudulent practice” means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;

3. “collusive practice” means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels; and

4. “coercive practice” means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

ARTICLE 5 – BASIS OF BID

5.01. Bidder will complete the Work for the following unit prices, computed in accordance with Paragraph 13.03.C of the General Conditions. Bidder acknowledges that (1) each Bid unit price includes an amount considered by Bidder to be adequate to cover Contractor’s overhead and profit for each separately identified item, and (2) estimated quantities are not guaranteed and are solely for the purpose of comparison of Bids, and that final payment for all unit price Bid items will be based on actual quantities provided, determined as provided in the Contract Documents.

5.01 UNIT PRICE SCHEDULE

ITEM #	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL COST
1.	**GRAVITY PIPE**				
1.1	PIPE, 18" DIAMETER GRAVITY, PVC, SDR 35, 0-4' DEEP	LF	306	$	$
1.2	PIPE, 18" DIAMETER GRAVITY, PVC, SDR 35, 4-8' DEEP	LF	2,580	$	$
1.3	PIPE, 18" DIAMETER GRAVITY, PVC, SDR 35, 8-12' DEEP	LF	2,754	$	$
1.4	PIPE, 18" DIAMETER GRAVITY, PVC, SDR 35, 12-16' DEEP	LF	1,786	$	$
1.5	PIPE, 18” DIAMETER GRAVITY, PVC, SDR 26, 16-20’ DEEP	LF	510	$	$
1.6	PIPE, 18” DIAMETER GRAVITY, PVC, SDR 26, >20’ DEEP	LF	48	$	$
1.7	PIPE, 18" DIAMETER GRAVITY, DIP, CLASS 250, 4-8' DEEP	LF	172	$	$
1.8	PIPE, 18" DIAMETER GRAVITY, DIP, CLASS 250, 8-12' DEEP	LF	251	$	$

1.9	PIPE, 18" DIAMETER GRAVITY, DIP, CLASS 250, 12-16' DEEP	LF	25	$	$
1.10	PIPE, 18" DIAMETER GRAVITY, DIP, CLASS 250, 16-20' DEEP	LF	19	$	$
1.11	PIPE, 12” DIAMETER GRAVITY, PVC, SDR 35, 0-4’ DEEP	LF	280	$	$
1.12	PIPE, 12” DIAMETER GRAVITY, PVC, SDR 35, 4-8’ DEEP	LF	1,109	$	$
1.13	PIPE, 12” DIAMETER GRAVITY, PVC, SDR 35, 8-12’ DEEP	LF	12	$	$
1.14	PIPE, 12” DIAMETER GRAVITY, DIP, CLASS 250, 8-12’ DEEP	LF	105	$	$
1.15	PIPE, 10” DIAMETER GRAVITY, PVC, SDR 35, 4-8’ DEEP	LF	1,241	$	$
1.16	PIPE, 10” DIAMETER GRAVITY, PVC, SDR 35, 8-12’ DEEP	LF	2,013	$	$
1.17	PIPE, 10” DIAMETER GRAVITY, PVC, SDR 35, 12-16’ DEEP	LF	442	$	$
1.18	PIPE, 10” DIAMETER GRAVITY, DIP, CLASS 250, 4-8’ DEEP	LF	191	$	$
1.19	PIPE, 10” DIAMETER GRAVITY, DIP, CLASS 250, 8-12’ DEEP	LF	92	$	$
1.20	PIPE, 8” DIAMETER GRAVITY, PVC, SDR 35, 4-8’ DEEP	LF	583	$	$
1.21	PIPE, 8” DIAMETER GRAVITY, PVC, SDR 35, 8-12’ DEEP	LF	520	$	$
1.22	PIPE, 8” DIAMETER GRAVITY, PVC, SDR 26, 4-8’ DEEP	LF	112	$	$
1.23	PIPE, 8” DIAMETER GRAVITY, PVC, SDR 26, 8-12’ DEEP	LF	483	$	$
1.24	PIPE, 8” DIAMETER GRAVITY, PVC, SDR 26, 12-16’ DEEP	LF	71	$	$
1.25	PIPE, 8” DIAMETER GRAVITY, PVC, SDR 35, 16-20’ DEEP	LF	65	$	$
2.	**FORCE MAIN PIPE**				
2.1	PIPE, 10" DIAMETER FORCE MAIN, PVC, DR 18	LF	17,330	$	$
2.2	PIPE, 10" DIAMETER FORCE MAIN, CIP, CLASS 350	LF	866	$	$
2.3	PIPE, 8" DIAMETER FORCE MAIN, PVC, DR 25	LF	8,888	$	$
2.4	PIPE, 6" DIAMETER FORCE MAIN, PVC, DR 25	LF	5,621	$	$
2.5	PIPE, 6” DIAMETER FORCE MAIN, DIP, CLASS 350	LF	162	$	$
3.	**WATER LINE PIPE**				
3.1	PIPE, 2" DIAMETER WATER, HDPE	LF	2,017	$	$

4.	**STANDARD MANHOLES**				
4.1	PRECAST MANHOLE, 48" DIAMETER, 0-8' DEEP	EACH	9	$	$
4.2	PRECAST MANHOLE, 48" DIAMETER, 8-12' DEEP	EACH	22	$	$
4.3	PRECAST MANHOLE, 48" DIAMETER, 12-16' DEEP	EACH	6	$	$
4.4	PRECAST MANHOLE, 48" DIAMETER, >16' DEEP	EACH	3	$	$
4.5	PRECAST MANHOLE, 60" DIAMETER, >16' DEEP	EACH	1	$	$
4.6	PRECAST MANHOLE, 72" DIAMETER, 8-12' DEEP	EACH	1	$	$
4.7	PRECAST MANHOLE, 72" DIAMETER, 12-16' DEEP	EACH	1	$	$
4.8	PRECAST MANHOLE, 72" DIAMETER, >16' DEEP	EACH	1	$	$
5.	**INSIDE DROP MANHOLES**				
5.1	PRECAST MANHOLE, 72" DIAMETER, INSIDE DROP, 8-12' DEEP	EACH	2	$	$
5.2	PRECAST MANHOLE, 72" DIAMETER, INSIDE DROP, 12-16' DEEP	EACH	4	$	$
5.3	PRECAST MANHOLE, 72" DIAMETER, INSIDE DROP, >16' DEEP	EACH	9	$	$
6.	**SEAL TIGHT MANHOLES**				
6.1	PRECAST MANHOLE, 48" DIAMETER, 8-12' DEEP	EACH	1	$	$
6.2	PRECAST MANHOLE, 48" DIAMETER, 12-16' DEEP	EACH	1	$	$
6.3	PRECAST MANHOLE, 60" DIAMETER, >16' DEEP	EACH	1	$	$
7.	**FORCE MAIN FITTINGS**				
7.1	FITTINGS, 10" 45 DEGREE BEND	EACH	6	$	$
7.2	FITTINGS, 10" 11.25 DEGREE BEND	EACH	5	$	$
7.3	FITTINGS, 8" 45 DEGREE BEND	EACH	7	$	$
7.4	FITTINGS, 8" 22.5 DEGREE BEND	EACH	6	$	$
7.5	FITTINGS, 6" 45 DEGREE BEND	EACH	5	$	$
7.6	FITTINGS, 6" 11.25 DEGREE BEND	EACH	1	$	$

8.	**WATER LINE FITTINGS**				
8.1	FITTINGS, 2” 90 DEGREE BEND	EACH	1	$	$
8.2	FITTINGS, 2" 45 DEGREE BEND	EACH	2	$	$
8.3	FITTINGS, 2" 22.5 DEGREE BEND	EACH	1	$	$
9.	**CONNECTIONS TO EXISTING WATER LINES**				
9.1	TAPPING SLEEVE (8X2)	EACH	2	$	$
10.	**BORE AND JACK**				
10.1	30" STEEL CASING, BORE AND JACK, UNDER ROAD	LF	90	$	$
10.2	30" STEEL CASING, BORE AND JACK, UNDER RAILROAD	LF	284	$	$
10.3	20" STEEL CASING, BORE AND JACK, UNDER ROAD	LF	91	$	$
10.4	20" STEEL CASING, BORE AND JACK, UNDER RAILROAD	LF	371	$	$
10.5	18" STEEL CASING, BORE AND JACK, UNDER ROAD	LF	477	$	$
11.	**HORIZONTAL DIRECTIONAL DRILLING (HDD)**				
11.1	12” HDPE DR 11, HDD ALONG N MOUNTAIN ST, UNDER RAILRAOD, SEGMENT 6	LF	1,354	$	$
11.2	12” HDPE DR 11, HDD ALONG YORK RD, UNDER RAILROAD, SEGMENT 8	LF	800	$	$
11.3	12” HDPE DR 11 OR 10” fPVC DR 18, HDD ALONG JUMPING BRANCH RD, UNDER JUMPING CREEK, SEGMENT 8	LF	235	$	$
12.	**AIR RELEASE/VACCUM COMBINATION VALVES**				
12.1	2” INFLOW, 2X1/8 OUTFLOW	EACH	29	$	$
12.2	1” INFLOW, 2X1/8 OUTFLOW	EACH	4	$	$
12.3	3” INFLOW, 2X1/2 OUTFLOW	EACH	1	$	$
13.	**PLUG VALVES**				
13.1	10” PLUG VALVE	EACH	4	$	$
14.	**ROCK REMOVAL**	CY	100	$	$

15.	**REPAVING**				
15.1	PAVEMENT REPAIR	SY	796	$	$
15.2	DRIVEWAY REPAIR	SY	862	$	$
15.3	SIDEWALK REPAIR	SY	512	$	$
15.4	CURB AND GUTTER REPAIR	LF	38	$	$

Base Bid Subtotal (add Items 1 through 15) $_____

Mobilization (Not Greater than 3% of Base Bid Subtotal) $_____

Total Base Bid (add Base Bid Subtotal and Mobilization) $_____

(figures)

_____

(words)

5.01 ALTERNATIVES

ITEM #	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL COST
16.	**ALTERNATIVE 1: REMOVAL OF SEGMENT 6 HORIZONTAL DIRECTIONAL DRILLING AND 12" DR 11 HDPE FORCE MAIN UNDER THE RAILROAD ALONG N MOUNTAIN STREET (SC-5). INSTALLATION OF 10" DR 18 PVC FORCE MAIN WITH A 10" DIP, RJ CLASS 350 PIPE HANGING ALONG THE SC-5 BRIDGE OVER THE RAILROAD.**				
16.1	DEDUCT HDD, 12" HDPE DR 11, HDD ALONG N MOUNTAIN ST (SC-5), UNDER RAILROAD, SEGMENT 6	LF	-1,354	$	- $
16.2	ADD PIPE, 10" DIAMETER FORCE MAIN, DIP, CLASS 350	LF	244	$	$
16.3	ADD PIPE, 10" DIAMETER FORCE MAIN, PVC, DR 18	LF	1145	$	$
16.4	ADD AIR RELEASE/VACCUM COMBINATION VALVES 2" INFLOW, 2 x1/8 OUTFLOW	EACH	2	$	$
16.5	ADD FORCE MAIN FITTINGS, 10" 45 DEGREE BEND	EACH	4	$	$
16.6	ADD FORCE MAIN FITTINGS, 10" 90 DEGREE BEND	EACH	4	$	$
16.7	ADD BRIDGE HANGING INFRASTRUCTURE	LS	1	$	$

SUM OF ALTERNATIVE 1: $_____

ITEM #	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL COST
17.	**ALTERNATIVE 2: REMOVAL OF SEGMENT 8 HORIZONTAL DIRECTIONAL DRILLING AND 12" DR 11 HDPE FORCE MAIN UNDER THE RAILROAD ALONG YORK ROAD (SC-5). INSTALLATION OF 10" DR 18 PVC FORCE MAIN WITH A 10" DIP, RJ CLASS 350 PIPE HANGING ALONG THE SC-5 BRIDGE OVER THE RAILROAD.**				
17.1	DEDUCT HDD, 12" HDPE DR 11, HDD ALONG YORK RD (SC-5), UNDER RAILROAD, SEGMENT 8	LF	-800	$	- $
17.2	ADD PIPE, 10" DIAMETER FORCE MAIN, DIP, CLASS 350	LF	203	$	$
17.3	ADD PIPE, 10" DIAMETER FORCE MAIN, PVC, DR 18	LF	598	$	$
17.4	ADD AIR RELEASE/VACCUM COMBINATION VALVES 2" INFLOW, 2 x1/8 OUTFLOW	EACH	2	$	$
17.5	ADD FORCE MAIN FITTINGS, 10" 22.5 DEGREE BEND	EACH	2		
17.6	ADD FORCE MAIN FITTINGS, 10" 45 DEGREE BEND	EACH	6	$	$
17.7	ADD FORCE MAIN FITTINGS, 10" 90 DEGREE BEND	EACH	2	$	$
17.8	ADD BRIDGE HANGING INFRASTRUCTURE	LS	1	$	$

SUM OF ALTERNATIVE 2: $_____

ARTICLE 6 – TIME OF COMPLETION

6.01. Bidder agrees that the Work covered by the section or sections included in the contract award will be completed within the following numbers of calendar days after the date when Contract Times commence to run as provided in Paragraph 4.01 of the General Conditions. Completion shall mean completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions. The periods listed below shall run concurrently and shall apply regardless of the number of sections awarded to a Bidder.

Substantial Completion: 600 Days Final Completion: 630 Days

6.02. Bidder accepts the provisions of the agreement as liquidated damages in the event of failure to complete the work within the time specified above.

ARTICLE 7 – ATTACHMENTS TO THIS BID

7.01 The following documents are submitted with and made a condition of this Bid:

A Required Bid security;

B. List of Subcontractors and Suppliers;

C. Non-Collusion Affidavit;

D. Bidder Qualification Items:

1. A copy of financial statement certified by a Certified Public Accountant;

2. Resume of previous five (5) years (minimum) of experience including project descriptions, owner's name and contact information, contract value, contract duration and actual duration;

3. Resumes of project manager and project superintendent for the project;

4. A summary of present commitments, durations, and owner's contact information;

5. Experience Modification Rate for each of the three (3) most recent years;

6. A copy of Contractor's license for South Carolina; and

7. A copy of Contractor's active System for Award Management (SAM) registration.

8. Total linear foot of installed pressurized force main and gravity sewer with diameters over the last ten (10) years.

ARTICLE 8 – DEFINED TERMS

8.01. The terms used in this Bid have the meanings stated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

ARTICLE 9 – BID SUBMITTAL

BIDDER: _____

(Correct name of bidding entity)

By: _____

(Signature)

(If Bidder is a corporation, a limited liability company, a partnership, or a joint venture, attach evidence of authority to sign.)

_____

(Printed name)

Attest: _____

(Signature)

_____

(Printed name)

_____

(Title)

Submittal Date: _____

Address for giving notices:

_____

_____

_____

Telephone Number: (_____) _____

Fax Number: (_____) _____

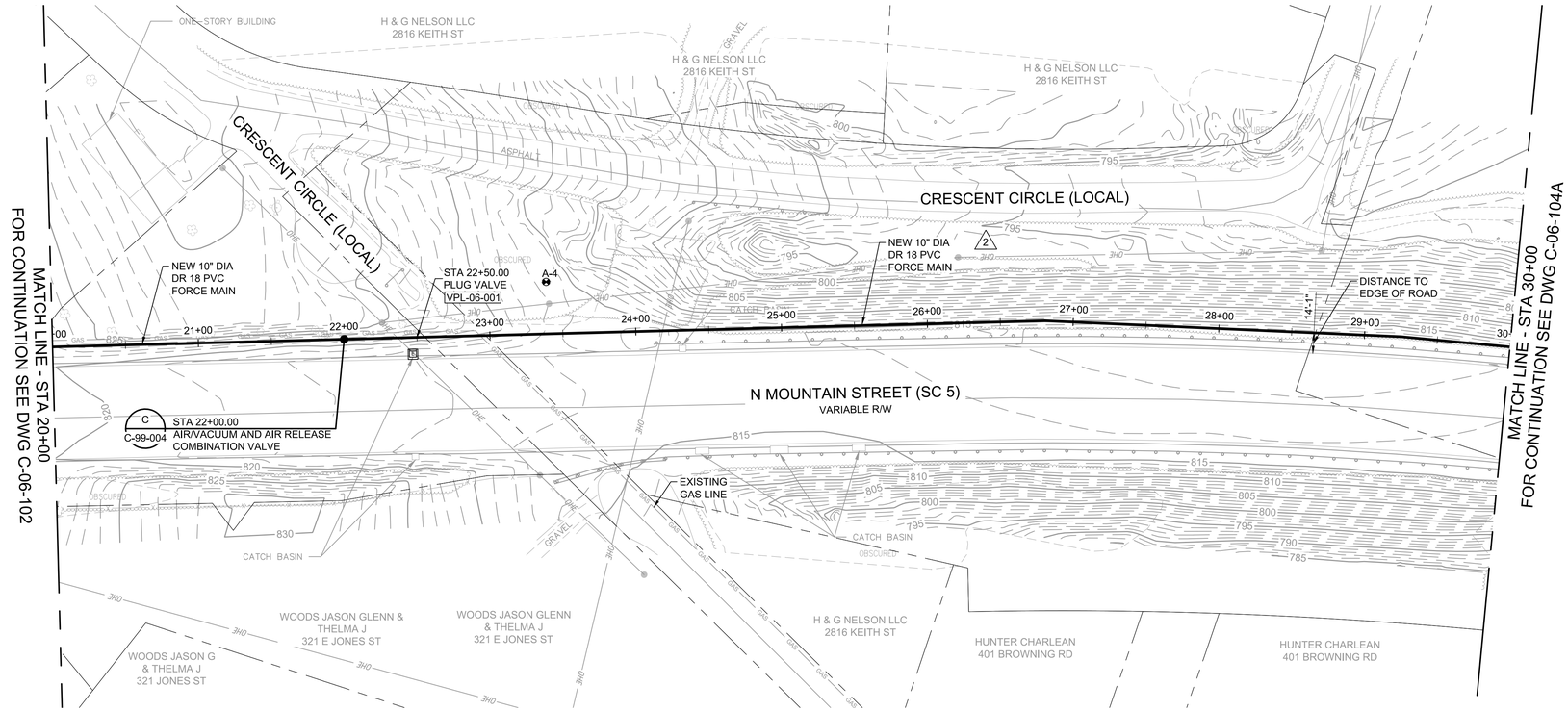
Contact Name and e-mail address: _____

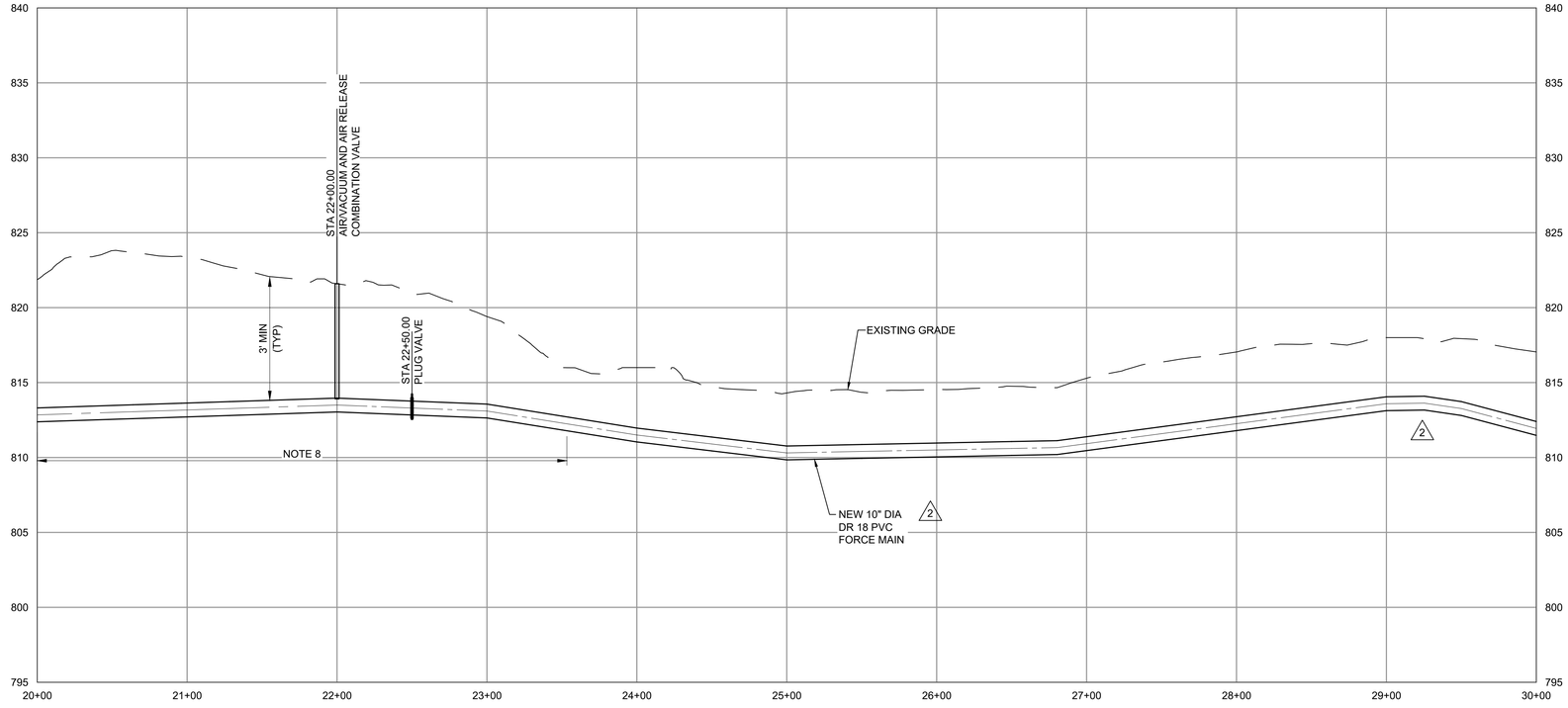
Contractor's License Number:_____

License Expiration Date :_____

Contractor's SAM Number:_____

End of Section





5' 3' 0 5' 10'
VERTICAL SCALE 1"=5'

50' 25' 0 50' 100'
HORIZONTAL SCALE 1"=50'

NOTES:

1. THE DEPTH OF EXISTING UTILITIES SHOWN ON DRAWING IS INDICATIVE ONLY. CONTRACTOR SHALL PERFORM TEST PITS TO LOCATE UTILITIES AND CONFIRM DEPTHS, PRIOR TO START OF WORK. CONTRACTOR SHALL ADOPT MEANS AND METHODS TO PROTECT THESE UTILITIES AND MINIMIZE DISRUPTION OF SERVICES. SHOULD UTILITY RELOCATION BE REQUIRED, CONTRACTOR SHALL COORDINATE WITH THE RESPECTIVE UTILITY OWNER TO PERFORM THE RELOCATION. CONTRACTOR SHALL COORDINATE WITH ALL UTILITIES BEFORE START OF THE WORK AND MAINTAIN COORDINATION DURING CONSTRUCTION.
2. CONTRACTOR SHALL COORDINATE WITH THE ELECTRIC UTILITY FOR CONSTRUCTION IN CLOSE VICINITY OF ELECTRIC POLES. CONTRACTOR SHALL PROVIDE ADEQUATE SUPPORT TO PROTECT THE EXISTING ELECTRIC POLES DURING CONSTRUCTION.
3. CONTRACTOR SHALL PROTECT THE EXISTING PROPERTY PINS, UTILITIES, AND ANY APPURTENANCES DURING CONSTRUCTION.
4. CONTRACTOR SHALL UTILIZE CAUTION TO MINIMIZE DISRUPTION NEAR DRIVEWAYS AND INTERSECTIONS. CONTRACTOR SHALL RESTORE ALL SIGNS, DRIVEWAYS, AND ASPHALT ROADS IN ORIGINAL CONDITION, FOLLOWING THE INSTALLATION OF THE SEWER MAIN.
5. MAINTAIN EXISTING SEWER SERVICE AT ALL TIMES DURING CONSTRUCTION OF NEW SEWER.
6. CURB AND GUTTER, DRAINING STRUCTURES, ROADWAY DITCHES, DRIVEWAY CULVERTS, AND ASPHALT TO BE REPLACED TO PRECONSTRUCTION CONDITIONS IN CASE OF DAMAGE DURING CONSTRUCTION.
7. SEE SHEET C-99-0201 AND C-99-002 FOR EROSION AND SEDIMENT CONTROL DETAILS AND REQUIREMENTS.
8. INSTALL DOUBLE POLYETHYLENE WRAP ON ANY DIP FITTING IN AREA NOTED, OR ALONG ENTIRE SECTION NOTED IF ALTERNATIVE OF DIP PIPE MATERIAL IS USED, WITH A MINIMUM OF 8 MIL THICKNESS. EXTEND MINIMUM 50' PAST END OF GAS LINE ON EITHER SIDE.
9. NOT USED.
10. REMOVE AND REPLACE BARRICADES/FENCING ON BRIDGE AS NECESSARY TO INSTALL PIPELINE.
11. AS PIPE TRANSITIONS OFF BRIDGE, NO PENETRATIONS THROUGH HEADWALLS ARE ALLOWED. PIPE TO BE INSTALLED AROUND OR ABOVE HEADWALL WITH PROPER SUPPORT.
12. CONTRACTOR SHALL FIELD VERIFY BRIDGE CONDITIONS AND RETURN EXISTING STRUCTURE COMPONENTS (HEADWALL, FENCE, ETC.) TO PRECONSTRUCTION CONDITIONS.

BLACK & VEATCH

Black & Veatch Corporation
Greenville, South Carolina

SUBCONSULTANT:

SOUTH CAROLINA
REGISTERED PROFESSIONAL ENGINEER
No. 34442
RYAN TODD CARWELL
1/10/2024

GAFFNEY
BOARD OF
PUBLIC WORKS

I-85 SEWER EXTENSION
CONTRACT 1C:
COLLECTIONS BEAR DEN
SEWAGE PUMP STATION TO
QUARRY-1 SEWAGE PUMP
STATION

2	1/10/24	REVISED PER ADDENDUM NO. 6

REVISIONS AND RECORD OF ISSUE

DESIGNED:	LDP
DETAILED:	VSK
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ALTERNATIVE 1
FORCE MAIN

CIVIL

ALTERNATIVE 1
- SC-5 BRIDGE #1
HANGING

C-06-103A

62
OF
74

SOUTH CAROLINA
CERTIFICATE OF AUTHORIZATION
BLACK & VEATCH
CORPORATION
No. C01918

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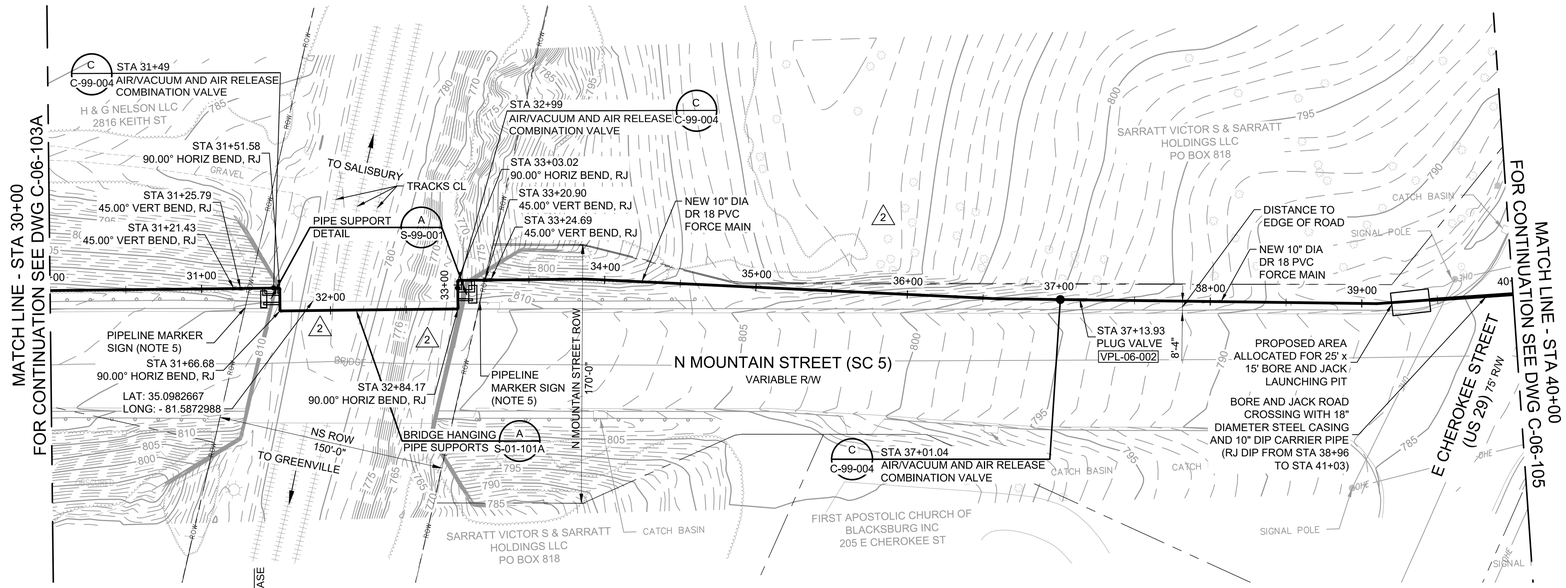

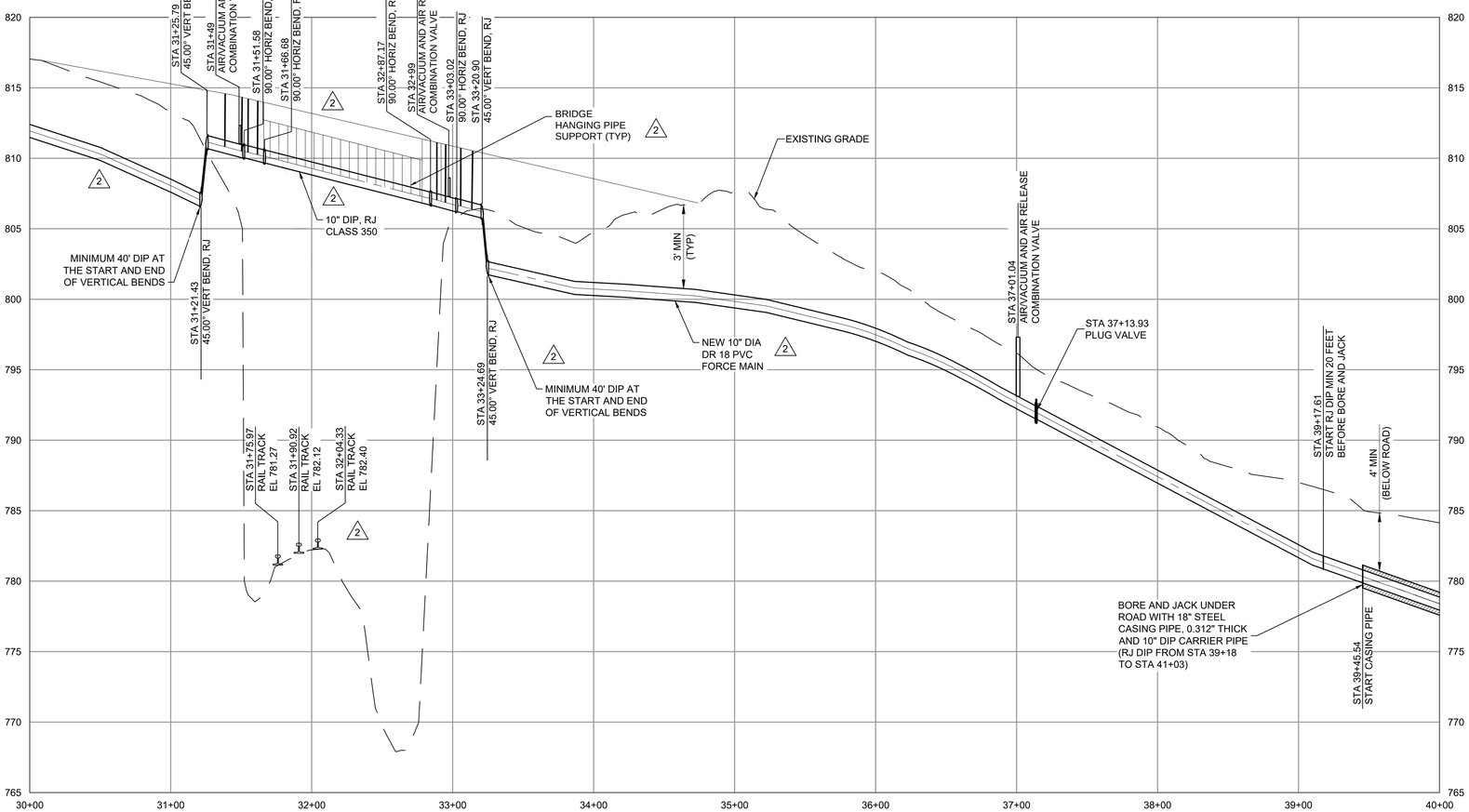

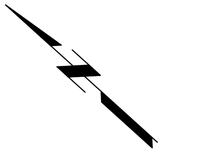

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NOTES:

1. COORDINATE WITH NORFOLK SOUTHERN FOR RAILROAD CROSSING PRIOR TO WORK INSIDE NORFOLK SOUTHERN'S RIGHT OF WAY.
2. CONTRACTOR SHALL FOLLOW ALL REQUIREMENTS OF NORFOLK SOUTHERN'S NSCE-8 SPECIFICATIONS.
3. PIPELINE CROSSING TO BE INSTALLLED AND MAINTAINED IN ACCORDANCE WITH LAST APPROVED AMERICAN RAILWAY ENGINEERING AND MAINTENANCE OF WAY ASSOCIATION SPECIFICATIONS FOR PIPELINES CONVEYING FLAMMABLE AND NON-FLAMMABLE SUBSTANCES.
4. BLASTING NOT PERMITTED.
5. PIPELINE SHALL BE MARKED WHERE IT INTERSECTS WITH NORFOLK SOUTHERN RIGHT-OF-WAY LINE IN ACCORDANCE WITH NORFOLK SOUTHERN'S NSCE-8 SPECIFICATIONS. INCLUDING NAME AND ADDRESS OF APPLICANT, CONTENTS OF PIPE, PRESSURE IN PIPE, AND EMERGENCY TELEPHONE NUMBER.
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SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION BLACK & VEATCH CORPORATION No. C01918

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BLACK & VEATCH

Black & Veatch Corporation
Greenville, South Carolina

SUBCONSULTANT:

SOUTH CAROLINA PROFESSIONAL ENGINEER No. 34442 RYAN TODD CARWELL 1/10/2024

GAFFNEY BOARD OF PUBLIC WORKS

I-85 SEWER EXTENSION CONTRACT 1C: COLLECTIONS BEAR DEN SEWAGE PUMP STATION TO QUARRY-1 SEWAGE PUMP STATION

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ALTERNATIVE 1
- SC-5 BRIDGE #1 HANGING

C-06-104A

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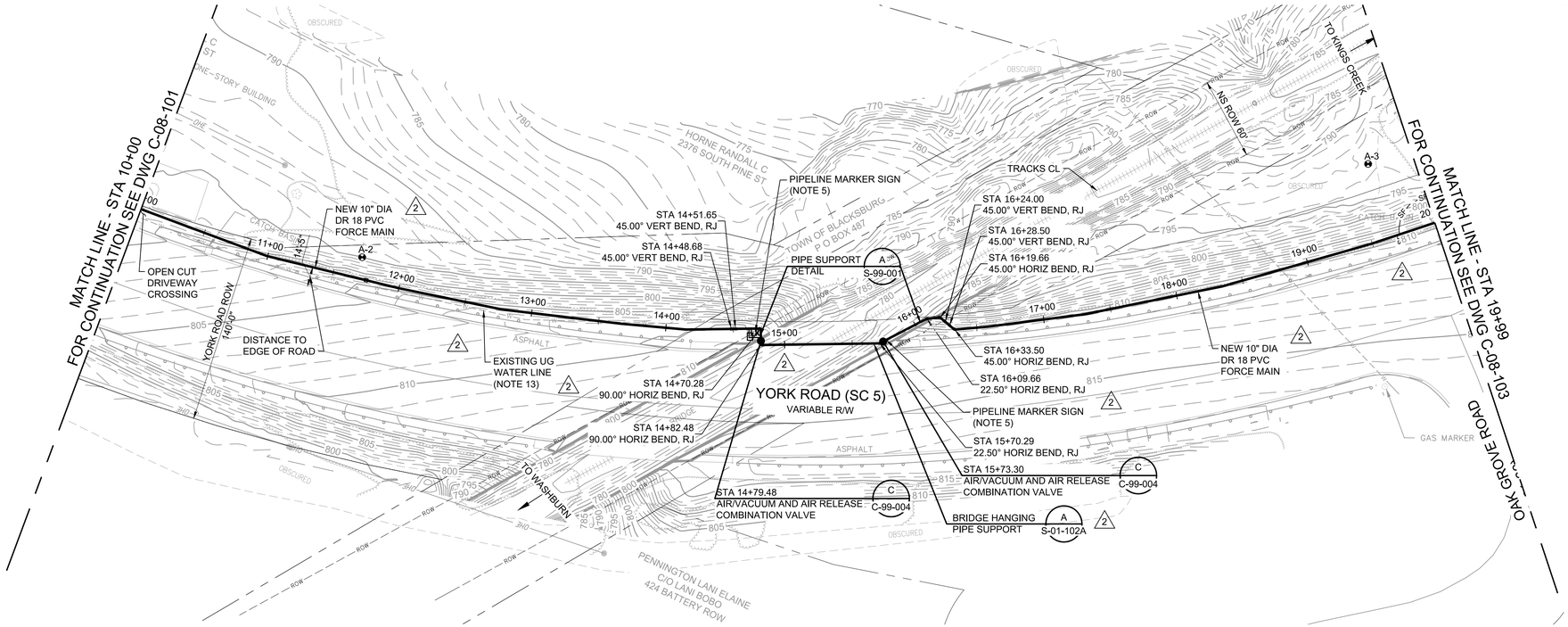

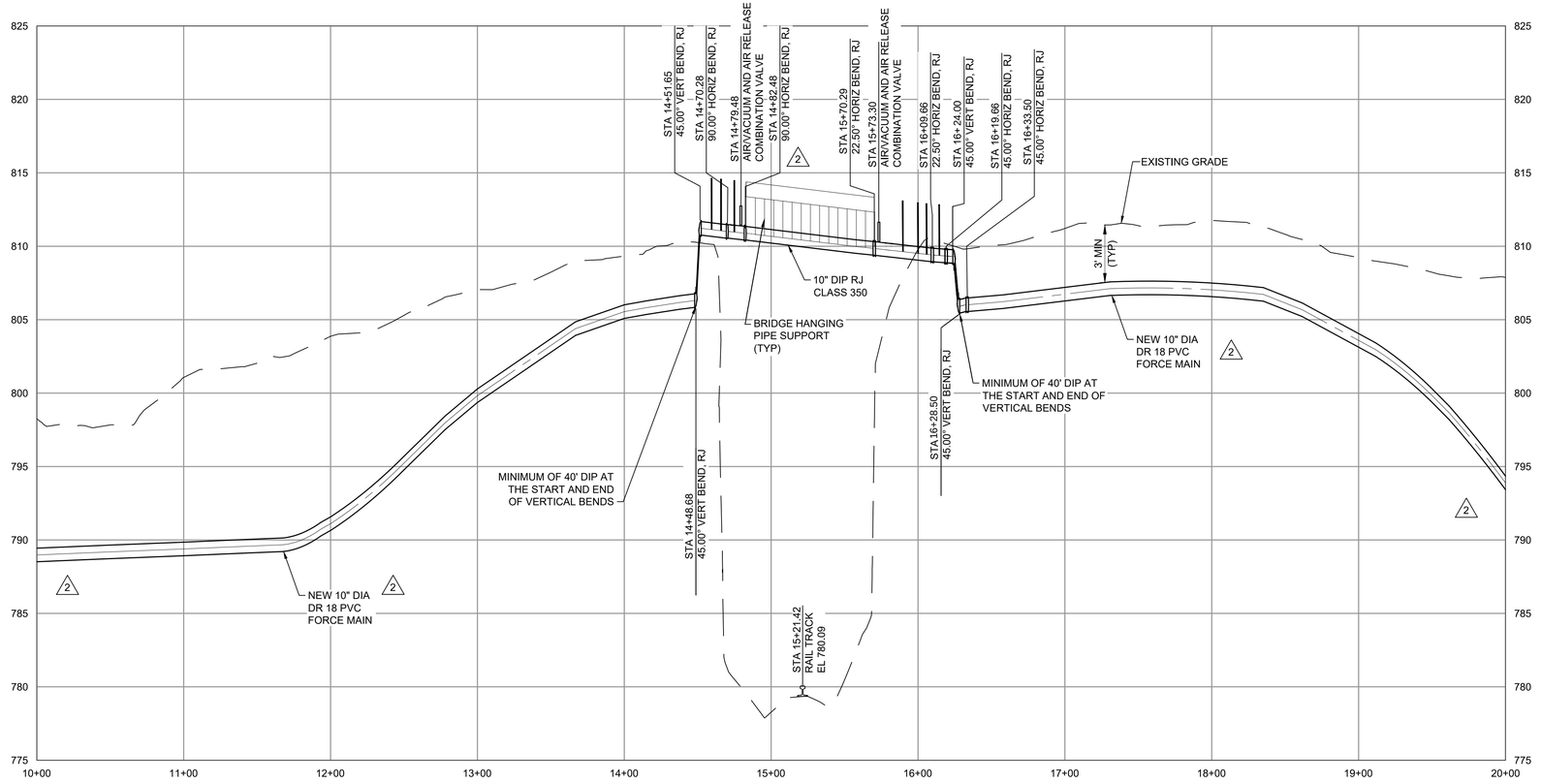

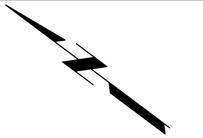

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12. SEE SHEET C-99-0201 AND C-99-002 FOR EROSION AND SEDIMENT CONTROL DETAILS AND REQUIREMENTS.
13. APPROXIMATE WATER LINE LOCATION. DEPTH IS UNKNOWN. CONTRACTOR SHALL POTHOLE AND VERIFY LOCATION OF WATER LINE WHERE WATER LINE IS WITHIN 10 FEET HORIZONTAL SEPARATION AND INSTALL SEWER FORCE MAIN MINIMUM OF 18 INCHES BELOW WATER LINE.
14. NOT USED.
15. AUGER REFUSAL AT 31 FT DURING FIRST ATTEMPT AT DRILLING. SEE GEOTECHNICAL REPORT BORING LOG FOR ADDITIONAL DETAIL.
16. REMOVE AND REPLACE BARRICADES/FENCING ON BRIDGE AS NECESSARY TO INSTALL PIPELINE.
17. AS PIPE TRANSITIONS OFF BRIDGE, NO PENETRATIONS THROUGH HEADWALLS ARE ALLOWED. PIPE TO BE INSTALLED AROUND OR ABOVE HEADWALL WITH PROPER SUPPORT.
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BLACK & VEATCH

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Greenville, South Carolina

SUBCONSULTANT:

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER RYAN TODD CARWELL No. 34442 1/10/2024

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ALTERNATIVE 2
FORCE MAIN

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- SC-5 BRIDGE #2 HANGING

C-08-102A

64 OF 74

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STRUCTURAL NOTES

GENERAL

1. THE APPLICABLE BUILDING CODE IS INDICATED ON THE LOADING CRITERIA DRAWING.
2. THE REQUIREMENTS INDICATED ON THIS SHEET ARE INTENDED AS A BASIC SUMMARY OF THE MATERIAL AND CONSTRUCTION REQUIREMENTS FOR THE PROJECT. ADDITIONAL, MORE STRINGENT REQUIREMENTS ARE GIVEN IN THE PROJECT DETAIL DRAWINGS AND SPECIFICATIONS.
3. ALL STRUCTURAL RELATED SHOP DRAWINGS SHALL BE REVIEWED BY THE ENGINEER PRIOR TO CONSTRUCTION.
4. STRUCTURES MAY BE BUOYANT WHEN EMPTY DURING CONSTRUCTION. CONTRACTOR SHALL PROTECT STRUCTURES AGAINST FLOTATION UNTIL CONSTRUCTION IS COMPLETE. .
5. STRUCTURES MAY BE UNSTABLE UNTIL THEY ARE CONSTRUCTED IN THIER ENTIRETY. CONTRACTOR IS RESPONSIBLE FOR DESIGNING TEMPORARY STRUCTURAL SUPPORTS TO RESIST WIND LOADS, CONSTRUCTION LOADS, AND ANY OTHER TEMPORARY CONDITIONS THAT MAY OCCUR DURING CONSTRUCTION, IN ORDER TO MAINTAIN STABILITY OF THE CONSTRUCTION WORK. ANCHORS FOR CONTRACTOR'S TEMPORARY SUPPORT SYSTEMS THAT ATTACH TO CONCRETE OR MASONRY SHALL BE LOCATED TO AVOID DAMAGING EMBEDDED REINFORCEMENT OR UTILITIES.

CAST-IN-PLACE CONCRETE

1. A MINIMUM 28 DAY COMPRESSIVE STRENGTH (f'c) OF 4,000 PSI WAS UTILIZED IN THE DESIGN OF STRUCTURAL REINFORCED CONCRETE. SEE SPECIFICATIONS FOR CONSTRUCTION STRENGTH REQUIREMENTS.
2. THE LOCATION OF ALL CONSTRUCTION JOINTS AND OTHER TYPES OF JOINTS, OTHER THAN THOSE SPECIFIED OR SHOWN ON THE PLANS, SHALL BE ACCEPTABLE TO THE ENGINEER PRIOR TO PLACING CONCRETE.

REINFORCING STEEL

1. ALL REINFORCING BAR SHALL BE GRADE 60, DEFORMED, ASTM A615, UNLESS NOTED OTHERWISE.
2. DIMENSIONS TO REINFORCING BARS ARE TO BAR CENTERLINES, UNLESS NOTED OTHERWISE. BAR COVER IS THE CLEAR DISTANCE BETWEEN THE BAR AND THE CONCRETE SURFACE.
3. NO WELDING OF REINFORCING BARS SHALL BE PERMITTED UNLESS APPROVAL IS OBTAINED FROM THE ENGINEER PRIOR TO CONSTRUCTION.
4. FOR CONCRETE SLABS THAT HAVE A SLOPING TOP FACE, THE TOP LAYERS OF REINFORCEMENT SHALL BE PLACED ON A SIMILAR SLOPE SO THAT SPECIFIED COVER IS MAINTAINED.

POST-INSTALLED ANCHORS

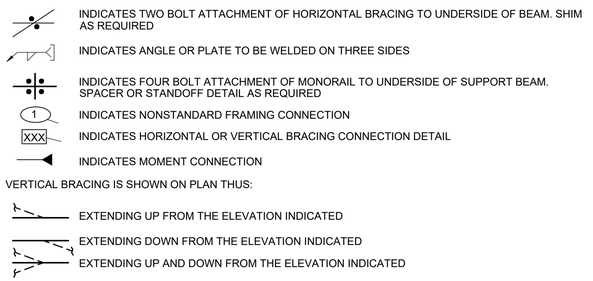
1. POST-INSTALLED ANCHORS SHALL INCLUDE ADHESIVE ANCHORS (THREADED RODS, BOLTS OR REINFORCING BARS), EXPANSION ANCHORS, AND UNDERCUT ANCHORS INSTALLED INTO HARDENED CONCRETE OR MASONRY. SEE THE ANCHORAGE IN CONCRETE AND MASONRY SPECIFICATION SECTION FOR ADDITIONAL REQUIREMENTS.
2. POST-INSTALLED ANCHORS SHALL ONLY BE USED WHERE INDICATED ON THE DRAWINGS. CONTRACTOR SHALL OBTAIN APPROVAL FROM ENGINEER PRIOR TO USING POST-INSTALLED ANCHORS FOR MISSING OR MISPLACED CAST-IN-PLACE ANCHORS.
3. CARE SHALL BE TAKEN TO AVOID CONFLICTS WITH EXISTING REINFORCING STEEL AND OTHER EMBEDDED ITEMS WHEN DRILLING HOLES. REINFORCING BARS SHALL NOT BE DAMAGED DURING DRILLING OR ANCHOR INSTALLATION. HOLES SHALL BE DRILLED AND CLEANED PER THE PRODUCT MANUFACTURER'S INSTRUCTIONS. ANCHORS SHALL BE INSTALLED PER THE PRODUCT MANUFACTURER'S INSTRUCTIONS AT NOT LESS THAN MINIMUM EDGE DISTANCES AND/OR SPACING INDICATED IN THE MANUFACTURER'S LITERATURE.
4. SUBSTITUTION REQUESTS FOR PRODUCTS OTHER THAN THOSE LISTED IN THE SPECIFICATION OR INDICATED ON THE DRAWINGS SHALL BE SUBMITTED TO ENGINEER FOR REVIEW AND APPROVAL. PRODUCT ICC-ESR EVALUATION REPORTS SHALL BE INCLUDED WITH THE SUBMITTAL PACKAGE. IF REQUESTED, CALCULATIONS PREPARED BY A REGISTERED PROFESSIONAL ENGINEER USING METHODS AND PROCEDURES REQUIRED BY THE BUILDING CODE MAY BE REQUIRED AS PART OF THE SUBMITTAL PACKAGE.
5. UNLESS NOTED OTHERWISE, THE MINIMUM EMBEDMENT PROVIDED FOR ADHESIVE ANCHORED REINFORCING BARS SHALL DEVELOP THE FULL TENSILE STRENGTH OF THE BAR.
6. SPECIAL INSPECTION WILL BE PROVIDED FOR ALL POST-INSTALLED ANCHORS.

STRUCTURAL STEEL

1. ROLLED WIDE FLANGE SHAPES SHALL HAVE A MINIMUM YIELD STRENGTH OF 50 KSI;
   CHANNELS, PLATES, AND ANGLES A MINIMUM OF 36 KSI;
   STRUCTURAL PIPES A MINIMUM OF 35 KSI;
   ROUND STRUCTURAL TUBES A MINIMUM OF 46 KSI;
   RECTANGULAR STRUCTURAL TUBES A MINIMUM OF 50 KSI.
2. WELDING SHALL BE DONE WITH A FILLER MATERIAL HAVING A MINIMUM TENSILE STRENGTH OF 70 KSI.
3. BOLTED CONNECTIONS SHALL USE 3/4" DIA ASTM F3125, GRADE A325 BOLTS OR GRADE F1852 TWIST-OFF BOLTS, WITH THE THREADS EXCLUDED FROM THE SHEAR PLANE, UNLESS NOTED OTHERWISE.
4. CARBON STEEL OR GALVANIZED STEEL ANCHOR RODS AND ANCHOR BOLTS SHALL CONFORM TO ASTM F1554 GRADE 36.
5. HOLES FOR ANCHOR RODS AND ANCHOR BOLTS IN COLUMN BASE PLATES USING ASTM F844 OR F436 FLAT CIRCULAR WASHERS SHALL BE AS FOLLOWS:

   BOLTS/RODS 3/4" TO 1" - 5/16" OVERSIZE
   BOLTS/RODS 1" TO 2" - 1/2" OVERSIZE
   BOLTS/RODS OVER 2" - 1" OVERSIZE

   AT THE CONTRACTORS OPTION, OVERSIZE HOLES LARGER THAN THOSE LISTED ABOVE MAY BE USED, PROVIDED THAT 3/8" PLATE WASHERS ARE USED WITH STANDARD HOLES AND FIELD WELDED WITH A 5/16" FILLET WELD TO THE BASE PLATE ALONG A MIN OF 3 SIDES.
6. STEEL LEGEND



VERTICAL BRACING IS SHOWN ON PLAN THUS:

EXCAVATION, BACKFILL, AND FOUNDATIONS

1. FOUNDATION CONSTRUCTION SHALL NOT BEGIN UNTIL ANY REQUIRED SPECIAL INSPECTION HAS BEEN COMPLETED AND THE CONTRACTOR NOTIFIED TO PROCEED.
2. TO FACILITATE SCHEDULING, AT LEAST 48 HOURS ADVANCE NOTICE SHALL BE GIVEN TO THE ENGINEER PRIOR TO THE REQUIRED INSPECTIONS.
3. UNLESS NOTED OTHERWISE, BACKFILL SHALL NOT BE PLACED AGAINST WALLS WHICH SUPPORT A CONCRETE SLAB OR WALKWAY UNTIL THE TOP SLAB OR WALKWAY HAS BEEN PLACED IN ITS ENTIRETY AND ALL CONCRETE HAS REACHED THE SPECIFIED DESIGN STRENGTH.
4. OVER-EXCAVATION OF SOIL, OR OVER-BREAKING OF ROCK, THAT WOULD RESULT IN A STRUCTURAL CONCRETE THICKNESS GREATER THAN INDICATED ON THE DRAWINGS SHALL BE CLASSIFIED AS UNAUTHORIZED EXCAVATION. CONTRACTOR SHALL SELECT ONE OF TWO METHODS TO ADDRESS UNAUTHORIZED EXCAVATION.
   - REPLACE UNAUTHORIZED EXCAVATION MATERIAL WITH LEAN CONCRETE THAT IS PLACED SEPARATELY FROM THE STRUCTURAL CONCRETE INDICATED ON THE DRAWINGS. CONTRACTOR WILL RECEIVE NO ADDITIONAL PAYMENT FOR THE LEAN CONCRETE.
   - REPLACE UNAUTHORIZED EXCAVATION MATERIAL WITH STRUCTURAL CONCRETE THAT IS PLACED MONOLITHICALLY WITH THE STRUCTURAL CONCRETE INDICATED ON THE DRAWINGS, CREATING AN ENLARGED SECTION. CONTRACTOR SHALL NOTIFY ENGINEER FOR DIRECTION PRIOR TO PERFORMING THIS WORK. THE INCREASED CONCRETE THICKNESS MAY REQUIRE ADDITIONAL REINFORCEMENT AND/OR OTHER DESIGN MODIFICATIONS. IF THE INCREASED CONCRETE THICKNESS EXCEEDS 36 INCHES, ENGINEER MAY REQUIRE CONTRACTOR TO IMPLEMENT MASS CONCRETE HEAT MITIGATION PROCEDURES. CONTRACTOR WILL RECEIVE NO ADDITIONAL PAYMENT FOR EXTRA STRUCTURAL CONCRETE, ADDITIONAL REINFORCEMENT, OTHER DESIGN MODIFICATIONS, OR MASS CONCRETING PROCEDURES.
5. FOUNDATION DESIGN IS BASED UPON THE INFORMATION AND RECOMMENDATION INCLUDED IN THE REPORT OF GEOTECHNICAL EXPLORATION - DRAFT, DATED APRIL 25, 2022, PREPARED BY BLE, PROJECT NO J22-17459-01, 9751 SOUTHERN PINE BOULEVARD, CHARLOTTE, NC, 28273.
6. MINIMUM BEARING DEPTH FOR FROST PROTECTION OF FOUNDATION AND SLAB ON GRADE IS 1'-6".
7. ALLOWABLE BEARING PRESSURES FOR ALL STRUCTURES= 3000 PSF NET FFf.

SPECIAL INSPECTIONS

1. CODE REQUIRED SPECIAL INSPECTIONS AND TESTS WILL BE CONDUCTED BY APPROVED AGENCIES EMPLOYED BY THE OWNER IN ACCORDANCE WITH THE APPLICABLE BUILDING CODE.
2. THE STATEMENT OF SPECIAL INSPECTIONS WILL BE PREPARED BY THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE DURING CONSTRUCTION.
3. EACH CONTRACTOR RESPONSIBLE FOR THE CONSTRUCTION OF A MAIN WIND OR SEISMIC FORCE RESISTING SYSTEM, DESIGNATED SEISMIC SYSTEM OR A WIND OR SEISMIC RESISTING COMPONENT LISTED IN THE STATEMENT OF SPECIAL INSPECTIONS SHALL SUBMIT A WRITTEN STATEMENT OF RESPONSIBILITY TO THE BUILDING OFFICIAL AND OWNER PRIOR TO COMMENCEMENT OF WORK ON THE SYSTEM OR COMPONENT.
4. SEE THE QUALITY CONTROL SECTION AND THE CODE REQUIRED SPECIAL INSPECTIONS AND PROCEDURES SECTION OF THE SPECIFICATIONS FOR FURTHER CLARIFICATION OF RESPONSIBILITIES.

DELEGATED DESIGN

1. THE FOLLOWING ITEMS ARE IDENTIFIED IN THE DRAWINGS AND SPECIFICATIONS AS BEING DESIGNED AND SEALED BY OTHERS. SUBMITTALS FOR THESE ITEMS SHALL BE PREPARED BY THE SUPPLIERS AND SUBMITTED TO ENGINEER AND CODE OFFICIAL FOR REVIEW.

   SECTION 01611 – EQUIPMENT AND NON-STRUCTURAL COMPONENTS.
   SECTION 05550 – EQUIPMENT ANCHORAGE.
   SECTION 013122 – METAL BUILDING SYSTEMS.

BASIC LOADING CRITERIA

THE APPLICABLE BUILDING CODE IS THE 2021 SOUTH CAROLINA BUILDING CODE, BASED ON THE 2021 INTERNATIONAL BUILDING CODE.

1. DEAD LOAD ..... CALCULATED
2. LIVE LOADS:
   OPERATING AND PROCESS FLOORS..... 150 PSF
   STAIRS, SERVICE PLATFORMS & LANDINGS..... 100 PSF
   ELECTRICAL AND CONTROL ROOM FLOORS..... 250 PSF
   ALL FLOORS NOT INDICATED.....100 PSF
   ROOF.....20 PSF(UNREDUCED)
3. LATERAL EARTH PRESSURE (EQUIVALENT FLUID PRESSURE)
   NON-SATURATED..... 64 PSF/FT
   SATURATED..... 93 PSF/FT
4. LATERAL SURCHARGE..... EQUIVALENT TO 2 FEET OF SOIL WHERE ADJACENT TO A ROADWAY
5. COMPACTIVE SURCHARGE LOAD..... 400 PSF AT FINISH GRADE ELEVATION DECREASING LINEARLY AT SAME RATE AS BACKFILL LOAD INCREASES. FOR WALLS 8 FEET OR LESS IN HEIGHT, USE CRITERIA 4 ABOVE AS COMPACTIVE SURCHARGE.

6. HYDROSTATIC FLUID PRESSURE..... 63 PSF/FT
7. SNOW LOAD:
   GROUND SNOW LOAD (P_g).....10 PSF
   SNOW EXPOSURE FACTOR (C_e)..... 1.0
8. SEISMIC LOAD:
   MAPPED MCE SHORT PERIOD SPECTRAL RESPONSE ACCELERATION (S_s)..... 0.237g
   MAPPED MCE ONE SECOND PERIOD SPECTRAL RESPONSE ACCELERATION (S_1)..... 0.087g
   DESIGN SPECTRAL RESPONSE ACCELERATION AT SHORT PERIODS (S_{DS})..... 0.253g
   DESIGN SPECTRAL RESPONSE ACCELERATION AT ONE SECOND PERIOD (S_{SC})..... 0.140g
   SITE CLASS.....D
9. WIND LOAD:
   BASIC (ULTIMATE) DESIGN WIND SPEED..... 117 MPH
   ALLOWABLE STRESS (NOMINAL) DESIGN WIND SPEED..... 92 MPH
   GROUND ELEVATION FACTOR (K_e)..... 1.0
   EXPOSURE..... C
10. 100 YEAR FLOOD ELEVATION..... SITES LOCATED OUTSIDE OF 100 YEAR FLOOD PLAIN. REFER TO C-07-101 AND C-08-101 FOR FLOOD PLAIN LIMITS.

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION BLACK & VEATCH CORPORATION No. C01918

(SCALE BAR IS 4" AT FULL SCALE) 0 1/2 1 2 3 4

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BLACK & VEATCH

Black & Veatch Corporation
Greenville, South Carolina

SUBCONSULTANT:

SOUTH CAROLINA PROFESSIONAL ENGINEER No. 34234 ROBERT A. ZECHMANN 12/01/2023

GAFFNEY BOARD OF PUBLIC WORKS

I-85 SEWER EXTENSION CONTRACT 1C: COLLECTIONS BEAR DEN SEWAGE PUMP STATION TO QUARRY-1 SEWAGE PUMP STATION

1	1/10/24	REVISED PER ADDENDUM NO. 6

REVISIONS AND RECORD OF ISSUE

DESIGNED:	JCG
DETAILED:	VMS
CHECKED:	ML
APPROVED:	RAZ
DATE:	JANUARY 2024
PROJECT NO.:	410381

GENERAL

STRUCTURAL

STANDARD STRUCTURAL NOTES

S-00-001

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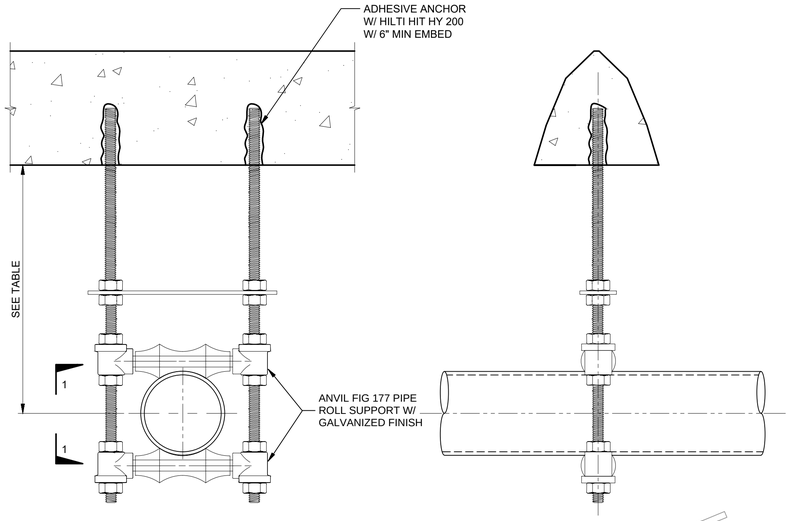


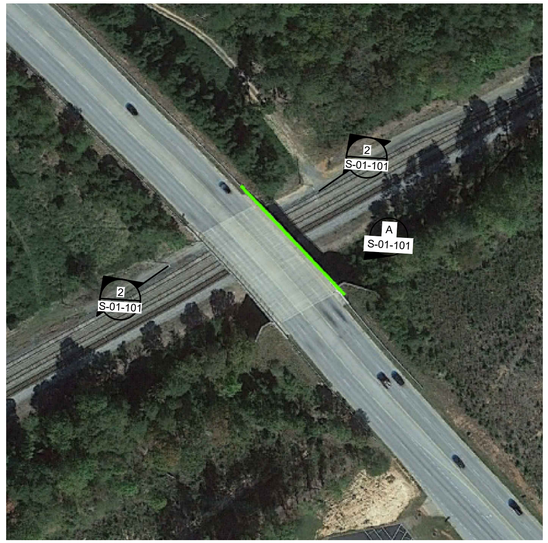
SECTION 1

BRIDGE	MAXIMUM STRENGTH LEVEL LOADS		HANGER LENGTH (FT)
	VERTICAL (LBS) (SEE NOTE 3)	SHEAR (TRANSVERSE TO PIPE) (LBS)	
SC BRIDGE 5 #1	540	210	2.5'

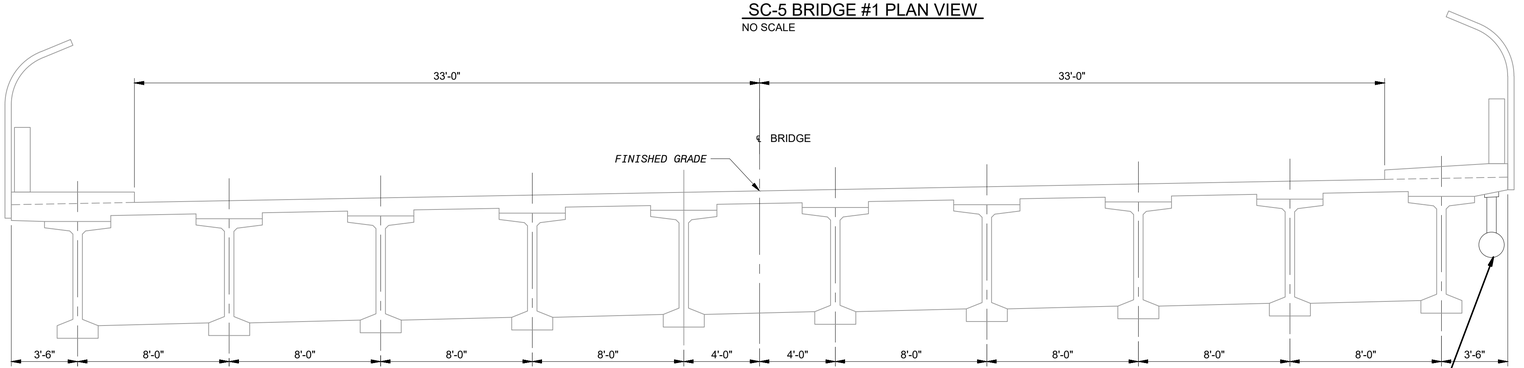
NOTES.

1. SUPPORTS TO BE INSTALLED TO UNDERSIDE OF BRIDGE SLAB.
2. MAXIMUM SPACING BETWEEN SUPPORTS SHALL BE 5'-0".
3. MOST UPSTREAM PIPE SUPPORT WILL ALSO SUPPORT A VALVE WITH A MAXIMUM ADDITIONAL WEIGHT OF 100 LBS

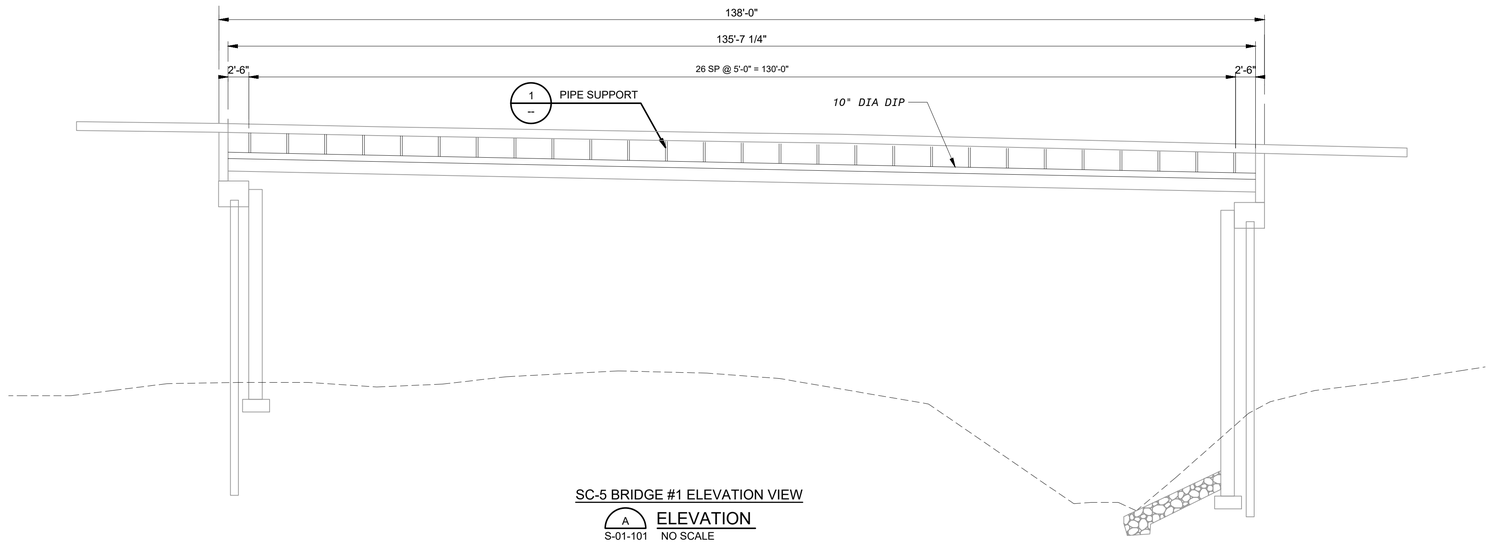
1 BRIDGE HANGING PIPE SUPPORT
S-01-101A 1 1/2" = 1'-0"



SC-5 BRIDGE #1 PLAN VIEW
NO SCALE



SC-5 BRIDGE #1
2 SECTION
S-01-101 NO SCALE



SC-5 BRIDGE #1 ELEVATION VIEW
A ELEVATION
S-01-101 NO SCALE

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GAFFNEY BOARD OF PUBLIC WORKS

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FORCE MAIN AND GRAVITY SEWER

STRUCTURAL

ALTERNATIVE 1 - BRIDGE HANGING DETAILS

SOUTH CAROLINA
BLACK & VEATCH CORPORATION
No. C01918
CERTIFICATE OF AUTHORIZATION

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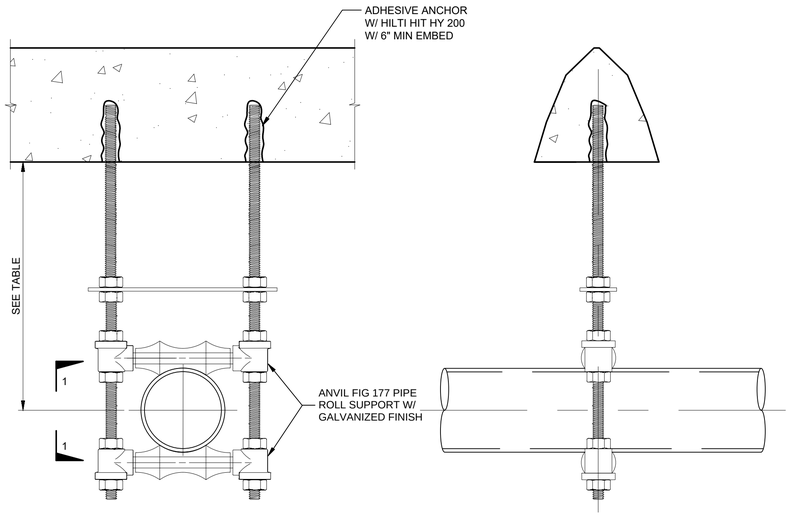


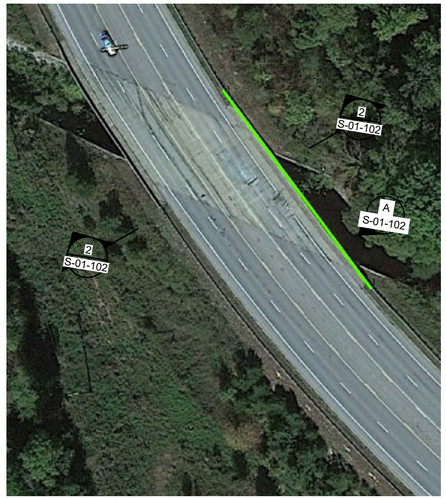
SECTION 1

	MAXIMUM STRENGTH LEVEL LOADS		
BRIDGE	VERTICAL (LBS) (SEE NOTE 3)	SHEAR (TRANSVERSE TO PIPE) (LBS)	HANGER LENGTH (FT)
SC BRIDGE 5 #2	540	210	2.5'

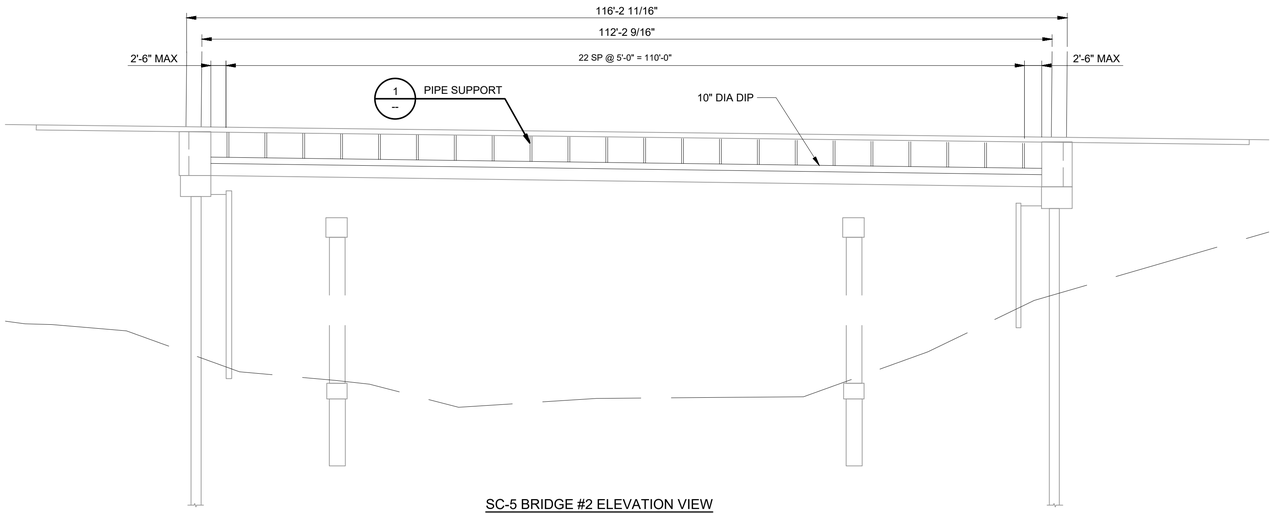
NOTES.

1. SUPPORTS TO BE INSTALLED TO UNDERSIDE OF BRIDGE SLAB.
2. MAXIMUM SPACING BETWEEN SUPPORTS SHALL BE 5'-0".
3. MOST UPSTREAM PIPE SUPPORT WILL ALSO SUPPORT A VALVE WITH A MAXIMUM ADDITIONAL WEIGHT OF 100 LBS

1 BRIDGE HANGING PIPE SUPPORT
S-01-102A 1 1/2" = 1'-0"

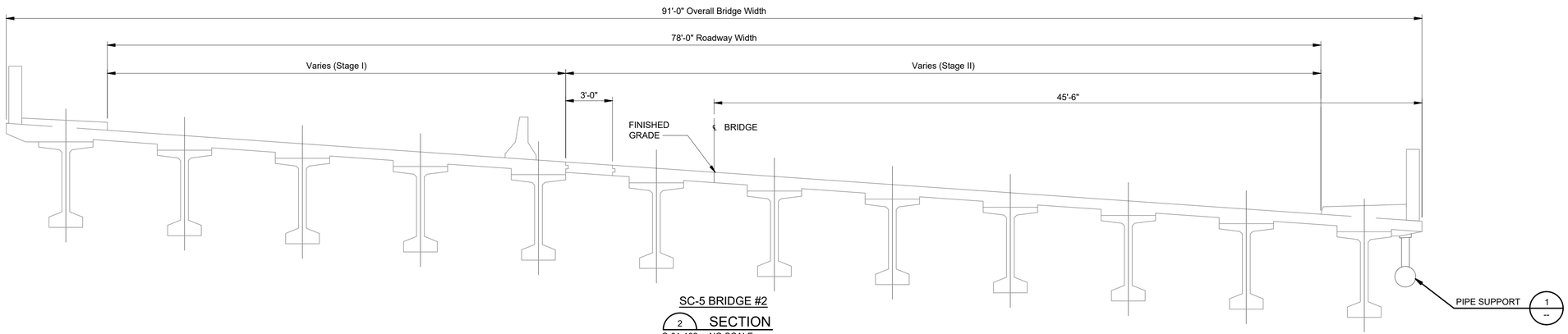


SC-5 BRIDGE #2 ELEVATION VIEW
NO SCALE



SC-5 BRIDGE #2 ELEVATION VIEW

A ELEVATION
S-01-102 NO SCALE



SC-5 BRIDGE #2

2 SECTION
S-01-102 NO SCALE

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FORCE MAIN AND GRAVITY SEWER

STRUCTURAL

ALTERNATIVE 2 - BRIDGE HANGING DETAILS

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION
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