



CITY OF VENICE, FLORIDA

Purchasing Department

**401 W. Venice Avenue
Venice, FL 34285**

Invitation to Bid

ITB Number 3060-17

Date of Issue: March 15, 2016

Submission Deadline: April 19, 2016 at 2:00 PM

Title and Purpose of ITB:

RO WTP Clearwell Interior Improvements

THIS PAGE INTENTIONALLY LEFT BLANK

CITY OF VENICE
RO WTP CLEARWELL INTERIOR IMPROVEMENTS

TABLE OF CONTENTS

BIDDING AND CONTRACTING REQUIREMENTS

<u>SECTION</u>	<u>DESCRIPTION</u>	<u>PAGE NO.</u>
----------------	--------------------	-----------------

DIVISION 0 – BIDDING AND CONTRACTING REQUIREMENTS

00 01 07	Seals and Certifications Page.....	00 01 07-1
00 11 13	Invitation to Bid	00 11 13-1
00 21 13	Instructions to Bidders	00 21 13-1
00 41 13	Bid Form	00 41 13-1
	Sample Contract	
	Payment Bond Form	
	Performance Bond Form	
	Contractor's Release of Lien	
	Certificate of Substantial Completion	
00 45 13	Bidder Qualification Statement.....	00 45 13-1
00 72 13	General Conditions of the Construction Contract.....	00 72 13-1
00 73 01	Supplementary Conditions.....	00 73 01-1

DIVISION 01 - GENERAL REQUIREMENTS

01 11 13	Summary of Work	01 11 13 -1
01 14 16	Coordination with Owner's Operations	01 14 16 -1
01 22 13	Measurement and Payment	01 22 13 -1
01 25 00	Substitution Procedures	01 25 00 -1
01 29 73	Schedule of Values	01 29 73 -1
01 31 13	Project Coordination	01 31 13 -1
01 31 19	Pre-Construction Conference	01 31 19 -1
01 32 16	Progress Schedule	01 32 16 -1
01 33 00	Submittal Procedures	01 33 00 -1
01 45 53	Cleaning and Disinfecting Hydraulic Structures	01 45 53 -1
01 57 05	Temporary Controls	01 57 05 -1
01 65 00	Product Delivery Requirements	01 65 00 -1
01 66 00	Product Storage and Handling Requirements	01 66 00 -1
01 77 19	Closeout Requirements	01 77 19 -1
01 78 23	Operations and Maintenance Data	01 78 23 -1

DIVISION 03 – CONCRETE

03 01 30	Repair and Rehabilitation of Cast-In-Place Concrete.....	03 01 30 -1
----------	--	-------------

**CITY OF VENICE
RO WTP CLEARWELL INTERIOR IMPROVEMENTS**

TABLE OF CONTENTS (continued)

<u>SECTION</u>	<u>DESCRIPTION</u>	<u>PAGE NO.</u>
<u>DIVISION 6 - WOOD, PLASTICS, COMPOSITES</u>		
06 10 53	Miscellaneous Rough Carpentry.....	06 10 53-1
<u>DIVISION 7 – THERMAL AND MOISTURE PROTECTION</u>		
07 54 23	Thermoplastic Polyolefin Membrane Roofing	07 54 23 -1
07 62 00	Sheet Metal Flashing and Trim.....	07 62 00-1
07 72 33	Roof Hatches.....	07 72 33-1
<u>DIVISION 9 – FINISHES</u>		
09 91 00	Painting	09 91 00 -1
<u>DIVISION 31 – EARTHWORKS</u>		
31 23 05.01	Dewatering.....	3123 05.01-1
<u>DIVISION 40 – PROCESS INTEGRATION</u>		
40 05 53	Process Valves Four-Inch Diameter and Larger	40 05 53 -1

+ + END OF TABLE OF CONTENTS + +

**CITY OF VENICE
VENICE, FLORIDA
RO WTP CLEARWELL INTERIOR IMPROVEMENTS**

SEALS AND CERTIFICATIONS PAGE

ENGINEER:
ARCADIS-US, Inc.
3109 W. Dr. Martin Luther King Jr. Blvd.
Suite 350
Tampa, Fl 33607

For: General, Civil, Mechanical:	For: Structural:
Sean Keoki Chaparro, P. E. License No. 75865	Adarsh B. Shah, P. E. License No. 79948

+ + END OF SEALS AND CERTIFICATIONS PAGE + +

THIS PAGE INTENTIONALLY LEFT BLANK

INVITATION TO BID

The City of Venice invites sealed bids from qualified bidders to provide the following goods or services, which is described in detail in the Specifications.

Bid No.: 3060-17

Bid Title: RO WTP Clearwell Interior Improvements

PROJECT DESCRIPTION: The Contractor shall furnish all labor, materials, equipment, tools, services and incidentals to complete all work required by these Specifications and as shown on the Drawings. The Contractor shall perform the work complete, in place and ready for continuous service, and shall include repairs, testing, permits, clean-up, replacements and restoration required as a result of damages caused during this construction. All materials, equipment, skills, tools and labor which is reasonably and properly inferable and necessary for the proper completion of the work in a substantial manner and in compliance with the requirements stated or implied by these Specifications or Drawings shall be furnished and installed by the Contractor without additional compensation, whether specifically indicated in the Contract Documents or not. The Contractor shall comply with all Municipal, County, State, Federal, and other codes which are applicable to the proposed construction work.

BID OPENING LOCATION: City of Venice, Venice City Hall, Community Hall, room # 114, 401 West Venice Ave., Venice FL 34285

BID SUBMITTAL DEADLINE and BID OPENING DATE & TIME: April 19 at 2:00 PM

PRE-BID MEETING: YES

DATE & TIME: March 28, 2017 at 2:00 PM

LOCATION: City of Venice RO Water Treatment Plant, Building “C” Break Room, 200 North Warfield Ave., Venice FL 34285

Specifications and Bid documents are available by calling Onvia DemandStar at (800) 711-1712 or by their Internet address at <http://www.demandstar.com>. Proposers may also pick up Bid documents at the City of Venice Procurement- Finance Department, Room 204, 401 West Venice Ave., Venice Florida 34285, (941) 882-7422 at no charge.

A non-mandatory pre-bid meeting/site visit will be held on March 28, 2017 at 2:00 p.m., City of Venice Reverse Osmosis Water Treatment Plant, Building “C” Break Room, 200 North Warfield Ave., Venice FL 34285. Representatives from the City will be present to discuss the overall project and the Invitation to Bid. **Interested Firms are encouraged to attend.**

All questions, comments, or concerns about this ITB must be submitted in writing to Mr. Peter Boers, Procurement- Finance Department, for the City of Venice, Room 204, 401 West Venice Avenue, Venice, FL 34285 or e-mail at pboers@venicegov.com. Mr. Boers is the only designated representative of the City authorized to respond to comments, questions, and concerns. The City will not respond to comments, questions or concerns addressed to any person other than Mr. Boers. If the City determines that a particular comment, question or concern necessitates a global response to all Proposers, the City will issue a clarifying memorandum or addendum. **The final day that the City will accept questions will be April 7, 2017 by 1:00 p.m.**

Bids must be submitted in **four sets** and at least one set must bear an original signature, in a sealed envelope marked **“Invitation to Bid # 3060-17: “RO WTP Clearwell Interior Improvements”** and mailed or delivered to the City of Venice- Purchasing Department, 401 W. Venice Ave. Room # 204, Venice, FL 34285, no later than the deadline specified. The City assumes no responsibility for bids received after the bid submittal time or at any location other than that specified, no matter what the reason. Late bids will be held unopened and will not be considered for award.

No bid will be received after the specified time for acceptance and no bidder may withdraw his bid within a period of ninety (90) days after the actual date of opening thereof.

Bids will be considered only from bidders who have the applicable license, if a license is required by the City of Venice and/or State of Florida, for the type of work specified. A copy of the applicable license must be submitted with bid if a license is required.

The City reserves the right to reject any or all bids in whole or in part, with or without cause, to waive any requirements, irregularities or technical defects therein, when it is deemed to be in the interest of the City.

CITY OF VENICE, FLORIDA

Publish: March 15, 2017
 March 18, 2017

City of Venice Utilities Department
City of Venice, Florida

RO WTP Clearwell Interior Improvements

INSTRUCTIONS TO BIDDERS

TABLE OF ARTICLES

- | | |
|--|--|
| 1. Defined Terms | 31. Indemnification/Hold Harmless |
| 2. Bids Received | 32. Public Entity Crimes/Non-Collusive Affidavit |
| 3. Location and Description of Project | 33. Gratuities and Kickbacks |
| 4. Copies of Bidding Documents | 34. Equal Employment Opportunity |
| 5. Qualifications of Bidders | 35. Conflict of Interest |
| 6. Examination of Bidding Documents, Other Related Data and Site | 36. Drug Free Workplace |
| 7. Pre-Bid Meeting | 37. Applicable Laws |
| 8. Site and Other Areas | 38. Disclosure – Public Officer, Public Employee or Advisory Board Member of Owner |
| 9. Interpretations and Addenda | 39. Bid Protests |
| 10. Bid Security | 40. Scrutinized Companies |
| 11. Contract Times | |
| 12. Liquidated and Special Damages | |
| 13. Substitute and "Or Equal" Items | |
| 14. Subcontractors, Suppliers and Others | |
| 15. Preparation of Bid | |
| 16. Basis of Bids; Comparison of Bids | |
| 17. Submittal of Bid | |
| 18. Modification or Withdrawal of Bid | |
| 19. Opening of Bids | |
| 20. Disqualification of Bidders | |
| 21. Bids to Remain Subject to Acceptance | |
| 22. Evaluation of Bids and Award of Contract | |
| 23. Contract Securities | |
| 24. Contractor's Insurance | |
| 25. Signing of Agreement | |
| 26. Notice to Proceed | |
| 27. Partnering | |
| 28. Sales and Use Taxes | |
| 29. Local Preference | |
| 30. Public Records/Tabulation | |

ARTICLE 1 – DEFINED TERMS

- 1.01 Terms used in these Instructions to Bidders have the meanings indicated in the General Conditions and Supplementary Conditions. Additional terms used in these Instructions to Bidders have the meanings indicated below which are applicable to both the singular and plural thereof.
- A. Issuing Office: The office from which the Bidding Documents are to be issued and here the bidding procedures are to be administered.

ARTICLE 2 – BIDS RECEIVED

- 2.01 Refer to the Invitation To Bid for information on receipt of Bids.

ARTICLE 3 – LOCATION AND DESCRIPTION OF PROJECT

- 3.01 Refer to Section 01 11 13, Summary of Work, in the General Requirements for the location and description of the Project.

ARTICLE 4 – COPIES OF BIDDING DOCUMENTS

- 4.01 Refer to the Invitation To Bid for information on location where Bidders may examine and obtain the Bidding Documents.
- 4.02 (Not Used)
- 4.03 Complete sets of Bidding Documents shall be used in preparing Bids; neither Owner nor Engineer assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.
- 4.04 Owner and Engineer in making copies of Bidding Documents available on the above terms, do so only for the purpose of obtaining Bids for the Work and do not grant permission for any other use.
- 4.05 Bidders who obtain solicitation documents from sources other than the Owner or download from <http://www.demandstar.com/> must officially register receipt of the solicitation with the City's Procurement – Finance Department in order to be placed on the notification list for any forthcoming addendum or other official communications. Failure to register as a prospective Bidder may cause your submittal to be rejected as non-responsive if you have submitted a response without acknowledgment of issued addenda. The Owner is not responsible for the accuracy of bid documents and information obtained from any source other than <http://www.demandstar.com/>.

ARTICLE 5 – QUALIFICATIONS OF BIDDERS

- 5.01 Bidders shall be experienced in the kind of Work to be performed, shall have the necessary equipment therefor, and shall possess sufficient capital to properly execute the Work within the time allowed. Bids received from Bidders who have previously failed to complete work within the time required, or who have previously performed similar work in an unsatisfactory manner, may be rejected. A Bid may be rejected if Bidder cannot show that Bidder has the necessary ability, plant, and equipment to commence the Work at the time prescribed and thereafter to prosecute and complete the Work at the rate or within the times specified. A Bid may be rejected if Bidder is already obligated for the performance of other work which would delay the commencement, prosecution or completion of the Work.
- 5.02 To demonstrate qualifications to perform the Work, Bidder shall submit within 5 days after Bid opening, upon Owner's request, a separate Bidder Qualifications Statement that will be furnished by OWNER. An example of the Bidder Qualifications Statement is bound in the Project Manual.
- 5.03 Bidders shall be qualified to do business in the state where the Project is located or covenant to obtain such qualification prior to signing the Agreement.
- 5.04 Bids will be received only from contractors licensed or registered by the State of Florida.

ARTICLE 6 – EXAMINATION OF BIDDING DOCUMENTS, OTHER RELATED DATA, AND SITE

6.01 Subsurface and Physical Conditions

A. The Supplementary Conditions identify:

1. Those reports of explorations and tests of subsurface conditions at or contiguous to the Site that have been utilized by Engineer in preparation of the Bidding Documents.
2. Those drawings of physical conditions relating to existing surface or subsurface structures (except Underground Facilities) which are at or contiguous to the Site, that have been utilized by Engineer in preparation of the Bidding Documents.

- B. Electronic copies of the reports and drawings referenced in Paragraph 6.01.A above will be made available by Owner to any Bidder on request. Those reports and drawings are not part of the Contract Documents, but the "technical data" contained therein upon which Bidder is entitled to rely as provided in Paragraph 4.02 of the General Conditions, has been identified and established in Paragraph SC-4.02 of the Supplementary Conditions. Bidder is responsible for any interpretation or conclusion drawn from any "technical data" or any other data, interpretations, opinions, or information contained in such reports or shown or indicated in such drawings.

6.02 Underground Facilities - Physical Conditions

- A. Information and data shown or indicated in the Bidding Documents with respect to existing Underground Facilities at or contiguous to the Site is based upon information and data furnished to Owner and Engineer by owners of such Underground Facilities, including Owner, or others.

6.03 Hazardous Environmental Condition

- A. Owner has no actual knowledge of a Hazardous Environmental Condition at the Site.

6.04 Provisions concerning responsibilities for the adequacy of data, furnished to prospective Bidders with respect to subsurface conditions, other physical conditions, and Underground Facilities, and possible changes in the Bidding Documents due to differing or unforeseen subsurface or physical conditions appear in Paragraphs 4.02, 4.03 and 4.04 of the General Conditions. Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to a Hazardous Environmental Condition at the Site, if any, and possible changes in the Contract Documents due to any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work appear in Paragraph 4.06 of the General Conditions.

6.05 Other Related Data (Not Used)

6.06 On request, Owner will provide Bidder access to the Site to conduct such examinations, investigations, explorations, tests, and studies as Bidder deems necessary for preparing and submitting a Bid. Bidder shall fill all holes and clean up and restore the Site to its original conditions upon completion of such explorations, investigations, tests, and studies. Bidder shall comply with all Laws and Regulations relative to such explorations, investigations, tests, and studies.

6.07 A single Site visit has been scheduled following the pre-bid conference. No other Site visits will be allowed without Owner's approval.

6.08 (Not Used)

6.09 (Not Used)

6.10 It is the responsibility of Bidder, before submitting a Bid to:

- A. examine and carefully study the Bidding Documents, the other related data identified in the Bidding Documents and Addenda (if any);
- B. visit the Site and become familiar with and satisfy Bidder as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work;

- C. become familiar with and satisfy Bidder as to the Laws and Regulations that may affect cost, progress and performance of the Work;
- D. carefully study all:
 - 1. reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities), if any, that have been identified in the Supplementary Conditions in Paragraph SC-4.02 as containing reliable “technical data”, and
 - 2. reports and drawings of Hazardous Environmental Condition identified at the Site, if any, that have been identified in the Supplementary Conditions in Paragraph SC-4.06 as containing reliable “technical data”;
- E. consider the information known to Bidder; 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 the Site-related reports and drawings identified in Bidding Documents with respect to the effect of such information, observation, 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, including applying any specific means, methods, techniques, sequences and procedures of construction expressly required by the Bidding Documents; and
 - 3. Bidder’s safety precautions and programs;
- F. agree at the time of submitting its Bid that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of its Bid for the performance of the Work at the price(s) bid and within the times required and in accordance with the other terms and conditions of the Bidding Documents;
- G. become aware of the general nature of work (if any) to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents;
- H. promptly give Engineer written notice of all conflicts, errors, ambiguities, and discrepancies that Bidder discovers in the Bidding Documents and confirm that the written resolution thereof by Engineer is acceptable to Bidder; and
- I. determine that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work.

- 6.11 The submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article 6, that without exception the Bid is premised upon performing the Work required by the Bidding Documents and applying any specific means, methods, techniques, sequences, or procedures of construction that may be shown or indicated or expressly required by the Bidding Documents, that Bidder has given Engineer written notice of all conflicts, errors, ambiguities, and discrepancies that Bidder has discovered in the Bidding Documents and the written resolutions thereof by Engineer are acceptable to Bidder, and that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performing the Work.

ARTICLE 7 – PRE-BID MEETING

- 7.01 A non-mandatory Pre-Bid Meeting will be held at the date and time indicated in the Invitation To Bid. Representatives of the Owner and Engineer will be present to discuss the Project. Owner will transmit to all prospective Bidders of record such Addenda as Owner considers necessary in response to questions raised at the pre-Bid conference. Oral statements may not be relied upon and will not be binding or legally effective.

ARTICLE 8 – SITE AND OTHER AREAS

- 8.01 The Site is identified in the Bidding Documents. Easements for permanent structures or permanent changes in existing facilities are to be obtained and paid for by Owner unless otherwise provided in the Bidding Documents. All additional lands and access thereto required for temporary construction facilities, construction equipment, or storage of materials and equipment, to be incorporated into the Work are to be obtained and paid for by Contractor.

ARTICLE 9 – INTERPRETATIONS AND ADDENDA

- 9.01 All questions about the meaning or intent of the Bidding Documents shall be submitted to Owner in writing. To receive consideration, questions must be received by Owner by the date indicated in the Invitation To Bid. Interpretations or clarifications considered necessary by Owner in response to such questions will be issued by Addenda mailed or delivered to all parties recorded by Owner as having received the Bidding Documents for receipt not later than three days prior to the date for the opening of Bids. Only questions answered by Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.
- 9.02 Addenda may also be issued to clarify, correct or change the Bidding Documents as deemed advisable by Owner or Engineer. Such Addenda, if any, will be issued in the manner and within the time period stated in Paragraph 9.01 of these Instructions to Bidders.

ARTICLE 10 – BID SECURITY

- 10.01 A Bid shall be accompanied by Bid security made payable to Owner in the amount of 5% of Bidder's maximum Bid price and in the form of Bid bond.
- 10.02 Bid bond shall be on the form bound in the Project Manual. Bid bond shall be issued by a surety complying with the requirements of Paragraphs 5.01 and 5.02 of the General Conditions.
- 10.03 The Bid security of the Successful Bidder will be retained until such Bidder has executed the Contract Documents, furnished the required contract security, and complied with the other conditions of the Notice of Award, whereupon the Bid security will be returned. If the Successful Bidder fails to sign and deliver the Contract Documents and furnish the required contract security within 15 days after the Notice of Award, Owner may annul the Notice of Award and may retain from the Bid security an amount equal to the damages which Owner may suffer by reason of such failure. Said damages shall be the difference between that Bidder's Bid and the Bid of the next lowest, responsible and responsive Bidder, but such amount shall not exceed the Bid security amount, and, if there is no such next lowest, responsible and responsive Bidder, then the Bid security amount of that Bidder will be forfeited to the Owner as liquidated damages for such failure.
- 10.04 The Bid security of other Bidders whom Owner believes to have a reasonable chance of receiving the award may be retained by Owner until the earlier of the seventh day after the Effective Date of the Agreement or the ninety-first day after the Bid opening whereupon the Bid security furnished by such Bidders will be returned. The Bid security of Bidders whom Owner believes do not have a reasonable chance of receiving an award will be returned within seven days of the Bid opening.

ARTICLE 11 – CONTRACT TIMES

- 11.01 The number of days within which Work is to be completed and ready for final payment (the Contract Times) are set forth in the Agreement.

ARTICLE 12 – LIQUIDATED AND SPECIAL DAMAGES

- 12.01 Provisions for liquidated and special damages, if any, are set forth in the Agreement.

ARTICLE 13 – SUBSTITUTE AND “OR EQUAL” ITEMS

- 13.01 The Contract, if awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents without consideration of possible substitute or “or-equal” items. Whenever it is specified or described in the Bidding Documents that a substitute or “or-equal” item of material or equipment may be furnished or used by Contractor if accepted by Engineer, application for such acceptance will not be considered by Engineer until after the Effective Date of the Agreement. The procedure for submittal

of any such application by Contractor and consideration by Engineer is set forth in the General Conditions which may be supplemented in the General Requirements.

- 13.02 Refer to Section 01 25 00, Substitution Procedures, of the General Requirements for the period of time after the Effective Date of the Agreement during which the Engineer will accept applications for substitute items of material or equipment.

ARTICLE 14 – SUBCONTRACTORS, SUPPLIERS, AND OTHERS

- 14.01 If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, individuals, or entities to be submitted to Owner in advance of a specified date prior to the Effective Date of the Agreement, the apparent Successful Bidder, and any other Bidder so requested, shall within five days after Bid opening submit to Owner a list of all such Subcontractors, Suppliers, other individuals, and entities proposed for those portions of the Work for which such identification is required. Such list shall be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualifications for each such Subcontractor, Supplier, individual, and entity if requested by Owner. If Owner or Engineer, after due investigation, has reasonable objection to any proposed Subcontractor, Supplier, individual, or entity, Owner may, before the Notice of Award is given, request the apparent Successful Bidder to submit an acceptable substitute without an increase in the Bid price.
- 14.02 If apparent Successful Bidder declines to make any such substitution, Owner may award the Contract to the next lowest Bidder that proposes to use acceptable Subcontractors, Suppliers and other individuals or entities. Declining to make requested substitutions will not constitute grounds for forfeiture of the Bid security of any Bidder. Any Subcontractor, Supplier, individual, or entity so listed and against which Owner or Engineer makes no written objection prior to the giving of the Notice of Award will be deemed acceptable to Owner and Engineer subject to revocation of such acceptance after the Effective Date of the Agreement as provided in Paragraph 6.06 of the General Conditions.
- 14.03 (Not Used)
- 14.04 Contractor shall not be required to employ any Subcontractor, Supplier, individual, or entity against whom Contractor has reasonable objection.

ARTICLE 15 – PREPARATION OF BID

- 15.01 A Bid shall be made on the Bid Form bound in the Project Manual. The Bid Form shall not be separated from the Project Manual nor shall the Bid Form be altered in any way.
- 15.02 All blanks in the Bid Form shall be completed in ink and the Bid Form signed in ink. Erasures or alterations shall be initialed in ink by the person signing the Bid Form. A Bid price shall be indicated for each Bid item listed therein. In the case of optional alternatives the words “No Bid”, “No Change”, or “Not Applicable” may be entered. Ditto marks shall not be used.

15.03 A Bid shall be executed as stated below.

- A. A Bid by an individual shall indicate the Bidder's name and official address.
- B. A Bid by a partnership shall be executed in the partnership name and signed by a partner (whose title shall appear under the signature), accompanied by evidence of authority to sign. The official address of the partnership shall be indicated.
- C. A Bid by a joint venture shall be executed by each joint venturer in the manner indicated on the Bid Form. The official address of the joint venture shall be indicated.
- D. A Bid by a corporation shall be executed in the corporate name by an officer of the corporation and shall be accompanied by a certified copy of a resolution of the board of directors authorizing the person signing the Bid to do so on behalf of the corporation. The corporate seal shall be affixed and attested by the secretary or an assistant secretary of the corporation. The state of incorporation and the official corporate address shall be indicated.
- E. A Bid by a limited liability company shall be executed in the name of the firm by a member and accompanied by evidence of authority to sign. The state of formation of the firm and the official address of the firm shall be indicated below the signature.
- F. All names shall be printed in ink below the signature.
- G. If applicable, the Bid shall contain evidence of Bidder's authority and qualification to do business in the state where the Project is located.
- H. Contractor's license or registration number, if any, shall be entered in the space provided on the Bid Form.

15.04 The Bid shall contain an acknowledgment of the receipt of all Addenda, the numbers of which shall be filled in at the space provided on the Bid Form.

15.05 Postal and e-mail addresses and telephone number for communications regarding the Bid shall be indicated.

15.06 In addition to the Bid Form, the forms listed in the Required Forms List, which are bound in the Project Manual, shall be submitted with the Bid. Each document shall be executed in the manner described in Paragraph 15.03 unless another manner is indicated.

ARTICLE 16 – BASIS OF BIDS; COMPARISON OF BIDS

16.01 Base Bid with Alternatives

- A. Bidder shall submit its Bid on the basis of a lump sum for the Base Bid and shall provide a separate Bid price for each additive alternative described in the Bidding Documents and as provided for on the Bid Form.
- B. For determination of the apparent low Bidder, Bids will be compared on the basis of the aggregate amount of the Base Bid, plus the additive alternative Bid prices providing the most features of the Work within the funds determined by the Owner to be available before Bids are opened. If the addition of another alternative Bid price in the listed order of priority would make the aggregate amount exceed such available funds for all Bidders, it will be skipped and the next subsequent alternative Bid price in a lower amount will be added if award thereon can be made within such funds.
- C. After the determination of the apparent low Bidder as stated, award in the best interest of the Owner may be made to said Bidder on its Base Bid and any combination of its additive alternative Bids for which Owner determines funds will be available at the time of award, provided that the award on any such combination of Base Bid and additive alternative Bids does not exceed the amount offered by any other Bidder for the same combination.

16.02 (Not Used)

16.03 Discrepancies between words and numerals will be resolved in favor of words. 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.

16.04 (Not Used)

ARTICLE 17 – SUBMITTAL OF BID

- 17.01 A Bid shall be received no later than the date and time prescribed and at the place indicated in the Invitation To Bid.
- 17.02 Bid shall be enclosed in an opaque sealed envelope plainly marked on the outside with the Project title, solicitation number, the name and address of the Bidder, and its license or registration number, if applicable. Bid shall be accompanied by Bid security and other required documents.
- 17.03 If the Bid is sent by mail or other delivery method, the sealed envelope containing the Bid shall be enclosed in a separate envelope plainly marked on the outside with the notation **“Invitation to Bid # 3060-17: “RO WTP Clearwell Interior Improvements”**. A mailed Bid shall be addressed to:

*Procurement – Finance Department
City of Venice – Procurement
401 West Venice Ave., Room #204
Venice, FL, 34285*

ARTICLE 18 – MODIFICATION OR WITHDRAWAL OF BID

18.01 Withdrawal Prior to Bid Opening:

- A. A Bid may be withdrawn by an appropriate document duly executed, in the manner that a Bid must be executed and delivered to the place where Bids are to be submitted prior to the date and time fixed for the opening of Bids. Upon receipt of such written notice, the unopened Bid will be returned to the Bidder.

18.02 Modification Prior to Bid Opening:

- A. If a Bidder wishes to modify its Bid, Bidder must withdraw its initial Bid in the manner specified in Paragraph 18.01.A of these Instructions to Bidders and submit a new Bid.

18.03 Withdrawal After Bid Opening

- A. After expiration of the period for receiving Bids, no Bid may be withdrawn or modified.

ARTICLE 19 – OPENING OF BIDS

19.01 Bids will be opened at the time and place where Bids are to be submitted and, unless obviously non-responsive, read aloud publicly. An abstract of the Bids will be made available to Bidders after the opening.

19.02 Bids received by mail or otherwise after the date and time specified for the opening of Bids will not be accepted. It will be the Bidder's responsibility to make arrangements for the return of their submittal at their expense.

ARTICLE 20 – DISQUALIFICATION OF BIDDERS

20.01 More than one Bid for the same Work from an individual or entity under the same or different names will not be considered. Reasonable grounds for believing that any Bidder has an interest in more than one Bid for the Work may be cause for disqualification of that Bidder and the rejection of all Bids in which that Bidder has an interest.

ARTICLE 21 – BIDS TO REMAIN SUBJECT TO ACCEPTANCE

21.01 All Bids shall remain subject to acceptance for the period of time stated in the Bid Form, but Owner may, in its sole discretion, release any Bid and return the Bid security prior to the end of that period.

ARTICLE 22 – EVALUATION OF BIDS AND AWARD OF CONTRACT

22.01 Owner reserves the right to reject any or all Bids, including without limitation the right to reject any or all nonconforming, nonresponsive, unbalanced, or conditional Bids. Owner further reserves the right to reject the Bid of any Bidder whom it finds, after reasonable

inquiry and evaluation, to be not responsible. Owner also reserves the right to waive any informality not involving price, time or changes in the Work.

- 22.02 Owner reserves the right to reject any Bid not accompanied by specified documentation and Bid security.
- 22.03 Owner reserves the right to reject any Bid that, in its sole discretion, is considered to be unbalanced or unreasonable as to the amount bid for any lump sum or unit price item.
- 22.04 In evaluating Bidders, Owner will consider the qualifications of Bidders, whether or not their Bids comply with the prescribed requirements, the alternatives, if any, the lump sum and unit prices, and other data as may be requested in the Bid Form or prior to the Notice of Award.
- 22.05 Owner may consider the qualifications and experience of Subcontractors, Suppliers, and other individuals or entities proposed for those portions of the Work for which the identity of Subcontractors, Suppliers, and other individuals or entities must be submitted as provided in the Supplementary Conditions.
- 22.06 Owner may conduct such investigations as Owner deems necessary to establish the responsibility, qualifications, and financial ability of the Bidders to perform the Work in accordance with the Contract Documents. Owner reserves the right to reject the Bid of any Bidder who does not pass any such evaluation to Owner's satisfaction.
- 22.07 If a Contract is to be awarded, Owner will award the Contract to the lowest responsive and responsible Bidder who has neither been disqualified nor rejected pursuant to Article 20 of the Instructions to Bidders or this Article 22.
- 22.08 A notice of intent for award will be posted for review by interested parties in City Hall or on the City's website prior to submission through the appropriate approval process to the appropriate level for final approval of award.

ARTICLE 23 – CONTRACT SECURITIES

- 23.01 Performance Bond shall be in the form "Construction Performance Bond". Payment Bond shall be in the form "Construction Payment Bond". The amounts of and other requirements for Performance and Payment Bonds are stated in Paragraph 5.01 of the General Conditions. The requirements for delivery of Bonds are stated in Paragraph 2.01 of the General Conditions. Additional requirements may be stated in the Supplementary Conditions.
- 23.02 (Not Used)

ARTICLE 24 – CONTRACTOR'S INSURANCE

- 24.01 The requirements for Contractor's insurance are stated in Article 5 of the General Conditions and in the Supplementary Conditions. The requirements for delivery of certificates of insurance and other evidence of insurance are stated in Paragraph 2.01.B of the General Conditions.
- 24.02 Successful Bidder shall within 15 days from the date of the Notice of Award deliver to Owner, for review and approval, the required policies of insurance. Upon approval, the policies will be returned to the Bidder and Bidder shall submit certificates of insurance and other evidence of insurance to the Owner as stated in the General Conditions.

ARTICLE 25 – SIGNING OF AGREEMENT

- 25.01 When Owner issues a Notice of Award to the Successful Bidder, it will be accompanied by the required number of unsigned counterparts of the Agreement along with the other Contract Documents which are identified in the Agreement as attached thereto. Within 15 days thereafter, Successful Bidder shall sign and deliver the required number of counterparts of the Agreement and attached documents to Owner. Within ten days thereafter, Owner will deliver one fully signed counterpart to Successful Bidder with a complete set of the Drawings with appropriate identification.

ARTICLE 26 – NOTICE TO PROCEED

- 26.01 Issuance of the Notice to Proceed shall be as stated in Article 2 of the General Conditions.

ARTICLE 27 – PARTNERING (Not Used)

ARTICLE 28 – SALES AND USE TAXES

- 28.01 Refer to the Paragraph SC-6.10 of the Supplementary Conditions for information on Owner's exemption from sales and use taxes on materials and equipment to be incorporated into the Work. Do not include said taxes in Bid.

ARTICLE 29 – LOCAL PREFERENCE

- 29.01 Unless otherwise noted in the solicitation, preference shall be given to a "local business" in the awarding of any Invitation to Bid (ITB), Request for Proposal (RFP) or Request for Qualifications (RFQ) in accordance with Section 2-217 of the City of Venice's Code. Local preference shall not apply to other types of solicitations unless explicitly stated in the subject solicitation.
- 29.02 "Local business" means the vendor has paid a local business tax to either Sarasota, Manatee, DeSoto or Charlotte County, whichever county the Bidder is located, if applicable prior to bid submission that authorizes the Bidder to provide the commodities or services to be purchased, and maintains a permanent physical business

address located within the limits of either Sarasota, Manatee, DeSoto or Charlotte County from which the Bidder operates or performs business, and at which at least one full time employee is located.

- 29.03 In addition, fifty percent (50%) or more of the employees based at the local business location must reside within Sarasota, Manatee, DeSoto or Charlotte County.
- 29.04 In the event the local office is not the primary location of the Bidder, at least ten percent (10%) of the Bidder's entire full-time employees must be based at the local office location. Alternatively, this requirement may be satisfied if at least one corporate officer, managing partner or principal owner of the Bidder resides in Sarasota, Manatee, DeSoto or Charlotte County.
- 29.05 Bidders wishing to be given preference as a local business must submit with their Bid, all of the Local Preference documentation identified in the "Required Forms Section" of the solicitation.
- 29.06 For local preference to be granted, the name of the company represented on the required forms must be the same as the name on the Local Preference documentation.
- 29.07 Information regarding Sarasota County's Local Business Tax can be found at www.sarasotataxcollector.governmax.com.
- 29.08 In case of a Bid submitted by more than one entity, any one of those entities can qualify the Bid for the local preference. Sub-contractors or sub-consultants cannot qualify a Bid for local preference.

ARTICLE 30 – PUBLIC RECORDS/TABULATION

- 30.01 Bids are not public records, subject to the provisions of Florida State Statutes, Chapters 119 and 120, until such time as notice of a decision or intended decision is provided, or within thirty (30) days after the bid opening, whichever is earlier. A copy of the tabulation results will be forwarded upon receipt of a stamped, self-addressed envelope. An electronic tabulation will be posted on Demand Star at the Internet Website at <http://www.demandstar.com/>.

ARTICLE 31 – INDEMNIFICATION/HOLD HARMLESS

- 31.01 The Bidder shall defend, indemnify and hold the Owner, the Owner's representatives or agents, and the officers, directors, agents, employees, and assigns of each harmless for and against any and all claims, demands, suits, judgments, damages to persons or property, injuries, losses or expenses of any nature whatsoever arising directly or indirectly from or out of any negligent act or omission of the Bidder, its sub-consultants and their officers, directors, agents or employees; any failure of the elected firm to perform its services hereunder in accordance with generally accepted professional standards; any material breach of the elected firm representations as set forth in the proposal or any other failure of the elected firm's to comply with the

obligations on its part to be performed under this contract.

ARTICLE 32 - PUBLIC ENTITY CRIMES/NON-COLLUSIVE AFFIDAVIT

- 32.01 Each Bidder shall complete the Non-Collusive Affidavit and the Public Entity Crimes Form and shall submit the forms with the submittal. Owner considers the failure of the Bidder to submit these documents to be a major irregularity and may be cause for rejection of their submittal.
- 32.02 A person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a response on a contract to provide any goods or services to a public entity, may not submit a response on a contract with a public entity for the construction or repair of a public building or public work, may not submit responses on leases of real property to a public entity, may not be awarded or perform work as a Bidder, supplier, Sub-Bidder, or consultant under a contract with any public entity, and may not transact business with any public entity in excess of the threshold amount provided in Section 287, for CATEGORY TWO for a period of 36 months from the date of being placed on the convicted vendor list.
- 32.03 Termination for Cause: Any Agreement with the Owner obtained in violation of this Section shall be subject to termination for cause. A Sub-Bidder who obtains a subcontract in violation of this Section shall be removed from the Project and promptly replaced by a Sub-Bidder acceptable to the City.

ARTICLE 33 – GRATUITIES AND KICKBACKS

- 33.01 Gratuities: It is unethical for any person to offer, give, or agree to give any employee or for any employee to solicit, demand, accept or agree to accept from another person, a gratuity or an offer of employment in connection with any decision, approval, disapproval, recommendation, preparation of any part of program requirement or a purchase request, influencing the content of any specification or procurement standard, rendering of advice, investigation, audit, or in any other advisory capacity in any proceeding or application, request for ruling, determination claim or controversy, or other particular matter, pertaining to any program requirement or an Agreement or subcontract, or to any solicitation or proposal therefore.
- 33.02 Kickbacks: It shall be unethical for any payment, gratuity, or offer of employment to be made by or on behalf of a Sub-Bidder under a Contract to Bidder or higher tier Sub-Bidder any person associated therewith, as an inducement of the award of a subcontract or order.
- 33.03 Contract Clause: The prohibition against gratuities and kickbacks prescribed in this section shall be conspicuously set forth in every Contract and subcontract and solicitation therefore.

ARTICLE 34 – EQUAL EMPLOYMENT OPPORTUNITY

- 34.01 Bidder shall be in compliance with Executive Order 11426 Equal Opportunity as amended by Executive Order 11375, and as supplemented by the Department of Labor Regulations as applicable.

ARTICLE 35 – CONFLICT OF INTEREST

- 35.01 No employee of an agency acting in his or her official capacity as a purchasing agent, or public officer acting in his or her official capacity, shall either directly or indirectly purchase, rent, or lease any realty, goods, or services for his or her own agency from any business entity of which the officer or employee or the officer's or employee's spouse or child is an officer, partner, director, or proprietor or in which such officer or employee or the officer's or employee's spouse or child, or any combination of them, has a material interest. Nor shall a public officer or employee, acting in a private capacity, rent, lease, or sell any realty, goods, or services to the officer's or employee's own agency, if he or she is a state officer or employee, or to any political subdivision or any agency thereof, if he or she is serving as an officer or employee of that political subdivision. The foregoing shall not apply to district offices maintained by legislators when such offices are located in the legislator's place of business or when such offices are on property wholly or partially owned by the legislator. This subsection shall not affect or be construed to prohibit contracts entered into prior to:

- October 1, 1975
- Qualification for elective office
- Appointment to public office
- Beginning public employment

ARTICLE 36 – DRUG FREE WORKPLACE

- 36.01 The Owner has adopted a policy in observation of the Drug Free Work Place Act of 1988. Therefore, it is unlawful to manufacture, distribute, disperse, possess, or use any controlled substance in the Owner's workplace. The Owner requests the attached Drug Free Workplace Affidavit to accompany your response. This form has been adopted by the Owner in accordance with the Drug Free Workplace Act. The Owner will not disqualify any respondent who does not concur with the affidavit. The Drug Free Workplace Affidavit is primarily used as tiebreaker when two or more separate entities have submitted proposals at the same price, terms and conditions.

ARTICLE 37 – APPLICABLE LAWS

- 37.01 Interested parties are advised that all Owner contracts and/or documentation pertinent to this solicitation are subject in full or in part to all legal requirements provided in applicable City Ordinances, State Statutes, and Federal Regulations. Uniform Commercial Code, Chapter 672, Florida State Statutes shall prevail, as the basis for contractual obligations between the Bidder and the Owner for any terms and conditions not specifically stated within the context of this contract.

ARTICLE 38 – DISCLOSURE – PUBLIC OFFICER, PUBLIC EMPLOYEE OR
ADVISORY BOARD MEMBER OF OWNER

- 38.01 Sections 112.313(3) and 112.313(7), Florida Statutes, prohibit any public officer, employee, or advisory board member of the Owner from holding any employment or contractual relationship with any business entity doing business with the Owner. Section 112.313(12) provides that a public officer, employee, or advisory board member will not be in violation of the prohibition if all three of the following conditions are met. The filing of the disclosure form with the Supervisor of Elections is the sole responsibility of the Proposer and must be filed prior to or at the time of submission of the proposal. A copy of the filed disclosure form shall be submitted as part of the proposal.
- 38.02 Bid is awarded under a sealed, competitive Bid to lowest or best Bidder system. Advisory board member is required to, prior to or at the time of the submission of the Bid, file a statement with the Supervisor of Elections, disclosing his interest and the nature of the intended business. The form is entitled "Form 3A Interest in Competitive Proposal for Public Business," a copy of which is available from the Owner's Procurement- Finance Department.
- 38.03 The public officer, employee, or advisory board member, spouse, or child is required to have in no way used or attempted to use his influence to persuade a member of the Owner or any of its personnel to enter into such a contract other than by the mere submission of the Bid.
- 38.04 The public officer, employee, or advisory board member, spouse, or child is required to have in no way participated in the determination of the Bid specifications or the determination of the lowest or best Bidder.

ARTICLE 39 – BID PROTESTS

- 39.01. In any case where a bidder wishes to protest either the results of, or the intended disposition of any bid, the bidder must:
- A. File a written notice to the city manager of the bidder's intention to protest within one business day of the bid opening or the city's declaration of intent with regard to the disposition. Upon receipt of a protest, the bid process shall be suspended until the protest procedure herein described has been completed.
 - B. Within five days of filing the written notice of intent to protest, the protester shall file a formal written protest with the city manager, acting as the bid protest officer, explaining in detail the nature of the protest and the grounds on which it is based. During this five-day period, the protester is encouraged to attempt to resolve the issue with the finance department.

- C. The protester must include with the formal written protest a bid protest bond in the form of a certified check, cashier's check or money order made payable to the city in an amount equal to five percent of the lowest acceptable bid or \$5,000.00 whichever is less. The bond will be deposited with the cashier's office where it will be put into an account and the protester will receive a receipt.

39.02 Upon timely receipt of the formal written protest and protest bond:

- A. The bid protest officer shall issue formal findings of fact and a written decision with regard to the validity or nonvalidity of the formal written protest within ten business days of the city's receipt of the protest.
- B. Within two business days of receipt of the formal findings of fact and written decision, the city shall notify the protester of the decision of the bid protest officer. Such notification shall be transmitted via certified return receipt mail.

39.03 Should the protest be found to be without merit or validity, the bid protest bond shall be forfeited to the city in its entirety, and the bid process may resume. If a decision favorable in whole or in part to the protest is rendered, a check for the full amount of the bond will be returned to the protester.

ARTICLE 40 – SCRUTINIZED COMPANIES

40.01 Pursuant to Section 287.135, F.S., a company that, at the time of bidding or submitting a proposal for a new contract or renewal of an existing contract, is on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, created pursuant to Section 215.473, F.S., is ineligible for, and may not bid on, submit a proposal for, or enter into or renew a contract with an agency or local governmental entity for goods or services of \$1 million or more. Any contract with an agency or local governmental entity for goods or services of \$1 million or more entered into or renewed on or after July 1, 2011, must contain a provision that allows for the termination of such contract at the option of the awarding body if the company is found to have submitted a false certification as provided under Subsection 287.135(5), F.S., or has been placed on either of the aforementioned lists. The Owner agrees to comply with the requirements of Section 287.135, F.S. in connection with the implementation of the Project.

Engineer: ARCADIS-US, Inc.
3109 W. Dr. Martin Luther King Jr. Blvd.
Suite 350
Tampa, Fl 33607

+ + END OF INSTRUCTIONS TO BIDDERS + +

BID FORM

CITY OF VENICE RO WTP CLEARWELL INTERIOR IMPROVEMENTS

TABLE OF ARTICLES

1. Bid Recipient
2. Bidder's Acknowledgements
3. Bidder's Representations
4. Bidder's Certifications
5. Basis of Bid
6. Time of Completion
7. Attachments to this Bid
8. Defined Terms
9. Bid Submittal
10. Required Forms

ARTICLE 1 - BID RECIPIENT

- 1.01 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 price(s) and within the times indicated in this Bid and in accordance with the Bidding Documents.

ARTICLE 2 - BIDDER'S ACKNOWLEDGEMENTS

- 2.01 Bidder accepts all of the terms and conditions of the Advertisement or Invitation to Bid and Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for 90 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of OWNER. Bidder will sign the AGREEMENT and will furnish the required contract security, and other required documents within the time periods set forth in the Bidding Documents.

ARTICLE 3 - BIDDER'S REPRESENTATIONS

- 3.01 In submitting this Bid, Bidder represents that:

- A. Bidder has examined and carefully studied the Bidding Documents, the other related data identified in the Bidding Documents, if any, and the following Addenda, receipt of all of which is hereby acknowledged.

Addendum No.	Date Received	Addendum No.	Date Received
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

- B. Bidder has visited the Site and become familiar with and is satisfied as to the general, local and Site conditions that may affect cost, progress, and performance of the Work.
- C. Bidder is familiar with and is satisfied as to all federal, state and local 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 contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) which have been identified in the Supplementary Conditions as provided in Paragraph 4.02 of the General Conditions, and (2) reports and drawings of Hazardous Environmental Conditions identified at the Site, if any, which that have been identified in the Supplementary Conditions as provided in Paragraph 4.06 of the General Conditions.
- E. Bidder has obtained and carefully studied (or accepts the consequences for not doing so) all additional or supplementary examinations, investigations, explorations, tests, studies and data concerning conditions (surface, subsurface and Underground Facilities) at or contiguous to the Site which may affect cost, progress or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences and procedures of construction to be employed by Bidder, including applying the specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents to be employed by Bidder, and safety precautions and programs incident thereto.
- F. Bidder does not consider that any further examinations, investigations, explorations, tests, studies or data are necessary for the determination of this Bid for performance of the Work at the price(s) bid and within the times and in accordance with the other terms and conditions of the Bidding Documents.
- G. Bidder is aware of the general nature of work (if any) to be performed by OWNER and others at the Site that relates to the Work as indicated in the Bidding Documents.

- H. Bidder has correlated the information known to Bidder, information and observations obtained from visits to the Site, reports and drawings identified in the Bidding Documents, and all additional examinations, investigations, explorations, tests, studies and data with the Bidding Documents.
- I. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and the written resolution thereof by Engineer is acceptable to Bidder.
- J. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work for which this Bid is submitted.

3.02 Bidder further represents that:

- A. this Bid is genuine and is not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any 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; Bidder has not solicited or induced any individual or entity to refrain from bidding;
- C. Bidder has not sought by collusion to obtain for itself any advantage over any other Bidder or over OWNER; and
- D. No person or persons acting in any official capacity for the OWNER are directly or indirectly interested in this Bid, or in any portion of the profit thereof.

ARTICLE 4 – BIDDER’S CERTIFICATIONS

4.01 Bidder certifies that:

- A. this Bid is genuine and is not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any 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 the Paragraph 4.01.D;
 - 1. Corrupt practice” means the offering, giving, 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 to 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.
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 in accordance with the Contract Documents for the following price(s):

**CITY OF VENICE REVERSE OSMOSIS WATER TREATMENT PLANT
CLEARWELL INTERIOR REHABILITATION**

Item	Description	Quantity	Unit	Unit Price	Total Price (In Numbers)
1	Mobilization and demobilization	1	Lump Sum		
2	Replace 36" butterfly valves, extension stem, stem cover, handwheel actuator, and associated appurtenances	3	Each		
3	Enlarge access hatch and associated roof repairs (hatch to access BV No. 3)	1	Lump Sum		
4	Replace large access hatches	3	Each		
5	Clearwell interior crack repairs	400	LF		
6	Clearwell interior surface spall repairs	600	SF		
7	Clearwell interior painting	50,000	SF		
8	Clearwell draining, cleaning, and disinfection	2	Each		
9	Clearwell Isolation under Phasing Option 1 ⁽¹⁾	1	Lump Sum		
10	Clearwell Isolation under Phasing Option 2 ⁽²⁾	1	Lump Sum		
11	Owner's Contingency Allowance for additional Work, as needed	1	Additional		\$50,000

CITY OF VENICE REVERSE OSMOSIS WATER TREATMENT PLANT
CLEARWELL INTERIOR REHABILITATION

Total Base Bid (Sum of Items 1 through 11, inclusive) \$ _____.

(in numbers)

Total Base Bid in Words (Sum of Items 1 through 11, inclusive)

\$ _____.

- ⁽¹⁾ If Item 9 is not required to be performed during construction, the OWNER reserves the right to request the CONTRACTOR a credit of its total price.
- ⁽²⁾ If Item 10 is not required to be performed during construction, the OWNER reserves the right to request the CONTRACTOR a credit of its total price.

Completion Time: _____ calendar days

Notice Needed Prior To Commencement Of WORK: _____ calendar days

NAME OF BIDDER: _____

BIDDER'S SIGNATURE: _____

CURRENT LICENSE NUMBER: _____

DATE: _____

5.04 Unit prices have been computed in accordance with Paragraph 11.03.B of the General Conditions.

5.05 Bidder acknowledges that estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids, and final payment for all Unit Price items will be based on actual quantities of Unit Price Work determined as provided in the Contract Documents.

5.06 All specified cash allowances are included in the price(s) set forth above and have been completed in accordance with Paragraph 11.02 of the General Conditions.

ARTICLE 6 - TIME OF COMPLETION

6.01 Bidder agrees that the Work will be substantially complete within 210 calendar days after the date when the Contract Times commence to run as provided in Paragraph 2.03 of the General Conditions, and will be completed and ready for final payment in accordance with paragraph 14.07.B of the General Conditions within 240 calendar days after the date when the Contract Times commence to run, which days will be entered by OWNER into the AGREEMENT as the Contract Times.

6.02 Bidder accepts the provisions of the AGREEMENT as to liquidated and special damages, if any, in the event of failure to complete the Work within the Contract Times.

ARTICLE 7 - ATTACHMENTS TO THIS BID

7.01 The following documents are attached to and made a condition of this Bid:

- A. Required Bid security.
- B. Required Bidder Qualifications Statement with supporting data.
- C. Miscellaneous Bid Forms

ARTICLE 8 - DEFINED TERMS

8.01 The terms used in this Bid with initial capital letters have the meanings stated in the Instructions to Bidders and the General Conditions and Supplementary Conditions.

ARTICLE 9 - BID SUBMITTAL

9.01 This Bid submitted on _____, 20__ by:

If Bidder is:

Individual

Name (Typed or Printed): _____

By _____
(Individual's Signature)

Doing business as _____

License or Registration Number: _____

Business Address: _____

Phone No.: _____ Facsimile: _____

A Partnership

Partnership Name: _____

By: _____
(Signature of General Partner - Attach evidence of authority to sign)

(Name (Typed or Printed): _____

License or Registration Number: _____

Business Address: _____

Phone No.: _____ Facsimile: _____

A Corporation

Corporation Name: _____

(State of Incorporation)

By _____
(Signature - Attach evidence of authority to sign)

Name and Title (Typed or Printed): _____

(CORPORATE
SEAL)

Attest: _____
(Secretary)

License or Registration Number: _____

Business Address: _____

Phone No.: _____ Facsimile: _____

Limited Liability Company

By: _____
(Firm Name)

(State of Formation)

By: _____
(Signature of Member/Authorized to Sign)

(Printed or Typed Name and Title of Member Authorized to Sign)
(Attach evidence of authority to sign.)

License or Registration Number: _____

Business Address: _____

Phone No.: _____ Facsimile: _____

A Joint Venture

Name of Joint Venture: _____

First Joint Venturer Name: _____

By: _____
(Signature of First Joint Venturer - Attach evidence of authority to sign)

Name (Typed or Printed): _____
(Title)

Title: _____

Second Joint Venturer Name: _____

By: _____
(Signature of Second Joint Venturer - Attach evidence of authority to sign)

Name (Typed or Printed): _____
(Title)

(Each joint venturer must sign. The manner of signing for each individual, partnership, corporation or limited liability company that is a party to the joint venture shall be in the manner indicated above).

Business Address: _____

Phone and FAX number and address for receipt of communications to joint venture:

Phone: _____ Facsimile: _____

ARTICLE 10 – REQUIRED FORMS

Required Forms Check List: ITB# 3060-17: RO WTP Clearwell Interior Improvements

- Proposal Bond
- Local Preference Form
- Qualifications Statement
- Co-operative Procurement with Other Jurisdictions
- Form 3A- Interest in Competitive Bid for Public Business
- Indemnification/Hold Harmless
- FDEP & U.S. EPA Construction Notices of Intent (NOI)
- Statement of References for Contractor
- Contractor's Statement of Sub-contractors
- Drug Free Workplace Certification
- Non-Collusive Affidavit
- Public Entity Crime Information
- Statement of "No Bid" (if applicable)

All required forms are included in this package. All forms must be filled out and returned with the firm's proposal.

Failure to do so will result in the firm being considered non-responsive and their proposal will be disallowed.

Mark N/A if not applicable to your firm

PROPOSAL BOND

****Not to be completed if a certified check is submitted.***

KNOW ALL MEN BY THESE PRESENTS: That we, the undersigned,

_____ as Principal,

and _____ as Surety

are held and firmly bound unto the City of Venice, Florida, in the sum of

_____ \$_____, for the payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors and assigns.

The condition of the above obligation is such that if the attached Proposal of Principal and Surety for work specified as:

all as stipulated in said Proposal, by doing all work incidental thereto, in accordance with the plans and specifications provided heretofore, all within Sarasota County, is accepted and the bidder shall within ten (10) days after notice of said award, enter into a contract, in writing, and furnish the required Performance Bond with surety or sureties to be approved by the Director of Purchasing, this obligation shall be void; otherwise the same shall be in full force and virtue by law and the full amount of this Proposal Bond will be paid to the City as stipulated or liquidated damages.

Signed this _____ day of _____, 20__.

Principal

Surety

Principal must indicate whether corporation, partnership, company, or individual.

The person signing shall, in his own handwriting, sign the Principal's name, his own name, and his title. The person signing for a corporation must, by affidavit, show his authority to bind the corporation.

THIS PAGE INTENTIONALLY LEFT BLANK

HOW DO I DETERMINE “LOCAL PREFERENCE”

The following questions will help you determine local preference for your company.

Please answer questions 1 through 4 **FIRST**. If you answer **NO** to any questions 1 through 4, local preference does **NOT** apply.

ONLY if you answer **YES** to questions 1 through 4, may you proceed to question 5.

If you answer **YES** to any questions 5 through 7, local preference applies.

If you are unsure of how to answer any questions, please contact the City of Venice’s Purchasing Department at 941-486-2626.

Questions 1 – 4

1. Have you paid a local business tax either to Sarasota, DeSoto or Charlotte County (Manatee County does not have a local business tax) authorizing your company to provide goods or services described in this solicitation ?

YES ____ If “yes”, proceed to question 2.

NO ____ If “no”, **STOP, local preference does not apply.**

* If the name on the local business tax receipt is not the same as the name on the bid/solicitation submittal, local preference does not apply.

2. Does your company maintain a permanent physical business address located within the limits of Sarasota, Manatee, DeSoto or Charlotte County ?

YES ____ If “yes”, proceed to question 3.

NO ____ If “no”, **STOP, local preference does not apply.**

3. Does your local business office (identified in question 2) have a least one full time employee ?

YES ____ If “yes”, proceed to question 4.

NO ____ If “no”, **STOP, local preference does not apply.**

4. Do at least fifty percent (50%) of your company employees who are based in the local business location (identified in question 2) reside within Sarasota, Manatee, DeSoto or Charlotte County ?

YES ____ If “yes”, proceed to question 5.

NO ____ If no, **STOP, local preference does not apply.**

Questions 5 – 7

5. Is your local business office (identified in question 2) the primary location (headquarters) of your company ?

YES ____ If “yes”, **STOP, local preference applies.**

NO ____ If “no”, proceed to question 6.

6. If the local business office (identified in question 2) is not the primary location of your company, are at least ten percent (10%) of your company's entire full-time employees based at the local office location ?

YES ☐ If "yes", **STOP, local preference applies**

NO ☐ If "no", proceed to question 7

7. If your local business office is not the primary location of your company, does at least one corporate officer, managing partner or principal owner of the company reside in Sarasota, Manatee, DeSoto or Charlotte County ?

YES ☐ If "yes", **STOP, local preference applies**

NO ☐ If "no", local preference does not apply.

QUALIFICATIONS STATEMENT

The undersigned certifies under oath the truth and correctness of all statements and all answers to questions made hereinafter:

SUBMITTED TO:

CITY OF VENICE
Procurement- Finance Department
401 W. Venice Avenue
Venice, Florida 34285

CHECK ONE:

- ☐ Corporation
☐ Partnership
☐ Individual
☐ Joint Venture
☐ Other

SUBMITTED BY:

NAME: _____
ADDRESS: _____
PRINCIPLE OFFICE: _____

State the true, exact, correct and complete legal name of the partnership, corporation, trade or fictitious name under which you do business and the address of the place of business.

The correct name of the Offeror is: _____

The address of the principal place of business is: _____

If the Offeror is a corporation, answer the following:

- a. Date of Incorporation: _____
- b. State of Incorporation: _____
- c. President's Name: _____
- d. Vice President's Name: _____
- e. Secretary's Name: _____
- f. Treasurer's Name: _____
- g. Name and address of Resident Agent: _____

If Offeror is an individual or partnership, answer the following:

- a. Date of Organization: _____
- b. Name, address and ownership units of all partners:

- c. State whether general or limited partnership: _____

If Offeror is other than an individual, corporation partnership, describe the organization and give the name and address of principals:

If Offeror is operating under fictitious name, submit evidence of compliance with the Florida Fictitious Name Statute.

How many years has your organization been in business under its present business name?

- a. Under what other former names has your organization operated?
- _____

ACKNOWLEDGEMENT

State of _____ }
County of _____ } SS.

On this the _____ day of _____, 20____, before me, the undersigned Notary Public of the State of _____, personally appeared _____ and (Name(s) of individual(s) who appeared before notary) whose name(s) is/are Subscribed to the within instrument, and he/she/they acknowledge that he/she/they executed it.

NOTARY PUBLIC
SEAL OF OFFICE:

NOTARY PUBLIC, STATE OF _____

(Name of Notary Public: Print, stamp, or type as commissioned)

☐ Personally known to me, or ☐ Produced Identification: _____ ☐ **DID** take an oath, or ☐ **DID NOT** take an oath

COOPERATIVE PROCUREMENT WITH OTHER JURISDICTIONS

The vendor, by submitting a bid, authorizes other Public Agencies to "Piggy-Back" or purchase equipment or services being proposed in this invitation to bid at prices bid unless otherwise noted on the proposal sheet.

Yes _____ No _____

AUTHORIZED SIGNATURE

By submission of the ITB, the undersigned certifies that:

1. He/She has not paid or agreed to pay any fee or commission, or any other thing of value contingent upon the award of this contract, to any City of Venice, Florida employee or official or to any current consultant to the City of Venice, Florida;
2. He/She has not paid or agreed to pay any fee or commission or any other thing of value contingent upon the award of this contract to any broker or agent or any other person;
3. The prices contained in this proposal have been arrived at independently and without collusion, consultation, communication or agreement intended to restrict competition.
4. He/She has the full authority of the Offeror or to execute the proposal and to execute any resulting contract awarded as the result of, or on the basis of, the proposal.

Authorized Representative: _____

Signature: _____

Title: _____

Company Name: _____

Address: _____

City, State, ZIP: _____

Telephone Number: _____

Fax Number: _____

E-mail address: _____

THIS PAGE INTENTIONALLY LEFT BLANK

FORM 3A INTEREST IN COMPETITIVE BID FOR PUBLIC BUSINESS

LAST NAME — FIRST NAME — MIDDLE INITIAL			OFFICE / POSITION HELD
MAILING ADDRESS			AGENCY
CITY	ZIP	COUNTY	ADDRESS OF AGENCY

WHO MUST FILE THIS STATEMENT

Sections 112.313(3) and 112.313(7), Florida Statutes, prohibit certain business relationships on the part of public officers and employees, their spouses, and their children. See Part III, Chapter 112, Florida Statutes, and/or the brochure entitled "A Guide to the Sunshine Amendment and Code of Ethics for Public Officers and Employees" for more details on these prohibitions. However, Section 112.313(12), Florida Statutes, provides certain limited exemptions to the above-referenced prohibitions, including one where the business is awarded under a system of sealed, competitive bidding; the public official has exerted no influence on bid negotiations or specifications; AND where disclosure is made, prior to or at the time of the submission of the bid, of the official's or his spouse's or child's interest and the nature of the intended business. This form has been promulgated by the Commission on Ethics for such disclosure, *if and when applicable* to a public officer or employee.

INTEREST IN COMPETITIVE BID FOR PUBLIC BUSINESS *(Required by § 112.313(12)(b), Fla. Stat.)*

1. The competitive bid to which this statement applies has been / will be (strike one) submitted to the following government agency:		
2. The person submitting the bid is:	NAME ▼	POSITION ▼
3. The business entity with which the person submitting the bid is associated is:		
4. My relationship to the person or business entity submitting the bid is as follows:		
5. The nature of the business intended to be transacted in the event that this bid is awarded is as follows:		
a. The realty, goods, and / or services to be supplied specifically include: _____		
b. The realty, goods, and / or services will be supplied for the following period of time: _____		
c. Will the contract be subject to renewal without further competitive bidding? <input type="checkbox"/> Yes <input type="checkbox"/> No. If so, how often?		
6. Additional comments:		
7. SIGNATURE	DATE SIGNED	DATE FILED

FILING INSTRUCTIONS

If you are a state officer or employee required to disclose the information above, please file this form with the Department of State in Room 316, R.A. Gray Building, 500 South Bronough Street, Tallahassee, Florida 32399-0250. If you are an officer or employee of a political subdivision of this state and are subject to this disclosure, please file the statement with the Supervisor of Elections of the county in which the agency in which you are serving has its principal office.

NOTICE: UNDER PROVISIONS OF FLORIDA STATUTES §112.017, A FAILURE TO MAKE ANY REQUIRED DISCLOSURE CONSTITUTES GROUNDS FOR AND MAY BE PUNISHED BY ONE OR MORE OF THE FOLLOWING: IMPEACHMENT, REMOVAL OR SUSPENSION FROM OFFICE OR EMPLOYMENT, DEMOTION, REDUCTION IN SALARY, REPRIMAND, OR A CIVIL PENALTY NOT TO EXCEED \$10,000.

CE FORM 3A — REV. 1-95

THIS PAGE MUST BE COMPLETED & SUBMITTED WITH OFFER

THIS PAGE INTENTIONALLY LEFT BLANK

INDEMNIFICATION/HOLD HARMLESS

The elected firm shall (if required by City) defend, indemnify and hold the City, the City's representatives or agents, and the officers, directors, agents, employees, and assigns of each harmless for and against any and all claims, demands, suits, judgments, damages to persons or property, injuries, losses or expenses of any nature whatsoever (including attorneys' fees at trial at appellate level) arising directly or indirectly from or out of any negligent act or omission of the elected firm, its Sub-Offers and their officers, directors, agents or employees; any failure of the elected firm to perform its services hereunder in accordance with generally accepted professional standards; any material breach of the elected firm's representations as set forth in the proposal or any other failure of the elected firm to comply with the obligations on its part to be performed under this contract.

I, _____, being an authorized representative of the firm of
_____ located at City
_____, State _____, Zip Code _____ Phone:
_____ Fax: _____. Having read and
understood the contents above, hereby submit accordingly as of this Date,
_____, 20__.

Please Print Name

Signature

This signed document shall remain in effect for a period of one (1) year from the date of signature or for the contract period, whichever is longer.

THIS PAGE INTENTIONALLY LEFT BLANK

CITY OF VENICE, FLORIDA
FDEP & U.S. EPA CONSTRUCTION NOTICES OF INTENT (NOI)

The undersigned bidder acknowledges the requirement of the U.S. Environmental Protection Agency (EPA) and the Florida Department of Environmental Protection (FDEP) which have published the rules for NPDES General Permits for stormwater discharges from construction sites and said bidder agrees to assist the owner in the preparation of these permits and associated plans. The bidder acknowledges that he has taken these permits and associated construction costs into account in the preparation of his lump sum bid. These permits are mandated under Section 402(p) of the Clean Water Act for "Stormwater Discharge from Construction Activities (including clearing, grading, and excavation activities) that result in the disturbance of five (5) or more acres total land area, including areas that are part of a larger common plan of development or sale." The EPA has published summary guidance for: "Developing Prevention Plans and Best Management Practices" (EPA 833-R-92-001, October 1992).

The EPA permit format is a *Notice of Intent (NOI) for Stormwater Discharges Associated with Construction Activity to be covered under a NPDES Permit*, and it is to be submitted according to the NOI instructions. The Stormwater Pollution Prevention Plan which must accompany the NOI must be signed by authorized representatives of the contractor and subcontractors as well as the facility Owner. Copies of the EPA NOI must be provided to state and local agencies who have issued stormwater management, grading, or land alteration permits or approvals.

An NOI must also be submitted to the Florida Department of Environmental Protection, NPDES Stormwater Notices Center, MS 2510, 2600 Blair Stone Road, Tallahassee, FL 32399. FDEP forms may be downloaded from the State's web site <http://www.dep.state.fl.us/water/stormwater/npdes/> or phone 850-921-9870 if you have questions.

Acceptance of the bid to which this certification and disclosure applies in no way represents the Owner or its Representative has evaluated and thereby determined that the information is adequate to comply with the applicable U.S. EPA or FDEP requirements nor does it in any way relieve the contractor of its sole responsibility to comply with the applicable U.S. EPA and FDEP requirements, including inspection of all control measures at least once each week and following any storm (rainfall) event of 0.5 inches or greater and maintaining reports of each inspection.

Bidder (Company): _____

Name and Title: _____

Address: _____

Telephone: _____

BY SIGNATURE BELOW OF AUTHORIZED REPRESENTATIVE, CONTRACTOR ACKNOWLEDGES RECEIPT OF A COPY OF CITY ORDINANCES 95-12 and 96-09 AND AGREES TO ABIDE BY THE REQUIREMENTS OF SAID ORDINANCES.

Signature: _____

Date: _____

Printed name/title:

ORDINANCE 95-12

AN ORDINANCE OF THE CITY OF VENICE, FLORIDA, AMENDING THE CODE OF ORDINANCES BY AMENDING CHAPTER 9, HEALTH AND SANITATION, ARTICLE IV, DISPOSAL OF EXCRETA, SECTION 9-71, DISCHARGE OF RAW SEWAGE INTO STORMWATER; DELETING ARTICLE V, PROHIBITED STORMWATER DISCHARGES; ADDING CHAPTER 19, WATER AND SEWERS, ARTICLE VI, STORMWATER QUALITY; DELETING CHAPTER 15, STREETS AND SIDEWALKS, ARTICLE IV, EXCAVATIONS, SECTION 15-53, STORM DRAINAGE AND POLLUTION; PROVIDING FOR CONFLICT WITH OTHER ORDINANCES; PROVIDING FOR A SEVERABILITY CLAUSE AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, control of stormwater runoff is necessary from individual lots that do not require a permit from the Southwest Florida Water Management District and requiring compliance with the provisions of the Clean Water Act 33 U.S.C.1251 et.seq., as amended by the Water Quality Act of 1987; and

WHEREAS, the City is desirous of complying with its U.S. Environmental Protection Agency National Pollutant Discharge Elimination System Permit and its Stormwater Master Plan, therefore, stormwater runoff and any discharge to the City storm sewer system will be closely monitored and regulated; and

WHEREAS, the control of stormwater runoff is the responsibility of each individual property owner; and

WHEREAS, the City is desirous of controlling stormwater runoff and insuring compliance with the Comprehensive Plan.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF VENICE, FLORIDA:

SECTION 1. Chapter 9, Water and Sewers, Article IV, Disposal of Excreta, Section 9-71, Discharge of Raw Sewage into Storm Sewer, is amended to read as follows:

Sec. 9-71. Discharge of raw sewage into storm sewer.

It shall be unlawful for any person to discharge raw sewage or to discharge the effluent of and from any septic tank into the storm sewer system of the city or to construct or maintain any system of drainage, pipes, conduits or other apparatus whereby raw sewage or the effluent of and from any septic tank shall or may be discharged into or through the storm sewer system of the city.

SECTION 2. Chapter 9, Water and Sewers, Article V, Prohibited Stormwater Discharges, is deleted in its entirety.

SECTION 3. Chapter 19, Water and Sewers, Article VI, Stormwater Quality is added to read as follows:

ARTICLE VI. STORMWATER QUALITY

Sec. 19-141. Definitions.

As used in this article "industrial stormwater" means stormwater runoff from a site with industrial activities, as defined under 40 CFR Section 122.26(a)(14) U.S. Environmental Protection Agency regulation.

As used in this article "construction sites" refers to all sites.

As used in this article, "illicit discharge" is any discharge of anything other than stormwater to the municipal separate storm sewer system (MS4) or the waters of the State of Florida or the United States.

As used in this article "industrial wastewater" refers to liquids used by an entity in their course of business, that if discharged to the MS4, would degrade the quality of stormwater.

Sec. 19-142. Disposal of industrial stormwater discharges.

The following types of discharges to the municipal separate storm sewer of the city must be controlled as indicated.

(1) **Industrial wastewater/illicit discharge:** Industrial wastewater/illicit discharge may not be discharged to the city's municipal separate storm sewer system.

(2) **Industrial stormwater:** As required to comply with NPDES regulations, the quality of industrial stormwater which is discharged through the city's municipal separate storm sewer system may be subject to

regulation or permitting, and any violation of such regulation or permit may be subject to an order to immediately cease such discharge.

Sec. 19-143. Runoff stormwater and Best Management Practice (BMPs) for construction sites.

BMPs shall be implemented as necessary, to insure that all discharges from construction activities are in compliance with the City of Venice EPA/NPDES Stormwater Permit and the Stormwater Master Plan, or the SWFWMD Permit or EPA's NPDES Construction Activity General Permit, whichever is most stringent in its requirements.

Best Management Practices include but are not limited to, the following requirements:

(a) All site grading shall be conducted in such a manner that all stormwater management facilities located adjacent to the site are not altered in any way which will diminish their designated flow or pollutant removal capacity or the shape of the drainage facility.

(b) Maintenance of vegetative buffers or use of a silt fence and/or staked hay bales which minimize erosion and retain sediment on site, shall be implemented prior to any construction activities taking place at sites which discharge to surface water or the municipal separate storm sewer system (MS4). These controls, when utilized, shall be secured and properly maintained during construction activities until the site has been stabilized with sod and/or seed and mulch. A double silt fence may be required as an additional measure to insure that discharges from the site are in compliance with water quality standards as established by the EPA/NPDES Stormwater Permit. Undisturbed vegetative buffers shall be maintained intact to the maximum extent possible to reduce erosion and the discharge of sediment from stormwater runoff. All areas of exposed soil shall be stabilized within 72 hours of attaining final grade.

(c) Storm sewer systems (eg. inlets, pipes and ditches, etc.) adjacent to the site must be protected by a silt fence and/or staked hay bales during construction, to keep solids from entering conveyance systems.

(d) Vehicles such as concrete or dump trucks and other construction equipment shall not be washed at locations where the runoff will flow directly into a lake, wetland, watercourse or stormwater conveyance system. Special areas must be designated for washing vehicles. In all new subdivisions, a wash area may be established by the owner/developer which can be used by the site contractor and home builders. If established, wash areas shall be located where the wash water will spread out and evaporate or infiltrate directly into the ground, or where the runoff can be collected in a temporary holding or seepage basin. Gravel or rock bases are recommended for temporary holding or seepage basins, to minimize mud generation. Underdrains shall be installed where infiltration basins are provided as required by the owner/developer's engineer or the Southwest Florida Water Management District. Upon completion of the project, the wash areas shall be graded and stabilized and any trash or waste shall be collected and disposed of properly.

(e) Fuel, chemicals, cements, solvents, paints, topsoil, or other potential water pollutants shall be stored in areas where they will not cause runoff pollution. Toxic chemicals and materials, such as pesticides, paints, and acids, must be stored in accordance with manufacturer's guidelines. Groundwater resources shall be protected from leaching by placing a plastic mat, packed clay, tar paper, or other impervious material on any areas where toxic liquids are to be opened and stored.

(f) A minimum of one permitted driveway must be established prior to construction and shall be used as the only access for ingress/egress during construction in order to provide minimum disturbance of drainage facilities and vegetative cover on site.

Sec. 19-44. Owner responsibility for stormwater runoff.

(a) The control of stormwater runoff is the responsibility of each individual property owner.

(b) Any property owner constructing or causing to be constructed any building which requires an elevated slab and the elevation of the building pad is higher than that of adjoining properties, will control stormwater runoff during construction. Likewise, any property that is filled more than twelve inches above the adjacent property must provide additional control measures for stormwater during construction. Upon completion of the work, all stormwater runoff shall flow to its natural preconstruction drainage swale, ditch, etc., or be retained in a retention or detention pond(s) designed and constructed for that purpose.

(c) For any construction where the elevation of the building pad or site fill will be higher than adjoining properties, construction plans certified by a professional engineer registered with the State of Florida, retained by the property owner, will be provided to the City prior to issuance of a building permit.

(d) Any single lot not covered under Southwest Florida Water Management District rules, exceeding forty-five percent in impervious coverage (including buildings, drives, sidewalks, patios, etc.) shall require

stormwater retention facilities to be designed by a Florida registered engineer. The design is to meet the City of Venice EPA/NPDES Permit requirements for quantity and quality of treatment.

(e) The property owner's engineer will be required to certify to the City Engineer that construction was completed in accordance with the certified plans, prior to issuance of a Certificate of Occupancy.

(f) All improvements to property affecting stormwater drainage must be done in compliance with the City's Comprehensive Plan.

Sec. 19-145. Illicit discharges.

It shall be unlawful for any person to discharge anything other than stormwater into the city's municipal separate storm sewer system whether such discharges occur through piping connections, runoff, exfiltration, infiltration, seepage, or leaks. No person may maintain, use, or establish any direct or indirect connection to any storm sewer owned by the city that results in any discharge in violation of any provision of federal, state, city, or other law or regulation. This provision is retroactive to January 1, 1995, and applies to connections made prior to the effective date of this provision, regardless of whether made under a permit, or other authorization, or whether permissible under laws or practices applicable or prevailing at the time the connection was made.

No materials other than those composed entirely of stormwater shall be disposed of, dumped, or spilled into the city's municipal separate storm sewer system, whether such materials are in a solid or liquid form.

Sec. 19-146. Inspections.

It shall be the duty of the city engineer or designee to carry out all inspections, surveillance, and monitoring procedures necessary to determine compliance with this article.

SECTION 4. Chapter 15, Streets and Sidewalks, Article IV, Excavations, Section 15-53, Storm Drainage and Pollution, is deleted in its entirety.

SECTION 5. To the extent of any conflict between the provisions of this Ordinance, and any other Ordinance, Resolution, or Agreement of the City of Venice, Florida, the provisions of this Ordinance shall prevail.

SECTION 6. Severability. If for any reason a provision of this Ordinance or the application thereof to any person, group of persons, or circumstances is held invalid, the invalidity shall not effect other provisions or applications of the Ordinance which can be given effect without the invalid provision or application, and to this end the provisions of the Ordinance are severable.

SECTION 7. Effective Date. This Ordinance shall take effect immediately upon its adoption, as required by law.

PASSED BY THE COUNCIL OF THE CITY OF VENICE, FLORIDA, THIS 23RD DAY OF MAY, 1995.

First Reading: May 9, 1995 - Final Reading: May 23, 1995 - ADOPTION: May 23, 1995

ATTEST: /s/LORI STELZER, CMC, CITY CLERK /S/ MERLE L. GRASER, MAYOR

I, LORI STELZER, City Clerk of the City of Venice, Florida, a municipal corporation in Sarasota County, Florida, do hereby certify that the foregoing is a full and complete, true and correct copy of an Ordinance duly adopted by the Venice City Council, at a meeting thereof duly convened and held on the 23rd day of May, 1995, a quorum being present.

WITNESS my hand and the official seal of said City this 24th day of May, 1995.

/S/ LORI STELZER, CMC, CITY CLERK Approved as to form: /S/ ROBERT C. ANDERSON, CITY ATTORNEY

ORDINANCE 96-09

AN ORDINANCE OF THE CITY OF VENICE, FLORIDA, AMENDING THE CODE OF ORDINANCES BY AMENDING CHAPTER 19, WATER AND SEWERS, ARTICLE VI, STORMWATER QUALITY, SECTION 19-141, DEFINITION FOR INDUSTRIAL STORMWATER, SECTION 19-146, INSPECTIONS, PROVIDING FOR CONFLICT WITH OTHER ORDINANCES; PROVIDING FOR A SEVERABILITY CLAUSE AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, the City of Venice is responsible for the conservation, management, protection, control, use and enhancement of stormwater within its corporate limits, and for the acquisition, management, maintenance, extension, and improvement of the stormwater systems in the City; and

WHEREAS, the Environmental Protection Agency/National Pollutant Discharge Elimination System (EPA/NPDES) permit requires certain amendments to the existing Ordinance and extension of inspection authority on private properties.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF VENICE, FLORIDA:

SECTION 1. Chapter 19, Water and Sewers, Article VI, Stormwater Quality, Section 19-141, Definition, for Industrial Stormwater is amended to read as follows:

Sec. 19-141. Definitions.

As used in this article, "industrial stormwater" means stormwater runoff from a site with industrial activities, as defined under 40 CFR Section 122.26 (a) (b) (14), U.S. Environmental Protection Agency regulation.

SECTION 2. Chapter 19, Water and Sewers, Article VI, Stormwater Quality, Section 19-146, Inspections, is amended to read as follows:

Sec. 19-146. Inspections.

It shall be the duty of the city engineer or designee to carry out all inspections, surveillance, and monitoring procedures necessary to determine compliance with this article. The city engineer or his duly authorized agents may enter at all reasonable times in or upon any private or public property for the purpose of inspecting and investigating conditions and practices which may be a violation of this ordinance, regulation or permit. The city engineer may, whenever necessary, make an inspection of construction sites to enforce any of the provisions of this ordinance, regulation or permit issued hereunder, or whenever an authorized official has reasonable cause to believe there exists any condition constituting a violation of this ordinance, regulation or permit issued hereunder. The city engineer shall inspect the work and shall require the owner to obtain services to provide adequate on-site inspection. If the city engineer finds that eroded soils are leaving the construction site, the city engineer may direct the owner(s) or his agents or his contractor on the site by written order to install any and all erosion controls that are deemed necessary to prevent said soil erosion from migrating off site. Notwithstanding the existence or pursuit of any other remedy, the City may maintain an action in its own name in any court of competent jurisdiction for an injunction or other process against any person to restrain or prevent violations of this ordinance.

SECTION 3. To the extent of any conflict between the provisions of this Ordinance, and any other Ordinance, Resolution, or Agreement of the City of Venice, Florida, the provisions of this Ordinance shall prevail.

SECTION 4. Severability. If for any reason a provision of this Ordinance or the application thereof to any person, group of persons, or circumstances is held invalid, the invalidity shall not effect other provisions or applications of the Ordinance which can be given effect without the invalid provision or application, and to this end the provisions of the Ordinance are severable.

SECTION 5. Effective Date. This Ordinance shall take effect immediately upon its adoption, as required by law.

PASSED BY THE COUNCIL OF THE CITY OF VENICE, FLORIDA, THIS 26TH DAY OF MARCH, 1996.

First Reading: March 12, 1996 - Final Reading: March 26, 1996 - ADOPTION: March 26, 1996

ATTEST: /s/LORI STELZER, CMC.CITY CLERK /S/ MERLE L. GRASER, MAYOR

I, LORI STELZER, City Clerk of the City of Venice, Florida, a municipal corporation in Sarasota County, Florida, do hereby certify that the foregoing is a full and complete, true and correct copy of an

Ordinance duly adopted by the Venice City Council, at a meeting thereof duly convened and held on the 26th day of March, 1996, a quorum being present.

WITNESS my hand and the official seal of said City this 27th day of March, 1996.

/S/ LORI STELZER, CMC, CITY CLERK Approved as to form: /S/ ROBERT C. ANDERSON, CITY ATTORNEY.

STATEMENT OF REFERENCES
FOR CONTRACTOR

NAME OF CONTRACTOR: _____

BUSINESS ADDRESS: _____

How many years have you been engaged in the business under the present firm name? _____

List previous business experience: _____

List at least three construction references:

(1) Person to contact: _____

Company Name: _____

Address: _____

Telephone: _____ Date work performed: _____

(2) Person to contact: _____

Company Name: _____

Address: _____

Telephone: _____ Date work performed: _____

(3) Person to contact: _____

Company Name: _____

Address: _____

Telephone: _____ Date work performed: _____

(4) Person to contact: _____

Company Name: _____

Address: _____

Telephone: _____ Date work performed: _____

THIS PAGE INTENTIONALLY LEFT BLANK

**CONTRACTOR'S STATEMENT OF
SUBCONTRACTORS TO BE USED FOR THIS WORK**

NAME OF CONTRACTOR: _____

BUSINESS ADDRESS: _____

LIST SUBCONTRACTORS TO BE USED IN THE PROJECT:

(1) Company Name: _____

Address: _____

Telephone: _____ Phase of Work Sublet: _____

(2) Company Name: _____

Address: _____

Telephone: _____ Phase of Work Sublet: _____

(3) Company Name: _____

Address: _____

Telephone: _____ Phase of Work Sublet: _____

(4) Company Name: _____

Address: _____

Telephone: _____ Phase of Work Sublet: _____

THIS PAGE INTENTIONALLY LEFT BLANK

DRUG FREE WORKPLACE CERTIFICATION

If identical tie bids exist, preference will be given to the vendor who submits a certification with their bid/proposal certifying they have a drug-free workplace in accordance with Section 287.087, Florida Statutes. The drug-free workplace preference is applied as follows:

IDENTICAL TIE BIDS: Preference shall be given to businesses with drug-free workplace programs. Whenever two or more bids, which are equal with respect to price, quality, and service, are received by the State or by any political subdivision for the procurement of commodities or contractual services, a bid received from a business that certifies that it has implemented a drug-free workplace program shall be given preference in the award process. Established procedures for processing tie bids will be followed if none of the tied vendors have a drug-free workplace program.

As the person authorized to sign this statement, I certify that this firm complies fully with the following requirements:

- 1) This firm publishes a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition.
- 2) This firm informs employees about the dangers of drug abuse in the workplace, the business's 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) This firm gives 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), this firm notifies 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) This firm imposes a sanction on or requires 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) This firm will continue to make a good faith effort to maintain a drug-free workplace through implementation of this section.

Contractor's Name Signature

THIS PAGE INTENTIONALLY LEFT BLANK

NON-COLLUSIVE AFFIDAVIT

State of _____ }
County of _____ } SS.

_____ being first duly sworn, deposes and says that:

1. He/she is the _____, (Owner, Partner, Officer, Representative or Agent) of _____ the Offeror that has submitted the attached Proposal;
2. He/she is fully informed respecting the preparation and contents of the attached Proposal and of all pertinent circumstances respecting such Proposal;
3. Such Proposal is genuine and is not a collusive or sham Proposal;
4. Neither the said Offeror nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this affiant, have in any way colluded, conspired, connived or agreed, directly or indirectly, with any other Offeror, firm, or person to submit a collusive or sham Proposal in connection with the Work for which the attached Proposal has been submitted; or have in any manner, directly or indirectly sought by agreement or collusion, or have in any manner, directly or indirectly, sought by agreement or collusion, or communication or conference with any Offeror, firm, or person to fix the price or prices in the attached Proposal or of any other Offeror, or to fix any overhead, profit, or cost elements of the Proposal price or the Proposal price of any other Offeror, or to secure through any collusion, conspiracy, connivance, or unlawful agreement any advantage against (Recipient), or any person interested in the proposal Work.

Signed, sealed and delivered
in the presence of:

By: _____

(Printed Name)

(Title)

ACKNOWLEDGEMENT

State of _____

County of _____

On this _____ day of _____, 20____, before me, the undersigned Notary Public of the State of _____, personally appeared _____ and (Name(s) of Individual(s) who appeared before notary) whose name(s) in/are Subscribed to the written instrument, and he/she/they acknowledge that he/she/they executed it.

NOTARY PUBLIC
SEAL OF OFFICE:

NOTARY PUBLIC, STATE OF _____

(Name of Notary Public: Print, stamp, or type as commissioned)

☐ Personally known to me, or ☐ Produced Identification: _____ ☐ **DID** take an oath, or ☐ **DID NOT** take an oath

THIS PAGE INTENTIONALLY LEFT BLANK

PUBLIC ENTITY CRIME INFORMATION

A person or affiliate who has been placed on the State of Florida's convicted vendor list following a conviction for a public entity crime may not submit a BID/ITB proposal on a contract to provide any goods or services to a public entity, may not submit a response on a contract with a public entity for services in the construction or repair of a public building or public work, may not submit bids on leases of real property to a public entity, may not be awarded or perform work as a Contractor, supplier, Sub-Contractor, or Contractor under a contract with any public entity, and may not transact business with any public entity in excess of the threshold amount provided in **Section 2876.017, for CATEGORY TWO for a period of 36 months from the date of being placed on the convicted vendor list.**

I, _____, being an authorized representative
of the firm of _____, located at City:
_____ State: _____ Zip: _____, have
read and understand the contents of the Public Entity Crime Information and of this
formal BID/ITB package, hereby submit our proposal accordingly.

Signature: _____
Phone: _____
Federal ID#: _____

Date: _____
Fax: _____

THIS PAGE INTENTIONALLY LEFT BLANK

NO BID RESPONSE

IMPORTANT: If you choose not to submit a bid for the attached "Invitation To Bid," please complete and return this form only on/before bid closing date. Failure to respond will result in your company being negatively registered as non-responsive. In the event five (5) "no responses" are posted, you will be automatically dropped from our mailing list for future solicitations for the described product/service.

Thank you for taking this opportunity to help us update and improve the solicitation process.

Bid Open/Close Date: **April 19, 2017 at 2:00 PM**

Bid Number: **3060-17**

Description: This project includes isolating the existing clearwell to allow work to be performed on half at a time; the replacement of three (3) existing butterfly valves; interior concrete repairs; completely removing and replacing the interior coating system; enlarging one of the existing hatches to allow removal of a butterfly valve being replaced, replacing the existing hatch to match the new roof opening; and disinfecting the entire clearwell after coating but prior to placing the clearwell half back into useful service.

Contact: Peter Boers, Procurement- Finance Department

Please check the appropriate response. We respectfully submit "No bid" for the following reason(s):

- ☐ 1. We are unable to meet the required delivery date
- ☐ 2. We cannot provide a product to meet the required specifications.
- ☐ 3. We no longer provide the requested product.
- ☐ 4. We do not represent the required brand name product.
- ☐ 5. The bid closing date does not allow adequate time to prepare a response.
- ☐ 6. The specifications are too restrictive.
- ☐ 7. We have chosen not to do business with the City
- ☐ 8. Other (feel free to provide our response on your company letterhead.)

Company Name _____ Vendor No. _____

Authorized Signature _____

Print Name _____

Title _____

Date _____ Telephone No. _____

+ + END OF BID FORM + +

THIS PAGE INTENTIONALLY LEFT BLANK

SAMPLE CONTRACT

THIS CONTRACT, pursuant to City Council approval granted on _____, is made and entered into this _____ day of _____, 20____, by and between the City of Venice, Florida, hereinafter referred to as the City, and _____, hereinafter referred to as the Contractor.

W I T N E S S E T H:

THAT FOR and in consideration of the mutual covenants and obligations hereafter set forth, the parties hereto agree as follows:

(1) The Contract Documents consist of this Contract, Performance and Payment Bonds attached hereto as composite Attachment A and, the City's Invitation to Bid (ITB) # 3060-17 **RO WTP Clearwell Interior Improvements**, including: standard general conditions, supplemental conditions, special conditions, technical specifications, drawings, Contractor's bid proposal for ITB 3060-17 all of which are incorporated herein by reference. All of the Contract Documents are made a part of this Contract.

(2) The Contractor shall perform all the work required by the Contract Documents and shall include installation of the listed items per the bid specifications.

(3) The work to be performed under this Contract shall be completed within Two Hundred Forty (240) days of the issuance of the Notice to Proceed by the City.

(4) The City shall pay the Contractor for the performance of the work, in accordance with Exhibit B, subject to the terms and conditions of the Contract Documents and any written change orders, the contract sum not to exceed: _____ & ___/100s (\$ _____).

(5) Time is of the essence in this contract. In the event that the work is not completed within the required time as specified in Section 3 herein, then from the compensation otherwise to be paid to the Contractor, the City may retain the sum of **one thousand five hundred thirty-two dollars (\$ 1,532) per day** for each calendar day that the work remains incomplete beyond the time limit, which sum shall represent the actual damage which the City will have sustained per day by failure of the Contractor to complete the work within the required time, said sum not being a penalty but being the stipulated damages the City will have sustained in the event of such default by the Contractor.

(6) In connection with the performance of work under this Contract, the Contractor agrees not to discriminate against any employee or applicant for employment because of race, sex, religion, color, or national origin. The aforesaid provision shall include, but not be limited to, the following: employment, upgrading, demotion or transfer, recruitment or recruitment advertising, lay-off or termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship. The Contractor agrees to post hereafter in conspicuous places, available for employees or applicants for employment, notices to be provided by the contracting officer setting forth the provisions of the non-discrimination clause. The Contractor further agrees to insert the foregoing provisions in all contracts hereunder, including contracts or agreements with labor unions and/or workers' representatives, except subcontracts for standard commercial supplies or raw

materials.

(7) Contractor must secure and maintain any and all permits and licenses required to complete the work under this Contract, unless the Contract Documents provide otherwise.

(8) Throughout the term of this Contract the Contractor must maintain insurance in at least the amounts and coverage required as shown in Exhibit C. The Contractor must provide a Certificate of Insurance to the City evidencing such coverage prior to issuance of the Notice to Proceed by the City.

(9) Contractor agrees to comply with Florida's public records law by keeping and maintaining public records that ordinarily and necessarily would be required by the public agency in order to perform the Engineering Services; upon the request of the City's Custodian of Public Records, by providing the City with copies of or access to public records on the same terms and conditions that City would provide the records and at a cost that does not exceed the cost provided by Florida law; by ensuring that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed excepts as authorized by law for the duration of the term of the Contract and following completion of the Contract if the Contractor does not transfer the records to the City; and upon completion of the Contract by transferring, at no cost, to City all public records in possession of Contractor or by keeping and maintaining all public records required by the City to perform the Engineering Services. If the Contractor transfers all public records to the City upon completion of the Contract, the Contractor shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If the Contractor keeps and maintains public records upon completion of the Contract, the Contractor shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to the City, upon request from the City's custodian of public records, in a format that is compatible with the information technology systems of the City.

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 CITY'S CUSTODIAN OF PUBLIC RECORDS LORI STELZER, MMC, CITY CLERK, AT 401 W. VENICE AVENUE, VENICE, FLORIDA 34285, (941) 882-7390, LSTELZER@VENICEGOV.COM.

(10) Contractor shall indemnify, pay the cost of defense, including attorneys' fees, and hold harmless the City from all suits, actions, or claims of any kind brought on account of any injuries or damages received or sustained by any person or property by or from the Contractor or in consequence of any neglect in safeguarding the work; or by the use of any unacceptable materials related to the work; or on account of any act or omission, neglect or misconduct of the Contractor; or on account of any claim or amounts received under the "Workers' Compensation Law" or any other laws or ordinances, except only such injury or damage as shall have been caused by the negligence of the City. The first ten dollars (\$10.00) of compensation received by the Contractor represents specific consideration for this indemnification obligation.

(11) Contractor shall be responsible for compliance with the requirements under Chapter 556, Florida Statutes, the "Underground Facility Damage Prevention and Safety Act." Contractor's obligations to defend, indemnify, and hold harmless the City, as provided for under Section 10 of

this Contract, shall specifically apply to any violations alleged against the City under the Underground Facility Damage Prevention and Safety Act related to the performance of the work under this Contract. Contractor acknowledges that included in the various items of the proposal and in the total bid price, are costs for complying with the Florida Trench Safety Act (90-96 Laws of Florida) effective October 1, 1990.

(12) Termination. This Contract may be terminated by the City without cause, by giving thirty (30) days prior written notice to contractor of the intention to cancel. or with cause at any time contractor fails to fulfill or abide by any of the terms or conditions specified. Failure of contractor to comply with any of the provisions of this agreement shall be considered a material breach of contract and shall be cause for immediate termination of the agreement at the discretion of the city. This Contract may be terminated by the Contractor only by mutual consent of both parties. If this Contract is terminated before performance is completed, the Contractor shall be paid only for that work satisfactorily performed for which costs can be substantiated.

(13) The laws of the State of Florida shall govern all provisions of this Contract. Venue for any dispute shall be Sarasota County, Florida. If any court proceeding or other action occurs between the parties as a result of this Contract or any other document or act required by this Contract, the prevailing party shall be entitled to recover attorney's fees and all court costs, including attorney's fees and court costs incurred in any pre-trial, trial, appellate, and/or bankruptcy proceedings, as well as, attorney's fees and costs incurred in determining entitlement to and reasonableness of fees and costs.

(14) This Contract and the Contract Documents constitute the entire agreement of the parties and may not be changed or modified, except by a written document signed by both parties hereto. This Contract shall be binding upon the successors and assigns of the parties.

IN WITNESS WHEREOF, the parties to the agreement have hereunto set their hands and seals and have executed this agreement, the day and year first above written.

(SEAL)

ATTEST:

CITY OF VENICE
IN SARASOTA COUNTY, FLORIDA

CITY CLERK

BY:_____
MAYOR JOHN HOLIC

ATTEST:

BY:_____

Signed by (typed or printed)

Signed by (typed or printed)

Approved as to Form and Correctness

David Persson, City Attorney

EXHIBIT A

SURETY BONDS

At the time of executing the Contract Documents, the successful proposer shall append to this sheet separate performance and payment bonds each equal to one-hundred percent (100%) of the contract amount. Said bonds become an integral part of these Contract Documents and shall meet the following requirements:

1. Surety bonds submitted shall be written by a surety company that is approved by the City Finance Director and authorized to do business in the State of Florida, shall be accompanied by evidence of the authority of the issuing agent, and shall be on a form to be approved by the City Attorney. No bond in an amount greater than \$5,000 required by the City Charter, the Ordinances of The City of Venice, or the laws of the State of Florida shall be approved by the City Finance Director unless the surety company executing the bond is listed by the United States Treasury Department as being approved for writing bonds for Federal projects and its current list in an amount not less than the amount of the bond tendered to The City of Venice.

2. Both the separate payment and performance bonds shall be in the general form of AIA documents A311. Additionally, the payment bond shall state as follows:

“This bond is issued in compliance with Section 255.05, Florida Statutes (1994 Supp.), as may be amended. A claimant, except a laborer, who is not in privity with the contractor and who has not received payment for his labor, materials, or supplies shall, within 45 days after beginning to furnish labor, materials, or supplies for the prosecution of the work, furnish the contractor with a notice, that he intends to look to the bond for protection. A claimant who is not in privity with the contractor and who has not received payment for his labor, materials, or supplies shall, within 90 days after performance of the labor or after complete delivery of the materials or supplies, or with respect to rental equipment, within 90 days after the date that the rental equipment was last on the job site available for use, deliver to the contractor and to the surety written notice of the performance of the labor or delivery of the materials or supplies and of the nonpayment. No action for the labor, materials, or supplies may be instituted against the contractor or the surety unless both notices have been given. No action shall be instituted against the contractor or the surety on the payment bond or the payment provisions of a combined payment and performance bond after 1 year from the performance of the labor or completion of delivery of the materials or supplies. A claimant may not waive in advance his right to bring an action under the bond against the surety. In any action brought to enforce a claim against a payment bond under this section, the prevailing party is entitled to recover a reasonable fee for the services of his attorney for trial and appeal or for arbitration, in an amount to be determined by the court, which fee must be taxed as part of his costs, as allowed in equitable actions.”

THIS PAGE INTENTIONALLY LEFT BLANK

PUBLIC WORKS PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS:

THAT _____, as Principal, hereinafter called Contractor; and _____, a corporation of the State of Florida, as surety, hereinafter called Surety, are held and firmly bound unto the City of Venice as Obligee, hereinafter called the City, in the amount of (\$_____) _____/100's, for the payment whereof Contractor and Surety bind themselves, their heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

WHEREAS, Contractor has by written agreement dated the _____ day of _____, 20____, entered into a Contract with the City for the following described project: **ITB# 3060-17 RO WTP Clearwell Interior Improvements** which contract is by reference incorporated herein and made a part hereof, and is hereinafter referred to as the Contract.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that if Contractor shall promptly make payments to all persons supplying Contractor labor, materials and supplies, used directly or indirectly by the said Contractor or Subcontractors in the prosecution of the work provided for in said Contract, then this obligation shall be null and void; otherwise it shall remain in full force and effect.

PROVIDED FURTHER, that the said Surety for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract or to the work to be performed thereunder or the Specifications accompanying the same shall in anywise affect its obligation on this Bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract or to the work or to the Specifications.

PROVIDED FURTHER, that this Bond is issued pursuant to Section 255.05, Florida Statutes, and reference is hereby made to the notice and time limitations in said statute for making claims against this Bond.

PROVIDED FURTHER, that any suit under this Bond must be instituted before the expiration of one (1) year from the performance of the labor or completion of delivery of the materials or supplies.

PROVIDED FURTHER, no right of action shall accrue on this Bond to or for the use of any person or corporation other than the City named herein and those persons or corporations provided for by Section 255.05, Florida Statutes, their heirs, executors, administrators, successors or assigns.

SIGNED AND SEALED this _____ day of _____, A.D., 20__.

IN THE PRESENCE OF:

CONTRACTOR

BY: _____

INSURANCE COMPANY

BY: _____
Agent and Attorney-in-Fact

PUBLIC WORKS PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS:

THAT _____, as Principal, hereinafter called Contractor; and _____, a corporation of the State of Florida, as surety, hereinafter called Surety, are held and firmly bound unto the City of Venice as Obligee, hereinafter called the City, in the amount of (\$ _____) & _____/100's, for the payment whereof Contractor and Surety bind themselves, their heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

WHEREAS, Contractor has by written agreement dated the _____ day of _____, 20__, entered into a contract with the City of Venice for the following described project: **ITB# 3060-17 RO WTP Clearwell Interior Improvements** which contract is by reference incorporated herein and made a part hereof, and is hereinafter referred to as the contract.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that if the Contractor shall promptly and faithfully perform the Contract during the original term thereof and any extensions thereof which may be granted by the City with or without notice to the Surety and during any guarantee or warranty period, including the obligation to correct any latent defects not discovered until after acceptance of the project by the City, and if he shall satisfy all claims and demands incurred under said Contract and shall fully indemnify and save harmless the City, its agents, Engineer and employees from all losses, damages, expenses, costs and Attorney's Fees, including appellate proceedings which it may suffer by reason of failure to do so, and shall reimburse and repay the City all outlay and expense which the City may incur in making good any default, then this obligation shall be null and void; otherwise it shall remain in full force and effect.

PROVIDED FURTHER, whenever Contractor shall be, and declared by the City to be in default under the Contract, the City having performed its obligations thereunder, the Surety may promptly remedy the default or shall promptly:

- (1) Complete the Contract in accordance with its terms and conditions; or
- (2) Obtain a bid or bids for submission to the City for completing the Contract in accordance with its terms and conditions and upon determination by the City and Surety of the lowest responsible bidder, arrange for a contract between such bidder and City and make available as work progresses (even though there should be a default or a succession of defaults under the Contract or Contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion, less the balance of the contract price; but not exceeding, including other costs and damages for which the Surety may be liable hereunder, the amount set forth in the first paragraph hereof. The term "balance of the contract price" as used in this paragraph, shall mean the total

amount payable by the City to Contractor under the Contract and any amendments thereto, less the amount properly paid by the City to the Contractor.

PROVIDED FURTHER, the Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract or to the work to be performed thereunder or the Contract Documents accompanying the same shall in any waive notice of any such change, extension of time, alteration or addition to the terms of the Contract or to the work or to the Contract Documents.

PROVIDED FURTHER, any suit under this bond must be instituted before the expiration of two (2) years from the date on which final payment under the Contract falls due; except that, when the action involves a latent defect, suit must be instituted within four (4) years from the time the defect is discovered or should have been discovered with the exercise of due diligence.

PROVIDED FURTHER, no right of action shall accrue on this bond to or for the use of any person or corporation other than the City, its successors or assigns.

SIGNED AND SEALED this _____ day of _____, AD., 20__.

IN THE PRESENCE OF:

CONTRACTOR

BY: _____

INSURANCE COMPANY

BY: _____
Agent and Attorney-in-Fact

EXHIBIT B

(Bid Form to be Supplied)

THIS PAGE INTENTIONALLY LEFT BLANK

EXHIBIT C

Before performing any work, the Contractor shall procure and maintain, during the life of the Contract, insurance listed below. The policies of insurance shall be primary and written on forms acceptable to the City and placed with insurance carriers approved and licensed by the Insurance Department in the State of Florida and meet a minimum financial AM Best and Company rating of no less than A:VII. No changes are to be made to these specifications without prior written specific approval by the City.

1. The City of Venice is to be specifically included as an **ADDITIONAL INSURED** for **Commercial General Liability** and **Business Auto Policy**.
2. The City of Venice shall be named as Certificate Holder. *Please Note that the Certificate Holder should read as follows:*

*The City of Venice
401 W. Venice Avenue
Venice, FL 34285*

No City Division, Department, or individual name should appear on the certificate. **NO OTHER FORMAT WILL BE ACCEPTABLE.**

3. The “Acord” certification of insurance form shall be used.
 4. Required Coverage
 - a) **Commercial General Liability:** including but not limited to bodily injury, property damage, contractual liability, products and completed operations, and personal injury with limits of not less than \$1,000,000 per occurrence, \$1,000,000 aggregate covering all work performed under this Contract. Include broad form property damage (provide insurance for damage to property under the care custody and control of the contractor)
 - b) **Business Auto Policy:** including bodily injury and property damage for all vehicles owned, leased, hired and non-owned vehicles with limits of not less than \$1,000,000 combined single limit covering all work performed under this Contract.
 - c) **Workers Compensation:** Contractor will provide Workers Compensation Insurance on behalf of all employees, including sub-contractors, who are to provide a service under this Contract, as required under Florida Law, Chapter 440, and Employers Liability with limits of not less than \$100,000 per employee per accident; \$500,000 disease aggregate; and \$100,000 per employee per disease.
 - d) **Installation Floater/Installation Builders’ Risk–Property Coverage:** Policy to cover direct physical loss or damage to materials, supplies, machinery, and equipment being installed, constructed or rigged by the contractor in conjunction with its installation or construction. All items involved in the project including drainage/water sewer pipes, etc. (as included in description of project) need to be insured for the total completed replacement value. Coverage should include perils of fire, theft, vandalism, windstorm/hail, collapse and transit, sewer backup, testing, equipment breakdown,
-

waterborne property. Coverage shall start when the items to be installed are transported to City premises and remain in place until the interest of the contractors ceases or the City accepts possession whichever comes first. Coverage should apply to owned property and non-owned property in the contractor's care, custody and control. The installation coverage forms shall provide coverage for building materials and supplies at the construction site, in transit to the site and similar property intended for the construction project at other locations as necessary or because of lack of storage space at the construction site. Coverage should apply on a Primary basis and should include a Waiver of Subrogation. Contractor should be responsible for any deductibles.

5. Policy Form:

- a) All policies required by this Contract, with the exception of Workers Compensation, or unless specific approval is given by the City, are to be written on an occurrence basis, shall name the City of Venice, its Elected Officials, Officers, Agents, Employees as additional insured as their interest may appear under this Contract. Insurer(s), with the exception of Workers Compensation, shall agree to waive all rights of subrogation against the City of Venice, its Elected Officials, Officers, Agents, and Employees.
 - b) Insurance requirements itemized in this Contract, and required of the Contractor, shall be provided on behalf of all subcontractors to cover their operations performed under this Contract. The Contractor shall be held responsible for any modifications, deviations, or omissions in these insurance requirements as they apply to subcontractors.
 - c) Each insurance policy required by this Contract shall:
 - (1) apply separately to each insured against whom claim is made and suit is brought, except with respect to limits of the insurer's liability;
 - (2) be endorsed to state that coverage shall not be suspended, voided or canceled by either party except after thirty (30) calendar days prior written notice by certified mail, return receipt requested, has been given to the City of Venice's Director of Administrative Services.
 - d) The City shall retain the right to review, at any time, coverage form, and amount of insurance.
 - e) The procuring of required policies of insurance shall not be construed to limit Contractor's liability nor to fulfill the indemnification provisions and requirements of this Contract.
 - f) The Contractor shall be solely responsible for payment of all premiums for insurance contributing to the satisfaction of this Contract and shall be solely responsible for the payment of any deductible and/or retention to which such policies are subject, whether or not the City is an insured under the policy. In the event that claims in excess of the insured amounts provided herein are filed by reason of operations under the contract, the amount excess of such claims, or any portion thereof, may be withheld from any payment due or to become due to the contractor until such time the contractor shall furnish additional security covering such claims as may be determined by the City.
 - g) Claims Made Policies will be accepted for professional and hazardous materials and
-

such other risks as are authorized by the City. All Claims Made Policies contributing to the satisfaction of the insurance requirements herein shall have an extended reporting period option or automatic coverage of not less than two years. If provided as an option, the Contractor agrees to purchase the extended reporting period on cancellation or termination unless a new policy is affected with a retroactive date, including at least the last policy year.

- h) Certificates of Insurance evidencing Claims Made or Occurrence form coverage and conditions to this Contract, as well as the City's Bid Number and description of work, are to be furnished to the City's Director of Administrative Services, 401 West Venice Avenue, Venice, FL 34285, ten (10) business days prior to commencement of work and a minimum of thirty (30) calendar days prior to expiration of the insurance policy.
 - i) Notices of Accidents and Notices of Claims associated with work being performed under this Contract, shall be provided to the Contractor's insurance company and the City's Director of Administrative Services, as soon as practicable after notice to the insured.
 - j) All property losses shall be payable to, and adjusted with, the City.
-

THIS PAGE INTENTIONALLY LEFT BLANK

CONTRACTOR'S RELEASE OF LIEN

BEFORE ME, the undersigned authority in said County and State, appeared

_____, who being first duly sworn, deposes and says that he is _____ of _____ a company and/or corporation authorized to do business under the laws of Florida, which is the contractor on Project known as City of Venice Bid # 3060-17, located in the City of Venice, County of Sarasota, Florida, under contract with the City of Venice, dated the _____ day of _____, 20____, that the said deponent is duly authorized to make this affidavit by resolution of the Board of Directors of said company and/or corporation; that deponent knows of his own knowledge that said contract has been complied with in every particular by said contractor and that all parts of the work have been approved by the City Engineer; that there are no bills remaining unpaid for labor, material or otherwise, in connection with said contract and work, and that there are no suits pending against the undersigned as contractor or anyone in connection with the work done and materials furnished or otherwise, under said contract.

DEPONENT further says that the final estimate which has been submitted to the City simultaneously with the making of this affidavit, constitutes all claims and demands against the City on account of said contract or otherwise, and that acceptance of the sum specified in said final estimate will operate as a full and final release and discharge of the City from any further claims, demands or compensation by contractor under the above contract.

DEPONENT further agrees that all guarantees under this contract shall start and be in full force from the date of this release as spelled out in the contract documents.

Signature: _____

Printed Name:

STATE OF FLORIDA)
COUNTY OF)

Signed before me this _____ day of _____, 20____,
by _____ who is personally known to me or has produced
_____ as identification.

Notary Public

My Commission Expires:

Commission Number:

WE, the _____, having heretofore executed a performance bond and a payment bond for the above named contractor covering project and section as described above in the sum of (\$ _____) _____ Dollars, hereby agree that the Owner may make full payment of the final estimate, including the retained percentage, to said contractor.

IT IS fully understood that the granting of the right to make the payment of the final estimate to said contractor and/or his assigns, shall in no way relieve this surety company of its

obligations under its bonds, as set forth in the specifications, contract, and bonds pertaining to the above project.

IN WITNESS WHEREOF, the _____ has caused this instrument to be executed on its behalf by its _____, and/or its duly authorized attorney in fact, and its corporate seal to be hereunto affixed, all on this _____ day of _____, A.D., 20__.

Surety Company

Attorney in Fact

Power of Attorney must be attached if executed by Attorney in Fact.

STATE OF)

COUNTY OF)

BEFORE ME, the undersigned authority, appeared _____, who is personally known to me or has produced _____ as identification, and who executed the foregoing instrument in the name of _____ as its _____ and the said _____ acknowledged that he executed said instrument in the name of _____ as its _____ and/or _____, for the purpose therein expressed and that he had due and legal authority to execute the same on behalf of said _____, a corporation.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal at _____ this _____ day of _____, 20__.

Notary Public

My Commission Expires:

CERTIFICATE OF SUBSTANTIAL COMPLETION

PROJECT NO.

PROJECT:

CONTRACTOR CONTRACT DATE

CONTRACT FOR

Project or Specified Part Shall Include:

DEFINITION OF SUBSTANTIAL COMPLETION

The date of substantial completion of a project or specified part of a project is the date when the work is sufficiently completed, in accordance with the Contract Documents, so that the project or specified part of the project can be utilized for the purpose for which it was intended.

TO: (Contractor)

DATE OF SUBSTANTIAL COMPLETION: _____

The work performed under this contract has been inspected by authorized representatives of the City of Venice and the contractor, and the project or specified part of the project, is hereby declared to be substantially completed on the above date.

A tentative list of items to be completed or corrected is appended hereto. This list may not be exhaustive, and the failure to include an item on it does not alter the responsibility of the contractor to complete all the work in accordance with the contract documents. These items shall be completed by the contractor within _____ days of Substantial Completion.

The date of Substantial Completion is the date upon which all guarantees and warranties begin, except as noted below. The responsibilities between the Owner and the Contractor for maintenance shall be as set forth below.

CITY OF VENICE

By:

Date: _____

The contractor accepts the foregoing Certification of Substantial Completion and agrees to complete and correct the items on the tentative list within the time indicated.

Contractor Authorized Representative

Date: _____

RESPONSIBILITIES:

OWNER:

CONTRACTOR:

EXCEPTIONS AS TO GUARANTEES AND WARRANTIES:

ATTACHMENTS (Identify)

THIS PAGE INTENTIONALLY LEFT BLANK

BIDDER QUALIFICATION STATEMENT

(Completion of this statement is required in advance of
consideration for award of Contract.)

SUBMITTED TO:

City of Venice
401 West Venice Avenue
Venice, FL 34285

SUBMITTED FOR:

RO WTP Clearwell Interior Improvements

SUBMITTED BY:

Name of Organization: _____
(Print or Type Name of Bidder)

Name of Individual: _____

Title: _____

Business Address: _____

Telephone No.: _____

Fax No.: _____

E-mail Address: _____

Bidder's Website: _____

If address and phone number given above is for a branch office, provide address and phone number of principal home office:

Principal Home Office Address: _____

Principal Home Office Telephone No.: _____

Gentlemen:

The undersigned certifies under oath the truth and correctness of all statements and of all answers to questions made hereinafter.

(Note: Attach additional sheets as required.)

1.0 Bidder's General Business Information

1.1 Check if:

- ☐ Corporation ☐ Partnership ☐ Joint Venture ☐ Other
- ☐ Limited Liability Company ☐ Sole Proprietorship

If Corporation:

A. Date and State of Incorporation:

B. List of Executive Officers:

Name	Title	Address

If Partnership:

A. Date and State of Organization:

B. Current General Partners (name and address for each):

C. Type of Partnership

- ☐ General ☐ Publicly Traded ☐ Limited
- ☐ Limited Liability ☐ Other (describe): _____

If Joint Venture:

A. Date and State of Organization:

B. Name, Address, Form of Organization, and State of Organization of Each Joint Venture Partner: (Indicate with an asterisk (*) the managing or controlling Joint Venturer if applicable):

If Limited Liability Company:

A. Date and State of Organization:

B. Members:

Name	Address
------	---------

<hr/>	<hr/>
<hr/>	<hr/>
<hr/>	<hr/>
<hr/>	<hr/>

If Sole Proprietorship:

A. Date and State of Organization:

B. Name and Address of Owner or Owners:

If Other Type of Organization:

A. Type of Organization: _____

B. Date and State of Organization:

C. Name and Address of Each Owner or Principal:

1.2 Certifications: In addition to the above categories of business entities, indicate whether Bidder's organization is a:

- ☐ Disadvantaged Business Enterprise, certified by _____
- ☐ Minority Business Enterprise, certified by _____
- ☐ Women's Business Enterprise, certified by _____
- ☐ Historically Underutilized Business Zone Small Business Concern, certified by _____

2.0 How many years has your organization been in business as a general contractor?

3.0 If your organizational structure has changed within the past five years, provide data as listed above in Item 1.0 for your previous organization.

4.0 Do you plan to subcontract any part of this project? _____ If so, give details.

- 5.0 Has any construction contract to which you have been a party been terminated by the owner; have you ever terminated work on a project prior to its completion for any reason; has any surety which issued a performance bond on your behalf ever completed the work in its own name or financed such completion on your behalf; has any surety expended any monies in connection with a contract for which they furnished a bond on your behalf? If the answer to any portion of this question is "yes", furnish details of all such occurrences including name of owner, architect or engineer, and surety, and name and date of project.
- 6.0 Has any officer or partner of your organization ever been an officer or partner of another organization that had any construction contract terminated by the owner; terminated work on a project prior to its completion for any reason; had any surety which issued a performance bond complete the work in its own name or financed such completion; or had any surety expend any monies in connection with a contract for which they furnished a bond? If the answer to any portion of this question is "yes", furnish details of all such occurrences including name of owner, architect or engineer, and surety, and name and date of project.
- 7.0 In the last five years, has your organization, or any predecessor organization, failed to substantially complete a project in a timely manner? If the answer to this question is "yes", furnish details of all such occurrences including name of owner, architect or engineer, and surety, and name and date of project.
- 8.0 On Schedule A, attached, list name, location and description of project, owner, architect or engineer, contract price, percent complete and scheduled completion of the major construction projects your organization has in progress on this date. Provide name, address and telephone number of a reference for each project listed.
- 9.0 On Schedule B, attached, list name, location and description of project, owner, architect or engineer, contract price, date of completion and percent of work with your own forces of major projects of the same general nature as this project which your organization has completed in the past five years. Provide name, address and telephone number of a reference for each project listed.

10.0 On Schedule C, attached, list name and construction experience of the principal individuals of your organization directly involved in construction operations.

11.0 Licenses and Registrations:

11.1 Indicate the jurisdictions in which your firm is legally qualified to practice. Indicate license or registration number for each jurisdiction, if applicable, and type of license or registration. Attach separate sheet as required.

Jurisdiction	License/Registration No.	Type
_____	_____	_____
_____	_____	_____
_____	_____	_____

11.2 In the past five years, has Bidder had any business or professional license suspended or revoked?

☐ No ☐ Yes

If yes, describe on a separate attachment the circumstances, including the jurisdiction and bases for suspension or revocation.

12.0 Provide the following information for your surety:

12.1 Surety Company: _____

12.2 Agent: _____

A. Address: _____

B. Telephone No.: _____

13.0 Provide the following with respect to an accredited banking institution familiar with your organization.

13.1 Name of Bank: _____

13.2 Address: _____

13.3 Account Manager: _____

13.4 Telephone No.: _____

14.0 Provide the name, address and telephone number of an individual who represents a major equipment/material supplier whom the Owner may contact for a financial reference:

15.0 Industry Affiliations, Memberships, Awards, and Honors

15.1 List below the industry organizations with which your organization is affiliated or which your organization is a member:

15.2 List below the industry awards or honors received by your organization and the date for each. Attach supporting documentation as necessary.

17.0 Statement of Potential Conflicts of Interest: List below business associations, financial interests, or other circumstances that may create a conflict of interest with the Owner or other entity involved in the Project. Attach additional documentation as required.

17.0 Dated at _____, this _____ day of _____, 20__.

Bidder: _____
(Print or Type Name of Bidder)

By: _____

Title: _____

00 45 13-8

Attachments A, B and C

(Seal, if corporation)

------(Affidavit for Individual)-----

_____ being duly sworn, deposes and says that:

a) the financial statement, taken from his/her books, is a true and accurate statement of his/her financial condition as of the date thereof; and b) all of the foregoing qualification information is true, complete, and accurate.

------(Affidavit for Partnership)-----

_____ being duly sworn, deposes and says that:

a) he/she is a member of the partnership of _____;
b) he/she is familiar with the books of said partnership showing its financial condition;
c) the financial statement, taken from the books of said partnership, is a true and accurate statement of the financial condition of the partnership as of the date thereof; and d) all of the foregoing qualification information is true, complete, and accurate.

------(Affidavit for Corporation)-----

_____ being duly sworn, deposes and says that: a) he/she is
_____ of _____;
(Full name of Corporation)

b) he/she is familiar with the books of said corporation showing its financial condition;
c) the financial statement, taken from the books of said corporation, is a true and accurate statement of the financial condition of said corporation as of the date thereof; and d) that all of the foregoing qualification information is true, complete, and accurate.

------(Affidavit for Limited Liability Company (LLC))-----

_____ being duly sworn, deposes and says that: a) he/she is
_____ of _____;
(Full name of LLC)

b) he/she is familiar with the books of said company showing its financial condition; c) the financial statement, taken from the books of said company, is a true and accurate statement of the financial condition of said company as of the date thereof; and d) that all of the foregoing qualification information is true, complete, and accurate.

------(Affidavit for Joint Venture)-----

Each joint venturer shall complete the affidavit appropriate for the joint venturer's type of organization and attach said affidavit to the Bidder Qualifications Statement. Submit separate acknowledgement for each joint venturer's affidavit.

----- (Acknowledgment) -----

_____ being duly sworn, deposes and says
that he/she is _____ of _____;
(Name of Bidder)

that he/she is duly authorized to make the foregoing affidavit and that he/she makes it on behalf of

() himself/herself; () said partnership; () said corporation;

() said joint venture; () said limited liability company

Sworn to before me this _____ day of _____, 20____, in the County of _____, State of _____.

—

(Notary Public)

My commission expires _____

(Seal)

+ + END OF BIDDER QUALIFICATIONS STATEMENT + +

ATTACHMENT A

SCHEDULE A PROJECTS IN PROGRESS

[illegible]

ATTACHMENT B

SCHEDULE B
PROJECTS COMPLETED

[illegible]

ATTACHMENT C

SCHEDULE C
PERSONNEL

[illegible]

GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Adapted from EJCDC C-700, Standard General Conditions
of the Construction Contract (2007 Edition)

TABLE OF CONTENTS

	<u>Page</u>
ARTICLE 1 – DEFINITIONS AND TERMINOLOGY	00 72 13 - 7
1.01 <i>Defined Terms</i>	00 72 13 - 7
1.02 <i>Terminology</i>	00 72 13 - 11
ARTICLE 2 – PRELIMINARY MATTERS	00 72 13 - 13
2.01 <i>Delivery of Bonds and Evidence of Insurance</i>	00 72 13 - 13
2.02 <i>Copies of Documents</i>	00 72 13 - 13
2.03 <i>Commencement of Contract Times; Notice to Proceed</i>	00 72 13 - 13
2.04 <i>Starting the Work</i>	00 72 13 - 13
2.05 <i>Before Starting Construction</i>	00 72 13 - 14
2.06 <i>Preconstruction Conference</i>	00 72 13 - 14
2.07 <i>Initial Acceptance of Schedules</i>	00 72 13 - 14
ARTICLE 3 – CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE.....	00 72 13 - 15
3.01 <i>Intent</i>	00 72 13 - 15
3.02 <i>Reference Standards</i>	00 72 13 - 15
3.03 <i>Reporting and Resolving Discrepancies</i>	00 72 13 - 17
3.04 <i>Amending and Supplementing Contract Documents</i>	00 72 13 - 17
3.05 <i>Reuse of Documents</i>	00 72 13 - 17
3.06 <i>Electronic Data</i>	00 72 13 - 17
ARTICLE 4 – AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; REFERENCE POINTS	00 72 13 - 18
4.01 <i>Availability of Lands</i>	00 72 13 - 18
4.02 <i>Subsurface and Physical Conditions</i>	00 72 13 - 18
4.03 <i>Differing Subsurface or Physical Conditions</i>	00 72 13 - 19
4.04 <i>Underground Facilities</i>	00 72 13 - 20
4.05 <i>Reference Points</i>	00 72 13 - 21
4.06 <i>Hazardous Environmental Condition at Site</i>	00 72 13 - 22
ARTICLE 5 – BONDS AND INSURANCE	00 72 13 - 23
5.01 <i>Performance, Payment, and Other Bonds</i>	00 72 13 - 23
5.02 <i>Licensed Sureties and Insurers</i>	00 72 13 - 24
5.03 <i>Certificates of Insurance</i>	00 72 13 - 24
5.04 <i>Contractor's Liability Insurance</i>	00 72 13 - 25
5.05 <i>Owner's Liability Insurance</i>	00 72 13 - 26
5.06 <i>Property Insurance</i>	00 72 13 - 26
5.07 <i>Waiver of Rights</i>	00 72 13 - 26
5.08 <i>Receipt and Application of Insurance Proceeds</i>	00 72 13 - 26
5.09 <i>Acceptance of Bonds and Insurance; Option to Replace</i>	00 72 13 - 26
5.10 <i>Partial Utilization Acknowledgment of Property Insurer</i>	00 72 13 - 27

TABLE OF CONTENTS (Continued)

	<u>Page</u>
ARTICLE 6 – CONTRACTOR’S RESPONSIBILITIES	00 72 13 - 27
6.01 <i>Supervision and Superintendence</i>	00 72 13 - 27
6.02 <i>Labor; Working Hours</i>	00 72 13 - 27
6.03 <i>Services, Materials, and Equipment</i>	00 72 13 - 28
6.04 <i>Progress Schedule</i>	00 72 13 - 28
6.05 <i>Substitutes and "Or-Equals"</i>	00 72 13 - 28
6.06 <i>Concerning Subcontractors, Suppliers, and Others</i>	00 72 13 - 31
6.07 <i>Patent Fees and Royalties</i>	00 72 13 - 33
6.08 <i>Permits</i>	00 72 13 - 33
6.09 <i>Laws and Regulations</i>	00 72 13 - 33
6.10 <i>Taxes</i>	00 72 13 - 34
6.11 <i>Use of Site and Other Areas</i>	00 72 13 - 34
6.12 <i>Record Documents</i>	00 72 13 - 35
6.13 <i>Safety and Protection</i>	00 72 13 - 35
6.14 <i>Safety Representative</i>	00 72 13 - 36
6.15 <i>Hazard Communication Programs</i>	00 72 13 - 36
6.17 <i>Emergencies</i>	00 72 13 - 36
6.17 <i>Shop Drawings and Samples</i>	00 72 13 - 37
6.18 <i>Continuing the Work</i>	00 72 13 - 39
6.19 <i>Contractor's General Warranty and Guarantee</i>	00 72 13 - 39
6.20 <i>Indemnification</i>	00 72 13 - 40
6.21 <i>Delegation of Professional Design Services</i>	00 72 13 - 40
ARTICLE 7 – OTHER WORK AT THE SITE	00 72 13 - 41
7.01 <i>Related Work at Site</i>	00 72 13 - 41
7.02 <i>Legal Relationships</i>	00 72 13 - 42
ARTICLE 8 – OWNER’S RESPONSIBILITIES	00 72 13 - 42
8.01 <i>Communications to Contractor</i>	00 72 13 - 42
8.02 <i>Furnish Data</i>	00 72 13 - 42
8.03 <i>Pay When Due</i>	00 72 13 - 43
8.04 <i>Lands and Easements; Reports and Tests</i>	00 72 13 - 43
8.05 <i>Insurance</i>	00 72 13 - 43
8.06 <i>Change Orders</i>	00 72 13 - 43
8.07 <i>Inspections, Tests, and Approvals</i>	00 72 13 - 43
8.08 <i>Limitations on Owner's Responsibilities</i>	00 72 13 - 43
8.09 <i>Undisclosed Hazardous Environmental Condition</i>	00 72 13 - 43
8.10 <i>Evidence of Financial Arrangements</i>	00 72 13 - 43
8.11 <i>Compliance With Safety Programs</i>	00 72 13 - 44

TABLE OF CONTENTS (Continued)

ARTICLE 9 – ENGINEER’S STATUS DURING CONSTRUCTION	00 72 13 - 44
9.01 <i>Owner’s Representative</i>	00 72 13 - 44
9.02 <i>Visits to Site</i>	00 72 13 - 44
9.03 <i>Project Representative</i>	00 72 13 - 45
9.04 <i>Authorized Variations in Work</i>	00 72 13 - 45
9.05 <i>Rejecting Defective Work</i>	00 72 13 - 45
9.06 <i>Shop Drawings, Change Orders and Payments</i>	00 72 13 - 45
9.07 <i>Determinations for Unit Price Work</i>	00 72 13 - 46
9.08 <i>Decisions on Requirements of Contract Documents, and</i> <i>Acceptability of Work</i>	00 72 13 - 46
9.09 <i>Limitations on Engineer's Authority and Responsibilities</i>	00 72 13 - 46
9.10 <i>Compliance with Safety Programs</i>	00 72 13 - 47
ARTICLE 10 – CHANGES IN THE WORK; CLAIMS	00 72 13 - 47
10.01 <i>Authorized Changes in the Work</i>	00 72 13 - 47
10.02 <i>Unauthorized Changes in the Work</i>	00 72 13 - 47
10.03 <i>Execution of Change Orders</i>	00 72 13 - 48
10.04 <i>Notification to Surety</i>	00 72 13 - 48
10.05 <i>Claims</i>	00 72 13 - 48
ARTICLE 11 – COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK	00 72 13 - 49
11.01 <i>Cost of the Work</i>	00 72 13 - 49
11.02 <i>Allowances</i>	00 72 13 - 52
11.03 <i>Unit Price Work</i>	00 72 13 - 53
ARTICLE 12 – CHANGE OF CONTRACT PRICE; CHANGE OF CONTRACT TIMES	00 72 13 - 54
12.01 <i>Change of Contract Price</i>	00 72 13 - 54
12.02 <i>Change of Contract Times</i>	00 72 13 - 55
12.03 <i>Delays</i>	00 72 13 - 55
ARTICLE 13 – TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK.....	00 72 13 - 56
13.01 <i>Notice of Defects</i>	00 72 13 - 56
13.02 <i>Access to Work</i>	00 72 13 - 56
13.03 <i>Tests and Inspections</i>	00 72 13 - 56
13.04 <i>Uncovering Work</i>	00 72 13 - 57
13.05 <i>Owner May Stop the Work</i>	00 72 13 - 58
13.06 <i>Correction or Removal of Defective Work</i>	00 72 13 - 58
13.07 <i>Correction Period</i>	00 72 13 - 58
13.08 <i>Acceptance of Defective Work</i>	00 72 13 - 59
13.09 <i>Owner May Correct Defective Work</i>	00 72 13 - 60

TABLE OF CONTENTS (Continued)

ARTICLE 14 – PAYMENTS TO CONTRACTOR AND COMPLETION.....	00 72 13 - 60
14.01 <i>Schedule of Values</i>	00 72 13 - 60
14.02 <i>Progress Payments</i>	00 72 13 - 61
14.03 <i>Contractor’s Warranty of Title</i>	00 72 13 - 64
14.04 <i>Substantial Completion</i>	00 72 13 - 64
14.05 <i>Partial Utilization</i>	00 72 13 - 65
14.06 <i>Final Inspection</i>	00 72 13 - 65
14.07 <i>Final Payment</i>	00 72 13 - 66
14.08 <i>Final Completion Delayed</i>	00 72 13 - 67
14.09 <i>Waiver of Claims</i>	00 72 13 - 67
 ARTICLE 15 – SUSPENSION OF WORK AND TERMINATION	 00 72 13 - 68
15.01 <i>Owner May Suspend Work</i>	00 72 13 - 68
15.02 <i>Owner May Terminate for Cause</i>	00 72 13 - 68
15.03 <i>Owner May Terminate For Convenience</i>	00 72 13 - 69
15.04 <i>Contractor May Stop Work or Terminate</i>	00 72 13 - 70
 ARTICLE 17 – DISPUTE RESOLUTION.....	 00 72 13 - 70
16.01 <i>Methods and Procedures</i>	00 72 13 - 70
 ARTICLE 17 – MISCELLANEOUS	 00 72 13 - 70
17.01 <i>Giving Notice</i>	00 72 13 - 70
17.02 <i>Computation of Times</i>	00 72 13 - 71
17.03 <i>Cumulative Remedies</i>	00 72 13 - 71
17.04 <i>Survival of Obligations</i>	00 72 13 - 71
17.05 <i>Controlling Law</i>	00 72 13 - 71
17.06 <i>Headings</i>	00 72 13 - 71

GENERAL CONDITIONS

ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

- A. Wherever used in the Bidding Requirements or Contract Documents and printed with initial capital letters, the terms listed below will have the meanings indicated which are applicable to both the singular and plural thereof. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.
1. *Addenda* – Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.
 2. *Agreement* – The written instrument which is evidence of the agreement between Owner and Contractor covering the Work.
 3. *Application for Payment* – The form acceptable to Engineer which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.
 4. *Asbestos* – Any material that contains more than one percent asbestos and is friable or is releasing asbestos fibers into the air above current action levels established by the United States Occupational Safety and Health Administration.
 5. *Bid* – The offer or proposal of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.
 6. *Bidder* – The individual or entity who submits a Bid directly to Owner.
 7. *Bidding Documents* – The Bidding Requirements and the proposed Contract Documents (including all Addenda).
 8. *Bidding Requirements* – The Advertisement or Invitation to Bid, Instructions to Bidders, bid security of acceptable form, if any, and the Bid Form with any supplements.
 9. *Change Order* – A document recommended by Engineer which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, issued on or after the Effective Date of the Agreement.

10. *Claim* – A demand or assertion by Owner or Contractor seeking an adjustment of Contract Price or Contract Times, or both, or other relief with respect to the terms of the Contract. A demand for money or services by a third party is not a Claim.
11. *Contract* – The entire and integrated written agreement between the Owner and Contractor concerning the Work. The Contract supersedes prior negotiations, representations, or agreements, whether written or oral.
12. *Contract Documents* – Those items so designated in the Agreement. Only printed or hard copies of the items listed in the Agreement are Contract Documents. Approved Shop Drawings, other Contractor's submittals, and the reports and drawings of subsurface and physical conditions are not Contract Documents.
13. *Contract Price* – The moneys payable by Owner to Contractor for completion of the Work in accordance with the Contract Documents as stated in the Agreement (subject to the provisions of Paragraph 11.03 in the case of Unit Price Work).
14. *Contract Times* – The number of days or the dates stated in the Agreement to: (i) achieve Milestones, if any, (ii) achieve Substantial Completion; and (iii) complete the Work so that it is ready for final payment as evidenced by Engineer's written recommendation of final payment.
15. *Contractor* or *CONTRACTOR* – The individual or entity with whom Owner has entered into the Agreement.
16. *Cost of the Work* – See Paragraph 11.01.A for definition.
17. *Drawings* – That part of the Contract Documents prepared or approved by Engineer which graphically shows the scope, extent, and character of the Work to be performed by Contractor. Shop Drawings and other Contractor submittals are not Drawings as so defined.
18. *Effective Date of the Agreement* – The date indicated in the Agreement on which it becomes effective, but if no such date is indicated, it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.
19. *Engineer* or *ENGINEER* – The individual or entity named as such in the Agreement.
20. *Field Order* – A written order issued by Engineer which requires minor changes in the Work but which does not involve a change in the Contract Price or the Contract Times.
21. *General Requirements* – Sections of Division 01 of the Specifications.

22. *Hazardous Environmental Condition* – The presence at the Site of Asbestos, PCBs, Petroleum, Hazardous Waste, or Radioactive Material in such quantities or circumstances that may present a substantial danger to persons or property exposed thereto.
23. *Hazardous Waste* – The term Hazardous Waste shall have the meaning provided in Section 1004 of the Solid Waste Disposal Act (42 USC Section 6903) as amended from time to time.
24. *Laws and Regulations; Laws or Regulations* – Any and all applicable laws, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.
25. *Liens* – Charges, security interests, or encumbrances upon Project funds, real property, or personal property.
26. *Milestone* – A principal event specified in the Contract Documents relating to an intermediate completion date or time prior to Substantial Completion of all the Work.
27. *Notice of Award* – The written notice by Owner to the Successful Bidder stating that upon timely compliance by the Successful Bidder with the conditions precedent listed therein, Owner will sign and deliver the Agreement.
28. *Notice to Proceed* – A written notice given by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work under the Contract Documents.
29. *Owner or OWNER* – The individual or entity with whom Contractor has entered into the Agreement and for whom the Work is to be performed.
30. *PCBs* – Polychlorinated biphenyls.
31. *Petroleum* – Petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute), such as oil, petroleum, fuel oil, oil sludge, oil refuse, gasoline, kerosene, and oil mixed with other non-Hazardous Waste and crude oils.
32. *Progress Schedule* – A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising the Contractor's plan to accomplish the Work within the Contract Times.
33. *Project* – The total construction of which the Work to be performed under the Contract Documents may be the whole, or a part.

34. *Project Manual* – The bound documentary information prepared for bidding and constructing the Work. A listing of the contents of the Project Manual, which may be bound in one or more volumes, is contained in the table(s) of contents.
35. *Radioactive Material* – Source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954 (42 USC Section 2011 et seq.) as amended from time to time.
36. *Resident Project Representative* – The authorized representative of Engineer who may be assigned to the Site or any part thereof.
37. *Samples* – Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.
38. *Schedule of Submittals* – A schedule, prepared and maintained by Contractor, of required submittals and the time requirements to support scheduled performance of related construction activities.
39. *Schedule of Values* – A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.
40. *Shop Drawings* – All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work.
41. *Site* – Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements for access thereto, and such other lands furnished by Owner which are designated for the use of Contractor.
42. *Specifications* – That part of the Contract Documents consisting of written requirements for materials, equipment, systems, standards and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable thereto.
43. *Subcontractor* – An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work at the Site.
44. *Substantial Completion* – The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms "substantially complete" and

“substantially completed” as applied to all or part of the Work refer to Substantial Completion thereof.

- 45. *Successful Bidder* – The Bidder submitting a responsive Bid to whom Owner makes an award.
- 46. *Supplementary Conditions* – That part of the Contract Documents which amends or supplements these General Conditions.
- 47. *Supplier* – A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or Subcontractor.
- 48. *Underground Facilities* – All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.
- 49. *Unit Price Work* – Work to be paid for on the basis of unit prices.
- 50. *Work* – The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction, and furnishing, installing, and incorporating all materials and equipment into such construction, all as required by the Contract Documents.
- 51. *Work Change Directive* – A written statement to Contractor issued on or after the Effective Date of the Agreement and signed by Owner and recommended by Engineer ordering an addition, deletion, or revision in the Work, or responding to differing or unforeseen subsurface or physical conditions under which the Work is to be performed or to emergencies. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the change ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Times.

1.02 Terminology

- A. The words and terms referenced in this Paragraph 1.02 are not defined but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.
- B. *Intent of Certain Terms or Adjectives*

1. The Contract Documents include the terms “as allowed”, “as approved”, “as ordered”, “as directed” or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives “reasonable,” “suitable,” “acceptable,” “proper,” “satisfactory,” or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action or determination will be solely to evaluate, in general, the Work for compliance with information in the Contract Documents and with the design concept of the Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of Paragraph 9.09 or any other provision of the Contract Documents.

C. *Day*

1. The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.

D. *Defective*

1. The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:
 - a. does not conform to the Contract Documents, or
 - b. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents, or
 - c. has been damaged prior to Engineer’s recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 14.04 or 14.05).

E. *Furnish, Install, Perform, Provide*

1. The word “furnish,” when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.
2. The word “install,” when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.

3. The words “perform” or “provide,” when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.
 4. When “furnish,” “install,” “perform,” or “provide” is not used in connection with services, materials, or equipment in a context clearly requiring an obligation of Contractor, “provide” is implied.
- F. Unless stated otherwise in the Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

ARTICLE 2 – PRELIMINARY MATTERS

2.01 Delivery of Bonds and Evidence of Insurance

- A. When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner such bonds as Contractor may be required to furnish.
- B. *Evidence of Insurance:* Before any Work at the Site is started, Contractor and Owner shall each deliver to the other, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance which either of them or any additional insured may reasonably request) which Contractor and Owner respectively are required to purchase and maintain in accordance with Article 5.

2.02 Copies of Documents

- A. Owner shall furnish to Contractor up to ten printed or hard copies of the Drawings and Project Manual. Additional copies will be furnished upon request at the cost of reproduction.

2.03 Commencement of Contract Times; Notice to Proceed

- A. The Contract Times will commence to run on the thirtieth day after the Effective Date of the Agreement or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Agreement.

2.04 Starting the Work

- A. Contractor shall start to perform the Work on the date when the Contract Times commence to run. No Work shall be done at the Site prior to the date on which the Contract Times commence to run.

2.05 *Before Starting Construction*

- A. *Preliminary Schedules:* Within 10 days after the Effective Date of the Agreement (unless otherwise specified in the General Requirements), Contractor shall submit to Engineer for timely review:
1. a preliminary Progress Schedule;
 2. a preliminary Schedule of Submittals; and
 3. a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

2.06 *Preconstruction Conference; Designation of Authorized Representative*

- A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in Paragraph 2.05.A, procedures for handling Shop Drawings and other submittals, processing Applications for Payment, and maintaining required records.
- B. At this conference Owner and Contractor each shall designate in writing, a specific individual to act as its authorized representative with respect to the services and responsibilities under the Contract. Such individuals shall have the authority to transmit instructions, receive information, render decisions relative to the Contract and otherwise act on behalf of each respective party.

2.07 *Initial Acceptance of Schedules*

- A. At least 10 days before submission of the first Application for Payment a conference attended by Contractor, Engineer, and others as appropriate will be held to review for acceptability to Engineer as provided below the schedules submitted in accordance with Paragraph 2.05.A. Contractor shall have an additional 10 days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to Contractor until acceptable schedules are submitted to Engineer.
1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work nor interfere with or relieve Contractor from Contractor's full responsibility therefor.

2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.
3. Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to component parts of the Work.

ARTICLE 3 – CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

3.01 Intent

- A. The Contract Documents are complementary; what is required by one is as binding as if required by all.
- B. It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents. Any labor, documentation, services, materials, or equipment that reasonably may be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the indicated result will be provided whether or not specifically called for at no additional cost to Owner.
- C. Clarifications and interpretations of the Contract Documents shall be issued by Engineer as provided in Article 9.

3.02 Reference Standards

- A. Standards, Specifications, Codes, Laws, and Regulations
 1. Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard, specification, manual, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Agreement if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.
 2. No provision of any such standard, specification, manual or code, or any instruction of a Supplier shall be effective to change the duties or responsibilities of Owner, Contractor, or Engineer, or any of their subcontractors, consultants, agents, or employees from those set forth in the Contract Documents. No such provision or instruction shall be effective to assign to Owner, Engineer, or any of their officers, directors, members, partners, employees, agents, consultants or subcontractors any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.

3.03 *Reporting and Resolving Discrepancies*

A. Reporting Discrepancies

1. *Contractor's Review of Contract Documents Before Starting Work:* Before undertaking each part of the Work, Contractor shall carefully study and compare the Contract Documents and check and verify pertinent figures therein and all applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy which Contractor discovers or has actual knowledge of and shall obtain a written interpretation or clarification from Engineer before proceeding with any Work affected thereby.
2. *Contractor's Review of Contract Documents During Performance of Work:* If, during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents or between the Contract Documents and
 - a) any applicable Law or Regulation,
 - b) any standard, specification, manual or code, or,
 - c) any instruction of any Supplierthen Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 6.16.A) until an amendment or supplement to the Contract Documents has been issued by one of the methods indicated in Paragraph 3.04.
3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor had actual knowledge thereof.

B. *Resolving Discrepancies*

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between the provisions of the Contract Documents and:
 - a. the provisions of any standard, specification, manual, code, or the instruction of any Supplier (whether or not specifically incorporated by reference in the Contract Documents); or
 - b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

3.04 Amending and Supplementing Contract Documents

- A. The Contract Documents may be amended to provide for additions, deletions, and revisions in the Work or to modify the terms and conditions thereof by either a Change Order or a Work Change Directive.
- B. The requirements of the Contract Documents may be supplemented, and minor variations and deviations in the Work may be authorized, by one or more of the following ways:
 - 1. a Field Order;
 - 2. Engineer's approval of a Shop Drawing or Sample; (subject to the provisions of Paragraph 6.17.D.3); or
 - 3. Engineer's written interpretation or clarification.

3.05 Reuse of Documents

- A. Contractor and any Subcontractor or Supplier shall not:
 - 1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or Engineer's consultants, including electronic media editions; or
 - 2. reuse any such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaptation by Engineer.
- B. The prohibitions of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein shall preclude Contractor from retaining copies of the Contract Documents for record purposes.

3.06 Electronic Data

- A. Unless otherwise stated in the Supplementary Conditions, the data furnished by Owner or Engineer to Contractor or by Contractor to Owner or Engineer that may be relied upon are limited to the printed copies (also known as hard copies). Files in electronic media format of text, data, graphics, or other types are furnished only for the convenience of the receiving party. Any conclusion or information obtained or derived from such electronic files will be at the user's sole risk. If there is a discrepancy between the electronic files and the hard copies, the hard copies govern.
- B. Because data stored in electronic media format can deteriorate or be modified

inadvertently or otherwise without authorization of the data's creator, the party receiving electronic files agrees that it will perform acceptance tests or procedures within 60 days, after which the receiving party shall be deemed to have accepted the data thus transferred. Any errors detected within the 60-day acceptance period will be corrected by the transferring party.

- C. When transferring documents in electronic media format, the transferring party makes no representations as to long term compatibility, usability, or readability of documents resulting from the use of software application packages, operating systems, or computer hardware differing from those used by the data's creator.

ARTICLE 4 – AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS; REFERENCE POINTS

4.01 Availability of Lands

- A. Owner shall furnish the Site. Owner shall notify Contractor of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work. Owner will obtain in a timely manner and pay for easements for permanent structures or permanent changes in existing facilities. If Contractor and Owner are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, as a result of any delay in Owner's furnishing the Site or a part thereof, Contractor may make a Claim therefor as provided in Paragraph 10.05.
- B. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

4.02 Subsurface and Physical Conditions

- A. *Reports and Drawings:* The Supplementary Conditions identify:
 - 1. those reports of explorations and tests of subsurface conditions at or contiguous to the Site; that Engineer has used in preparing the Contract Documents; and
 - 2. those drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) that Engineer has used in preparing the Contract Documents.
- B. *Limited Reliance by Contractor on Technical Data Authorized:* Contractor may rely on the general accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants or

subcontractors with respect to:

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto; or
2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or
3. any Contractor interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions, or information.

4.03 Differing Subsurface or Physical Conditions

A. *Notice:* If Contractor believes that any subsurface or physical condition that is uncovered or revealed either:

1. is of such a nature as to establish that any "technical data" on which Contractor is entitled to rely as provided in Paragraph 4.02 is materially inaccurate; or
2. is of such a nature as to require a change in the Contract Documents; or
3. differs materially from that shown or indicated in the Contract Documents; or
4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except as aforesaid) until receipt of written order to do so.

B. *Engineer's Review:* After receipt of written notice as required by Paragraph 4.03.A, Engineer will promptly review the pertinent condition, determine the necessity of Owner's obtaining additional exploration or tests with respect thereto, and advise Owner in writing (with a copy to Contractor) of Engineer's findings and conclusions.

C. *Possible Price and Times Adjustments*

1. The Contract Price or the Contract Times, or both, will be equitably adjusted to the extent that the existence of such differing subsurface or physical condition causes an increase or decrease in Contractor's cost of, or time required for, performance

of the Work; subject, however, to the following:

- a. such condition must meet any one or more of the categories described in Paragraph 4.03.A; and
 - b. with respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraphs 9.07 and 11.03.
2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times if:
- a. Contractor knew of the existence of such conditions at the time Contractor made a final commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract; or
 - b. the existence of such condition could reasonably have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such final commitment; or
 - c. Contractor failed to give the written notice as required by Paragraph 4.03.A.
3. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, a Claim may be made therefor as provided in Paragraph 10.05. However, neither Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants or subcontractors shall be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.

4.04 *Underground Facilities*

- A. *Shown or Indicated:* The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the Site is based on information and data furnished to Owner or Engineer by the owners of such Underground Facilities, including Owner, or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:
1. Owner and Engineer shall not be responsible for the accuracy or completeness of any such information or data provided by others; and
 2. the cost of all of the following will be included in the Contract Price, and Contractor shall have full responsibility for:

- a. reviewing and checking all such information and data,
- b. locating all Underground Facilities shown or indicated in the Contract Documents,
- c. coordination of the Work with the owners of such Underground Facilities, including Owner, during construction, and
- d. the safety and protection of all such Underground Facilities and repairing any damage thereto resulting from the Work.

B. *Not Shown or Indicated*

- 1. If an Underground Facility is uncovered or revealed at or contiguous to the Site which was not shown or indicated, or not shown or indicated with reasonable accuracy in the Contract Documents, Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer. Engineer will promptly review the Underground Facility and determine the extent, if any, to which a change is required in the Contract Documents to reflect and document the consequences of the existence or location of the Underground Facility. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.
- 2. If Engineer concludes that a change in the Contract Documents is required, a Work Change Directive or a Change Order will be issued to reflect and document such consequences. An equitable adjustment shall be made in the Contract Price or Contract Times, or both, to the extent that they are attributable to the existence or location of any Underground Facility that was not shown or indicated or not shown or indicated with reasonable accuracy in the Contract Documents and that Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment in Contract Price or Contract Times, Owner or Contractor may make a Claim therefor as provided in Paragraph 10.05.

4.05 *Reference Points*

- A. Owner shall provide engineering surveys to establish reference points for construction which in Engineer's judgment are necessary to enable Contractor to proceed with the Work. Contractor shall be responsible for laying out the Work, shall protect and preserve the established reference points and property monuments, and shall make no changes or relocations without the prior written approval of Owner. Contractor shall

report to Engineer whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

4.06 *Hazardous Environmental Condition at Site*

- A. *Reports and Drawings:* The Supplementary Conditions identify those reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at the Site.,
- B. *Limited Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the “technical data” contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such “technical data” is identified in the Supplementary Conditions. Except for such reliance on such “technical data,” Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants or subcontractors with respect to:
 - 1. the completeness of such reports and drawings for Contractor’s purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by Contractor and safety precautions and programs incident thereto; or
 - 2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or
 - 3. any Contractor interpretation of or conclusion drawn from any “technical data” or any such other data, interpretations, opinions or information.
- C. Contractor shall not be responsible for any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work. Contractor shall be responsible for a Hazardous Environmental Condition created with any materials brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible.
- D. If Contractor encounters a Hazardous Environmental Condition or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, Contractor shall immediately: (i) secure or otherwise isolate such condition; (ii) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 6.16.A); and (iii) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any. Promptly after consulting with Engineer, Owner shall take such actions as are necessary to permit

Owner to timely obtain required permits and provide Contractor the written notice required by Paragraph 4.06.E.

- E. Contractor shall not be required to resume Work in connection with such condition or in any affected area until after Owner has obtained any required permits related thereto and delivered to Contractor written notice:: (i) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work; or (ii) specifying any special conditions under which such Work may be resumed safely. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, either party may make a Claim therefor as provided in Paragraph 10.05.
- F. If after receipt of such written notice Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of an adjustment in Contract Price or Contract Times as a result of deleting such portion of the Work, then either party may make a Claim therefor as provided in Paragraph 10.05. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 7.
- G. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06.G shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's sole negligence.
- H. The provisions of Paragraphs 4.02, 4.03, and 4.04 do not apply to a Hazardous Environmental Condition uncovered or revealed at the Site.

ARTICLE 5 – BONDS AND INSURANCE

5.01 Performance, Payment, and Other Bonds

- A. Contractor shall furnish performance and payment bonds, each in an amount at least equal to the Contract Price as security for the faithful performance and payment of all of Contractor's obligations under the Contract Documents. These bonds shall remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 13.07, whichever is later,

except as provided otherwise by Laws or Regulations or by the Contract Documents. Contractor shall also furnish such other bonds as are required by the Contract Documents.

- B. All bonds shall be in the form prescribed by the Contract Documents except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in the list of “Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies” as published in Circular 570 (amended) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. All bonds signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual’s authority to bind the surety. The evidence of authority shall show that it is effective on the date the agent or attorney-in-fact signed each bond.
- C. If the surety on any bond furnished by Contractor is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases to meet the requirements of Paragraph 5.01.B, Contractor shall promptly notify Owner and Engineer and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the requirements of Paragraphs 5.01.B and 5.02.

5.02 Licensed Sureties and Insurers

- A. All bonds and insurance required by the Contract Documents to be purchased and maintained by Owner or Contractor shall be obtained from surety or insurance companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds or insurance policies for the limits and coverages so required. Such surety and insurance companies shall also meet such additional requirements and qualifications as may be provided in the Supplementary Conditions.

5.03 Certificates of Insurance

- A. Contractor shall deliver to Owner, with copies to each additional insured and loss payee identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by Owner or any other additional insured) which Contractor is required to purchase and maintain.
- B. Owner shall deliver to Contractor, with copies to each additional insured and loss payee identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by Contractor or any other additional insured) which Owner is required to purchase and maintain.
- C. Failure of Owner to demand such certificates or other evidence of Contractor’s full compliance with these insurance requirements or failure of Owner to identify a deficiency in compliance from the evidence provided shall not be construed as a waiver of Contractor’s obligation to maintain such insurance.

- D. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor.
- E. The insurance and insurance limits required herein shall not be deemed as a limitation on Contractor's liability under the indemnities granted to Owner in the Contract Documents.

5.04 *Contractor's Liability Insurance*

- A. Contractor shall purchase and maintain such insurance as is appropriate for the Work being performed and as will provide protection from claims set forth below which may arise out of or result from Contractor's performance of the Work and Contractor's other obligations under the Contract Documents, whether it is to be performed by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable:
 - 1. claims under workers' compensation, disability benefits, and other similar employee benefit acts;
 - 2. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees;
 - 3. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees;
 - 4. claims for damages insured by reasonably available personal injury liability coverage which are sustained:
 - a. by any person as a result of an offense directly or indirectly related to the employment of such person by Contractor, or
 - b. by any other person for any other reason;
 - 5. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom; and
 - 6. claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance or use of any motor vehicle.
- B. The policies of insurance required by this Paragraph 5.04 shall:
 - 1. with respect to insurance required by Paragraphs 5.04.A.3 through 5.04.A.6 inclusive, be written on an occurrence basis, include as additional insureds

(subject to any customary exclusion regarding professional liability) Owner and Engineer, and any other individuals or entities identified in the Supplementary Conditions, all of whom shall be listed as additional insureds, and include coverage for the respective officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of all such additional insureds, and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby;

2. include at least the specific coverages and be written for not less than the limits of liability provided in the Supplementary Conditions or required by Laws or Regulations, whichever is greater;
3. include contractual liability insurance covering Contractor's indemnity obligations under Paragraphs 6.11 and 6.20;
4. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other additional insured identified in the Supplementary Conditions to whom a certificate of insurance has been issued (and the certificates of insurance furnished by the Contractor pursuant to Paragraph 5.03 will so provide);
5. remain in effect at least until final payment and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work in accordance with Paragraph 13.07; and
6. include completed operations insurance;
 - a. such insurance shall remain in effect for at least two years after final payment, and
 - b. Contractor shall furnish Owner and each other additional insured identified in the Supplementary Conditions, to whom a certificate of insurance has been issued, evidence satisfactory to Owner and any such additional insured of continuation of such insurance at final payment and one year thereafter.

5.05 Owner's Liability Insurance

- A. In addition to the insurance required to be provided by Contractor under Paragraph 5.04, Owner, at Owner's option, may purchase and maintain at Owner's expense Owner's own liability insurance as will protect Owner against claims which may arise from operations under the Contract Documents.

5.06 (Not Used)

5.07 (Not Used)

5.08 (Not Used)

5.09 (Not Used)

5.10 Acceptance of Bonds and Insurance; Option to Replace

- A. If either Owner or Contractor has any objection to the coverage afforded by or other provisions of the bonds or insurance required to be purchased and maintained by the other party in accordance with Article 5 on the basis of non-conformance with the Contract Documents, the objecting party shall so notify the other party in writing within 10 days after receipt of the certificates (or other evidence requested) required by Paragraph 2.01.B. Owner and Contractor shall each provide to the other such additional information in respect of insurance provided as the other may reasonably request. If either party does not purchase or maintain all of the bonds and insurance required of such party by the Contract Documents, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage. Without prejudice to any other right or remedy, the other party may elect to obtain equivalent bonds or insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and a Change Order shall be issued to adjust the Contract Price accordingly.

ARTICLE 6 – CONTRACTOR'S RESPONSIBILITIES

6.01 Supervision and Superintendence

- A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction. Contractor shall not be responsible for the negligence of Owner or Engineer in the design or specification of a specific means, method, technique, sequence, or procedure of construction which is shown or indicated in and expressly required by the Contract Documents.
- B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who shall not be replaced without written notice to Owner and Engineer except under extraordinary circumstances. Unless the Owner shall otherwise agree in writing, the superintendent will be Contractor's representative at the Site and shall have authority to act on behalf of Contractor. All communications given to or

received from the superintendent shall be binding on Contractor.

6.02 Labor; Working Hours

- A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall at all times maintain good discipline and order at the Site.
- B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours. Contractor will not permit the performance of Work on a Saturday, Sunday, or any legal holiday without Owner's written consent (which will not be unreasonably withheld) given after prior written notice to Engineer.

6.03 Services, Materials, and Equipment

- A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start-up, and completion of the Work.
- B. All materials and equipment incorporated into the Work shall be as specified or, if not specified, shall be of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications shall expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.
- C. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

6.04 Progress Schedule

- A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.07 as it may be adjusted from time to time as provided below.
 - 1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.07) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times. Such adjustments will comply with any provisions of the General Requirements applicable thereto.
 - 2. Proposed adjustments in the Progress Schedule that will change the Contract

Times shall be submitted in accordance with the requirements of Article 12. Adjustments in Contract Times may only be made by a Change Order.

6.05 *Substitutes and “Or-Equals”*

A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the specification or description is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or “or-equal” item or no substitution is permitted, other items of material or equipment or material or equipment of other Suppliers may be submitted to Engineer for review under the circumstances described below.

1. *“Or-Equal” Items:* If in Engineer’s sole discretion an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, it may be considered by Engineer as an “or-equal” item, in which case review and approval of the proposed item may, in Engineer’s sole discretion, be accomplished without compliance with some or all of the requirements for approval of proposed substitute items. For the purposes of this Paragraph 6.05.A.1, a proposed item of material or equipment will be considered functionally equal to an item so named if:

a. in the exercise of reasonable judgment Engineer determines that:

- 1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics; and
- 2) it will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole; and
- 3) it has a proven record of performance and availability of responsive service; and

b. Contractor certifies that, if approved and incorporated into the Work:

- 1) there will be no increase in cost to the Owner or increase in Contract Times; and
- 2) it will conform substantially to the detailed requirements of the item named in the Contract Documents.

2. *Substitute Items*

- a. If in Engineer's sole discretion an item of material or equipment proposed by Contractor does not qualify as an "or-equal" item under Paragraph 6.05.A.1, it will be considered a proposed substitute item.
- b. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is essentially equivalent to that named and an acceptable substitute therefor. Requests for review of proposed substitute items of material or equipment will not be accepted by Engineer from anyone other than Contractor.
- c. The requirements for review by Engineer will be as set forth in Paragraph 6.05.A.2.d, as supplemented by the General Requirements and as Engineer may decide is appropriate under the circumstances.
- d. Contractor shall make written application to Engineer for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application:
 - 1) shall certify that the proposed substitute item will:
 - a) perform adequately the functions and achieve the results called for by the general design,
 - b) be similar in substance to that specified, and
 - c) be suited to the same use as that specified;
 - 2) will state:
 - a) the extent, if any, to which the use of the proposed substitute item will prejudice Contractor's achievement of Substantial Completion on time,
 - b) whether use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item, and
 - c) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty;
 - 3) will identify:
 - a) all variations of the proposed substitute item from that specified, and

- b) available engineering, sales, maintenance, repair, and replacement services; and
 - 4) shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including costs of redesign and claims of other contractors affected by any resulting change.
- B. *Substitute Construction Methods or Procedures:* If a specific means, method, technique, sequence, or procedure of construction is expressly required by the Contract Documents, Contractor may furnish or utilize a substitute means, method, technique, sequence, or procedure of construction approved by Engineer. Contractor shall submit sufficient information to allow Engineer, in Engineer's sole discretion, to determine that the substitute proposed is equivalent to that expressly called for by the Contract Documents. The requirements for review by Engineer will be similar to those provided in Paragraph 6.05.A.2.
- C. *Engineer's Evaluation:* Engineer will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to Paragraphs 6.05.A and 6.05.B. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No "or equal" or substitute will be ordered, installed or utilized until Engineer's review is complete, which will be evidenced by a Change Order in the case of a substitute and an approved Shop Drawing for an "or equal." Engineer will advise Contractor in writing of any negative determination.
- D. *Special Guarantee:* Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.
- E. *Engineer's Cost Reimbursement:* Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor pursuant to Paragraphs 6.05.A.2 and 6.05.B. Whether or not Engineer approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse Owner for the reasonable charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the reasonable charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.
- F. *Contractor's Expense:* Contractor shall provide all data in support of any proposed substitute or "or-equal" at Contractor's expense.

6.06 Concerning Subcontractors, Suppliers, and Others

- A. Contractor shall not employ any Subcontractor, Supplier, or other individual or entity (including those acceptable to Owner as indicated in Paragraph 6.06.B), whether initially or as a replacement, against whom Owner may have reasonable objection. Contractor shall not be required to employ any Subcontractor, Supplier, or other

individual or entity to furnish or perform any of the Work against whom Contractor has reasonable objection.

- B. If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, or other individuals or entities to be submitted to Owner in advance for acceptance by Owner by a specified date prior to the Effective Date of the Agreement, and if Contractor has submitted a list thereof in accordance with the Supplementary Conditions, Owner's acceptance (either in writing or by failing to make written objection thereto by the date indicated for acceptance or objection in the Bidding Documents or the Contract Documents) of any such Subcontractor, Supplier, or other individual or entity so identified may be revoked on the basis of reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity, and the Contract Price will be adjusted by the difference in the cost occasioned by such replacement, and an appropriate Change Order will be issued. No acceptance by Owner of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of any right of Owner or Engineer to reject defective Work.
- C. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor's own acts and omissions. Nothing in the Contract Documents:
 - 1. shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Owner or Engineer and any such Subcontractor, Supplier or other individual or entity; nor
 - 2. shall anything in the Contract Documents create any obligation on the part of Owner or Engineer to pay or to see to the payment of any moneys due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.
- D. Contractor shall be solely responsible for scheduling and coordinating the Work of Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work under a direct or indirect contract with Contractor.
- E. Contractor shall require all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work to communicate with Engineer through Contractor.
- F. The divisions and sections of the Specifications and the identifications of any Drawings shall not control Contractor in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.
- G. All Work performed for Contractor by a Subcontractor or Supplier will be pursuant to

an appropriate agreement between Contractor and the Subcontractor or Supplier which specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Owner and Engineer. Whenever any such agreement is with a Subcontractor or Supplier who is listed as a loss payee on the property insurance provided in Paragraph 5.06, the agreement between the Contractor and the Subcontractor or Supplier will contain provisions whereby the Subcontractor or Supplier waives all rights against Owner, Contractor, Engineer, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or loss payees (and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them) for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work. If the insurers on any such policies require separate waiver forms to be signed by any Subcontractor or Supplier, Contractor will obtain the same.

6.07 *Patent Fees and Royalties*

- A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if to the actual knowledge of Owner or Engineer its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by Owner in the Contract Documents.
- B. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

6.08 *Permits*

- A. Unless otherwise provided in the Supplementary Conditions, Contractor shall obtain and pay for all construction permits and licenses. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of opening of Bids, or, if there are no Bids, on the Effective Date of the Agreement. Owner shall pay all charges of utility owners for connections for providing permanent service to the Work.

6.09 *Laws and Regulations*

- A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.
- B. If Contractor performs any Work knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work. However, it shall not be Contractor's primary responsibility to make certain that the Specifications and Drawings are in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor's obligations under Paragraph 3.03.
- C. Changes in Laws or Regulations not known at the time of opening of Bids (or, on the Effective Date of the Agreement if there were no Bids) having an effect on the cost or time of performance of the Work shall be the subject of an adjustment in Contract Price or Contract Times. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Paragraph 10.05.

6.10 *Taxes*

- A. Contractor shall pay all sales, consumer, use, and other similar taxes required to be paid by Contractor in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

6.11 *Use of Site and Other Areas*

- A. *Limitation on Use of Site and Other Areas*
 - 1. Contractor shall confine construction equipment, the storage of materials and equipment, and the operations of workers to the Site and other areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and other areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for any damage to any such land or area, or to the owner or occupant thereof, or of any adjacent land or areas resulting from the performance of the Work.
 - 2. Should any claim be made by any such owner or occupant because of the performance of the Work, Contractor shall promptly settle with such other party by negotiation or otherwise resolve the claim by arbitration or other dispute

resolution proceeding or at law.

3. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused by or based upon Contractor's performance of the Work.
- B. *Removal of Debris During Performance of the Work:* During the progress of the Work Contractor shall keep the Site and other areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.
 - C. *Cleaning:* Prior to Substantial Completion of the Work, Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.
 - D. *Loading Structures:* Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

6.12 Record Documents

- A. Contractor shall maintain in a safe place at the Site one record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, and written interpretations and clarifications in good order and annotated to show changes made during construction. These record documents together with all approved Samples and a counterpart of all approved Shop Drawings will be available to Engineer for reference. Upon completion of the Work, these record documents, Samples, and Shop Drawings will be delivered to Engineer for Owner.

6.13 Safety and Protection

- A. Contractor shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons and property in the performance of their work nor for compliance with applicable safety Laws and Regulations. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:

1. all persons on the Site or who may be affected by the Work;
 2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and
 3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.
- B. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify owners of adjacent property and of Underground Facilities and other utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property.
- C. Contractor shall comply with the applicable requirements of Owner's safety programs that are applicable to the Work.
- D. Contractor shall inform Owner and Engineer of the specific requirements of Contractor's safety programs with which Owner's and Engineer's employees and representatives must comply while at the Site.
- E. All damage, injury, or loss to any property referred to in Paragraph 6.13.A.2 or 6.13.A.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).
- F. Contractor's duties and responsibilities for safety and for protection of the Work shall continue until such time as all the Work is completed and Engineer has issued a notice to Owner and Contractor in accordance with Paragraph 14.07.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

6.14 Safety Representative

- A. Contractor shall designate a qualified and experienced safety representative at the Site

whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

6.15 *Hazard Communication Programs*

- A. Contractor shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

6.16 *Emergencies*

- A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor is obligated to act to prevent threatened damage, injury, or loss. Contractor shall give Engineer prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby or are required as a result thereof. If Engineer determines that a change in the Contract Documents is required because of the action taken by Contractor in response to such an emergency, a Work Change Directive or Change Order will be issued.

6.17 *Shop Drawings and Samples*

- A. Contractor shall submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals (as required by Paragraph 2.07). Each submittal will be identified as Engineer may require.

1. *Shop Drawings*

- a. Submit number of copies specified in the General Requirements.
- b. Data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide and to enable Engineer to review the information for the limited purposes required by Paragraph 6.17.D.

2. *Samples*

- a. Submit number of Samples specified in the Specifications.
- b. Clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the submittal for the limited purposes required by Paragraph 6.17.D.

- B. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to Engineer's review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.

C. *Submittal Procedures*

1. Before submitting each Shop Drawing or Sample, Contractor shall have:
 - a. reviewed and coordinated each Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents.;
 - b. determined and verified all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;
 - c. determined and verified the suitability of all materials offered with respect to indicated use, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and
 - d. determined and verified all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto.
2. Each submittal shall bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review and approval of that submittal.
3. With each submittal, Contractor shall give Engineer specific written notice of any variations, that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be both a written communication separate from the Shop Drawing or Sample submittal; and, in addition, by a specific notation made on each Shop Drawing or Sample submitted to Engineer for review and approval of each such variation.

D. *Engineer's Review*

1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the Schedule of Submittals acceptable to Engineer. Engineer's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.
2. Engineer's review and approval will not extend to means, methods, techniques,

sequences, or procedures of construction (except where a particular means, method, technique, sequence, or procedure of construction is specifically and expressly called for by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.

3. Engineer's review and approval shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 6.17.C.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer's review and approval shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 6.17.C.1.

E. *Resubmittal Procedures*

1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous submittals.

6.18 *Continuing the Work*

- A. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as permitted by Paragraph 15.04 or as Owner and Contractor may otherwise agree in writing.

6.19 *Contractor's General Warranty and Guarantee*

- A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective for a minimum period of one (1) year. Engineer and its officers, directors, members, partners, employees, agents, consultants and subcontractors shall be entitled to rely on representation of Contractor's warranty and guarantee.
- B. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:
 1. abuse, modification, or improper maintenance or operation by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or
 2. normal wear and tear under normal usage.
- C. Contractor's obligation to perform and complete the Work in accordance with the

Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of Contractor's obligation to perform the Work in accordance with the Contract Documents:

1. observations by Engineer;
2. recommendation by Engineer or payment by Owner of any progress or final payment;
3. the issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;
4. use or occupancy of the Work or any part thereof by Owner;
5. any review and approval of a Shop Drawing or Sample submittal or the issuance of a notice of acceptability by Engineer;
6. any inspection, test, or approval by others; or
7. any correction of defective Work by Owner.

6.20 *Indemnification*

- A. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage:
 1. is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of real or personal property (other than the Work itself), including the loss of use resulting therefrom; and
 2. is caused by any act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable, regardless of whether or not caused in part by an individual or entity indemnified hereunder or whether liability is imposed upon such indemnified party by Laws or Regulations.
- B. In any and all claims against Owner or Engineer or any of their , officers, directors, members, partners, employees, agents, consultants, or subcontractors by any employee (or the survivor or personal representative of such employee) of Contractor,

- any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 6.20.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.
- C. The indemnification obligations of Contractor under Paragraph 6.20.A shall not be limited in any way by the amount or types of insurance provided by Contractor under Article 5 of the General Conditions.
 - D. The indemnification obligations of Contractor under Paragraph 6.20.A shall not extend to the sole negligence or willful misconduct of Owner or Engineer or of the officers, directors, members, partners, employees, agents, and consultants and subcontractors of each and any of them.

6.21 Delegation of Professional Design Services

- A. Contractor will not be required to provide professional design services unless such services are specifically required by the Contract Documents for a portion of the Work or unless such services are required to carry out Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. Contractor shall not be required to provide professional services in violation of applicable law.
- B. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of Contractor by the Contract Documents, Owner and Engineer will specify all performance and design criteria that such services must satisfy. Contractor shall cause such services or certifications to be provided by a properly licensed professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to Engineer.
- C. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications or approvals performed by such design professionals, provided Owner and Engineer have specified to Contractor all performance and design criteria that such services must satisfy.
- D. Pursuant to this Paragraph 6.21, Engineer's review and approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Engineer's review and approval of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 6.17.D.1.

- E. Contractor shall not be responsible for the adequacy of the performance or design criteria required by the Contract Documents.

ARTICLE 7 – OTHER WORK AT THE SITE

7.01 Related Work at Site

- A. Owner may perform other work related to the Project at the Site with Owner's employees, or through other direct contracts therefor, or have other work performed by utility owners. If such other work is not noted in the Contract Documents, then:
 - 1. written notice thereof will be given to Contractor prior to starting any such other work; and
 - 2. if Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times that should be allowed as a result of such other work, a Claim may be made therefor as provided in Paragraph 10.05.
- B. Contractor shall afford each other contractor who is a party to such a direct contract, each utility owner and Owner, if Owner is performing other work with Owner's employees, proper and safe access to the Site, provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work, and shall properly coordinate the Work with theirs. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering such work; provided, however, Contractor may cut or alter the work of others with the written consent of Engineer and the others whose work will be affected. The duties and responsibilities of Contractor under this Paragraph are for the benefit of such utility owners and other contractors to the extent that there are comparable provisions for the benefit of Contractor in said direct contracts between Owner and such utility owners and other contractors.
- C. If the proper execution or results of any part of Contractor's Work depends upon work performed by others under this Article 7, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.

7.02 Legal Relationships

- A. Paragraph 7.01.A is not applicable for utilities not under the control of Owner.
- B. Each other direct contract of Owner under Paragraph 7.01.A shall provide that the other contractor is liable to Owner and Contractor for the reasonable direct delay and disruption costs incurred by Contractor as a result of the other contractor's actions or inactions.
- C. Contractor shall be liable to Owner and any other contractor under direct contract to Owner for the reasonable direct delay and disruption costs incurred by such other contractor as a result of Contractor's action or inactions.

ARTICLE 8 – OWNER'S RESPONSIBILITIES

8.01 Communications to Contractor

- A. Except as otherwise provided in these General Conditions, Owner shall issue all communications to Contractor through Engineer.

8.02 Furnish Data

- A. Owner shall promptly furnish the data required of Owner under the Contract Documents.

8.03 Pay When Due

- A. Owner shall make payments to Contractor when they are due as provided in Paragraphs 14.02.C and 14.07.C.

8.04 Lands and Easements; Reports and Tests

- A. Owner's duties with respect to providing lands and easements and providing engineering surveys to establish reference points are set forth in Paragraphs 4.01 and 4.05. Paragraph 4.02 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of subsurface conditions and drawings of physical conditions relating to existing surface or subsurface structures at or contiguous to the Site.

8.05 Insurance

- A. Owner's responsibilities, if any, with respect to purchasing and maintaining liability and property insurance are set forth in Article 5.

8.06 *Change Orders*

- A. Owner is obligated to execute Change Orders as indicated in Paragraph 10.03.

8.07 *Inspections, Tests, and Approvals*

- A. Owner's responsibility with respect to certain inspections, tests, and approvals is set forth in Paragraph 13.03.B.

8.08 *Limitations on Owner's Responsibilities*

- A. The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Owner will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

8.09 *Undisclosed Hazardous Environmental Condition*

- A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 4.06.

8.10 *Evidence of Financial Arrangements*

- A. If and to the extent Owner has agreed to furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract Documents, Owner's responsibility in respect thereof will be as set forth in the Supplementary Conditions.

8.11 *Compliance With Safety Programs*

- A. While on the Site, Owner's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Owner has been informed pursuant to Paragraph 6.13.B.

ARTICLE 9 – ENGINEER'S STATUS DURING CONSTRUCTION

9.01 *Owner's Representative*

- A. Engineer will be Owner's representative during the construction period. The duties and responsibilities and the limitations of authority of Engineer as Owner's representative during construction are set forth in the Contract Documents and will not be changed without written consent of Owner and Engineer.

9.02 *Visits to Site*

- A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer's efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.
- B. Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 9.09. Particularly, but without limitation, during or as a result of Engineer's visits or observations of Contractor's Work, Engineer will not supervise, direct, or have control over Contractor's Work, nor shall Engineer have authority over or responsibility for the means, methods, techniques, sequences, or procedures of construction selected by Contractor, for safety precautions and programs incident to Contractor's Work in progress, nor for any failure of Contractor to comply with Laws and Regulations applicable to Contractor's furnishing and performing the Work.

9.03 *Project Representative*

- A. If Owner and Engineer agree, Engineer will furnish a Resident Project Representative to assist Engineer in providing more extensive observation of the Work. The authority and responsibilities of any such Resident Project Representative and assistants will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in Paragraph 9.09. If Owner designates another representative or agent to represent Owner at the Site who is not Engineer's consultant, agent or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.

9.04 *Authorized Variations in Work*

- A. Engineer may authorize minor variations in the Work from the requirements of the Contract Documents which do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. These may be accomplished by a Field Order and will be binding on Owner and also on Contractor, who shall perform the Work involved promptly. If Owner or Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both,

and the parties are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Paragraph 10.05.

9.05 Rejecting Defective Work

- A. Engineer will have authority to reject Work which Engineer believes to be defective, or that Engineer believes will not produce a completed Project that conforms to the Contract Documents or that will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Engineer will also have authority to require special inspection or testing of the Work as provided in Paragraph 13.04, whether or not the Work is fabricated, installed, or completed.

9.06 Shop Drawings, Change Orders and Payments

- A. In connection with Engineer's authority, and limitations thereof, as to Shop Drawings and Samples, see Paragraph 6.17.
- B. In connection with Engineer's authority, and limitations thereof, if any,
 - 1. as to design calculations and design drawings submitted in response to a delegation of professional design services, if any, see Paragraph 6.21;
 - 2. as to Change Orders, see Articles 10, 11, and 12; and
 - 3. as to Applications for Payment, see Article 14.

9.07 Determinations for Unit Price Work

- A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer's written decision thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, subject to the provisions of Paragraph 10.05.

9.08 Decisions on Requirements of Contract Documents and Acceptability of Work

- A. Engineer will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. All matters in question and other matters between Owner and Contractor arising prior to the date final payment is due relating to the acceptability of the Work, and the interpretation of the requirements of the Contract Documents pertaining to the performance of the Work, will be referred initially to Engineer in writing within 30 days of the event giving rise to the question.

- B. Engineer will, with reasonable promptness, render a written decision on the issue referred. If Owner or Contractor believes that any such decision entitles them to an adjustment in the Contract Price or Contract Times or both, a Claim may be made under Paragraph 10.05. The date of Engineer's decision shall be the date of the event giving rise to the issues referenced for the purposes of Paragraph 10.05.B.
- C. Engineer's written decision on the issue referred will be final and binding on Owner and Contractor, subject to the provisions of Paragraph 10.05.
- D. When functioning as interpreter and judge under this Paragraph 9.08, Engineer will not show partiality to Owner or Contractor and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity.

9.09 Limitations on Engineer's Authority and Responsibilities

- A. Neither Engineer's authority or responsibility under this Article 9 or under any other provision of the Contract Documents nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.
- B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.
- C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.
- D. Engineer's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Paragraph 14.07.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals that the results certified indicate compliance with the Contract Documents.
- E. The limitations upon authority and responsibility set forth in this Paragraph 9.09 shall also apply to the Resident Project Representative, if any, and assistants, if any.

9.10 *Compliance with Safety Programs*

- A. While on the Site, Engineer's employees and representatives shall comply with the specific applicable requirements of the Contractor's safety programs of which Engineer has been informed pursuant to Paragraph 6.13.C.

ARTICLE 10 – CHANGES IN THE WORK; CLAIMS

10.01 *Authorized Changes in the Work*

- A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work by a Change Order, or a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved which will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided).
- B. If Owner and Contractor are unable to agree on entitlement to, or on the amount or extent, if any, of an adjustment in the Contract Price or Contract Times, or both, that should be allowed as a result of a Work Change Directive, a Claim may be made therefor as provided in Paragraph 10.05.

10.02 *Unauthorized Changes in the Work*

- A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents as amended, modified, or supplemented as provided in Paragraph 3.04, except in the case of an emergency as provided in Paragraph 6.16 or in the case of uncovering Work as provided in Paragraph 13.04.B.

10.03 *Execution of Change Orders*

- A. Owner and Contractor shall execute appropriate Change Orders recommended by Engineer covering:
 - 1. changes in the Work which are:
 - a) ordered by Owner pursuant to Paragraph 10.01.A,
 - b) required because of acceptance of defective Work under Paragraph 13.08.A or Owner's correction of defective Work under Paragraph 13.09, or
 - c) agreed to by the parties;

2. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive; and
3. changes in the Contract Price or Contract Times which embody the substance of any written decision rendered by Engineer pursuant to Paragraph 10.05; provided that, in lieu of executing any such Change Order, an appeal may be taken from any such decision in accordance with the provisions of the Contract Documents and applicable Laws and Regulations, but during any such appeal, Contractor shall carry on the Work and adhere to the Progress Schedule as provided in Paragraph 6.18.A.

10.04 *Notification to Surety*

- A. If the provisions of any bond require notice to be given to a surety of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times), the giving of any such notice will be Contractor's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

10.05 *Claims*

- A. *Engineer's Decision Required:* All Claims, except those waived pursuant to Paragraph 14.09, shall be referred to the Engineer for decision. A decision by Engineer shall be required as a condition precedent to any exercise by Owner or Contractor of any rights or remedies either may otherwise have under the Contract Documents or by Laws and Regulations in respect of such Claims.
- B. *Notice:* Written notice stating the general nature of each Claim shall be delivered by the claimant to Engineer and the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto. The responsibility to substantiate a Claim shall rest with the party making the Claim. Notice of the amount or extent of the Claim, with supporting data shall be delivered to the Engineer and the other party to the Contract within 60 days after the start of such event (unless Engineer allows additional time for claimant to submit additional or more accurate data in support of such Claim). A Claim for an adjustment in Contract Price shall be prepared in accordance with the provisions of Paragraph 12.01.B. A Claim for an adjustment in Contract Times shall be prepared in accordance with the provisions of Paragraph 12.02.B. Each Claim shall be accompanied by claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant believes it is entitled as a result of said event. The opposing party shall submit any response to Engineer and the claimant within 30 days after receipt of the claimant's last submittal (unless Engineer allows additional time).
- C. *Engineer's Action:* Engineer will review each Claim and, within 30 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any,

take one of the following actions in writing:

1. deny the Claim in whole or in part,
 2. approve the Claim, or
 3. notify the parties that the Engineer is unable to resolve the Claim if, in the Engineer's sole discretion, it would be inappropriate for the Engineer to do so. For purposes of further resolution of the Claim, such notice shall be deemed a denial.
- D. In the event that Engineer does not take action on a Claim within said 30 days, the Claim shall be deemed denied.
- E. Engineer's written action under Paragraph 10.05.C or denial pursuant to Paragraphs 10.05.C.3 or 10.05.D will be final and binding upon Owner and Contractor, unless Owner or Contractor invoke the dispute resolution procedure set forth in Article 16 within 30 days of such action or denial.
- F. No Claim for an adjustment in Contract Price or Contract Times will be valid if not submitted in accordance with this Paragraph 10.05.

ARTICLE 11 – COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

11.01 *Cost of the Work*

- A. *Costs Included:* The term Cost of the Work means the sum of all costs, except those excluded in Paragraph 11.01.B, necessarily incurred and paid by Contractor in the proper performance of the Work. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, the costs to be reimbursed to Contractor will be only those additional or incremental costs required because of the change in the Work or because of the event giving rise to the Claim. Except as otherwise may be agreed to in writing by Owner, such costs shall be in amounts no higher than those prevailing in the locality of the Project, shall not include any of the costs itemized in Paragraph 11.01.B, and shall include only the following items:
1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor. Such employees shall include, without limitation, superintendents, foremen, and other personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, vacation and

holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by Owner.

2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts shall accrue to Owner. All trade discounts, rebates and refunds and returns from sale of surplus materials and equipment shall accrue to Owner, and Contractor shall make provisions so that they may be obtained.
3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, who will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 11.01.
4. Costs of special consultants (including but not limited to Engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.
5. Supplemental costs including the following:
 - a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.
 - b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.
 - c. Rentals of all construction equipment and machinery, and the parts thereof whether rented from Contractor or others in accordance with rental agreements approved by Owner with the advice of Engineer, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.
 - d. Sales, consumer, use, and other similar taxes related to the Work, and for which

Contractor is liable, imposed by Laws and Regulations.

- e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.
- f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with Paragraph 5.06.D), provided such losses and damages have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining Contractor's fee.
- g. The cost of utilities, fuel, and sanitary facilities at the Site.
- h. Minor expenses such as telegrams, long distance telephone calls, telephone service at the Site, express and courier services, and similar petty cash items in connection with the Work.
- i. The costs of premiums for all bonds and insurance Contractor is required by the Contract Documents to purchase and maintain.

B. *Costs Excluded:* The term Cost of the Work shall not include any of the following items:

- 1. Payroll costs and other compensation of Contractor's officers, executives, principals (of partnerships and sole proprietorships), general managers, safety managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 11.01.A.1 or specifically covered by Paragraph 11.01.A.4, all of which are to be considered administrative costs covered by the Contractor's fee.
- 2. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.
- 3. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.

4. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.
 5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraphs 11.01.A.
- C. *Contractor's Fee:* When all the Work is performed on the basis of cost-plus, Contractor's fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, Contractor's fee shall be determined as set forth in Paragraph 12.01.C.
- D. *Documentation:* Whenever the Cost of the Work for any purpose is to be determined pursuant to Paragraphs 11.01.A and 11.01.B, Contractor will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to Engineer an itemized cost breakdown together with supporting data.

11.02 *Allowances*

- A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.
- B. *Cash Allowances*
1. Contractor agrees that:
 - a. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and
 - b. Contractor's costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.
- C. *Contingency Allowance*
1. Contractor agrees that a contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.

- D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

11.03 *Unit Price Work*

- A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.
- B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work performed by Contractor will be made by Engineer subject to the provisions of Paragraph 9.07.
- C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.
- D. Owner or Contractor may make a Claim for an adjustment in the Contract Price in accordance with Paragraph 10.05 if:
 - 1. the quantity of any item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement; and
 - 2. there is no corresponding adjustment with respect to any other item of Work; and
 - 3. Contractor believes that Contractor is entitled to an increase in Contract Price as a result of having incurred additional expense or Owner believes that Owner is entitled to a decrease in Contract Price and the parties are unable to agree as to the amount of any such increase or decrease.

ARTICLE 12 – CHANGE OF CONTRACT PRICE; CHANGE OF CONTRACT TIMES

12.01 *Change of Contract Price*

- A. The Contract Price may only be changed by a Change Order. Any Claim for an adjustment in the Contract Price shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.
- B. The value of any Work covered by a Change Order or of any Claim for an adjustment

in the Contract Price will be determined as follows:

1. where the Work involved is covered by unit prices contained in the Contract Documents, by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 11.03); or
2. where the Work involved is not covered by unit prices contained in the Contract Documents, by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 12.01.C.2); or
3. where the Work involved is not covered by unit prices contained in the Contract Documents and agreement to a lump sum is not reached under Paragraph 12.01.B.2, on the basis of the Cost of the Work (determined as provided in Paragraph 11.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 12.01.C).

C. *Contractor's Fee:* The Contractor's fee for overhead and profit shall be determined as follows:

1. a mutually acceptable fixed fee; or
2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:
 - a. for costs incurred under Paragraphs 11.01.A.1 and 11.01.A.2, the Contractor's fee shall be 15 percent;
 - b. for costs incurred under Paragraph 11.01.A.3, the Contractor's fee shall be five percent;
 - c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraph 12.01.C.2.a and 12.01.C.2.b is that the Subcontractor who actually performs the Work, at whatever tier, will be paid a fee of 15 percent of the costs incurred by such Subcontractor under Paragraphs 11.01.A.1 and 11.01.A.2 and that any higher tier Subcontractor and Contractor will each be paid a fee of five percent of the amount paid to the next lower tier Subcontractor;
 - d. no fee shall be payable on the basis of costs itemized under Paragraphs 11.01.A.4, 11.01.A.5, and 11.01.B;
 - e. the amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in Contractor's fee by an amount equal to five percent of such net decrease; and

- f. when both additions and credits are involved in any one change, the adjustment in Contractor's fee shall be computed on the basis of the net change in accordance with Paragraphs 12.01.C.2.a through 12.01.C.2.e, inclusive.

12.02 *Change of Contract Times*

- A. The Contract Times may only be changed by a Change Order. Any Claim for an adjustment in the Contract Times shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.
- B. Any adjustment of the Contract Times covered by a Change Order or any Claim for an adjustment in the Contract Times will be determined in accordance with the provisions of this Article 12.

12.03 *Delays*

- A. Where Contractor is prevented from completing any part of the Work within the Contract Times due to delay beyond the control of Contractor, the Contract Times will be extended in an amount equal to the time lost due to such delay if a Claim is made therefor as provided in Paragraph 12.02.A. Delays beyond the control of Contractor shall include, but not be limited to, acts or neglect by Owner, acts or neglect of utility owners or other contractors performing other work as contemplated by Article 7, fires, floods, epidemics, abnormal weather conditions, or acts of God.
- B. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delays within the control of Contractor. Delays attributable to and within the control of a Subcontractor or Supplier shall be deemed to be delays within the control of Contractor.
- C. If Owner, Engineer, or utility owners performing other work for Owner as contemplated by Article 7, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
- D. If Contractor is delayed in the performance or progress of the Work by fire, flood, epidemic, abnormal weather conditions, acts of God, acts or failures to act of other contractors or utility owners, or other causes not the fault of and beyond control of Owner and Contractor, then Contractor shall be entitled to an equitable adjustment in Contract Times, if such adjustment is essential to Contractor's ability to complete the Work within the Contract Times. Such an adjustment shall be Contractor's sole and exclusive remedy for the delays described in this Paragraph 12.03.D.

- E. Owner and Engineer and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each of them shall not be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.

ARTICLE 13 – TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

13.01 *Notice of Defects*

- A. Prompt notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor. Defective Work may be rejected, corrected, or accepted as provided in this Article 13.

13.02 *Access to Work*

- A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and governmental agencies with jurisdictional interests will have access to the Site and the Work at reasonable times for their observation, inspection, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor's Site safety procedures and programs so that they may comply therewith as applicable.

13.03 *Tests and Inspections*

- A. Contractor shall give Engineer timely notice of readiness of the Work for all required inspections, tests, or approvals and shall cooperate with inspection and testing personnel to facilitate required inspections or tests.
- B. Owner shall employ and pay for the services of an independent testing laboratory to perform all inspections, tests, or approvals required by the Contract Documents except:
 - 1. for inspections, tests, or approvals covered by Paragraphs 13.03.C and 13.03.D below;
 - 2. that costs incurred in connection with tests or inspections conducted pursuant to Paragraph 13.04.B shall be paid as provided in said Paragraph 13.04.C; and
 - 3. as otherwise specifically provided in the Contract Documents.
- C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other

representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.

- D. Contractor shall be responsible for arranging and obtaining and shall pay all costs in connection with any inspections, tests, or approvals required for Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work; or acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work. Such inspections, tests, or approvals shall be performed by organizations acceptable to Owner and Engineer.
- E. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, Contractor shall if requested by Engineer, uncover such Work for observation.
- F. Uncovering Work as provided in Paragraph 13.03.E shall be at Contractor's expense unless Contractor has given Engineer timely notice of Contractor's intention to cover the same and Engineer has not acted with reasonable promptness in response to such notice.

13.04 *Uncovering Work*

- A. If any Work is covered contrary to the written request of Engineer, it must, if requested by Engineer, be uncovered for Engineer's observation and replaced at Contractor's expense.
- B. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, furnishing all necessary labor, material, and equipment.
- C. If it is found that the uncovered Work is defective, Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefor as provided in Paragraph 10.05.
- D. If, the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or

extent thereof, Contractor may make a Claim therefor as provided in Paragraph 10.05.

13.05 *Owner May Stop the Work*

- A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, Owner may order Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop the Work shall not give rise to any duty on the part of Owner to exercise this right for the benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

13.06 *Correction or Removal of Defective Work*

- A. Promptly after receipt of written notice, Contractor shall correct all defective Work, whether or not fabricated, installed, or completed, or, if the Work has been rejected by Engineer, remove it from the Project and replace it with Work that is not defective. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or removal (including but not limited to all costs of repair or replacement of work of others).
- B. When correcting defective Work under the terms of this Paragraph 13.06 or Paragraph 13.07, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.

13.07 *Correction Period*

- A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the terms of any applicable special guarantee required by the Contract Documents) or by any specific provision of the Contract Documents, any Work is found to be defective, or if the repair of any damages to the land or areas made available for Contractor's use by Owner or permitted by Laws and Regulations as contemplated in Paragraph 6.11.A is found to be defective, Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:
 - 1. repair such defective land or areas; or
 - 2. correct such defective Work; or
 - 3. if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, and
 - 4. satisfactorily correct or repair or remove and replace any damage to other Work,

to the work of others or other land or areas resulting therefrom.

- B. If Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others) will be paid by Contractor.
- C. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.
- D. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this Paragraph 13.07, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.
- E. Contractor's obligations under this Paragraph 13.07 are in addition to any other obligation or warranty. The provisions of this Paragraph 13.07 shall not be construed as a substitute for or a waiver of the provisions of any applicable statute of limitation or repose.

13.08 *Acceptance of Defective Work*

- A. If, instead of requiring correction or removal and replacement of defective Work, Owner (and, prior to Engineer's recommendation of final payment, Engineer) prefers to accept it, Owner may do so. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness) and for the diminished value of the Work to the extent not otherwise paid by Contractor pursuant to this sentence. If any such acceptance occurs prior to Engineer's recommendation of final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work, and Owner shall be entitled to an appropriate decrease in the Contract Price, reflecting the diminished value of Work so accepted. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefor as provided in Paragraph 10.05. If the acceptance occurs after such recommendation, an appropriate amount will be paid by Contractor to Owner.

13.09 *Owner May Correct Defective Work*

- A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work or to remove and replace rejected Work as required by Engineer in accordance with Paragraph 13.06.A, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, Owner may, after seven days written notice to Contractor, correct or remedy any such deficiency.
- B. In exercising the rights and remedies under this Paragraph 13.09, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, take possession of Contractor's tools, appliances, construction equipment and machinery at the Site, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this Paragraph.
- C. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 13.09 will be charged against Contractor, and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount of the adjustment, Owner may make a Claim therefor as provided in Paragraph 10.05. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.
- D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 13.09.

ARTICLE 14 – PAYMENTS TO CONTRACTOR AND COMPLETION

14.01 *Schedule of Values*

- A. The Schedule of Values established as provided in Paragraph 2.07.A will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments on account of Unit Price Work will be based on the number of units completed.

14.02 *Progress Payments*

A. Applications for Payments

1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that Owner has received the materials and equipment free and clear of all Liens and evidence that the materials and equipment are covered by appropriate property insurance or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.
2. Beginning with the second Application for Payment, each Application shall include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied on account to discharge Contractor's legitimate obligations associated with prior Applications for Payment.
3. The amount of retainage with respect to progress payments will be as stipulated in the Contract.

B. *Review of Applications*

1. Engineer will, within 10 days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to Owner or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.
2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations of the executed Work as an experienced and qualified design professional and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:
 - a. the Work has progressed to the point indicated;
 - b. the quality of the Work is generally in accordance with the Contract Documents

(subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, to the results of any subsequent tests called for in the Contract Documents, to a final determination of quantities and classifications for Unit Price Work under Paragraph 9.07, and to any other qualifications stated in the recommendation); and

- c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.
3. By recommending any such payment Engineer will not thereby be deemed to have represented that:
- a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract Documents; or
 - b. there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.
4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:
- a. to supervise, direct, or control the Work, or
 - b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or
 - c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work, or
 - d. to make any examination to ascertain how or for what purposes Contractor has used the moneys paid on account of the Contract Price, or
 - e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.
5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 14.02.B.2. Engineer may also refuse to recommend any such payment or, because of subsequently discovered evidence or the results of subsequent inspections or tests, revise or revoke any such payment recommendation previously made, to such extent as may be necessary in

Engineer's opinion to protect Owner from loss because:

- a. the Work is defective, or completed Work has been damaged, requiring correction or replacement;
- b. the Contract Price has been reduced by Change Orders;
- c. Owner has been required to correct defective Work or complete Work in accordance with Paragraph 13.09; or
- d. Engineer has actual knowledge of the occurrence of any of the events enumerated in Paragraph 15.02.A.

C. *Payment Becomes Due*

1. Ten days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended will (subject to the provisions of Paragraph 14.02.D) become due, and when due will be paid by Owner to Contractor.

D. *Reduction in Payment*

1. Owner may refuse to make payment of the full amount recommended by Engineer because:
 - a. claims have been made against Owner on account of Contractor's performance or furnishing of the Work;
 - b. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens;
 - c. there are other items entitling Owner to a set-off against the amount recommended; or
 - d. Owner has actual knowledge of the occurrence of any of the events enumerated in Paragraphs 14.02.B.5.a through 14.02.B.5.c or Paragraph 15.02.A.
2. If Owner refuses to make payment of the full amount recommended by Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, when Contractor remedies the reasons for such action.
3. Upon a subsequent determination that Owner's refusal of payment was not

justified, the amount wrongfully withheld shall be treated as an amount due as determined by Paragraph 14.02.C.1 and subject to interest as provided in the Agreement.

14.03 *Contractor's Warranty of Title*

- A. Contractor warrants and guarantees that title to all Work, materials, and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to Owner no later than the time of payment free and clear of all Liens.

14.04 *Substantial Completion*

- A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete (except for items specifically listed by Contractor as incomplete) and request that Engineer issue a certificate of Substantial Completion.
- B. Promptly after Contractor's notification, Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.
- C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a tentative certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment. Owner shall have seven days after receipt of the tentative certificate during which to make written objection to Engineer as to any provisions of the certificate or attached list. If, after considering such objections, Engineer concludes that the Work is not substantially complete, Engineer will within 14 days after submission of the tentative certificate to Owner notify Contractor in writing, stating the reasons therefor. If, after consideration of Owner's objections, Engineer considers the Work substantially complete, Engineer will within said 14 days execute and deliver to Owner and Contractor a definitive certificate of Substantial Completion (with a revised tentative list of items to be completed or corrected) reflecting such changes from the tentative certificate as Engineer believes justified after consideration of any objections from Owner.
- D. At the time of delivery of the tentative certificate of Substantial Completion, Engineer will deliver to Owner and Contractor a written recommendation as to division of responsibilities pending final payment between Owner and Contractor with respect to security, operation, safety, and protection of the Work, maintenance, heat, utilities, insurance, and warranties and guarantees. Unless Owner and Contractor agree otherwise in writing and so inform Engineer in writing prior to Engineer's issuing the definitive certificate of Substantial Completion, Engineer's aforesaid recommendation will be binding on Owner and Contractor until final payment.

- E. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the tentative list.

14.05 *Partial Utilization*

- A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions.
 - 1. Owner at any time may request Contractor in writing to permit Owner to use or occupy any such part of the Work which Owner believes to be ready for its intended use and substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner and Engineer will follow the procedures of Paragraph 14.04.A through D for that part of the Work.
 - 2. Contractor at any time may notify Owner and Engineer in writing that Contractor considers any such part of the Work ready for its intended use and substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.
 - 3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 14.04 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.
 - 4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 5.10 regarding property insurance.

14.06 *Final Inspection*

- A. Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, Engineer will promptly make a final inspection with Owner and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

14.07 *Final Payment*

A. *Application for Payment*

1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of inspection, marked-up record documents (as provided in Paragraph 6.12), and other documents, Contractor may make application for final payment following the procedure for progress payments.
2. The final Application for Payment shall be accompanied (except as previously delivered) by:
 - a. all documentation called for in the Contract Documents, including but not limited to the evidence of insurance required by Paragraph 5.04.B.6;
 - b. consent of the surety, if any, to final payment;
 - c. a list of all Claims against Owner that Contractor believes are unsettled; and
 - d. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of or Liens filed in connection with the Work.
3. In lieu of the releases or waivers of Liens specified in Paragraph 14.07.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that:
 - a) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and
 - b) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner might in any way be responsible, or which might in any way result in liens or other burdens on Owner's property have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any Lien.

B. *Engineer's Review of Application and Acceptance*

1. If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations

under the Contract Documents have been fulfilled, Engineer will, within ten days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of payment and present the Application for Payment to Owner for payment. At the same time Engineer will also give written notice to Owner and Contractor that the Work is acceptable subject to the provisions of Paragraph 14.09. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

C. *Payment Becomes Due*

1. Thirty days after the presentation to Owner of the Application for Payment and accompanying documentation, the amount recommended by Engineer, less any sum Owner is entitled to set off against Engineer's recommendation, including but not limited to liquidated damages, will become due and will be paid by Owner to Contractor.

14.08 *Final Completion Delayed*

- A. If, through no fault of Contractor, final completion of the Work is significantly delayed, and if Engineer so confirms, Owner shall, upon receipt of Contractor's final Application for Payment (for Work fully completed and accepted) and recommendation of Engineer, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance to be held by Owner for Work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if bonds have been furnished as required in Paragraph 5.01, the written consent of the surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by Contractor to Engineer with the Application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

14.09 *Waiver of Claims*

- A. The making and acceptance of final payment will constitute:
 1. a waiver of all Claims by Owner against Contractor, except Claims arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 14.06, from failure to comply with the Contract Documents or the terms of any special guarantees specified therein, or from Contractor's continuing obligations under the Contract Documents; and
 2. a waiver of all Claims by Contractor against Owner other than those previously made in accordance with the requirements herein and expressly acknowledged by Owner in writing as still unsettled.

ARTICLE 15 – SUSPENSION OF WORK AND TERMINATION

15.01 *Owner May Suspend Work*

- A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by notice in writing to Contractor and Engineer which will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be granted an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension if Contractor makes a Claim therefor as provided in Paragraph 10.05.

15.02 *Owner May Terminate for Cause*

- A. The occurrence of any one or more of the following events will justify termination for cause:
 - 1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the Progress Schedule established under Paragraph 2.07 as adjusted from time to time pursuant to Paragraph 6.04);
 - 2. Contractor's disregard of Laws or Regulations of any public body having jurisdiction;
 - 3. Contractor's disregard of the authority of Engineer; or
 - 4. Contractor's repeated violation in any substantial way of any provisions of the Contract Documents.
- B. If one or more of the events identified in Paragraph 15.02.A occur, Owner may, after giving Contractor (and surety) seven days written notice of its intent to terminate the services of Contractor:
 - 1. exclude Contractor from the Site, and take possession of the Work and of all Contractor's tools, appliances, construction equipment, and machinery at the Site, and use the same to the full extent they could be used by Contractor (without liability to Contractor for trespass or conversion);
 - 2. incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere; and
 - 3. complete the Work as Owner may deem expedient.

- C. If Owner proceeds as provided in Paragraph 15.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Owner arising out of or relating to completing the Work, such excess will be paid to Contractor. If such claims, costs, losses, and damages exceed such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this Paragraph Owner shall not be required to obtain the lowest price for the Work performed.
- D. Notwithstanding Paragraphs 15.02.B and 15.02.C, Contractor's services will not be terminated if Contractor begins within seven days of receipt of notice of intent to terminate to correct its failure to perform and proceeds diligently to cure such failure within no more than 30 days of receipt of said notice.
- E. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue. Any retention or payment of moneys due Contractor by Owner will not release Contractor from liability.
- F. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 5.01.A, the termination procedures of that bond shall supersede the provisions of Paragraphs 15.02.B, and 15.02.C.

15.03 *Owner May Terminate For Convenience*

- A. Upon seven days written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):
 - 1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;
 - 2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses;
 - 3. all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred in settlement of terminated

contracts with Subcontractors, Suppliers, and others; and

4. reasonable expenses directly attributable to termination.

- B. Contractor shall not be paid on account of loss of anticipated profits or revenue or other economic loss arising out of or resulting from such termination.

15.04 *Contractor May Stop Work or Terminate*

- A. If, through no act or fault of Contractor, (i) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (ii) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (iii) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon seven days written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the Contract and recover from Owner payment on the same terms as provided in Paragraph 15.03.
- B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, seven days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this Paragraph 15.04 are not intended to preclude Contractor from making a Claim under Paragraph 10.05 for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this Paragraph.

ARTICLE 16 – DISPUTE RESOLUTION

16.01 *Methods and Procedures*

- A. Dispute resolution methods and procedures, if any, shall be as set forth in the Supplementary Conditions. If no method and procedure has been set forth, and subject to the provisions of Paragraph 10.05, Owner and Contractor may exercise such rights or remedies as either may otherwise have under the Contract Documents or by Laws or Regulations in respect of any dispute.

ARTICLE 17 – MISCELLANEOUS

17.01 *Giving Notice*

- A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if:

1. delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or
2. delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

17.02 *Computation of Times*

- A. When any period of time is referred to in the Contract Documents by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

17.03 *Cumulative Remedies*

- A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract Documents. The provisions of this Paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

17.04 *Survival of Obligations*

- A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract Documents, as well as all continuing obligations indicated in the Contract Documents, will survive final payment, completion, and acceptance of the Work or termination or completion of the Contract or termination of the services of Contractor.

17.05 *Controlling Law*

- A. This Contract is to be governed by the law of the state in which the Project is located.

17.06 *Headings*

- A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.

+ + END OF GENERAL CONDITIONS + +

SUPPLEMENTARY CONDITIONS

SCOPE

These Supplementary Conditions amend or supplement the General Conditions of the Construction Contract. All provisions of the General Conditions that are not so amended or supplemented remain in full force and effect.

The terms used in these Supplementary Conditions which are defined in the General Conditions have the meanings assigned to them in the General Conditions. Additional terms used in these Supplementary Conditions have the meanings stated below, which are applicable to the singular and plural thereof.

The address system used in these Supplementary Conditions conforms to the address system used in the General Conditions, with the prefix "SC" added thereto.

SC-1.01.A.36 Change the definition of *Resident Project Representative* to read as follows:

SC-1.01.A.36 *Resident Project Representative*: The Owner's representative who will provide day to day inspection services of construction activities.

SC-1.01.A.51 Change the last sentence in the definition of *Work Change Directive* to read as follows:

"A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the change ordered or documented by a Work Change Directive will be incorporated in a subsequently issued IFCA or Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Times."

SC-1.01.A.52 Add the following definition:

1.01.A.52 *Interim Field Change Agreement (IFCA)* - A document signed by the Engineer, Contractor, Owner and Owner's Representative documenting a change to the Work, which does not result in the total contract price exceeding the amount specified in the contract. An IFCA will authorize re-distribution of existing contract amounts or use of Owner's Allowance funds.

SC-2.03.A Delete paragraph A in its entirety and replace with the following:

A. The Contract Times will commence to run on the thirtieth day after the Effective Date of the Agreement or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Agreement.

SC-4.03, A. Change the last paragraph to read as follows:

“then Contractor shall, within seven (7) days after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except as aforesaid) until receipt of written order to do so.

SC-4.06 Delete Paragraphs 4.06.A and 4.06.B in their entirety and insert the following:

SC-4.06.A. In the preparation of the Drawings and Specifications, Engineer has not utilized any report or drawing related to a Hazardous Environmental Condition identified at the Site.

SC-4.06.B (Not Used)

SC- Article 5 Replace the entire article with the following:

Before performing any work, the Contractor shall procure and maintain, during the life of the Contract, insurance listed below. The policies of insurance shall be primary and written on forms acceptable to the City and placed with insurance carriers approved and licensed by the Insurance Department in the State of Florida and meet a minimum financial AM Best and Company rating of no less than A:VII. No changes are to be made to these specifications without prior written specific approval by the City.

1. The City of Venice is to be specifically included as an **ADDITIONAL INSURED** for **Commercial General Liability** and **Business Auto Policy**.
2. The City of Venice shall be named as Certificate Holder. *Please Note that the Certificate Holder should read as follows:*

*The City of Venice
401 W. Venice Avenue
Venice, FL 34285*

No City Division, Department, or individual name should appear on the certificate. **NO OTHER FORMAT WILL BE ACCEPTABLE.**

3. The “Acord” certification of insurance form shall be used.
4. Required Coverage
 - e) **Commercial General Liability:** including but not limited to bodily injury, property damage, contractual liability, products and completed operations, and personal injury with limits of not less than \$ _____ per occurrence, \$ _____ aggregate covering all work performed under this Contract. Include broad form property damage

(provide insurance for damage to property under the care custody and control of the contractor)

- f) **Business Auto Policy:** including bodily injury and property damage for all vehicles owned, leased, hired and non-owned vehicles with limits of not less than \$1,000,000 combined single limit covering all work performed under this Contract.
- g) **Workers Compensation:** Contractor will provide Workers Compensation Insurance on behalf of all employees, including sub-contractors, who are to provide a service under this Contract, as required under Florida Law, Chapter 440, and Employers Liability with limits of not less than \$100,000 per employee per accident; \$500,000 disease aggregate; and \$100,000 per employee per disease.
- h) **Installation Floater/Installation Builders' Risk-Property Coverage:** Policy to cover direct physical loss or damage to materials, supplies, machinery, and equipment being installed, constructed or rigged by the contractor in conjunction with its installation or construction. All items involved in the project including drainage/water sewer pipes, etc. (as included in description of project) need to be insured for the total completed replacement value. Coverage should include perils of fire, theft, vandalism, windstorm/hail, collapse and transit, sewer backup, testing, equipment breakdown, waterborne property. Coverage shall start when the items to be installed are transported to City premises and remain in place until the interest of the contractors ceases or the City accepts possession whichever comes first. Coverage should apply to owned property and non-owned property in the contractor's care, custody and control. The installation coverage forms shall provide coverage for building materials and supplies at the construction site, in transit to the site and similar property intended for the construction project at other locations as necessary or because of lack of storage space at the construction site. Coverage should apply on a Primary basis and should include a Waiver of Subrogation. Contractor should be responsible for any deductibles.

5. Policy Form:

- a) All policies required by this Contract, with the exception of Workers Compensation, or unless specific approval is given by the City, are to be written on an occurrence basis, shall name the City of Venice, its Elected Officials, Officers, Agents, Employees as additional insured as their interest may appear under this Contract. Insurer(s), with the exception of Workers Compensation, shall agree to waive all rights of subrogation against the City of Venice, its Elected Officials, Officers, Agents, and Employees.
- b) Insurance requirements itemized in this Contract, and required of the Contractor, shall be provided on behalf of all subcontractors to cover their operations performed under this Contract. The Contractor shall be held responsible for any modifications, deviations, or omissions in these insurance requirements as they apply to subcontractors.
- c) Each insurance policy required by this Contract shall:
 - (1) apply separately to each insured against whom claim is made and suit is brought, except with respect to limits of the insurer's liability;

- (2) be endorsed to state that coverage shall not be suspended, voided or canceled by either party except after thirty (30) calendar days prior written notice by certified mail, return receipt requested, has been given to the City of Venice's Director of Administrative Services.
- d) The City shall retain the right to review, at any time, coverage form, and amount of insurance.
- e) The procuring of required policies of insurance shall not be construed to limit Contractor's liability nor to fulfill the indemnification provisions and requirements of this Contract.
- f) The Contractor shall be solely responsible for payment of all premiums for insurance contributing to the satisfaction of this Contract and shall be solely responsible for the payment of any deductible and/or retention to which such policies are subject, whether or not the City is an insured under the policy. In the event that claims in excess of the insured amounts provided herein are filed by reason of operations under the contract, the amount excess of such claims, or any portion thereof, may be withheld from any payment due or to become due to the contractor until such time the contractor shall furnish additional security covering such claims as may be determined by the City.
- g) Claims Made Policies will be accepted for professional and hazardous materials and such other risks as are authorized by the City. All Claims Made Policies contributing to the satisfaction of the insurance requirements herein shall have an extended reporting period option or automatic coverage of not less than two years. If provided as an option, the Contractor agrees to purchase the extended reporting period on cancellation or termination unless a new policy is affected with a retroactive date, including at least the last policy year.
- h) Certificates of Insurance evidencing Claims Made or Occurrence form coverage and conditions to this Contract, as well as the City's Bid Number and description of work, are to be furnished to the City's Director of Administrative Services, 401 West Venice Avenue, Venice, FL 34285, ten (10) business days prior to commencement of work and a minimum of thirty (30) calendar days prior to expiration of the insurance policy.
- i) Notices of Accidents and Notices of Claims associated with work being performed under this Contract, shall be provided to the Contractor's insurance company and the City's Director of Administrative Services, as soon as practicable after notice to the insured.
- k) All property losses shall be payable to, and adjusted with, the City.

SC-6.02.B Add new paragraphs immediately after Paragraph 6.02.B that are to read as follows:

SC-6.02.B.1 If it shall become absolutely necessary to perform Work at night or on Saturdays, Sundays, or legal holidays, written notice shall be submitted to Owner and Engineer at least 5 days in advance of the need for such Work. Owner will only consider the performance of such Work as can be performed satisfactorily under the conditions. Good lighting and all other necessary

facilities for carrying out and observing the Work shall be provided and maintained where such Work is being performed at night.

SC-6.02.B.2 If Owner authorizes Work during other than regular working hours, Contractor shall reimburse Owner for all Owner's additional costs associated with such Work, including, but not necessarily limited to, the overtime costs for Owner's, Engineer's, and Resident Project Representative's personnel on the Site and other additional costs assessed against or incurred by the Owner. At Owner's option, such additional costs may either be deducted from Contractor's progress payments or deducted from the retained amount prior to release following Substantial Completion.

SC-6.07.B Change the first sentence of Paragraph 6.07.B by replacing the term "Owner and Engineer" with the term "Owner, Engineer, and Resident Project Representative".

SC-6.11.A.3. Change the first sentence of Paragraph 6.11.A.3. by replacing the term "Owner and Engineer" with the term "Owner, Engineer, and Resident Project Representative".

SC-6.12 Add a new paragraph immediately after Paragraph 6.12.A, that is to read as follows:

SC-6.12.B Contractor will be required to review with Engineer the status of record documents in connection with the Engineer's review of an Application for Payment. Failure to maintain record documents current may be just cause for Engineer to recommend withholding of payments for Work performed.

SC-6.15 Add a new paragraph immediately after Paragraph 6.15.A that is to read as follows:

SC-6.15.B Contractor shall be responsible for coordinating exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with all Laws and Regulations. Contractor shall provide a centralized location for the maintenance of the material safety data sheets or other hazard communication information required to be made available by any employer on the Site. Location of the material safety data sheets or other hazard communication information shall be readily accessible to the employees of employers on the Site.

SC-6.17 Add the following new paragraphs immediately after Paragraph 6.17.E that are to read as follows:

SC-6.17.F Contractor shall furnish required submittals with sufficient information and accuracy to obtain required approval or acceptance of submittal with no more than two (2) submittals (initial submittal plus one re-submittal). Engineer will record Engineer's time for reviewing subsequent submittals of Shop Drawings, Samples, or other submittals or items requiring approval or acceptance, and Contractor shall reimburse Owner for Engineer's charges for such time.

SC-6.19.A Supplement Paragraph 6.19.A by adding, after the term, "Engineer" in the second sentence, the term "and Resident Project Representative".

SC-6.19.C.1. Supplement Paragraph 6.19.C.1. by adding, after the term, "Engineer" the term "or Resident Project Representative".

SC-6.20.A. Change the first sentence of Paragraph 6.20.A by replacing the term "Owner and Engineer" in the first sentence, with the term ", Owner, Engineer, and Resident Project Representative".

SC-6.20.B Change the first sentence of Paragraph 6.20.B by replacing the term "Owner or Engineer" with the term "Owner, Engineer or Resident Project Representative".

SC-7.03 Add a new paragraph immediately after Paragraph 7.02 that is to read as follows:

SC-7.03 Separate Contractor Claims

A. Should Contractor cause damage to the work or property of another contractor at the Site, or should any claim arising out of Contractor's performance of the Work at the Site be made by any other contractor against Contractor, Owner or Engineer or Resident Project Representative, Contractor, without involving any other party, shall either:

1. remedy the damage,
2. agree to compensate the other contractor for remedy of the damage,
or
3. remedy the damage and attempt to settle with such other contractor by agreement, or otherwise resolve the dispute by arbitration or at law.

B. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner, Engineer, Resident Project Representative, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to, all fees and charges of engineers, architects, attorneys, and other

professionals, and all court or arbitration or other dispute resolution costs) arising directly, indirectly, or consequentially out of or relating to any claim or action, legal or equitable, brought by any other contractor against Owner or Engineer or Resident Project Representative to the extent said claim is based upon Contractor's performance of the Work.

- C. Should another contractor cause damage to the Work or property of Contractor at the Site or should the performance of work by any other contractor at the Site give rise to any other claim, Contractor shall not institute any action, legal or equitable, against Owner or Engineer or Resident Project Representative, or permit any action against any of them to be maintained and continued in its name or for its benefit in any court or before any arbiter which seeks to impose liability on or to recover damages from Owner or Engineer or Resident Project Representative on account of any such damage or claim.
- D. If Contractor is delayed at any time in performing or furnishing Work by any act or neglect of another contractor and Owner and Contractor are unable to agree as to the extent of any adjustment in Contract Times attributable thereto, Contractor may make a Claim therefore in accordance with Article 12. An extension of the Contract Times shall be Contractor's exclusive remedy with respect to Owner or Engineer or Resident Project Representative for any delay, disruption, interference, or hindrance caused by any other contractor.

SC-8.01.A. Amend paragraph 8.01.A. by adding after the term "Engineer" to words "or Resident Project Representative".

SC-9.03 Add a new paragraph immediately after Paragraph 9.03.A that is to read as follows:

SC-9.03.B Resident Project Representative (RPR) will be Owner's employee or agent at the Site, will act as directed by and under the supervision of the Owner, and will confer with the Owner and Engineer regarding RPR's actions. RPR's dealings in matters pertaining to the Work in general shall be with Engineer and Contractor keeping Owner advised as necessary. RPR's dealings with Subcontractors shall only be through or with the full knowledge and approval of Contractor. RPR shall generally communicate with Owner with the knowledge of the Engineer.

- 1. Duties and Responsibilities of RPR:
 - a. Schedules: Review the Progress Schedule, Schedule of Submittals, and Schedule of Values prepared by Contractor and consult with Owner and Engineer concerning acceptability.
 - b. Conferences and Meetings: Attend meetings with Contractor, such as preconstruction conferences, progress meetings, job conferences, and

other Project-related meetings, and prepare and circulate copies of minutes thereof.

c. Liaison:

- 1) Serve as Owner's and Engineer's liaison with Contractor, working principally through Contractor's superintendent, and assist in providing understanding of the intent of the Contract Documents as directed by the Engineer.
- 2) Assist in obtaining from Owner or Engineer additional details or information, when required for proper execution of the Work.

d. Shop Drawings and Samples:

- 1) Record date of receipt of Shop Drawings and Samples, that are received at the Site.
- 2) Receive Samples that are furnished at the Site by Contractor, and notify Engineer of availability of Samples for examination.
- 3) Advise Engineer and Contractor of the commencement of any Work requiring a Shop Drawing or Sample if the submittal has not been approved by Engineer.

e. Review of Work, Rejection of Defective Work, Inspections and Tests:

- 1) Conduct observations of the Work in progress on the Site to assist Engineer in determining if the Work is, in general, proceeding in accordance with the Contract Documents.
- 2) Report to Engineer when RPR believes that any Work is unsatisfactory, faulty, or defective or does not conform generally to the Contract Documents, or has been damaged, or does not meet the requirements of any inspection, test, or approval required to be made; and advise Engineer of Work that RPR believes should be corrected or rejected or should be uncovered for observation, or requires special testing, inspection, or approval.
- 3) Verify that tests, equipment, and systems startups, and operating and maintenance training are conducted in the presence of appropriate Owner's personnel, and that Contractor maintains adequate records thereof; and observe, record, and report to Engineer appropriate details relative to the test procedures and startups.
- 4) Accompany visiting inspectors representing public or other agencies having jurisdiction over the Project, record the results of these inspections and report to Engineer.

f. Interpretation of Contract Documents: Report to Engineer when clarifications and interpretations of the Contract Documents are needed and transmit to Contractor clarifications and interpretations as issued by Engineer.

g. Modifications: Consider and evaluate Contractor's suggestions for modifications to Drawings or Specifications and report with RPR's

recommendations to Engineer. Transmit to Contractor decisions issued by Engineer.

h. Records:

- 1) Maintain at the Site orderly files for correspondence, reports of job conferences, Shop Drawings and Samples, and reproductions of original Contract Documents including all Addenda, Change Orders, Work Change Directives, Field Orders, additional Drawings issued subsequent to the execution of the Agreement, Engineer's clarifications and interpretations of the Contract Documents, progress reports, and other Project-related documents.
- 2) Keep a record recording Contractor's hours, personnel and equipment on the Site, weather conditions, data relative to questions on Change Orders or changed conditions, list of visitors to the Site, daily activities, decisions, observations in general, and specific observations in more detail as in the case of observing test procedures; and send copies to Engineer.
- 3) Record names, addresses, and telephone numbers of all Contractors, Subcontractors, and major Suppliers of materials and equipment.

i. Reports:

- 1) Furnish Engineer periodic reports as required of progress of the Work and of Contractor's compliance with the Progress Schedule and Schedule of Submittals.
- 2) Consult with Engineer in advance of scheduled major tests, inspections, or start of important phases of the Work.
- 3) Report immediately to Engineer and Owner upon the occurrence of any Site accident, any Hazardous Environmental Condition, emergencies or acts of God endangering the Work, or property damage by fire or other cause.

j. Payment Requests: Review Applications for Payment with Contractor for compliance with the established procedure for their submission, and submit recommendations to Engineer, noting particularly the relationship of the payment requested to the Schedule of Values, Work completed, and materials and equipment delivered at the Site but not incorporated in the Work.

k. Certificates, Maintenance and Operation Manuals: During the course of the Work, verify that certificates, maintenance and operation manuals, and other data required by the Specifications to be assembled and furnished by Contractor are applicable to the items actually installed and in accordance with the Contract Documents, and have this material delivered to Engineer for review and forwarding to Owner prior to final payment for the Work.

l. Completion:

- 1) Before Engineer issues a certificate of Substantial Completion, submit to Contractor a list of observed items requiring completion or correction.
 - 2) Observe whether Contractor has arranged for inspections required by Laws and Regulations, including but not limited to those to be performed by public authorities having jurisdiction over the Work.
 - 3) Conduct final inspection in the company of Engineer, Owner, and Contractor, and prepare a final list of items to be completed or corrected.
 - 4) Observe that all items on final list have been completed or corrected and make recommendations to Engineer concerning acceptance of the Work.
2. The RPR shall not:
- a. Authorize any deviation from the Contract Documents or substitution of materials or equipment, including “or equal” items.
 - b. Exceed limitations of Engineer’s authority as set forth in the Contract Documents.
 - c. Undertake any of the responsibilities of Contractor, Subcontractors, or Contractor’s superintendent.
 - d. Advise on, issue directions relative to, or assume control over any aspect of the means, methods, techniques, sequences or procedures of construction, unless such advice or directions are specifically required by the Contract Documents.
 - e. Advise on, issue directions regarding, or assume control over safety precautions and programs in connection with the Work.
 - f. Accept Shop Drawing or Sample submittals from anyone other than Contractor.
 - g. Authorize Owner to occupy the Project in whole or in part.
 - h. Participate in specialized field or laboratory tests or inspections conducted by others except as specifically authorized by Engineer.

SC-9.08.A Change “30 days” in the last sentence to read “10 days”.

SC-10.05.B Delete paragraph B in its entirety and replace with the following:.

Notice: Written notice stating the general nature of each Claim shall be delivered by the claimant to Engineer and the other party to the Contract promptly (but in no event later than 10 days) after the start of the event giving rise thereto. The responsibility to substantiate a Claim shall rest with the party making the Claim. Notice of the amount or extent of the Claim, with supporting data shall be delivered to the Engineer and the other party to the Contract within 30 days after the start of such event (unless Engineer allows additional time for claimant to submit additional or more accurate data in support of such Claim). A Claim for an adjustment in Contract Price shall be prepared in accordance with the provisions of Paragraph 12.01.B. A Claim for an adjustment in Contract

Times shall be prepared in accordance with the provisions of Paragraph 12.02.B. Each Claim shall be accompanied by claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant believes it is entitled as a result of said event. The opposing party shall submit any response to Engineer and the claimant within 30 days after receipt of the claimant's last submittal (unless Engineer allows additional time).

- SC-12.01.C Delete the semicolon at the end of GC 12.01.C.2.c, and add the following:
- provided, however, that on any subcontracted work the total maximum fee to be paid by Owner to Contractor under this Paragraph shall be no greater than 27 percent of the costs incurred by the Subcontractor who actually performs the work;
- SC-12.03.C. Change the first sentence of Paragraph 12.03.C by replacing the term "Owner and Engineer" in the first sentence, with the term "Owner, Engineer, and Resident Project Representative".
- SC-12.03.E. Change the first sentence of Paragraph 12.03.E by replacing the term "Owner and Engineer" in the first sentence, with the term "Owner, Engineer, and Resident Project Representative".
- SC-13.01.A. Change the first sentence of Paragraph 13.01.A. by replacing the term "Owner or Engineer" with the term "Owner, Engineer, or Resident Project Representative".
- SC-13.03.A. Change the first sentence of Paragraph 13.03.A. by replacing the term "Engineer" with the term "Engineer and Resident Project Representative".
- SC-13.03.B. Delete Paragraph 13.03.B. and subparagraphs in their entirety and replace with the following:
- B. Contractor shall employ and pay for the services of an independent testing laboratory to perform all inspections, tests, or approvals required by the Contract Documents.
- SC-13.04.A. Delete Paragraph 13.04.A. in its entirety and replace with the following:
- A. If any Work is covered contrary to the written request of Engineer or Resident Project Representative, it must, if requested by Engineer or Resident Project Representative, be uncovered for Engineer's or Resident Project Representative's observation and replaced at Contractor's expense.
- SC-13.04.D. Change the words "If, the uncovered work is not found to be defective," to read "Unless the Contractor was provided with prior written request not to cover the work, if the uncovered work is not found to be defective,".

SC-14.02.A Add new paragraphs immediately after Paragraph 14.02.A.3 that are to read as follows:

SC-14.02.A.4. Owner shall make monthly progress payments on account of the Contract Price on the basis of Contractor's Applications for Payment as recommended by Engineer. Contractor's Applications for Payment will be due within 7 days after the last day of each month during performance of the Work. All progress payments will be on the basis of the progress of the Work measured by the Schedule of Values provided for in Paragraph 2.07.A of the General Conditions (and in the case of Unit Price Work, based on the number of units completed) or, in the event there is no Schedule of Values, as provided in the General Requirements. A progress payment will not be made whenever the value of the Work completed since the last previous progress payment is less than \$5,000.

1. Prior to Substantial Completion

- a. Progress payments will be made in the amount of up to 90 percent of the Work completed, (with the balance being retainage), less the aggregate of payments previously made and less such amounts as Engineer shall determine, or Owner may withhold, in accordance with Paragraph 14.02 of the General Conditions; and
- b. 90 percent of the cost of materials and equipment not incorporated in the Work but suitably stored (with the balance being retainage).

2. Upon Substantial Completion, Owner shall pay an amount sufficient to increase total payments to Contractor to 100 percent of the Work completed, less such amounts as Engineer shall determine in accordance with Paragraph 14.02.B.5 of the General Conditions and less 200 percent of Engineer's estimate of the value of Work to be completed or corrected as shown on the tentative list of items to be completed or corrected attached to the certificate of Substantial Completion.

SC-14.02.C. Replace the existing paragraph with the following:

All payments to Contractor shall be made in accordance with Florida's Local Government Prompt Payment Act.

SC-14.04.B. Change the terms "Owner, Contractor and Engineer" to read "Owner, Contractor, Engineer and Resident Project Representative".

SC-14.07.C. Replace the existing paragraph with the following:

All payments to Contractor shall be made in accordance with Florida's Local Government Prompt Payment Act.

SC-16.01 Add new paragraphs immediately after Paragraph 16.01.A that are to read as follows:

SC-16.01.B Either Owner or Contractor may request mediation of any Claim submitted to Engineer for a decision under Paragraph 10.05 before such decision becomes final and binding. The mediation will be governed by the Construction Industry Mediation Rules of the American Arbitration Association in effect as of the Effective Date of the Agreement. The request for mediation shall be submitted in writing to the American Arbitration Association and the other party to the Contract. Timely submission of the request shall stay the effect of Paragraph 10.05.E.

SC-16.01.C Owner and Contractor shall participate in the mediation process in good faith. The process shall be concluded within 60 days of filing of the request. The date of termination of the mediation shall be determined by application of the mediation rules referenced above.

SC-16.01.D If the Claim is not resolved by mediation, Engineer's action under Paragraph 10.05.C or a denial pursuant to Paragraphs 10.05.C.3 or 10.05.D shall become final and binding 30 days after termination of the mediation unless, within that time period, Owner or Contractor,

1. elects in writing to demand arbitration of the Claim, pursuant to Paragraph SC-16.02, or
2. agrees with the other party to submit the Claim to another dispute resolution process.

SC-16.02 Add a new paragraph immediately after Paragraph 16.01 that is to read as follows:

SC-16.02 *Arbitration*

- A. All Claims or counter claims, disputes, or other matters in question between Owner and Contractor arising out of or relating to the Contract Documents or the breach thereof (except for Claims that have been waived by the making or acceptance of final payment as provided by Paragraph 14.09), including but not limited to those not resolved under the provisions of Paragraph SC-16.01.B and SC-16.01.C will be decided by arbitration in accordance with Construction Industry Arbitration Rules of the American Arbitration Association, subject to the conditions and limitations of this Paragraph SC-16.02. This agreement to arbitrate and any other agreement or consent to arbitrate entered into will be specifically enforceable under the prevailing law of any court having jurisdiction.

- B. The demand for arbitration will be filed in writing with the other party to the Contract and with the selected arbitrator or arbitration provider, and a copy will be sent to Engineer for information. The demand for arbitration will be made within the 30-day period specified in Paragraph SC-16.01.D. and in all other cases within a reasonable time after the Claim or counter claim, dispute, or other matter in question has arisen, and in no event shall any such demand be made after the date when institution of legal or equitable proceedings based on such Claim or counter claim, dispute, or other matter in question would be barred by the applicable statute of limitations.
- C. No arbitration arising out of or relating to the Contract Documents shall include by consolidation, joinder, or in any other manner any individual or entity (including Engineer, Resident Project Representative, and the officers, directors, partners, employees, agents, or consultants of each and any of them) who is not party to this Contract unless:
 - 1. the inclusion of such other individual or entity is necessary if complete relief is to be afforded among those who are already parties to the arbitration; and
 - 2. such other individual or entity is substantially involved in a question of law or fact which is common to those who are already parties to the arbitration and which will arise in such proceedings, and
- D. The award rendered by the arbitrator(s) shall be:
 - 1. consistent with the agreement between the parties, and
 - 2. in writing, and shall include:
 - a. a concise breakdown of the award, and
 - b. a written explanation of the award specifically citing the Contract Document provisions deemed applicable and relied on in making the award.
- E. Subject to provisions of the Controlling Law relating to vacating or modifying an arbitration award, the award will be final. Judgment may be entered upon it in any court having jurisdiction thereof and it will not be subject to modification or appeal.
- F. The fees and expenses of the arbitrator(s) and any arbitration service shall be shared equally by Owner and Contractor.

SC-17.07 Add a new paragraph immediately after Paragraph 17.06 that is to read as follows:

SC-17.07 Confidential Information

- A. All Drawings, Specifications, technical data, and other information furnished to Contractor either by Owner or Engineer or developed by Contractor or others in connection with the Work are, and will remain, the property of Owner or Engineer, and shall not be copied or otherwise reproduced or used in any way except in connection with the Work, or disclosed to third parties or used in any manner detrimental to the interests of Owner or Engineer.
- B. The following information is not subject to the above confidentiality requirements:
 - 1. information in the public domain through no action of Contractor in breach of the Contract Documents; or
 - 2. information lawfully possessed by Contractor before receipt from Owner or Engineer; or
 - 3. information required to be disclosed by Laws or Regulations, or by a court or agency of competent jurisdiction. However, in the event Contractor shall be so required to disclose such information, Contractor shall, prior to disclosure, provide reasonable notice to Owner and Engineer, who shall have the right to interpose all objections Owner may have to the disclosure of such information.

SC-18 Add new Article immediately after Article 17, which is to read as follows:

ARTICLE SC-18 – STATUTORY REQUIREMENTS

SC-18.01 This Article contains portions of certain Laws or Regulations which, by provision of Laws or Regulations, are required to be included in the Contract Documents. The material included in this Article may not be complete or current. Contractor's obligation to comply with all Laws and Regulations applicable to the Work is set forth in Paragraph 6.09 of the General Conditions.

+ + END OF SPECIAL CONDITIONS + +

SECTION 01 11 13

SUMMARY OF WORK

PART 1 – GENERAL

1.1 SECTION INCLUDES

A. Table of Articles for this Section is:

<u>Article</u>	<u>Title</u>
1.1	Section Includes
1.2	Location and Description of Work
1.3	Other Construction Contracts
1.4	Work By Others
1.5	Work By Owner
1.6	Owner-furnished Equipment and Materials
1.7	Assigned Procurement Contracts
1.8	Sequence and Progress of Work
1.9	Contractor's Use of Site
1.10	Easements and Rights-of-Way
1.11	Notices to Owners and Authorities of Properties Adjacent to the Work
1.12	Salvage of Equipment and Materials
1.13	Partial Utilization by Owner

1.2 LOCATION AND DESCRIPTION OF WORK

- A. The Work is located at the site of the City of Venice Reverse Osmosis Water Treatment Plant (RO WTP) at 200 N. Warfield Ave. Venice, FL 34285.
- B. The work to be performed by the CONTRACTOR generally includes furnishing of all labor, equipment, materials, tools and services required to repair the interior of the existing North and South Clearwells at the City of Venice RO WTP. The specific areas of work include, but are not limited to items 1-7 listed below
1. Installing pneumatic plugs in the clearwell connecting pipes for BV Nos. 1 and 2 to allow for draining of the North or South Clearwell to complete valve replacement and concrete repair and recoating work. Contractor shall provide a suitable secondary containment method in addition to the pneumatic plugs, if necessary, to allow for draining of the North or South Clearwell for an extended time period to complete the valve replacement and clearwell interior repairs and recoating.
 2. Increasing the opening on one of the existing access hatches on the clearwell roof and provide a new expanded access hatch to facilitate replacement of one of the butterfly valves.

3. Replacing the existing large three access hatches on the clearwell roof.
 4. Replacing the existing three 36-inch butterfly valves, actuators, neck extensions, and valve sleeve covers on the clearwells with new 36" butterfly valves, actuators, neck extensions and valve sleeve covers.
 5. Completing structural and roofing repairs required for the replacement of the 36" butterfly valves and access hatches.
 6. Completing structural repairs of the interior of the North and South Clearwells.
 7. Recoating the entire interior of the clearwell floors, walls, and interior roof with a new protective coating system.
 8. Clean and disinfect the North and South Clearwell upon completion of repair work prior to placing each clearwell in service.
- C. The CONTRACTOR shall perform system cleaning, disinfection, and testing. The CONTRACTOR shall be responsible for coordinating and completing the overall system cleaning, disinfection and testing. The CONTRACTOR is responsible for providing all labor equipment and materials for conducting systems cleaning, disinfection and testing. The CONTRACTOR is responsible for ensuring that all provisions for the Contract Documents have been properly executed and successfully completed.
- D. The Contract Documents indicate existing conditions only where they impact the proposed facility modifications and equipment installation. It is the responsibility of the CONTRACTOR to field verify existing and proposed equipment locations and notify the ENGINEER of any conflicts prior to construction. The contract documents have been developed to indicate the final location of equipment, piping, conduits and miscellaneous items associated with this project. The CONTRACTOR is responsible for developing and updating a construction schedule, which will allow installation of equipment in phases. Cleaning, disinfection and testing and final certification of each clearwell for the project shall be included in the schedule.
- E. CONTRACTOR'S Duties:
1. Cooperate with the ENGINEER, other contractors for other projects, and the OWNER.
 2. Except as specifically noted, provide and pay for:
 - a. Labor, materials and equipment.
 - b. Tools, construction equipment, and machinery.
 - c. Water and utilities required for construction.
 - d. Other facilities and services necessary for the proper execution and completion of the Work.
 3. Secure and pay for, as necessary for the proper execution and completion of the Work, and as applicable at time of receipt of bids:
 - a. Permits.
 - b. Government fees.
 - c. Licenses.
 4. Give required notices in writing.

5. Comply with codes, ordinances, rules, regulations, orders, and other
6. Legal requirements of public authorities that bear on performance of Work.
7. Promptly submit written notice to ENGINEER of observed variance of Contract Documents from legal requirements.
8. Enforce strict discipline and good order among employees. Do not employ persons lacking the required skills for their assigned task.
9. The CONTRATOR shall furnish personnel and equipment that will be efficient, appropriate, and large enough to secure a satisfactory quality of work and a rate of progress that will ensure the completion of the work within the time stipulated.
10. The CONTRACTOR shall be responsible for restoring all disturbed property, resulting from his construction activities, or the activities of his sub-consultant, at no additional cost to the OWNER.
11. The CONTRACTOR shall confine his activities to the site(s) designated by the OWNER for the Work or for materials storage.

F. Contracting Method: Work shall be constructed under one prime contract.

1.3 OTHER CONSTRUCTION CONTRACTS (NOT USED)

1.4 WORK BY OTHERS (NOT USED)

1.5 WORK BY OWNER (NOT USED)

1.6 OWNER-FURNISHED EQUIPMENT AND MATERIALS (NOT USED)

1.7 ASSIGNED PROCUREMENT CONTRACTS (NOT USED)

1.8 SEQUENCE AND PROGRESS OF WORK

- A. Requirements for sequencing and coordinating with Owner's operations, including maintenance of plant operations during construction, and requirements for tie-ins and shutdowns, are in Section 01 14 16, Coordination with Owner's Operations.

1.9 CONTRACTOR'S USE OF SITE

- A. CONTRACTOR will only have access to the portions of the Site shown for storage and operations of workers.
- B. Move stored products that interfere with operations of OWNER, other contractors, and others performing work for OWNER.
- C. Site access shall be directed by the OWNER and ENGINEER.

1.10 EASEMENTS AND RIGHTS-OF-WAY

- A. Easements and rights-of-way will be provided by OWNER in accordance with the General Conditions. Confine construction operations within OWNER'S property, public rights-of-way, easements obtained by OWNER, and the limits shown. Use care in placing construction tools, equipment, excavated materials, and materials and equipment to be incorporated into the Work to avoid damaging property and interfering with traffic. Do not enter private property outside the construction limits without permission from the owner of the property.
- B. On Private Property:
 - 1. General limits of easements are shown on the Drawings.

1.11 NOTICES TO OWNERS AND AUTHORITIES OF PROPERTIES ADJACENT TO THE WORK

- A. Notify owners of adjacent property and utilities when prosecution of the Work may affect their property, facilities, or use of property.
- B. When it is necessary to temporarily obstruct access to property, or when utility service connection will be interrupted, provide notices sufficiently in advance to enable affected persons to provide for their needs. Conform notices to Laws and Regulations and, whether delivered orally or in writing, include appropriate information concerning the interruption and instructions on how to limit inconvenience caused thereby.
- C. Notify utility owners and other concerned entities at least 48 hours prior to cutting or closing streets or other traffic areas or excavating near Underground Facilities or exposed utilities.

1.12 SALVAGE OF EQUIPMENT AND MATERIALS

- A. Existing equipment and materials removed and not shown or specified to be reused in the Work will become Contractor's property.
- B. Existing equipment and materials removed by Contractor shall not be reused in the Work, except where so specified or indicated.
- C. Carefully remove in manner to prevent damage all equipment and materials specified or indicated to be salvaged and reused or to remain property of Owner. Store and protect salvaged items specified or indicated to be used in the Work. Replace in kind or with new items equipment, materials, and components damaged in removal, storage, or handling through carelessness or improper procedures.

- D. Contractor may furnish and install new items, with Engineer's approval, instead of those specified or indicated to be salvaged and reused, in which case such removed items will become Contractor's property.

1.13 PARTIAL UTILIZATION BY OWNER (NOT USED)

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

++ END OF SECTION ++

THIS PAGE INTENTIONALLY LEFT BLANK

SECTION 01 14 16

COORDINATION WITH OWNER'S OPERATIONS

PART 1 – GENERAL

1.1 DESCRIPTION

- A. Scope:
 - 1. This Section includes requirements for coordinating with OWNER's operations during the Work, and includes requirements for tie-ins and shutdowns necessary to complete the Work without impact on OWNER's operations except as allowed in this Section.
 - 2. CONTRACTOR shall provide labor, materials, tools, equipment and incidentals shown, specified and required to coordinate with OWNER's operations during the Work.
- B. Coordination:
 - 1. Review installation procedures under other Specification sections and coordinate Work that must be performed with or before the Work specified in this Section.
- C. Related Sections:
 - 1. Section 01 11 13, Summary of Work.
- D. Perform the Work such that OWNER's facility remains in continuous satisfactory operation during the Project. Schedule and conduct the Work such that the Work does not: impede OWNER's production or processes, create potential hazards to operating equipment and personnel, reduce the quality of the facility's products or effluent, or cause odors or other nuisances.
- E. Work not specifically covered in this Section or in referenced Sections may, in general, be completed at any time during regular working hours in accordance with the General Conditions and Supplementary Conditions, subject to the requirements in this Section.
- F. CONTRACTOR has the option of providing additional temporary facilities that can eliminate or mitigate a constraint without additional cost to OWNER, provided such additional temporary facilities: do not present hazards to the public, personnel, structures, and equipment; that such additional temporary facilities do not adversely affect OWNER's ability to comply with Laws and Regulations, permits, and operating requirements; that such temporary facilities do not generate or foster the generation of odors and other nuisances; and that requirements of the Contract Documents are fulfilled.

- G. Coordinate shutdowns with OWNER and ENGINEER. When possible, combine multiple tie-ins into a single shutdown to minimize impacts on OWNER's operations and processes.
- H. Do not shut off or disconnect existing operating systems, unless accepted by ENGINEER in writing. Operation of existing equipment will be by OWNER unless otherwise specified or indicated. Where necessary for the Work, CONTRACTOR shall seal or bulkhead OWNER-operated gates and valves to prevent leakage that may affect the Work, OWNER's operations, or both. Provide temporary watertight plugs and bulkheads as required. After completing the Work, remove seals, plugs, and bulkhead to satisfaction of ENGINEER.
- I. Bypassing:
 - 1. Diversion of flows around treatment processes is not allowed.

1.2 SUBMITTALS

- A. Action Submittals: Submit the following:
 - 1. Phasing and Shutdown Plan:
 - a. CONTRACTOR shall provide submittal explaining the proposed phasing and shutdown plan for the work under this project. Phasing and shutdown plan shall indicate in detail the proposed sequence of work, required shutdowns, and testing to be completed. Submittal shall also indicate the proposed containment methods, labor, materials and estimate of time required to complete the various phases and shutdowns required to perform the work.
 - b. When deviation from specified sequence is proposed, submittal shall explain in detail the proposed sequence change and its effects, including evidence that OWNER's operations will not be adversely affected by proposed change. List benefits of proposed sequence change, including benefits to Progress Schedule.
 - c. For each shutdown, submit an inventory of labor and materials required to perform the shutdown tasks, an estimate of time required to accomplish the complete shutdown including time for OWNER to take down and start up existing equipment, systems, or conduits, and written description of steps required to complete the Work associated with the shutdown.
 - 2. Shutdown Notification: After acceptance of Phasing and Shutdown Plan submittal and prior to starting the shutdown, provide written notification to OWNER and ENGINEER of date and time each shutdown is to start. Provide notification at least 72 hours in advance of each shutdown.

1.3 GENERAL CONSTRAINTS

- A. Specified in the Contract Documents are the sequence and shutdown durations, where applicable, for OWNER'S systems that are to be taken out of service temporarily for the Work. New equipment, materials, and systems may be used by OWNER after the specified field quality controls and testing are successfully completed and the materials or equipment are Substantially Complete.
- B. The following constraints apply to coordination with OWNER's operations:
 - 1. CONTRACTOR shall maintain one clearwell in service at all times during construction (i.e. North or South Clearwell).
 - 2. Operational Access: OWNER'S personnel shall have access to equipment and areas that remain in operation.
 - 3. Schedule and perform equipment testing and shutdowns for Monday through Thursday. Equipment and systems shall not be tested or shutdown on Friday, Saturday, and Sunday.
 - 4. Dead End Valves or Pipe: Provide blind flanges, watertight bulkheads, or valve at temporary and permanent terminuses of pipes and conduits. Blind flanges and bulkheads shall be suitable for the service and braced and blocked, as required, or otherwise restrained as directed by ENGINEER. Temporary valves shall be suitable for their associated service. Where valve is provided at permanent terminus of pipe or conduit, also provide on downstream side of valve a blind flange with drain/flushing connection.
 - 5. CONTRACTOR shall be responsible for operating the existing three 36" butterfly valves to be replaced. OWNER will assist CONTRACTOR in operating all other valves in the system as required for taking a clearwell out of service to complete the specified valve replacement and interior repair work. CONTRACTOR shall be responsible for dewatering existing clearwells, pipes, and other work areas. Maintain clean and dry work area by pumping and properly disposing of fluid that accumulates in work areas.
 - 6. Draining, Cleaning and Disinfection of Clearwells:
 - a. Upon properly isolating the North or South Clearwell, CONTRACTOR shall drain the clearwell as much as possible by directing flow into the 30" effluent header feeding the high service pumps. Remaining water in the clearwell shall be pumped from the existing 6" drain on the 30" effluent header to a discharge location approved by the OWNER and ENGINEER.
 - b. CONTRACTOR shall provide pneumatic plugs in the clearwell connecting pipes for BV Nos. 1 and 2 for replacement of BV Nos. 1 and 2. Pneumatic plugs may be required for a longer time period (if BV Nos. 1 and 2 are not operable) to allow for draining of the North or South Clearwell to complete the valve replacement and concrete repair and coating work. If existing BV Nos. 1 and 2 are not operable, CONTRACTOR shall provide a suitable secondary containment method in addition to the pneumatic plugs if a clearwell will be offline for an extended time period (i.e. to complete the valve replacement,

- concrete repairs and recoating at one time). The sequence of work will depend on whether the existing BVs can be operated.
- c. Upon completing structural repairs and recoating, CONTRACTOR shall remove any solids, debris or materials within the clearwell at an appropriate location at the Site as specified and directed by ENGINEER. CONTRACTOR shall clean and disinfect the clearwell as specified prior to placing the clearwell back in service. Bacteriological testing shall pass prior to placing the disinfected clearwell in service.
 - c. Spillage shall be brought to ENGINEER's attention immediately, both verbally and in writing, and reported in accordance with Laws and Regulations. CONTRACTOR shall wash down spillage to drains and flush the system to prevent clogging and odors. If spillage is not suitable for discharge to the drainage system, such as chemical spills, as determined by ENGINEER, CONTRACTOR shall remove spillage by other method, such as vacuum truck, acceptable to ENGINEER.

1.4 SEQUENCE OF WORK

- A. Perform the Work in the specified sequence. CONTRACTOR may propose alternate sequence of work if OWNER operations are not adversely affected by proposed sequence change, with ENGINEER's acceptance. Stages specified in this Article 1.4 are sequence-dependent.
- B. CONTRACTOR shall attempt to close existing BV Nos. 1 and 2 and open existing BV No. 3. If these valves can be operated, CONTRACTOR shall proceed with Phasing Option No. 1. If the existing 36" BVs cannot be operated, CONTRACTOR shall proceed with Phasing Option No. 2.
 - 1. Phasing Option No. 1 – Existing 36" Butterfly Valves can be operated.
 - a. Stage 1 – Drain South Clearwell, Replace BV No. 3 and Complete Structural Repairs and Interior Recoating in the South Clearwell
 - i. Divert flow to the North Clearwell.
 - ii. Drain the South Clearwell as much as possible by directing flow through BV No. 5 into the 30" effluent header feeding the high service pumps.
 - iii. When South Clearwell is emptied as much as possible through the 30" effluent header, close BV No. 5 and use a temporary pump to pump remaining water out of the clearwell cell to a discharge point approved by the OWNER and ENGINEER.
 - iv. Increase the size of the access hatch opening and install new access hatch for access to BV No. 3.
 - vi. Replace existing BV No. 3, neck extension, sleeve and handwheel actuator. Repair roofing of the South Clearwell in the area impacted by the access hatch extension and valve replacement work.

- vii. Complete structural repairs and interior recoating in the South Clearwell. Allow sufficient time for coating to properly cure in accordance with manufacturer's recommendations.
 - viii. With the South Clearwell empty, install pneumatic plugs in the pipes between the North and South Clearwells (where BV Nos. 1 and 2 are located). The plugs shall be fully cleaned and disinfected before they are installed. Pneumatic plugs shall not touch the existing butterfly valves and fully fit within the 36" clearwell connecting pipes after they are inflated.
 - ix. Clean, flush and disinfect clearwell and pass bacteriological testing before placing Clearwell back in service.
 - b. Stage 2 – Place the South Clearwell back in service, drain North Clearwell, replace BV Nos.1 and 2, and complete structural repairs and interior recoating in the North Clearwell:
 - i. Divert flow to the South Clearwell.
 - ii. Drain the North Clearwell as much as possible by directing flow through BV No. 4 into the 30" effluent header feeding the high service pumps. When the North Clearwell is almost empty, close BV No. 4. A temporary pump shall be connected to the existing 6" drain located on the 30" effluent header to pump any remaining water in the clearwell cell that the high service pumps cannot pump while draining the tank to a discharge point approved by the OWNER and ENGINEER. The temporary pump and piping shall be cleaned and disinfected and suitable for potable water use .
 - iii. Replace existing BV Nos. 1 and 2, neck extensions, sleeves and handwheel actuators. The 36-inch valves will be replaced using the existing access hatches adjacent to the valves. Repair roofing of the North Clearwell in the area impacted by the valve replacement work.
 - iv. Remove pneumatic plugs.
 - v. Complete structural repairs and interior recoating in the North Clearwell.
 - vi. After coating has properly cured in the North Clearwell, CONTRACTOR shall clean, flush and disinfect clearwell and pass bacteriological testing before it can be placed back in service.
 - c. Stage 3 – Place North and South Clearwells back to normal operation.
2. Phasing Option No. 2 – Existing 36" BVs Cannot be Operated
- a. Stage 1 – Drain South Clearwell, and replace BV No. 3
 - i. Install pneumatic plugs in the pipes between the North and South Clearwells (where BV Nos. 1 and 2 are located). The plugs shall be fully cleaned and disinfected before they are

installed. Pneumatic plugs shall not touch the existing butterfly valves and fully fit within the 36" clearwell connecting pipes after they are inflated. Pneumatic plug installation will be conducted with the Clearwells full of water. Diver requirements for access into the South Clearwell for pneumatic plug installation shall be in accordance with AWWA C652.

- ii. Divert flow to the North Clearwell
- iii. Drain the South Clearwell as much as possible by directing flow through BV No. 5 into the 30" effluent header feeding the high service pumps. If BV No. 3 cannot be opened, CONTRACTOR shall provide a temporary pump to pump water from the east side to the west side of the South Clearwell as the existing cell drain cannot be used. The temporary pump and piping will need to be cleaned and disinfected and suitable for potable water use.
- iv. When South Clearwell is emptied as much as possible through the 30" effluent header, close BV No. 5 and use the temporary pump to pump remaining water out of the clearwell cell to a discharge point approved by the OWNER and ENGINEER.
- v. Install approved secondary containment method in the 36" interconnecting clearwell piping for BV Nos. 1 and 2.
- vi. Increase the size of the access hatch opening and install new access hatch for access to BV No. 3.
- vii. Replace existing BV No. 3, neck extension, sleeve and handwheel actuator.
- viii. Complete structural repairs and interior recoating in the South Clearwell. Allow sufficient time for coating to properly cure in accordance with manufacturer's recommendations.
- vii. After coating has properly cured, clean, flush and disinfect South Clearwell before it can be placed back in service.
- b. Stage 2 – Place South Clearwell back in service, drain the North Clearwell, replace BV Nos. 1 and 2 and complete structural repairs and interior recoating in the North Clearwell.
 - i. Divert flow to the South Clearwell.
 - ii. Drain the North Clearwell as much as possible by directing flow through BV No. 4 into the 30" effluent header feeding the high service pumps. When the North Clearwell is almost empty, close BV No. 4. A temporary pump shall be connected to the existing 6" drain located on the 30" effluent header to pump any remaining water in the clearwell cell that the high service pumps cannot pump while draining the tank to a discharge point approved by the OWNER and ENGINEER.
 - iii. Replace existing BV Nos. 1 and 2, neck extensions, sleeves and handwheel actuators. The 36-inch valves will be replaced using the existing access hatches adjacent to the valves. Repair

- roofing of the North Clearwell in the area impacted by the valve replacement work.
- iv. Complete structural repairs and interior recoating in the North Clearwell.
 - v. After coating has been properly cured in the North Clearwell, CONTRACTOR shall clean, flush and disinfect clearwell before it can be placed back in service.
- c. Stage 3 – Place North and South Clearwells back to normal operation.

1.5 TIE-INS (NOT USED)

1.6 SHUTDOWNS

A. General:

1. Terminology: A “shutdown” is when a portion of the normal operation of OWNER’s facility, whether equipment, systems, piping, or conduit, has to be temporarily suspended or taken out of service to perform the Work.
2. Work that may interrupt normal operations shall be accomplished at times convenient to OWNER.
3. Furnish at the Site, in close proximity to the shutdown and tie-in work areas, tools, equipment, spare parts and materials, both temporary and permanent, necessary to successfully complete the shutdown. Complete to the extent possible, prefabrication of piping and other assemblies prior to the associated shutdown. Demonstrate to ENGINEER’s satisfaction that CONTRACTOR has complied with these requirements before commencing the shutdown.
4. If CONTRACTOR’s operations cause an unscheduled interruption of OWNER’s operations, immediately re-establish satisfactory operation for OWNER.
5. Unscheduled shutdowns or interruptions of continued safe and satisfactory operation of OWNER’s facilities that result in fines or penalties by authorities having jurisdiction shall be paid solely by CONTRACTOR if, in ENGINEER’s opinion, CONTRACTOR did not conform to the requirements of the Contract Documents, or was negligent in the Work, or did not exercise proper precautions in conducting the Work.
6. Shutdowns shall be in accordance with Table 01 14 16-B of this Section. Work requiring service interruptions for tie-ins shall be performed during scheduled shutdowns.
7. Temporary, short-term shutdowns of smaller piping, conduits, equipment, and systems may not be included in Table 01 14 16-B. Coordinate requirements for such shutdowns with ENGINEER and OWNER.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.1 DETAILED SHUTDOWN REQUIREMENTS

- A. Shutdown A:
 - 1. General:
 - a. Affected Equipment Operating Prior to Shutdown: Full Plant
 - b. Equipment Operating During Shutdown: Full plant. Elevated storage tanks will be used for distribution (shutdown not to exceed 4 hours) while high service pumps are shutdown.
 - c. Equipment Out of Service During Shutdown: Full Plant
 - d. Procedure: Full system shutdown.
 - 2. Prior to Shutdown:
 - a. Obtain ENGINEER's acceptance of proposed shutdown planning submittal and shutdown notification submittal.
 - b. Bring necessary equipment, and appurtenances to the work areas.
 - c. Assist OWNER in preparing to take equipment temporarily out of service.
 - d. Coordinate other tie-ins to be performed simultaneously.
 - 3. During Shutdown:
 - a. Install pneumatic plugs with the clearwells full of water under Phasing Option No. 2.

3.2 SCHEDULES

- A. The schedules listed below, following the "End of Section" designation, are part of this Specification section:
 - 1. Table 01 14 16-A, Schedule of Shutdowns.

+ + END OF SECTION + +

**TABLE 01 14 16-A
SCHEDULE OF SHUTDOWNS**

Shut-down No.	Process Equipment and Service Lines Out-of-Service During Shutdown	Process Equipment In Operation During Shutdown	Stage Nos.	Maximum Duration
A	Full Plant Shutdown	None	Stage 1 – Option 2 – Pneumatic Plug Installation	4 hours

THIS PAGE INTENTIONALLY LEFT BLANK

SECTION 01 22 13

MEASUREMENT AND PAYMENT

PART 1 – GENERAL

1.1 DESCRIPTION

- A. Items listed starting in Article 1.4 of this Section refer to and are the same pay items listed in the Bid Form and constitute all pay items for completing the Work. No direct or separate payment will be made for providing miscellaneous temporary or accessory works, plant services, CONTRACTOR's or ENGINEER's field offices, layout surveys, sanitary requirements, testing, safety provisions and safety devices, submittals and record drawings, water supplies, power and fuel, traffic maintenance, removal of waste, security, coordination with OWNER's operations, information technology (including hardware, software, and services) required during construction, bonds, insurance, or other requirements of the General Conditions, Supplementary Conditions, General Requirements, and other requirements of the Contract Documents. Compensation for all services, items, materials, and equipment shall be included in prices stipulated for lump sum and unit price pay items listed in this Section and included in the Contract.
- B. Each lump sum and unit price bid price shall include an amount considered by CONTRACTOR to be adequate to cover CONTRACTOR's overhead and profit for each separately identified item.

1.2 ENGINEER'S ESTIMATE OF QUANTITIES

- A. ENGINEER's estimated quantities for items of Work, as included in the Contract, are approximate only and are included solely for purpose of comparing Bids and pricing. OWNER does not expressly or by implication agree that nature of materials encountered below the ground surface or actual quantities of material encountered or required will correspond with the quantities included in the Contract at the time of award and reserves right to increase or decrease quantities or to eliminate quantities as OWNER may deem necessary.

1.3 RELATED PROVISIONS

- A. Payments to CONTRACTOR: Refer to General Conditions and Agreement.
- B. Changes in Contract Price: Refer to General Conditions.
- C. Schedule of Values: Refer to Section 01 29 73, Schedule of Values.

1.4 GENERAL CONSTRUCTION

A. Item 1 – Mobilization/Demobilization:

1. Measurement and Payment: Lump sum payment for Item 1 will be full compensation for completing all work associated with mobilization and demobilization as shown and specified. Seventy-five percent (75%) will be paid upon services rendered for mobilization and the remaining twenty-five percent (25%) will be paid upon services rendered for demobilization.
2. The lump sum price bid shall include all expenses related to the amassing of all labor, equipment, temporary offices, transportation, storage and materials required for the construction of the project, as shown on the Drawings and as specified for mobilization. Demobilization shall include removal of equipment and temporary offices as well as cleaning of site.

B. Item 2 – Replace 36” butterfly valves, extension stem, stem cover, handwheel actuator, and associated appurtenances

1. Measurement and Payment: Unit price payment for Item 2 will be full compensation for completing all demolition and construction work associated with the replacement of the 36” butterfly valves and associated appurtenances, as shown and specified.
2. The unit price bid shall include all supervision, labor, materials, tools, equipment and services associated with removal and replacement of the existing 36” butterfly valves, extension stem, stem cover, handwheel operator, and associated appurtenances as shown and specified. The unit price bid shall also include all work, materials and equipment required for painting of the valves and appurtenances.

C. Item 3 – Enlarge access hatch and associated roof repairs (hatch to access BV No. 3)

1. Measurement and Payment: Lump sum payment for Item 3 will be full compensation for completing all demolition and construction work associated with the replacement of the existing access hatch with a new larger access hatch and associated appurtenances; and clearwell roof repairs required, as shown and specified.
2. The lump sum price bid shall include all supervision, labor, materials, tools, equipment and services associated with removal of the existing access hatch, enlargement of existing opening, and furnishing and installing new larger access hatch and associated appurtenances. The lump sum bid shall also include all work and materials required for clearwell roofing repairs in areas impacted by the removal, enlargement of existing opening and installation of the new access hatch and 36” butterfly valves.

D. Item 4 – Replace large access hatches

1. Measurement and Payment: Unit price payment for Item 4 will be full compensation for completing all demolition and construction work

- associated with the replacement of the existing three large access hatches and associated appurtenances, as shown and specified.
2. The unit price bid shall include all supervision, labor, materials, tools, equipment and services associated with removal of the existing access hatches, and furnishing and installing new access hatches and associated appurtenances. The unit price bid shall also include all work and materials required for clearwell roofing repairs in areas impacted by the removal and installation of the new access hatches.
- E. Item 5 – Clearwell Interior Crack Repairs:
1. Measurement and Payment: Payment for this item will be full compensation for completing the work associated with crack repair, as shown and specified.
 2. The unit price bid shall be on a LF basis, and shall include all, supervision, labor, materials, tools, equipment and services for the completion of all work associated with the crack repair of the interior of the North and South Clearwells.
- F. Item 6 – Clearwell Interior Surface Spall Repairs:
1. Measurement and Payment: Payment for this item will be full compensation for completing the work associated with surface spall repair, as shown and specified.
 2. The unit price bid shall be on a square foot (SF) basis, and shall include all, supervision, labor, materials, tools, equipment and services for the completion of all work associated with the surface spall repair of the interior of the North and South Clearwells.
- G. Item 7 – Clearwell Interior Painting:
1. Measurement and Payment: Payment for this item will be full compensation for completing the work associated with interior painting, as shown and specified.
 2. The unit price bid shall be on a SF basis, and shall include all, supervision, labor, materials, tools, equipment and services for the completion of all work associated with the interior removal of existing paint system, preparation of surfaces and painting of the North and South Clearwells.
- H. Item 8 – Clearwell Draining, Cleaning and Disinfection
1. Measurement and Payment: Payment for this item will be full compensation for completing the work associated with draining, cleaning and disinfecting each Clearwell, as shown and specified.
 2. The unit price bid shall include all, supervision, labor, materials, tools, equipment and services for the completion of work associated with the draining, cleaning and disinfection of each clearwell. This item includes all work associated with draining the clearwell, temporary piping and pumping systems to fully drain the clearwell, cleaning and disinfecting the clearwell,

and bacteriological sample collection and analysis prior to placing a clearwell back in service.

- I. Item 9 – Clearwell Isolation under Phase Option No. 1
 - 1. Measurement and Payment: Lump sum payment for Item 9 for completing all work associated with the installation of two (2) pneumatic pipe plugs while the South Clearwell is Empty.
 - 2. The lump sum price bid shall include all supervision, labor, materials, tools, equipment and services for the completion of all work associated with the installation of two (2) pneumatic pipe plugs while the South Clearwell is empty. This item includes rental, installation and removal of pneumatic plugs.
- J. Item 10 – Additional Cost for Clearwell isolation under Phasing Option 2:
 - 1. Measurement and Payment: Lump sum payment for Item 10 will be full compensation for additional work required under Construction Phasing Option No. 2 (additional work required beyond costs included in Bid Item No. 9).
 - 2. The lump sum price bid shall include all additional supervision, labor, materials, tools, equipment, and services associated with installation of the pneumatic plugs with divers when the clearwell is full of water; additional rental time for pneumatic plugs and equipment; and installation of a secondary containment system. Installation of pneumatic pipe plugs by divers shall conform with AWWA C652 standards.
- K. Item 11 - Owner's Contingency Allowance for additional Work, as needed:
 - 1. Measurement: Includes a stipulated amount available as reserve for sole use by OWNER to cover unanticipated costs including, minor items unforeseen and necessary but not included in bid, unanticipated conflicts and/or design changes required during construction, and minor increases to existing bid item quantities, which are necessary for safe and timely completion of the Work.
 - 2. Payment: Payment for Work authorized under Item 11 will be full compensation for providing all Work authorized under the contingency allowance, complete as shown, indicated, or directed by ENGINEER, only upon written authorization from OWNER. Work authorized under contingency allowance may be included in subsequent Application(s) for Payment, as applicable, following authorization of and performance of contingency allowance Work.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

+ + END OF SECTION + +

SECTION 01 25 00

SUBSTITUTION PROCEDURES

PART 1 – GENERAL

1.1 DESCRIPTION

- A. Scope: Section includes:
 - 1. Administrative and procedural requirements for selecting products for the Project.
 - 2. Procedural requirements for product substitutions.
 - 3. Procedural requirements for substitute construction methods or procedures, when construction methods or procedures are specified.

1.2 TERMINOLOGY

- A. The following words or terms are not defined but, when used in this Section, have the following meaning:
 - 1. “Products” includes materials, equipment, machinery, components, fixtures, systems, and other goods incorporated in the Work. Products do not include machinery and equipment used for preparing, fabricating, conveying, erecting, or installing the Work. Products include OWNER-furnished goods incorporated in the Work where use of such goods is specifically required in the Contract Documents.

1.3 PRODUCT SUBSTITUTIONS

- A. Requests for approval of substitute products or items will be considered for a period of 45 days after the Effective Date of the Agreement. After end of specified period, requests will be considered only in case of unavailability of a specified product or other conditions beyond CONTRACTOR’s control.
- B. Procedure:
 - 1. Submit number of copies of request for substitution as specified for Shop Drawings and other submittals in Section 01 33 00, Submittal Procedures.
 - 2. Submit separate request for each substitution.
 - 3. Submit substitution request using forms attached to this Section by completing all information requested on the forms, and enclose with the forms supplementary information as required. In addition to requirements of the General Conditions and information required on substitution request forms, include with request the following:
 - a. Product identification, including manufacturer’s name and address.

- b. Manufacturer's literature with product description, performance and test data, and reference standards with which product complies.
- c. Samples, if appropriate.
- d. Name and address of similar projects on which product was used, and date of installation.

1.4 SUBSTITUTE CONSTRUCTION METHODS OR PROCEDURES

- A. Where construction methods or procedures are specified, for a period of 60 days after the Effective Date of the Agreement, ENGINEER will consider CONTRACTOR's written requests for substitute construction methods or procedures specified.
- B. Procedure:
 - 1. Submit number of copies of request for substitution as specified for Shop Drawings and other submittals in Section 01 33 00, Submittal Procedures.
 - 2. Submit separate request for each substitution.
 - 3. Submit substitution request using forms attached to this Section by completing all applicable information requested on the forms, and enclose with the forms supplementary information as required. In addition to requirements of the General Conditions and information required on substitution request forms, include with request the following:
 - a. Detailed description of proposed method or procedure.
 - b. Itemized comparison of the proposed substitution with the specified method or procedure.
 - c. Drawings illustrating method or procedure.
 - d. Other data required by ENGINEER to establish that proposed substitution is equivalent to specified method or procedure.

1.5 CONTRACTOR'S REPRESENTATION AND ACCEPTANCE

- A. In submitting request for substitution, CONTRACTOR represents that:
 - 1. CONTRACTOR has investigated proposed substitution and determined that it is equivalent to item, product, method, or procedure specified, as applicable.
 - 2. CONTRACTOR will provide the same or better guarantees or warranties for proposed substitution as for the specified product, manufacturer, method, or procedure, as applicable.
 - 3. CONTRACTOR waives all Claims for additional costs or extension of time related to proposed substitution that subsequently may become apparent.
- B. A proposed substitution will not be accepted for review if:
 - 1. Approval would require changes in design concept or a substantial revision of the Contract Documents.
 - 2. Approval would delay completion of the Work or the work of other contractors.

3. Substitution request is indicated or implied on a Shop Drawing or other submittal, or on a request for interpretation or clarification, and is not accompanied by CONTRACTOR's formal request for substitution.
- C. If ENGINEER does not approve the proposed substitute, CONTRACTOR shall provide the specified product, manufacturer, method, or procedure, as applicable.
- D. Approval of a substitution request will not relieve CONTRACTOR from requirement for submitting Shop Drawings as set forth in the Contract Documents.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.1 SUPPLEMENTS

- A. The forms listed below, following the “End of Section” designation, are part of this Specification Section:
 1. Substitution Request Form (two pages).
 2. Product Substitution Checklist (one page).

+ + END OF SECTION + +

SUBSTITUTION REQUEST

Project: _____ Substitution Request Number: _____

From: _____
To: _____ Date: _____

Engineer Proj. No. _____
Re: _____ Contract For: _____

Specification Title: _____ Description: _____
Section: _____ Page: _____ Article/Paragraph: _____

Proposed Substitution: _____
Manufacturer: _____ Address: _____ Phone: _____
Trade Name: _____ Model No.: _____
Installer: _____ Address: _____ Phone: _____

History: ☐ New product ☐ 1-4 years old ☐ 5-10 years old ☐ More than 10 years old

Differences between proposed substitution and specified product: _____

☐ Point-by-point comparative data attached — REQUIRED BY THE CONTRACT DOCUMENTS

Reason for not providing specified item: _____

Similar Installation:

Project: _____ Engineer: _____
Address: _____ Owner: _____
_____ Date Installed: _____

Proposed substitution affects other parts of Work: ☐ No ☐ Yes; explain _____

Savings to Owner for accepting substitution: _____ (\$ _____)
(attach detailed, itemized estimate)

Proposed substitution changes Contract Time: ☐ No ☐ Yes [Add] [Deduct] _____ days.
(clarify whether change is to Substantial Completion, Milestone, or time for readiness for final payment)

Supporting Data Attached: ☐ Drawings ☐ Product Data ☐ Samples ☐ Tests ☐ Reports ☐ _____

SUBSTITUTION REQUEST

(Continued)

☐ Substitute product, method, or procedure is subject to payment of licensing fee or royalty (check if "yes" and attach information)

☐ Substitute product, method, or procedure is patented or copyrighted (check if "yes" and attach information)

The undersigned certifies:

- Representations in the General Conditions and in Section 01 25 00, Substitution Procedures, regarding substitutions are valid.
- Same warranty will be furnished for proposed substitution as for specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay Progress Schedule.
- Cost data as stated above is complete. Claims for additional costs related to accepted substitution which may subsequently become apparent are waived.
- Proposed substitution does not affect dimensions and functional clearances.
- Payment will be made for Engineer's review and changes, if any, to the design and Contract Documents, and construction costs caused by the substitution.
- Coordination, installation, and changes in the Work as necessary for accepted substitution will be complete in all respects.

Submitted by: _____

Signed by: _____

Firm: _____

Address: _____

Telephone: _____

Attachments: ☐

ENGINEER'S REVIEW AND ACTION (FOR ENGINEER'S USE ONLY)

- ☐ Substitution approved.
- ☐ Substitution approved as noted.
- ☐ Substitution rejected - Use specified materials.
- ☐ Substitution Request received too late - Use specified materials.

Signed by: _____ Date: _____

Additional Comments: ☐ Contractor ☐ Subcontractor ☐ Supplier ☐ Manufacturer ☐ Engineer
☐ Other:

Adapted from CSI Form No. 13.0B, 2004 edition

PRODUCT SUBSTITUTION CHECKLIST

Date: _____

Re: _____

Engineer Proj No.: _____

Manufacturer's Project No.: _____

Filing No.: _____

Contract For: _____

Product Equivalence:

☐ Is the submitted product equivalent to the specified item? _____

☐ Does it serve the same function? _____

☐ Does it have the same dimensions? _____

☐ Does it have the same appearance? _____

☐ Will it last as long? _____

☐ Does it comply with the same codes, and standards and performance requirements? _____

☐ Has the product been used locally, and where are the projects? _____

☐ Has a problem occurred with the product, and what was the remedy? _____

Effect on the Project:

☐ Will the substitution affect other aspects of the construction? _____

☐ Are any details affected and are changes required? _____

☐ What is the cost of the changes? _____

☐ Who pays for the required changes? _____

☐ Is construction time affected? _____

Effect on the Warranty:

☐ How does the proposed warranty differ from the specified warranty? _____

☐ Does the manufacturer have a track record of standing behind the warranty? _____

Adapted from CSI Form No. 20.3, 1998 edition

SECTION 01 29 73

SCHEDULE OF VALUES

PART 1 – GENERAL

1.1 DESCRIPTION

- A. Submit to ENGINEER for acceptance a Schedule of Values that allocates cost to each item of the Work. Schedule of Value list of line items shall correspond to each aspect of the Work, establishing in detail the portion of the Contract Price allocated to each major component of the Work.
- B. Upon request of ENGINEER, support values with data that substantiate their correctness.
- C. Submit preliminary Schedule of Values to ENGINEER for initial review. CONTRACTOR shall incorporate ENGINEER's comments into the Schedule of Values and resubmit to ENGINEER. ENGINEER may require corrections and re-submittals until Schedule of Values is acceptable.
- D. Schedule of Values and the Progress Schedule updates specified in Section 01 32 16, Progress Schedule, shall be basis for preparing each Application for Payment. Schedule of Values may be used as a basis for negotiating price of changes, if any, in the Work.
- E. Include in Schedule of Values unit price payment items with their associated quantity. Provide in the Schedule of Values detailed breakdown of unit prices when required by ENGINEER.
- F. Include in Schedule of Values itemized list of Work for each major part of the Contract, for each payment item specified in Section 01 22 13, Measurement and Payment.
- G. Requirements for preliminary Schedule of Values and Schedule of Values are:
 - 1. Schedule of Values shall show division of Work between CONTRACTOR and Subcontractors. Line items for Work to be done by Subcontractor shall include the word, "(SUBCONTRACTED)".
 - 2. Schedule of Values shall include breakdown of costs for materials and equipment, installation, and other costs used in preparing the Bid by CONTRACTOR and each Subcontractor. List purchase and delivery costs for materials and equipment for which CONTRACTOR may apply for payment as stored materials.

3. Include separate amounts for each Specification Section in the Contract Documents by structure and work area.
4. Identify each line item with number corresponding to the associated Specification Section number. List sub-items of major products or systems, as appropriate or when requested by ENGINEER.
5. Sum of individual values shown on the Schedule of Values shall equal the total of associated payment item. Sum of payment item totals in the Schedule of Values shall equal the Contract Price.
6. Include in each line item a directly proportional amount of CONTRACTOR's overhead and profit. Do not include overhead and profit as separate item(s).
7. Include separate line item for each allowance, and for each unit price item
8. Include line item for bonds and insurance.
9. Include items for the General Conditions, permits (when applicable), construction Progress Schedule, and other items required by ENGINEER. Include such items in Applications for Payment on schedule accepted by ENGINEER.
10. Line items for Site maintenance such as dust control, compliance with storm water pollution prevention plans and permits, spill prevention control and countermeasures plans, and for construction photographic documentation; temporary utilities and temporary facilities, field offices, temporary controls, field engineering, and similar Work shall be included in the Schedule of Values and proportioned in Applications for Payment throughout duration of the Work.
11. Include separate line items under each appropriate payment item for mobilization and demobilization. Document for ENGINEER the activities included in mobilization and demobilization line items. Payment for mobilization and demobilization activities shall occur in accordance with Section 01 22 13, Measurement and Payment.
12. Include costs for submittals, operations and maintenance manuals, field testing, training of operations and maintenance personnel, and similar Work.
13. Contractor will be required to review with ENGINEER the status of record documents in connection with the Engineer's review of an Application for Payment. Failure to maintain record document current may be just cause for ENGINEER to recommend withholding of payments for Work performed.
14. Coordinate Schedule of Values with resource loading of the Progress Schedule, in accordance with Section 01 32 16, Progress Schedule.

1.2 SUBMITTALS

- A. Informational Submittals: Submit the following:
 1. Submit to ENGINEER four copies of Schedule of Values.
 2. Content of Schedule of Values submittals shall conform to Article 1.1 of this Section.

3. Time Frames for Submittals:
 - a. Submit preliminary Schedule of Values within ten days of date that the Contract Times commence running in accordance with the Notice to Proceed.
 - b. Submittal of the Schedule of Values shall be in accordance with the General Conditions. ENGINEER will not accept Applications for Payment without an acceptable Schedule of Values.
 - c. When required by ENGINEER, promptly submit updated Schedule of Values to include cost breakdowns for changes in the Contract Price.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

+ + END OF SECTION + +

THIS PAGE INTENTIONALLY LEFT BLANK

SECTION 01 31 13

PROJECT COORDINATION

PART 1 – GENERAL

1.1 DESCRIPTION

- A. CONTRACTOR shall coordinate the Work, including testing agencies whether hired by CONTRACTOR, OWNER, or others; Subcontractors, Suppliers, and others with whom coordination is necessary, in accordance with the General Conditions, Supplementary Conditions, and this Section, to complete the Work within the Contract Times and in accordance with the Contract Documents.
- B. In accordance with the General Conditions as may be modified by the Supplementary Conditions, CONTRACTOR shall cooperate with and coordinate the Work with other contractors, utility service companies, OWNER's employees working at the Site, and other entities working at the Site, in accordance with Section 01 11 13, Summary of Work.
- C. CONTRACTOR will not be responsible or liable for damage unless damage is through negligence of CONTRACTOR, or Subcontractors, Supplier, or other entity employed by CONTRACTOR.
- D. Attend and participate in all project coordination and progress meetings, and report on the progress of the Work and compliance with the Progress Schedule.
- E. Maintain sufficient competent personnel, drafting and CADD equipment, and supplies at the Site for preparing layout drawings, coordination drawings, and record documents. With the Contract Documents and Shop Drawings, use such coordination drawings as tools for coordinating the Work of various trades. Where such coordination drawings are to be prepared by mechanical, electrical, plumbing, or heating-ventilating-air conditioning Subcontractors and other Subcontractors, ensure that each Subcontractor maintains required personnel and facilities at the Site.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

+ + END OF SECTION + +

THIS PAGE INTENTIONALLY LEFT BLANK

SECTION 01 31 19

PRE-CONSTRUCTION CONFERENCE

PART 1 – GENERAL

1.1 DESCRIPTION

- A. Scope:
 - 1. A pre-construction conference will be held for the Project.
 - 2. CONTRACTOR shall attend the conference prepared to discuss all items on the agenda.
 - 3. ENGINEER will distribute an agenda, preside at conference, and prepare and distribute minutes to all conference participants and others as requested.
- B. Purpose of conference is to designate responsible personnel, establish working relationships, discuss preliminary schedules submitted by CONTRACTOR, and review administrative and procedural requirements for the Project. Matters requiring coordination will be discussed and procedures for handling such matters will be established.
- C. Date, Time and Location: Conference will be held after execution of the Contract and before Work starts at the Site. ENGINEER will establish the date, time, and location of conference and notify the interested and involved parties.
- D. Prior to the conference, submit the following preliminary schedules in accordance with the General Conditions:
 - 1. Progress Schedule.
 - 2. Schedule of Submittals.
 - 3. Schedule of Values.
- E. CONTRACTOR shall provide information required and contribute appropriate items for discussion. CONTRACTOR shall bring to the conference the following, with sufficient number of copies for each attendee:
 - 1. Preliminary Progress Schedule, as submitted to ENGINEER.
 - 2. Preliminary Schedule of Submittals, as submitted to ENGINEER.
 - 3. Preliminary Schedule of Values, as submitted to ENGINEER.
 - 4. List of emergency contact information, in accordance with Article 1.4 of this Section.

1.2 REQUIRED ATTENDANCE

- A. Representative of each entity attending the conference shall be authorized to act on that entity's behalf.
- B. Contractor Attendance: Conference shall be attended by CONTRACTOR's project manager, Site superintendent, project managers for major Subcontractors, and major equipment Suppliers as CONTRACTOR deems appropriate.
- C. Other attendees will be representatives of:
 - 1. OWNER, if available.
 - 2. ENGINEER.
 - 3. Authorities having jurisdiction over the Work, if available.
 - 4. Utility owners, as applicable.
 - 5. Others as requested by OWNER, CONTRACTOR, or ENGINEER.

1.3 AGENDA

- A. Preliminary Agenda: Be prepared to discuss in detail the topics listed below. Revisions to this agenda, if any, will be furnished to CONTRACTOR prior to conference.
 - 1. Procedural and Administrative:
 - a. Personnel and Teams:
 - 1) Designation of roles and personnel.
 - 2) Limitations of authority of personnel, including personnel who will sign Contract modifications and make binding decisions.
 - 3) Lists of proposed Subcontractors and manufacturers (where applicable).
 - 4) Authorities having jurisdiction.
 - b. Procedures for communications and correspondence.
 - c. Copies of the Contract Documents and availability.
 - d. Subcontractors.
 - e. The Work and Scheduling:
 - 1) Scope of the Work.
 - 2) Contract Times, including Milestones (if any).
 - 3) Phasing and sequencing.
 - 4) Preliminary Progress Schedule.
 - 5) Critical path activities.
 - f. Safety:
 - 1) Responsibility for safety.
 - 2) Designation of Contractor's safety representative.
 - 3) Emergency procedures and accident reporting.
 - 4) Emergency contact information.
 - 5) Confined space entry procedures.
 - 6) Hazardous materials communication program.

- 7) Impact of Project on public safety.
- g. Permits.
- h. Review of insurance requirements and insurance claims.
- i. Coordination:
 - 1) Project coordination, and coordination among contractors.
 - 2) Coordination with Owner's operations.
 - 3) Progress meetings.
- j. Products and Submittals:
 - 1) Preliminary Schedule of Submittals.
 - 2) Shop Drawings, Samples, and other submittals.
 - 3) Product options, "or equals", and substitutions.
 - 4) Construction photographic documentation.
- k. Contract Modification Procedures:
 - 1) Requests for interpretation.
 - 2) Clarification notices.
 - 3) Field Orders.
 - 4) Proposal requests.
 - 5) Change Order proposals.
 - 6) Work Change Directives.
 - 7) Change Orders.
 - 8) Procedure for filing Claims.
- l. Payment:
 - 1) Owner's Project financing and funding.
 - 2) Owner's tax-exempt status.
 - 3) Preliminary Schedule of Values, and procedures for measuring for payment.
 - 4) Retainage.
 - 5) Progress payment procedures.
 - 6) Prevailing wage rates and payrolls.
- m. Testing and inspections, including notification requirements.
- n. Disposal of demolition materials.
- o. Record documents.
- p. Preliminary Discussion of Contract Closeout:
 - 1) Procedures for Substantial Completion.
 - 2) Contract closeout requirements.
 - 3) Correction period.
 - 4) Duration of bonds and insurance.
- 2. Site Mobilization (if not covered in a separate meeting):
 - a. Working hours and overtime.
 - b. Field offices, trailers, and staging areas.
 - c. Temporary facilities.
 - d. Temporary utilities and limitations on utility consumption (where applicable).
 - e. Utility company coordination (if not done as a separate meeting).
 - f. Access to Site, access roads, and parking for construction vehicles.

- g. Maintenance and protection of traffic.
 - h. Use of premises.
 - i. Protection of existing property.
 - j. Security.
 - k. Temporary controls, such as sediment and erosion control, noise control, dust control, storm water control, and other such measures.
 - l. Site barriers and temporary fencing.
 - m. Storage of materials and equipment.
 - n. Reference points and benchmarks; surveys and layouts.
 - o. Site maintenance during the Project.
 - p. Cleaning and removal of trash and debris.
 - q. Restoration.
 - r. Site specific safety plan including hurricane preparedness plan.
- 3. General discussion and questions.
 - 4. Next meeting.
 - 5. Site visit, if required.

1.4 EMERGENCY CONTACT INFORMATION

- A. CONTRACTOR shall provide list of emergency contact information for 24-hour use throughout the Project. Emergency contact information shall be updated and kept current throughout the Project. If personnel or contact information change, provide updated emergency contact information list at the next progress meeting.
- B. CONTRACTOR's list of emergency contact information shall include:
 - 1. CONTRACTOR's project manager's office, field office, and cellular numbers.
 - 2. CONTRACTOR's Site superintendent's office, field office, and cellular numbers.
 - 3. CONTRACTOR's foreman's field office, and cellular numbers.
 - 4. Major Subcontractors' and Suppliers' office, and cellular numbers of project manager and foreman (when applicable).
- C. Additional Emergency Contact Information:
 - 1. OWNER's office and cellular telephone numbers.
 - 2. OWNER's central 24-hour emergency telephone number, if applicable.
 - 3. ENGINEER's project manager's office and cellular telephone numbers.
 - 4. Resident Project Representative's office, field office, and cellular telephone numbers for each RPR.
 - 5. Utility companies' 24-hour contact telephone number(s), including gas, water, sewer, oil, telephone, cable television/telecommunications, and other companies or concerns having utilities in the vicinity of the Work.
 - 6. Highway and street owners' 24-hour telephone number(s).
 - 7. Emergency telephone numbers, including: "Emergency: Dial 911", and ten-digit telephone numbers for the hospital, ambulance, police, and fire department nearest to the Site. Provide names of each of these institutions.

8. Other involved entities as applicable.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

+ + END OF SECTION + +

THIS PAGE INTENTIONALLY LEFT BLANK

SECTION 01 32 16

PROGRESS SCHEDULE

PART 1 – GENERAL

1.1 DESCRIPTION

A. Scope:

1. Prepare and submit Progress Schedules in accordance with the General Conditions and this Section, unless otherwise accepted by ENGINEER.
2. Maintain and update Progress Schedules. Submit updated Progress Schedules as specified in this Section unless otherwise directed by ENGINEER.
3. ENGINEER's acceptance of the Progress Schedule, and comments or opinions concerning the activities in the Progress Schedule shall not control CONTRACTOR's independent judgment relative to means, methods, techniques, sequences, and procedures of construction. CONTRACTOR is solely responsible for complying with the Contract Times.

1.2 SUBMITTALS

A. Informational Submittals: Submit the following:

1. Progress Schedules:
 - a. Submit 3 copies of preliminary Progress Schedule in accordance with Paragraph 2.05 of the General Conditions. Submit in accordance with Section 01 33 00, Submittal Procedures.
 - b. After making revisions in accordance with ENGINEER's comments on the preliminary Progress Schedule, submit 3 copies of Progress Schedule in accordance with Paragraph 2.07 of the General Conditions. Submit in accordance with Section 01 33 00, Submittal Procedures.
 - c. Submit each Progress Schedule submittal with letter of transmittal complying with requirements of Section 01 33 00, Submittal Procedures, and specifically indicating the following:
 - 1) Listing of activities and dates that have changed since the previous Progress Schedule submittal.
 - 2) Discussion of problems causing delays, anticipated duration of delays, and proposed countermeasures.
2. Recovery Schedules: Submit in accordance with this Section.

1.3 PROGRESS SCHEDULE FORMAT AND CONTENT

A. Format:

1. Type:
 - a. Horizontal bar chart or Gantt chart.
2. Sheet Size: 11 inches x 17 inches unless otherwise accepted by ENGINEER.

3. Time Scale: Indicate first date of each work week.
 4. Organization:
 - a. Indicate on the separate Schedule of Submittals dates for submitting and reviewing Shop Drawings, Samples, and other submittals.
 - b. Group deliveries of materials and equipment into a separate sub-schedule that is part of the Progress Schedule.
 - c. Group construction into a separate sub-schedule (that is part of the Progress Schedule) by activity.
 - d. Group critical activities that dictate the rate of progress (the “critical path”) into a separate sub-schedule that is part of the Progress Schedule. Clearly indicate the critical path on the Progress Schedule.
 - e. Organize each sub-schedule by Specification Section number.
 5. Activity Designations: Indicate title and related Specification Section number.
- B. Content: Progress Schedules shall indicate the following:
1. Delivery dates for materials and equipment to be incorporated into the Work.
 2. Dates for beginning and completing each phase of the Work by activity and by trade.
 3. Dates for start-up and check-out, field-testing, and instruction of OWNER’s personnel.
 4. Dates corresponding to the Contract Times, and planned completion date associated with each Milestone (if any), Substantial Completion, and readiness for final payment.
- C. Coordinate the Progress Schedule with the Schedule of Submittals.

1.4 RECOVERY SCHEDULES

- A. Recovery Schedules, General:
1. When updated Progress Schedule indicates that the ability to comply with the Contract Times falls 5 or more days behind schedule, and there is no excusable delay, Change Order, or Work Change Directive to support an extension of the Contract Times, CONTRACTOR shall prepare and submit a Progress Schedule demonstrating CONTRACTOR’s plan to accelerate the Work to achieve compliance with the Contract Times (“recovery schedule”) for ENGINEER’s acceptance.
 2. Submit recovery schedule within 3 days after submittal of updated Progress Schedule where need for recovery schedule is indicated.
- B. Implementation of Recovery Schedule:
1. At no additional cost to OWNER, do one or more of the following: furnish additional labor, provide additional construction equipment, provide suitable materials, employ additional work shifts, expedite procurement of materials and equipment to be incorporated into the Work, and other measures necessary to complete the Work within the Contract Times.

2. Upon acceptance of recovery schedule by ENGINEER, incorporate recovery schedule into the next Progress Schedule update.
- C. Lack of Action:
1. CONTRACTOR's refusal, failure, or neglect to take appropriate recovery action, or to submit a recovery schedule, shall constitute reasonable evidence that CONTRACTOR is not prosecuting the Work or separable part thereof with the diligence that will ensure completion within the Contract Times. Such lack of action shall constitute sufficient basis for OWNER to exercise remedies available to OWNER under the Contract Documents.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

+ + END OF SECTION + +

THIS PAGE INTENTIONALLY LEFT BLANK

SECTION 01 33 00

SUBMITTAL PROCEDURES

PART 1 – GENERAL

1.1 DESCRIPTION

A. Scope:

1. CONTRACTOR shall provide submittals in accordance with the General Conditions as modified by the Supplementary Conditions, and this Section.
2. Provide submittals well in advance of need for the material or equipment, or procedure (as applicable), in the Work and with ample time required for delivery of material or equipment and to implement procedures following ENGINEER's approval or acceptance of the associated submittal. Work covered by a submittal will not be included in progress payments until approval or acceptance of related submittals has been obtained in accordance with the Contract Documents.
3. CONTRACTOR is responsible for dimensions to be confirmed and corrected at the Site, for information pertaining solely to the fabrication processes and to techniques of construction, and for coordinating the work of all trades. CONTRACTOR's signature of submittal's stamp and letter of transmittal shall be CONTRACTOR's representation that CONTRACTOR has met his obligations under the Contract Documents relative to that submittal.

B. Samples:

1. Conform submittal of Samples to the General Conditions as modified by the Supplementary Conditions, this Section, and the Specification Section in which the Sample is specified.
2. Furnish at the same time Samples and submittals that are related to the same unit of Work or Specification Section. ENGINEER will not review submittals without associated Samples, and will not review Samples without associated submittals.
3. Samples shall clearly illustrate functional characteristics of product, all related parts and attachments, and full range of color, texture, pattern, and material.

1.2 TYPES OF SUBMITTALS

- ###### A.
- Submittal types are classified as follows: 1) Action Submittals, 2) Informational Submittals, 3) Closeout Submittals, and 4) Maintenance Material submittals. Type of each required submittal is designated in the respective Specification Sections; when type of submittal is not specified in the associated Specification Section, submittal will be classified as follows:

1. Action Submittals include:
 - a. Shop Drawings.
 - b. Product data.
 - c. Delegated design submittals, which include documents prepared, sealed, and signed by a design professional retained by CONTRACTOR, Subcontractor, or Supplier for materials and equipment to be incorporated into the completed Work. Delegated design submittals do not include submittals related to temporary construction unless specified otherwise in the related Specification Section. Delegated design submittals include: design drawings, design data including calculations, specifications, certifications, and other submittals prepared by such design professional.
 - d. Samples.
 - e. Testing plans, procedures, and testing limitations.
2. Informational Submittals include:
 - a. Certificates.
 - b. Design data not sealed and signed by a design professional retained by CONTRACTOR, Subcontractor, or Supplier.
 - c. Pre-construction test and evaluation reports, such as reports on pilot testing, subsurface investigations, potential Hazardous Environmental Condition, and similar reports.
 - d. Supplier instructions, including installation data, and instructions for handling, starting-up, and troubleshooting.
 - e. Source quality control submittals (other than testing plans, procedures, and testing limitations), including results of shop testing.
 - f. Field or Site quality control submittals (other than testing plans, procedures, and testing limitations), including results of operating and acceptability tests at the Site.
 - g. Supplier reports.
 - h. Sustainable design submittals (other than sustainable design closeout documentation).
 - i. Special procedure submittals, including health and safety plans and other procedural submittals.
 - j. Qualifications statements.
3. Closeout Submittals include:
 - a. Maintenance contracts.
 - b. Operations and maintenance data.
 - c. Bonds, such as maintenance bonds and bonds for a specific product or system.
 - d. Warranty documentation.
 - e. Record documentation.

4. Maintenance Material Submittals include:
 - a. Spare parts.
 - b. Extra stock materials.
 - c. Tools.
 5. When type of submittal is not specified and is not included in the list above, ENGINEER will determine the type of submittal.
- B. Not Included in this Section: Administrative and procedural requirements for the following are covered elsewhere in the Contract Documents:
1. Requests for interpretations of the Contract Documents.
 2. Change Orders, Work Change Directives, and Field Orders.
 3. Applications for Payment
 4. Progress Schedules.
 5. Photographic documentation.
 6. Reports and documentation required in accordance with applicable permits.
 7. Site survey data.

1.3 SUBMITTALS REQUIRED IN THIS SECTION

- A. Informational Submittals: Provide the following:
1. Schedule of Submittals:
 - a. Timing:
 - 1) Provide submittal within time frames specified in the Contract Documents.
 - 2) Provide updated Schedule of Submittals with each submittal of the updated Progress Schedule.
 - b. Content: In accordance with the General Conditions as modified by the Supplementary Conditions, and this Section. Requirements for content of preliminary Schedule of Submittals and subsequent submittals of the Schedule of Submittals are identical. Identify on Schedule of Submittals all submittals required in the Contract Documents. Updates of Schedule of Submittals shall show scheduled dates and actual dates for completed tasks. Indicate submittals that are on the Project's critical path. Indicate the following for each submittal:
 - 1) Date by which submittal will be provided to ENGINEER.
 - 2) Whether submittal will be for a substitution or "equal". Procedures for substitutions and "or equals" are specified in the General Conditions and the Division 01 Specifications.
 - 3) Date by which ENGINEER's response is required. At least 14 days shall be allowed from ENGINEER's receipt of each submittal. Allow increased time for large or complex submittals.
 - 4) For submittals for materials or equipment, date by which material or equipment must be at the Site to avoid delaying the Work and to avoid delaying the work of other contractors.

- c. Prepare Schedule of Submittals using same software, and in same format, specified for Progress Schedules.
- d. Coordinate Schedule of Submittals with the Progress Schedule.
- e. Schedule of Submittals that is not compatible with the Progress Schedule, or that does not indicate submittals on the Project's critical path, or that that places extraordinary demands on ENGINEER for time and resources, is unacceptable. Do not include submittals not required by the Contract Documents.
- f. In preparing Schedule of Submittals:
 - 1) Considering the nature and complexity of each submittal, allow sufficient time for review and revision.
 - 2) Reasonable time shall be allowed for: ENGINEER's review and processing of submittals, for submittals to be revised and resubmitted, and for returning submittals to CONTRACTOR.
 - 3) Identify and accordingly schedule submittals that are expected to have long anticipated review times.

1.4 PROCEDURE FOR SUBMITTALS

- A. Submittal Identification System: Use the following submittal identification system, consisting of submittal number and review cycle number.
 1. Submittal Number: Shall be separate and unique number correlating to each individual submittal required. CONTRACTOR shall assign submittal number as follows:
 - a. First part of submittal number shall be the applicable Specification Section number, followed by a hyphen.
 - b. Second part of submittal number shall be a three-digit number (sequentially numbered from 001 through 999) assigned to each separate and unique submittal provided under the associated Specification Section.
 - c. Typical submittal number for the third submittal provided for Section 40 05 31, Thermoplastic Process Pipe, would be "40 05 31-003".
 2. Review Cycle Number: Shall be a letter designation indicating the initial submittal or re-submittal associated with each submittal number:
 - a. "A" = Initial (first) submittal.
 - b. "B" = Second submittal (e.g., first re-submittal).
 - c. "C" = Third submittal (e.g., second re-submittal).
 3. Examples:

Example Description	Submittal Identification	
	Submittal No.	Review Cycle
Initial (first) review cycle of the third submittal provided under Section 40 05 31, Thermoplastic Process Pipe.	40 05 31-003-	A
Second review cycle (first re-submittal) of third submittal provided under Section 40 05 31, Thermoplastic Process Pipe.	40 05 31-003-	B

B. Letter of Transmittal for Submittals:

1. Provide separate letter of transmittal with each submittal. Each submittal shall be for one Specification Section.
2. At beginning of each letter of transmittal, provide a reference heading indicating: CONTRACTOR's name, OWNER's name, Project name, Contract name and number, transmittal number, and submittal number.
3. For submittals with proposed deviations from requirements of the Contract Documents, letter of transmittal shall specifically describe each proposed variation.

C. Contractor's Review and Stamp:

1. Contractor's Review: Before transmitting submittals to ENGINEER, review submittals to:
 - a. Assure proper coordination of the Work;
 - b. Determine that each submittal is in accordance with CONTRACTOR's desires;
 - c. Verify that submittal contains sufficient information for ENGINEER to determine compliance with the Contract Documents.
2. Incomplete or inadequate submittals will be returned without review.
3. Contractor's Stamp and Signature:
 - a. Each submittal provided shall bear CONTRACTOR's stamp of approval and signature, as evidence that submittal has been reviewed by CONTRACTOR and verified as complete and in accordance with the Contract Documents.
 - b. Submittals without CONTRACTOR's stamp and signature will be returned without review. Signatures that appear to be computer-generated will be regarded as unsigned and the associated submittal will be returned without review.
 - c. CONTRACTOR's stamp shall contain the following:

"Project Name": _____

Contractor's Name: _____

Date: _____

----- *Reference* -----

Item/Submittal Title: _____

Specifications:

Section: _____

Page No.: _____

Paragraph No.: _____

Drawing No.: _____ of _____

Location of Work: _____

Submittal No. and Review Cycle: _____

Coordinated by Contractor with Submittal Nos.: _____

I hereby certify that the Contractor has satisfied Contractor's obligations under the Contract Documents relative to Contractor's review and approval of this submittal.

Approved By (for Contractor): _____

D. Submittal Marking and Organization:

1. Mark on each page of submittal and each individual component submitted with submittal number and applicable Specification paragraph.
2. Arrange submittal information in same order as requirements are written in the associated Specification Section.
3. Each Shop Drawing sheet shall have title block with complete identifying information satisfactory to ENGINEER.
4. Package together submittals for the same Specification Section. Do not provide required information piecemeal.

E. Format of Submittal and Recipients:

1. Action Submittals and Informational Submittals: Furnish in accordance with Table 01 33 00-A, except that submittals of Samples shall be as specified elsewhere in this Section:

**TABLE 01 33 00-A: SUBMITTAL CONTACTS
AND REQUIRED COPIES**

	Address for Deliveries	Contact Person	E-mail Address	No. of Hard-copies*	Remarks
a.	Engineer: ARCADIS-US, Inc. 3109 Dr. Martin Luther King Jr. Blvd. Suite 350, Tampa, FL 33607	Sean Chaparro	Sean.chaparro@arcadis.com	One	One Electronic Version
b.	Owner: City of Venice 3510 E. Laurel Road Nokomis, FL 34275	Tony Wierzbicki	TWierzbicki@venicegov.com	Three	One Electronic Version

**Hard copies are required for final approved submittals only. Interim submittals for review can be submitted electronically.*

2. Samples:

- a. Securely label or tag Samples with submittal identification number. Label or tag shall include clear space at least three inches by three inches in size for affixing ENGINEER's review stamp. Label or tag shall not

- cover, conceal, or alter appearance or features of Sample. Label or tag shall not be separated from the Sample.
- b. Submit number of Samples required in Specifications. If number of Samples is not specified in the associated Specification Section, provide at least three identical Samples of each item required for ENGINEER's approval. Samples will not be returned to CONTRACTOR. If CONTRACTOR requires Sample(s) for CONTRACTOR's use, notify ENGINEER in writing and provide additional Sample(s). CONTRACTOR is responsible for furnishing, shipping, and transporting additional Samples.
 - c. Deliver one Sample to ENGINEER's field office at the Site. Deliver balance of Samples to ENGINEER at address listed in Table 01 33 00-A, unless otherwise directed by ENGINEER.
3. Closeout Submittals:
- a. Provide the following Closeout Submittals in accordance with Table 01 33 00-A: maintenance contracts; bonds for specific products or systems; warranty documentation; and sustainable design closeout documentation. On documents such as maintenance contracts and bonds, include on each document furnished original signature of entity issuing the document.
 - b. Operations and Maintenance Data: Submit in accordance with Section 01 78 23, Operations and Maintenance Data.
 - c. Record Documentation: Submit in accordance with Section 01 78 39, Project Record Documentation.
 - d. Software: Submit number of copies required in Specification Section where the software is specified. If number of copies is not specified, provide two copies on compact disc in addition to software loaded on to OWNER's computer(s) or microprocessor(s).
4. Maintenance Material Submittals: For spare parts, extra stock materials, and tools, submit quantity of items specified in associated Specification Section. Furnish in accordance with Section 01 78 43, Spare Parts and Extra Materials.

F. Distribution:

- 1. Distribution of Hardcopies: ENGINEER will distribute each reviewed submittal requiring ENGINEER's written response as follows:
 - a. CONTRACTOR: two copies (except closeout submittals and maintenance material submittals).
 - b. Resident Project Representative: One copy (except closeout submittals and maintenance material submittals).
 - c. ENGINEER's File: Two hard copies and one electronic version.

G. Resubmittals: Refer to the General Conditions for requirements regarding resubmitting required submittals.

- H. Submittal Log: Maintain an up-to-date log documenting required submittal description, submittal number, review cycle, status, dates, and other pertinent information.

1.5 ENGINEER'S REVIEW

- A. Timing: ENGINEER's review will conform to timing accepted by ENGINEER in the accepted Schedule of Submittals.
- B. Submittals not required in the Contract Documents will not be reviewed by ENGINEER and will not be recorded in ENGINEER's submittal log. All hardcopies of such submittals will be returned to CONTRACTOR.
- C. Action Submittals, Results of ENGINEER's Review: Each submittal will be given one of the following dispositions:
1. Approved: Upon return of submittal marked "Approved", order, ship, or fabricate materials and equipment included in the submittal (pending ENGINEER's approval or acceptance, as applicable, of source quality control submittals) or otherwise proceed with the Work in accordance with the submittal and the Contract Documents.
 2. Approved as Corrected: Upon return of submittal marked "Approved as Corrected", order, ship, or fabricate materials and equipment included in the submittal (pending ENGINEER's approval or acceptance, as applicable, of source quality control submittals) or otherwise proceed with the Work in accordance with the submittal and the Contract Documents, provided it is in accordance with corrections indicated.
 3. Approved as Corrected – Resubmit: Upon return of submittal marked "Approved as Corrected – Resubmit", order, ship, or fabricate materials and equipment included in the submittal (pending ENGINEER's approval or acceptance, as applicable, of source quality control submittals) or otherwise proceed with the Work in accordance with the submittal and the Contract Documents, provided it is in accordance with corrections indicated. Provide to ENGINEER record re-submittal with all corrections made. Receipt of corrected re-submittal is required before materials or equipment covered in the submittal will be eligible for payment.
 4. Revise and Resubmit: Upon return of submittal marked "Revise and Resubmit", make the corrections indicated and re-submit to ENGINEER for approval.
 5. Not Approved: This disposition indicates material or equipment that cannot be approved. Upon return of submittal marked "Not Approved", repeat initial submittal procedure utilizing approvable material or equipment.
- D. Informational Submittals, Results of ENGINEER's Review:
1. Each submittal will be given one of the following dispositions:

- a. Accepted: Information included in submittal conforms to the applicable requirements of the Contract Documents, and is acceptable. No further action by CONTRACTOR is required relative to this submittal, and the Work covered by the submittal may proceed, and products with submittals with this disposition may be shipped or operated, as applicable.
 - b. Not Accepted: Submittal does not conform to applicable requirements of the Contract Documents and is not acceptable. Revise submittal and re-submit to indicate acceptability and conformance with the Contract Documents.
- E. Closeout Submittals, Results of ENGINEER's Review: Dispositions and meanings are the same as specified for Informational Submittals. When acceptable, Closeout Submittals will not receive a written response from ENGINEER. Disposition as "accepted" will be recorded in ENGINEER's submittal log. When Closeout Submittal is not acceptable, ENGINEER will provide written response to CONTRACTOR.
- F. Maintenance Material Submittals, Results of ENGINEER's Review: Dispositions and meanings are the same as specified for Informational Submittals. When acceptable, Maintenance Material Submittals will not receive a written response from ENGINEER. Disposition as "accepted" will be recorded in ENGINEER's submittal log. When Maintenance Material Submittal is not acceptable, ENGINEER will provide written response to CONTRACTOR, and CONTRACTOR is responsible for costs associated with transporting and handling of maintenance materials until compliance with the Contract Documents is achieved.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

+ + END OF SECTION + +

THIS PAGE INTENTIONALLY LEFT BLANK

SECTION 01 45 53

CLEANING AND DISINFECTING HYDRAULIC STRUCTURES

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Scope:
1. CONTRACTOR shall provide labor, material, tools, equipment, and incidentals as shown, specified, and required to clean, flush, disinfect, and test structures.
 2. The Work also includes all labor and materials required to drain and dispose of water used for testing and disinfecting.
- B. Hydraulic Structures Scheduled for Disinfection: Clean and disinfect interior surfaces of the following:

Hydraulic Structure
1. North Clearwell
2. South Clearwell

- C. Provide chemicals for disinfection and dechlorination.

1.2 REFERENCES

- A. Standards referenced in this Section are:
1. AWWA C652, Disinfection of Water-Storage Facilities.
 2. AWWA C653, Disinfection of Water Treatment Plants.
 3. NSF/ANSI 60, Drinking Water Treatment Chemicals – Health Effects.

1.3 SUBMITTALS

- A. Action Submittals: Provide the following:
1. Product Data:
 - a. Data sheets on chemicals used for disinfection and dechlorination.
 - b. Proof of NSF/ANSI 60 compliance for chemicals used in disinfection and dechlorination.
 2. Procedure Submittals (including proposed plans for water conveyance, control, and disposal):
 - a. Cleaning procedures.

- b. Disinfection procedures and equipment required for clearwells to be tested.
 - c. Proposed phasing plan to complete clearwell repairs.
- B. Informational Submittals: Provide the following:
 - 1. Special Procedure Submittals:
 - a. Schedule for each test required.
 - b. Procedure for disposal of chlorinated water, including proposed dechlorination chemical and methods.
 - c. Provide written notice of intent to disinfect each clearwell at least three days prior to disinfection. Disinfection and bacteriological testing shall not commence without acceptance of ENGINEER.
 - 3. Site Quality Control Submittals:
 - a. Results of each bacteriological test (to be provided by CONTRACTOR).
 - b. Chain of custody documentation for bacteriological tests (to be provided by CONTRACTOR).

PART 2 – PRODUCTS

2.1 MATERIALS

- A. Provide and maintain temporary valves, plugs, and bulkheads, and other water control equipment suitable for the intended use. Do not use materials that would be injurious to the Work.
- B. Chemicals:
 - 1. Chemicals used for disinfection and dechlorination shall conform to NSF/ANSI 60.

PART 3 – EXECUTION

3.1 CLEANING

- A. Cleaning Requirements:
 - 1. Prior to disinfection, remove all scaffolding, planks, tools, rags, dirt, debris, and material not part of the structure.
 - 2. Thoroughly clean walls, floors, and ceilings by sweeping, high-pressure wash, scrubbing, or other methods that will not injure the Work and existing facilities.
 - 3. Remove from the hydraulic structure all water, dirt, and foreign material accumulated during cleaning. Provide temporary pumps, piping, and facilities as required to discharge water from the cleaning operation in

manner acceptable to ENGINEER and in conformance with Laws and Regulations.

4. Do not proceed with testing until ENGINEER has accepted in the field results of cleaning.

3.2 DISINFECTION, GENERAL

- A. Apply and cure protective coatings for concrete before starting disinfection.
- B. Provide disinfection to be as late as possible to provide maximum degree of sterility at the time the Work is placed into continuous service.
- C. Bacteriological testing shall be performed by certified testing laboratory retained by OWNER. Results of bacteriological testing shall indicate conformance with the Contract Documents and shall be acceptable to the authority having jurisdiction.
- D. Release of water from structure after disinfection shall be as approved or accepted (as applicable) by OWNER and ENGINEER.

3.3 DISINFECTING HYDRAULIC STRUCTURES

- A. Hydraulic structures to be disinfected shall be chlorinated by CONTRACTOR in accordance with one of the methods in AWWA C652 and as acceptable to OWNER and ENGINEER, unless otherwise specified or indicated in the Contract Documents.
- B. Disinfection:
 1. Provide temporary taps, plugs, valves, drains, pumps, tanks, piping, facilities, and connections required to disinfect, dechlorinate, and remove chlorinated water as specified.
 2. Disinfect hydraulic structures immediately before each structure is placed in operation to prevent facility from becoming contaminated after disinfection.
 3. Use solution of water and liquid chlorine, calcium hypochlorite, or sodium hypochlorite. Placement of chlorine powder or tablets inside hydraulic structure as means of disinfection is not allowed.
 4. Introduce chlorine solution into clearwell structure in manner accepted by ENGINEER.
 5. Add potable water to hydraulic structure with the chlorine solution. Introduce water to hydraulic structure through backflow prevention device.
 6. Upon completion of disinfection of each hydraulic structure, dechlorinate contents of hydraulic structure until chlorine residual equals the residual in local potable water system. Dechlorination shall be in accordance with AWWA C653.
 7. Discharge dechlorinated water to nearest plant drain, unless approved otherwise by ENGINEER.

- D. After disinfection is completed and before clearwell structure is placed in service, coordinate with OWNER to test the clearwell structure for bacteria in accordance with AWWA C652 and “Standard Methods for Examination of Water and Wastewater”.
- E. Samples for bacteriological testing shall be obtained by the CONTRACTOR from each disinfected hydraulic structure as follows:
 - 1. Immediately After Completion of Disinfection: Minimum of two samples.
 - 2. Twenty-four Hours after Obtaining First Set of Samples: Minimum of two samples.
- F. Sampling and testing for bacteriological tests shall conform to Paragraph 3.2.E of this Section. Test results shall indicate satisfactory results for bacteria, in accordance with requirements of authority having jurisdiction, before hydraulic structure will be accepted for placement back into service.
- G. Repeat the disinfection procedure at no additional cost to OWNER until test results indicate satisfactory results for bacteria.

+ + END OF SECTION + +

SECTION 01 57 05

TEMPORARY CONTROLS

PART 1 – GENERAL

1.1 DESCRIPTION

- A. Scope:
 - 1. CONTRACTOR shall provide and maintain methods, equipment, and temporary construction as required to control environmental conditions at the Site and adjacent areas.
 - 2. Maintain controls until no longer required.
 - 3. Temporary controls include, but are not limited to, the following:
 - a. Erosion and sediment controls.
 - b. Noise controls.
 - c. Dust control.
 - d. Pest and rodent control.
 - e. Control of water, including storm water runoff.
 - f. Pollution control.

1.2 QUALITY ASSURANCE

- A. Regulatory Requirements: Comply with applicable provisions and recommendations of jurisdictions having authority, including, but not limited to:
 - 1. Florida Department of Environmental Protection.
 - 2. Florida Department of Health.
 - 3. City of Venice Engineering Department.

PART 2 – PRODUCTS

2.1 MATERIALS FOR TEMPORARY EROSION AND SEDIMENT CONTROLS

- A. Materials for temporary erosion and sediment controls shall be as shown or indicated on the Drawings.
- B. Filter Bag on Dewatering Pump Discharge:
 - 1. Provide filter bag on discharge of each dewatering pump drawing from an excavation. Filter bag is not required on pumps associated with dewatering wells.
 - 2. Products and Manufacturers: Provide one of the following:
 - a. UltraTech Dewatering Bag, by Interstate Products.
 - b. Filter Bag, by US Fabrics.

- c. Dewatering (Filter) Bag, Indian Valley Industries.
- d. DirtBag, by Atlantic Construction Fabrics (ACF) Environmental.
- e. Or equal.
- 3. Size filter bags for maximum flow of the pump. Filter bags shall be specifically fabricated for use as a dewatering pump filter bag.
- 4. Provide sufficient spare filter bags for continuous dewatering operations.

C. Temporary Stone Construction Entrance:

- 1. Stone: Tough, hard, durable stone complying with the following gradation requirements:

Sieve Size	Total Percent Passing
Four-inch (100 mm)	100
3.5-inch (90 mm)	90 to 100
2.5-inch (65 mm)	25 to 60
1.5-inch (37.5 mm)	Zero to 15

- 2. Geotextile: As recommended by geotextile manufacturer for separating stone from subgrade, for the vehicle weight and traffic frequency required.

PART 3 – EXECUTION

3.1 NOISE CONTROL

A. Noise Control – General:

- 1. CONTRACTOR's vehicles and equipment shall minimize noise emissions to greatest degree practicable. Provide mufflers, silencers, and sound barriers when necessary.
- 2. Noise levels shall comply with Laws and Regulations, including OSHA requirements and local ordinances.
- 3. Noise emissions shall not interfere with the work of OWNER or others.

3.2 DUST CONTROL

A. Dust Control – General:

- 1. Control objectionable dust caused by CONTRACTOR's operation of vehicles and equipment, clearing, and other actions. To minimize airborne dust, apply water or use other methods subject to acceptance of ENGINEER and approval of authorities having jurisdiction.
- 2. CONTRACTOR shall prevent blowing and movement of dust from exposed soil surfaces and access roads to reduce on- and off-Site damage, nuisances, and health hazards associated with dust emissions. Control may be achieved by irrigation in which the Site shall be sprinkled with water until the surface is

moist. Apply dust controls as frequently as required without creating nuisances such as excessive mud and ponding of water at the Site.

3. Remove dust from roadways and access roads at maximum intervals of seven days by mechanical brooming or other method acceptable to ENGINEER.

3.3 PEST AND RODENT CONTROL

A. Pest and Rodent Control – General:

1. Provide rodent and pest control as required to prevent infestation of the Site and storage areas.
2. Employ methods and use materials that do not adversely affect conditions at the Site or on adjoining properties.
3. In accordance with Laws and Regulations, promptly and properly dispose of pests and rodents trapped or otherwise controlled.

3.4 WATER CONTROL

A. Water Control – General:

1. Provide methods to control surface water and water from excavations and structures to prevent damage to the Work, the Site, and adjoining properties.
2. Control fill, grading, and ditching to direct water away from excavations, pits, tunnels and other construction areas and to direct drainage to proper runoff courses to prevent erosion, damage, or nuisance.

B. Equipment and Facilities for Water Control: Provide, operate, and maintain equipment and facilities of adequate size to control surface water.

C. Discharge and Disposal: Dispose of drainage water in manner to prevent flooding, erosion, and other damage to any and all parts of the Site and adjoining areas, and that complies with Laws and Regulations.

3.5 POLLUTION CONTROL

A. Pollution Control – General:

1. Provide means, methods, and facilities required to prevent contamination of soil, water, and atmosphere caused by discharge of noxious substances from construction operations.
2. Equipment used during construction shall comply with Laws and Regulations.

B. Spills and Contamination:

1. Provide equipment and personnel to perform emergency measures required to contain spills and to remove contaminated soils and liquids.
2. Excavate contaminated material and properly dispose of off-Site, and replace with suitable compacted fill and topsoil.

- C. Protection of Surface Waters: Implement special measures to prevent harmful substances from entering surface waters. Prevent disposal of wastes, effluents, chemicals, and other such substances in or adjacent to surface waters and open drainage routes, in sanitary sewers, or in storm sewers.
- D. Atmospheric Pollutants:
 - 1. Provide systems for controlling atmospheric pollutants related to the Work.
 - 2. Prevent toxic concentrations of chemicals and vapors.
 - 3. Prevent harmful dispersal of pollutants into atmosphere.
- E. Solid Waste:
 - 1. Provide systems for controlling and managing solid waste related to the Work.
 - 2. Prevent solid waste from becoming airborne, and from discharging to surface waters and drainage routes.
 - 3. Properly handle and dispose of solid waste.

3.6 EROSION AND SEDIMENT CONTROL

- A. Protection of Storm Water Drainage Inlets and Catch Basins:
 - 1. Protect each drainage inlet and catch basin that has the potential to receive storm water runoff from exposed soils, and does not discharge into a storm water settlement basin.
 - 2. Install either, inlet filter bags inside of drainage inlet or catch basin, or a silt fence barrier around drainage inlets and catch basins. Secure inlet filter bag with the structure's grate or by other acceptable means.
 - 3. Inlet filter bags shall not pose any obstruction above the elevation of the drainage inlet or catch basin grate requiring barricades or flashers.
 - 4. When removing silt and sediment from inlet filter bag, do not dump filter bag's contents into the drainage inlet or catch basin.
 - 5. Remove silt and sediment from inlet filter bag, or replace inlet filter bag, when inlet filter bag is not more than half full.
- B. Filter Bag on Dewatering Pump Discharge:
 - 1. Provide dewatering of excavations in compliance with Division 31 Sections.
 - 2. Locate filter bags and temporary pump discharge lines to avoid interfering with the public, use of private property, and OWNER's operations. Relocate filter bags and appurtenances when required.
 - 3. Filter bag discharge shall be directed to appropriate storm water drainage route. Do not discharge into roadways, driveways, or access roads. When temporary settlement basin is used, locate filter bags to discharge to temporary settlement basin when practicable.
 - 4. Provide filter bag on discharge of each dewatering pump drawing from an excavation.
 - 5. Securely attach filter bag to pump discharge pipe or hose.
- 6. Maintain, clean out, and replace filter bags as required.

3.7 REMOVAL OF TEMPORARY CONTROLS

A. Removals – General:

1. Upon completion of the Work, remove temporary controls and restore Site to pre-construction condition.
2. After soils are permanently stabilized, remove from the Site temporary erosion and sediment controls.

+ + END OF SECTION + +

THIS PAGE INTENTIONALLY LEFT BLANK

SECTION 01 65 00

PRODUCT DELIVERY REQUIREMENTS

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Scope:
 - 1. This Section includes the general requirements for preparing for shipping, delivering, and handling materials and equipment.
 - 2. CONTRACTOR shall make all arrangements for transporting, delivering, and handling of materials and equipment required for prosecution and completion of the Work.
 - 3. When required, move stored materials and equipment without additional compensation and without changes to the Contract Times.

1.2 SUBMITTALS

- A. Refer to individual Specification Sections for submittal requirements relative to delivering and handling materials and equipment.

1.3 PREPARING FOR SHIPMENT

- A. When practical, factory-assemble materials and equipment. Match mark or tag separate parts and assemblies to facilitate field assembly. Cover machined and unpainted parts that may be damaged by the elements with strippable, protective coating.
- B. Package materials and equipment to facilitate handling, and protect materials and equipment from damage during shipping, handling, and storage. Mark or tag outside of each package or crate to indicate the associated purchase order number, bill of lading number, contents by name, OWNER's contract name and number, CONTRACTOR name, equipment number, and approximate weight. Include complete packing lists and bills of materials with each shipment.
- C. Protect materials and equipment from exposure to the elements and keep thoroughly dry and dust-free at all times. Protect painted surfaces against impact, abrasion, discoloration, and other damage. Lubricate bearings and other items requiring lubrication in accordance with manufacturer's instructions.

- D. Advance Notice of Shipments:
1. Keep ENGINEER informed of delivery of all materials and equipment to be incorporated in the Work.
 2. Upon receipt of Supplier's advance notice of shipment, at least seven days prior to delivery of materials and equipment, provide ENGINEER written notification of anticipated date and place of arrival.
- E. Do not ship materials and equipment until:
1. Related Shop Drawings and other submittals have been approved or accepted (as applicable) by ENGINEER, including, but not necessarily limited to, all Action Submittals associated with the materials and equipment being delivered.
 2. Manufacturer's instructions for handling, storing, and installing the associated materials and equipment have been submitted to and accepted by ENGINEER in accordance with the Specifications.
 3. Results of source quality control testing (factory testing), when required by the Contract Documents for the associated materials or equipment, have been reviewed and accepted by ENGINEER.
 4. Facilities required for handling materials and equipment in accordance with manufacturer's instructions are in place and available.
 5. Required storage facilities have been provided.

1.4 DELIVERY

- A. Scheduling and Timing of Deliveries:
1. Arrange deliveries of materials and equipment in accordance with the accepted Progress Schedule and in ample time to facilitate inspection prior to installation.
 2. Schedule deliveries to minimize space required for and duration of storage of materials and equipment at the Site or delivery location, as applicable.
 3. Coordinate deliveries to avoid conflicting with the Work and conditions at Site, and to accommodate the following:
 - a. Work of other contractors and OWNER.
 - b. Storage space limitations.
 - c. Availability of equipment and personnel for handling materials and equipment.
 - d. OWNER's use of premises.
 4. Deliver materials and equipment to the Site during regular working hours.
 5. Deliver materials and equipment to avoid delaying the Work and the Project, including work of other contractors, as applicable. Deliver anchor system materials, including anchor bolts to be embedded in concrete or masonry, in ample time to avoid delaying the Work.

B. Deliveries:

1. Shipments shall be delivered with CONTRACTOR's name, Subcontractor's name (if applicable), Site name, Project name, and contract designation (example: "ABC Construction Co., City of Somewhere, Idaho, Wastewater Treatment Plant Primary Clarifier Improvements, Contract 25, General Construction") clearly marked.
2. Site may be listed as the "ship to" or "delivery" address; but OWNER shall not be listed as recipient of shipment unless otherwise directed in writing by ENGINEER.
3. Provide CONTRACTOR's telephone number to shipper; do not provide OWNER's telephone number.
4. Arrange for deliveries while CONTRACTOR's personnel are at the Site. CONTRACTOR shall receive and coordinate shipments upon delivery. Shipments delivered to the Site when CONTRACTOR is not present will be refused by OWNER, and CONTRACTOR shall be responsible for the associated delays and additional costs, if incurred.

C. Containers and Marking:

1. Have materials and equipment delivered in manufacturer's original, unopened, labeled containers.
2. Clearly mark partial deliveries of component parts of materials and equipment to identify materials and equipment, to allow easy accumulation of parts, and to facilitate assembly.

D. Inspection of Deliveries:

1. Immediately upon delivery, inspect shipment to verify that:
 - a. Materials and equipment comply with the Contract Documents and approved or accepted (as applicable) submittals.
 - b. Quantities are correct.
 - c. Materials and equipment are undamaged.
 - d. Containers and packages are intact and labels are legible.
 - e. Materials and equipment are properly protected.
2. Promptly remove damaged materials and equipment from the Site and expedite delivery of new, undamaged materials and equipment, and remedy incomplete or lost materials and equipment to furnish materials and equipment in accordance with the Contract Documents, to avoid delaying progress of the Work.
3. Advise ENGINEER in writing when damaged, incomplete, or defective materials and equipment are delivered, and advise ENGINEER of the associated impact on the Progress Schedule.

1.5 HANDLING OF MATERIALS AND EQUIPMENT

- A. Provide equipment and personnel necessary to handle materials and equipment, including those furnished by OWNER, by methods that prevent soiling or damaging materials and equipment and packaging.
- B. Provide additional protection during handling as necessary to prevent scraping, marring, and otherwise damaging materials and equipment and surrounding surfaces.
- C. Handle materials and equipment by methods that prevent bending and overstressing.
- D. Lift heavy components only at designated lifting points.
- E. Handle materials and equipment in safe manner and as recommended by the manufacturer to prevent damage. Do not drop, roll, or skid materials and equipment off delivery vehicles or at other times during handling. Hand-carry or use suitable handling equipment.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

+ + END OF SECTION + +

SECTION 01 66 00

PRODUCT STORAGE AND HANDLING REQUIREMENTS

PART 1 – GENERAL

1.1 DESCRIPTION

- A. This Section includes general requirements for storing and protecting materials and equipment.

1.2 STORAGE

- A. Store and protect materials and equipment in accordance with manufacturer's recommendations and the Contract Documents.
- B. CONTRACTOR shall make all arrangements and provisions necessary for, and pay all costs for, storing materials and equipment. Excavated materials, construction equipment, and materials and equipment to be incorporated into the Work shall be placed to avoid injuring the Work and existing facilities and property, and so that free access is maintained at all times to all parts of the Work and to public utility installations in vicinity of the Work. Store materials and equipment neatly and compactly in locations that cause minimum inconvenience to OWNER, other contractors, public travel, and owners, tenants, and occupants of adjoining property. Arrange storage in manner to allow easy access for inspection.
- C. Store materials and equipment to become OWNER's property to facilitate their inspection and ensure preservation of quality and fitness of the Work, including proper protection against damage by freezing, moisture, and high temperatures with ambient temperatures as high as 100 degrees F. Store in indoor, climate-controlled storage areas all materials and equipment subject to damage by moisture, humidity, heat, cold, and other elements, unless otherwise acceptable to OWNER. When placing orders to Suppliers for equipment and controls containing computer chips, electronics, and solid-state devices, CONTRACTOR shall obtain, coordinate, and comply with specific temperature and humidity limitations on materials and equipment, because temperature inside cabinets and components stored in warm temperatures can approach 200 degrees F.
- D. CONTRACTOR shall be fully responsible for loss or damage (including theft) to stored materials and equipment.
- E. Do not open manufacturer's containers until time of installation, unless recommended by the manufacturer or otherwise specified in the Contract Documents.

- F. Do not store materials or equipment in structures being constructed unless approved by ENGINEER in writing.
- G. Do not use lawns or other private property for storage without written permission of the owner or other person in possession or control of such premises.

1.3 PROTECTION

- A. Equipment to be incorporated into the Work shall be boxed, crated, or otherwise completely enclosed and protected during shipping, handling, and storage, in accordance with Section 01 65 00, Product Delivery Requirements.
- B. Store all materials and equipment off the ground (or floor) on raised supports such as skids or pallets.
- C. Protect painted surfaces against impact, abrasion, discoloration, and other damage. Painted equipment surfaces that are damaged or marred shall be repainted in their entirety in accordance with equipment manufacturer and paint manufacturer requirements, to the satisfaction of ENGINEER.
- D. Protect electrical equipment, controls, and instrumentation against moisture, water damage, heat, cold, and dust. Space heaters provided in equipment shall be connected and operating at all times until equipment is placed in operation and permanently connected.

1.4 UNCOVERED STORAGE

- A. The following types of materials may be stored outdoors without cover on supports so there is no contact with the ground:
 - 1. Reinforcing steel.
 - 2. Precast concrete materials.
 - 3. Structural steel.
 - 4. Rigid electrical conduit.
 - 5. Piping, except polyvinyl chloride (PVC) pipe.
 - 6. Canopy materials.

1.5 COVERED STORAGE

- A. The following materials and equipment may be stored outdoors on supports and completely covered with covering impervious to water:
 - 1. Grout and mortar materials.
 - 2. Masonry units.
 - 3. Soil materials and granular materials such as aggregate.
 - 4. Ductile iron pipe.

- B. Tie down covers with rope, and slope covering to prevent accumulation of water.

1.6 FULLY PROTECTED STORAGE

- A. Store all material and equipment not named in Articles 1.4 and 1.5 of this Section on supports in buildings or trailers that have concrete or wooden flooring, roof, and fully closed walls on all sides. Covering with visquine plastic sheeting or similar material in space without floor, roof, and walls is not acceptable. Comply with the following:
 - 1. Provide heated storage for materials and equipment that could be damaged by low temperatures or freezing.
 - 2. Provide air-conditioned storage for materials and equipment that could be damaged by high temperatures.
 - 3. Protect mechanical and electrical equipment from being contaminated by dust, dirt, and moisture.
 - 4. Maintain humidity at levels recommended by manufacturers for electrical and electronic equipment.

1.7 HAZARDOUS PRODUCTS

- A. Prevent contamination of personnel, storage area, and the Site. Comply with all applicable Laws and Regulations and manufacturer's instructions.

1.8 MAINTENANCE OF STORAGE

- A. On scheduled basis, periodically inspect stored materials and equipment to ensure that:
 - 1. Condition and status of storage facilities is adequate to provide required storage conditions.
 - 2. Required environmental conditions are maintained on continuing basis.
 - 3. Materials and equipment exposed to elements are not adversely affected.
- B. Mechanical equipment requiring long-term storage shall have complete manufacturer's instructions for servicing each item, with notice of enclosed instructions shown on exterior of container or package.
 - 1. Comply with manufacturer's instructions on scheduled basis.
 - 2. Space heaters that are part of electrical equipment shall be connected and operated continuously until equipment is placed in service and permanently connected.

1.9 RECORDS

- A. Keep up-to-date account of materials and equipment in storage to facilitate preparation of Applications for Payment, if the Contract Documents provide for payment for materials and equipment not incorporated in the Work but delivered and

suitably stored at the Site or at another location agreed to in writing.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

+ + END OF SECTION +

SECTION 01 77 19

CLOSEOUT REQUIREMENTS

PART 1 – GENERAL

1.1 DESCRIPTION OF REQUIREMENTS

- A. Definitions: Closeout is defined to include the general requirements near the end of the Contract Time, in preparation for final acceptance, final payment, normal termination of the Contract, occupancy by the OWNER and similar actions evidencing completion of the WORK.

1.2 PREREQUISITES FOR FINAL ACCEPTANCE

- A. General: Prior to requesting the OWNER's final inspection for certifications of final acceptance and final payment, as required by the General Conditions, complete the following and list known exceptions (if any) in request:
 - 1. Submit final payment request with final releases and supports not previously submitted and accepted. Include certificates of insurance for products and completed operations.
 - 2. Submit updated final statement, accounting for additional changes to the Contract Sum.
 - 3. Submit certified copy of the OWNER's final punch-list of itemized WORK to be completed or corrected, stating that each item has been completed or otherwise resolved for acceptance, endorsed and dated by the OWNER.

1.3 CLOSEOUT PROCEDURES

- A. General Operating/Maintenance Instructions: Arrange for each installer of WORK requiring continuing maintenance (by the OWNER) or operation, to meet with the OWNER's personnel, at the project site, to provide basic instructions needed for proper operation and maintenance of the entire WORK. Include instructions by manufacturer's representatives where installers are not expert in the required procedures. Review maintenance manuals, record documentation, tools, spare parts and materials, identification system, hazards, cleaning and similar procedures and facilities. For operational equipment, demonstrates start-up, shut-down, emergency operations, noise and vibration adjustments, safety, economy/efficiency adjustments, and similar operations. Review maintenance and operations in relation with applicable guarantees, warranties, agreements to maintain, bonds and similar continuing commitments.

1.4 FINAL CLEANING

- A. General: As specified herein, provide final cleaning of the WORK. The following are examples, but not by way of limitation, of the cleaning levels required.
 - 1. Clean project site (yard and grounds), including landscaping, development areas, of litter and foreign substances. Sweep paved areas to a broom-clean condition; remove stains, petrochemical spills and other foreign deposits. Rake grounds, which are neither planted nor paved, to a smooth evenly textured surface.
 - 2. Restore the grass and landscaping to original condition. Repair ruts caused by equipment.
 - 3. Remove discharge piping and restore discharge pipeline trends to original condition. Sod where needed. Mow grass where needed.
 - 4. Remove discharge piping and restore outfall area to original condition.

1.5 REMOVAL OF PROTECTION

- A. Except as otherwise indicated or requested by the OWNER, remove temporary protection devices and facilities which were installed during the course of the WORK to protect previously completed WORK during the remainder of the construction period.

1.6 COMPLIANCY

- A. Comply with safety standards and governing regulations for cleaning operations. Do not burn waste materials at the site, or bury debris or excess materials on the OWNER's property, or discharge volatile or other harmful or dangerous materials into drainage systems; remove waste materials from the site and dispose of in a lawful manner.
- B. Where extra materials of value remaining after completion of the associated WORK have become the OWNER's property, dispose or store at the site as directed by the OWNER.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

+ + END OF SECTION + +

SECTION 01 78 23

OPERATIONS AND MAINTENANCE DATA

PART 1 – GENERAL

1.1 DESCRIPTION

- A. Scope:
1. Submit operation and maintenance data, in accordance with this Section and in accordance with requirements elsewhere in the Contract Documents, as instructional and reference manuals by operations and maintenance personnel at the Site.
 2. Required operation and maintenance data are presented in the individual Specification Sections. At minimum, submit operation and maintenance data for:
 - a. Valves, actuators, and related accessories.
 3. For each operation and maintenance manual, submit the following:
 - a. Preliminary Submittal: Electronic copy of entire operation and maintenance manual, except for test data, service reports by Supplier, and electronic copies.
 - b. Final Submittal: Printed and bound copy of complete operations and maintenance manual, including test data and service reports by Supplier, with electronic copies.
- B. Quantity Required and Timing of Submittals:
1. Preliminary Submittal:
 - a. Electronic Copies: One copy, exclusive of any printed copies required by CONTRACTOR.
 - b. Submit to ENGINEER by the earlier of: ninety days following approval of Shop Drawings and product data submittals, or ten days prior to starting training of operations and maintenance personnel, or ten days prior to field quality control testing at the Site.
 2. Final Submittal: Provide final submittal prior to Substantial Completion, unless submittal is specified as required prior to an interim Milestone.
 - a. Printed Copies: Three copies.
 - b. Electronic Copies: One copy.

1.2 FORMAT OF PRINTED COPIES

- A. Binding and Cover:
1. Bind each operation and maintenance manual in durable, permanent, stiff-cover binder(s), comprising one or more volumes per copy as required. Binders shall be minimum one-inch wide and maximum of three-inch wide. Binders for each copy of each volume shall be identical.

2. Binders shall be locking three-ring/"D"-ring type, or three-post type. Three-ring binders shall be riveted to back cover and include plastic sheet lifter (page guard) at front of each volume.
3. Do not overfill binders.
4. Covers shall be oil-, moisture-, and wear-resistant, including identifying information on cover and spine of each volume.
5. Provide the following information on cover of each volume:
 - a. Title: "OPERATING AND MAINTENANCE INSTRUCTIONS".
 - b. Name or type of material or equipment covered in the manual.
 - c. Volume number, if more than one volume is required, listed as "Volume ___ of ___", with appropriate volume-designating numbers filled in.
 - d. Name of Project and, if applicable, Contract name and number.
 - e. Name of building or structure, as applicable.
6. Provide the following information on spine of each volume:
 - a. Title: "OPERATING AND MAINTENANCE INSTRUCTIONS".
 - b. Name or type of material or equipment covered in the manual.
 - c. Volume number, if more than one volume is required, listed as "Volume ___ of ___", with appropriate volume-designating numbers filled in.
 - d. Project name and building or structure name.

B. Pages:

1. Print pages in manual on 30-pound (minimum) paper, 8.5 inches by 11 inches in size.
2. Reinforce binding holes in each individual sheet with plastic, cloth, or metal. When published, separately-bound booklets or pamphlets are part of the manual, reinforcing of pages within booklet or pamphlet is not required.
3. Provide each page with binding margin at least one inch wide. Punch each page with holes suitable for the associated binding.

C. Drawings:

1. Bind into the manual drawings, diagrams, and illustrations up to and including 11 inches by 17 inches in size, with reinforcing specified for pages.
2. Documents larger than 11 inches by 17 inches shall be folded and inserted into clear plastic pockets bound into the manual. Mark pockets with printed text indicating content and drawing numbers. Include no more than three drawing sheets per pocket.

D. Copy Quality and Document Clarity:

1. Contents shall be original-quality copies. Documents in the manual shall be either original manufacturer-printed documents or first-generation photocopies indistinguishable from originals. If original is in color, copies shall be in color. Manuals that contain copies that are unclear, not completely legible, off-center, skewed, or where text or drawings are cut by binding holes, are unacceptable. Pages that contain approval or date stamps, comments, or other markings that cover text or drawing are unacceptable. Faxed copies are unacceptable.
2. Clearly mark in ink to indicate all components of materials and equipment on

catalog pages for ease of identification. In standard or pre-printed documents, indicate options furnished or cross out inapplicable content. Using highlighters to so indicate options furnished is unacceptable.

E. Organization:

1. Coordinate with ENGINEER and OWNER to develop comprehensive, practical, and consistent indexing system for operations and maintenance data. ENGINEER will review indexing system before operations and maintenance data is submitted.
2. Table of Contents:
 - a. Provide table of contents in each volume of each operations and maintenance manual.
 - b. In table of contents and at least once in each chapter or section, identify materials and equipment by their functional names. Thereafter, abbreviations and acronyms may be used if their meaning is clearly indicated in a table bound at or near beginning of each volume. Using material or equipment model or catalog designations for identification is unacceptable.
3. Use dividers and indexed tabs between major categories of information, such as operating instructions, preventive maintenance instructions, and other major subdivisions of data in each manual.

1.3 FORMAT OF ELECTRONIC COPIES

A. Electronic Copies of Operation and Maintenance Manuals:

1. Each electronic copy shall include all information included in the corresponding printed copy.
2. Submit each electronic copy on a separate compact disc (CD), unless another electronic data transfer method or format is acceptable to ENGINEER.
3. File Format:
 - a. Files shall be in “portable document format” (PDF). Files shall be electronically searchable.
 - b. Submit separate file for each separate document in the printed copy.
 - c. Within each file, provide bookmarks for the following:
 - 1) Each chapter and subsection listed in the corresponding printed copy document’s table of contents.
 - 2) Each figure.
 - 3) Each table.
 - 4) Each appendix.
4. At the request of the OWNER, also submit drawings and figures in one of the following formats: “.bmp”, “.tif”, “.jpg”, or “.gif”. Submit files in a separate directory on the CD.

1.4 CONTENT

A. General:

1. Prepare each operations and maintenance manual specifically for the Project.

Include in each manual all pertinent instructions, as-built drawings as applicable, bills of materials, technical bulletins, installation and handling requirements, maintenance and repair instructions, and other information required for complete, accurate, and comprehensive data for safe and proper operation, maintenance, and repair of materials and equipment furnished for the Project. Include in manuals specific information required in the Specification Section for the material or equipment, data required by Laws and Regulations, and data required by authorities having jurisdiction.

2. Completeness and Accuracy:
 - a. Operation and maintenance manuals that include language stating or implying that the manual's content may be insufficient or stating that the manual's content is not guaranteed to be complete and accurate are unacceptable.
 - b. Operations and maintenance manuals shall be complete and accurate.
 - c. Operation and maintenance manuals shall indicate the specific alternatives and features furnished, and the specific operation and maintenance provisions for the material or equipment furnished.
 3. Submit complete, detailed written operating instructions for each material or equipment item including: function; operating characteristics; limiting conditions; operating instructions for start-up, normal and emergency conditions; regulation and control; operational troubleshooting; and shutdown. Also include, as applicable, written descriptions of alarms generated by equipment and proper responses to such alarm conditions.
- B. Submit written explanations of all safety considerations relating to operation and maintenance procedures.
- C. Submit complete, detailed, written preventive maintenance instructions including all information and instructions to keep materials, equipment, and systems properly lubricated, adjusted, and maintained so that materials, equipment, and systems function economically throughout their expected service life. Instructions shall include:
1. Written explanations with illustrations for each preventive maintenance task such as inspection, adjustment, lubrication, calibration, and cleaning. Include pre-startup checklists for each equipment item and maintenance requirements for long-term shutdowns.
 2. Recommended schedule for each preventive maintenance task.
 3. Troubleshooting instructions.
 4. List of required maintenance tools and equipment.
- D. Submit complete bills of material or parts lists for materials and equipment furnished. Lists or bills of material may be furnished on a per-drawing or per-equipment assembly basis. Bills of material shall indicate:
1. Manufacturer's name, address, telephone number, fax number, and Internet website address.
 2. Manufacturer's local service representative's or local parts supplier's name,

- address, telephone number, fax number, Internet website address, and e-mail addresses, when applicable.
3. Manufacturer's shop order and serial number(s) for materials, equipment or assembly furnished.
 4. For each part or piece include the following information:
 - a. Parts cross-reference number. Cross-reference number shall be used to identify the part on assembly drawings, Shop Drawings, or other type of graphic illustration where the part is clearly shown or indicated.
 - b. Part name or description.
 - c. Manufacturer's part number.
 - d. Quantity of each part used in each assembly.
 - e. Current unit price of the part at the time the operations and maintenance manual is submitted. Price list shall be dated.
- E. Submit complete instructions for ordering replaceable parts, including reference numbers (such as shop order number or serial number) that will expedite the ordering process.
- F. Submit manufacturer's recommended inventory levels for spare parts, extra stock materials, and consumable supplies for the initial two years of operation. Consumable supplies are items consumed or worn by operation of materials or equipment, and items used in maintaining the operation of material or equipment, including items such as lubricants, seals, reagents, and testing chemicals used for calibrating or operating the equipment. Include estimated delivery times, shelf life limitations, and special storage requirements.
- G. Submit manufacturer's installation and operation bulletins, diagrams, schematics, and equipment cutaways. Avoid submitting catalog excerpts unless they are the only document available showing identification or description of particular component of the equipment. Where materials pertain to multiple models or types, mark the literature to indicate specific material or equipment supplied. Marking may be in the form of checking, arrows, or underlining to indicate pertinent information, or by crossing out or other means of obliterating information that does not apply to the materials and equipment furnished.
- H. Submit original-quality copies of each approved and accepted Shop Drawing, product data, and other submittal, updated to indicate as-installed condition. Reduced drawings are acceptable only if reduction is to not less than one-half original size and all lines, dimensions, lettering, and text are completely legible on the reduction.
- I. Submit copy of warranty bond and service contract as applicable.
- K. When copyrighted material is used in operations and maintenance manuals, obtain copyright holder's written permission to use such material in the operation and maintenance manual.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

++ END OF SECTION ++

SECTION 03 01 30

REPAIR AND REHABILITATION OF CAST-IN-PLACE CONCRETE

PART 1 – GENERAL

1.1 DESCRIPTION

A. Scope:

1. CONTRACTOR shall provide all labor, materials, equipment, and incidentals as shown, specified, and required to repair or rehabilitate, as required, all existing concrete shown or indicated in the Contract Documents as being repaired or rehabilitated.

B. Coordination:

1. Review installation procedures under this and other Sections and coordinate the Work that must be installed with or before repair and rehabilitation of concrete.

1.2 REFERENCES

A. Standards referenced in this Section are:

1. ASTM C109/C109M, Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or [50-mm] Cube Specimens).
2. ASTM C882/C882M, Test Method for Bond Strength of Epoxy-Resin Systems Used with Concrete by Slant Shear.
3. ASTM D1042, Test Method for Linear Dimensional Changes of Plastics Under Accelerated Service Conditions.
4. ASTM D3574, Test Methods for Flexible Cellular Materials – Slab, Bonded, and Molded Urethane Foams.
5. ASTM G109, Test Method for Determining the Effects of Chemical Admixtures on the Corrosion of Embedded Steel Reinforcement in Concrete Exposed to Chloride Environments.
6. NSF/ANSI 61, Drinking Water System Components – Health Effects.

1.3 SUBMITTALS

A. Action Submittals: Submit the following:

1. Product Data: Information on all products proposed for use, including manufacturer's brochures, technical data, specifications, and other applicable data.
- B. Informational Submittals: Submit the following:
1. Certificates: Certificates documenting that repair materials that will be in contact with potable water or water that will be treated to become potable are listed in NSF/ANSI 61.
 2. Manufacturer's Instructions: Manufacturer's recommended procedures for installing materials proposed for use.
 3. Site Quality Control Submittals: Results of specified Site quality control testing.
 4. Special Procedure Submittals: When requested by ENGINEER, submit information on methods for supporting during demolition and repair Work existing structures, pipes, and other existing facilities affected by the Work.

1.4 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Delivery and Handling of Materials:
1. Conform to Section 01 65 00, Product Delivery Requirements, and this Section.
 2. Clearly mark on containers manufacturer's name and label, name or title of material, manufacturer's stock number, and date of manufacture.
 3. Handle materials carefully to prevent inclusion of foreign matter.
 4. Do not open containers or mix components until necessary preparatory Work has been completed and application Work is to start immediately.
- B. Storage of Materials:
1. Conform to Section 01 66 00, Product Storage and Handling Requirements, and this Section.
 2. Store only approved materials at the Site.

PART 2 – PRODUCTS

2.1 SYSTEM REQUIREMENTS

- A. All repair and rehabilitation materials that can or will come into contact with potable water or that will be treated to become potable shall be listed in ANSI/NSF 61.

2.2 REPAIR MORTAR

- A. Product Description: Repair mortar shall be prepackaged, cement-based product specifically formulated for repairing concrete surface defects.
- B. Products and Manufacturers: Provide one of the following:
1. SikaTop 122 Plus, SikaTop 123 Plus, or SikaTop 126 Plus, by Sika Corporation.
 2. DuralTop Gel, DuralTop Flowable Mortar by Euclid Chemical Company.
 3. Or equal.
- C. Materials:
1. Provide a two-component, polymer-modified, Portland cement, fast-setting, trowel-grade mortar. Repair mortar shall be enhanced with penetrating corrosion inhibitor, and shall have the following properties:

Physical Property	Value	ASTM Standard
Minimum Compressive Strength at One Day	2,000 psi	C109
Minimum Compressive Strength at 28 Days	6,000 psi	C109
Minimum Bond Strength at 28 Days	1,800 psi	C882*
* Modified for use with repair mortars.		

2. Where the least dimension of the placement in width or thickness exceeds four inches, extend repair mortar by adding aggregate as recommended by repair mortar manufacturer.
3. Product shall be listed in NSF/ANSI 61.

2.3 REPAIR OF EXPOSED REINFORCING STEEL

- A. System Description: System for repair of exposed reinforcing steel shall consist of two components: an initial application of corrosion inhibitor and subsequent application of protective slurry mortar.
- B. Corrosion Inhibitor:
1. Corrosion inhibitor shall penetrate the hardened concrete surface and form a protective layer on reinforcing steel.
 2. Products and Manufacturers: Provide one of the following:
 - a. Sika FerroGard 903, by Sika Corporation.
 - b. Or equal.

3. Corrosion inhibitor shall:
 - a. Not change the substrate's color, appearance, or texture.
 - b. Penetrate independently of orientation (horizontal, vertical, overhead) at rate up to 1/10 to 4/5 inches per day, depending on density of concrete, measured using secondary neutron mass spectroscopy.
 - c. Form on reinforcing steel a protective layer of high integrity of at least 100 angstroms thickness, measured using x-ray photon spectroscopy and secondary ion mass spectroscopy.
 - d. Demonstrate reduction in corrosion currents after treatment as determined using cracked beam corrosion tests of concrete, as adapted from ASTM G109.
 - e. Be capable of reducing active corrosion rates by at least 65 percent. Reduction shall be demonstrated by project references and an independent corrosion engineer using linear polarization resistance.
 - f. Penetrate up to three inches in 28 days, measured using secondary neutron mass spectroscopy.
 - g. Product shall be listed in NSF/ANSI 61.

C. Protective Slurry Mortar:

1. Material shall be two-component, polymer-modified, cementitious waterproofing and protective slurry mortar. Provide two coats at coverage of 50 square feet per gallon per coat.
2. Products and Manufacturers: Provide one of the following:
 - a. Sikatop Seal 107, by Sika Corporation.
 - b. Or equal.
3. Product shall be listed in NSF/ANSI 61.

2.4 CRACK INJECTION MATERIALS

A. Crack Repair System:

1. Hydrophobic Polyurethane Chemical Grout:
 - a. Provide hydrophobic polyurethane that forms a flexible gasket.
 - b. Products and Manufacturers: Provide one of the following:
 - 1) SikaFix HH LV, by Sika Chemical Company.
 - 2) Hydro Active Flex SLV, by De Neef Construction Chemicals, Inc.
 - 3) Or equal.
 - c. Shrinkage limit shall not exceed 4.0 percent in accordance with ASTM D1042.

- d. Minimum elongation of 250 percent in accordance with ASTM D3574.
- e. Minimum tensile strength of 150 psi in accordance with ASTM D3574.
- f. Product shall be listed in NSF/ANSI 61.

PART 3 – EXECUTION

3.1 INSPECTION

- A. Examine areas and conditions under which the repair Work is to be installed and notify ENGINEER in writing of conditions detrimental to proper and timely completion of the Work. Do not proceed with the Work until unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Surface Preparation:
 - 1. Initial Surface Preparation: Remove by chipping, abrasive blasting, or hydro blasting all laitance, foreign material, and unsound concrete from entire area to be repaired. Further roughen surface as specified in this Section. Where non-shrink grout or repair mortar is used, perform additional surface preparation, if any, recommended by product manufacturer.
 - 2. Wetting Procedure: Where repair concrete, shotcrete, or cement grout is used, and bonding agent is not required, or where repair mortar or non-shrink grout manufacturer recommends wet or saturated surface, perform the following:
 - a. Continuously apply water for at least four hours to surface being repaired. Where large surface areas are to be repaired, use fog-spray nozzles, mounted on stands, in sufficient number so that entire surface to be repaired is contacted by fog spray cloud.
 - b. Prevent concrete from drying until after repair is completed. Re-wet surfaces not yet repaired using water sprays at least a daily; should more than four days elapse without re-wetting surfaces not yet repaired, repeat the original saturating procedure.
 - c. Remove standing water in areas to be repaired before placing repair material. Provide means to remove excess water from structure.

3. Preparation for Epoxy Bonding Agent: Where repair material manufacturer recommends use of epoxy-bonding agent, conform to recommendations of both repair material manufacturer and bonding agent manufacturer.

3.3 INSTALLATION, GENERAL

- A. Construction Tolerances: Shall be per ACI., except as specified in this Section and elsewhere in the Contract Documents.
- B. Care shall be taken to fully consolidate repair material, completely filling all portions of space to be filled.
- C. Bring surface being repaired into alignment with adjacent surfaces, providing uniform, even surface. Surface repaired shall match adjacent existing surfaces in texture and shall receive coatings or surface treatments, if any, provided for the existing surface adjacent to repaired surface.
- D. Curing:
 1. Curing of repair mortar and non-shrink grout shall be in accordance with manufacturer's recommendations, except that minimum cure period shall be three days.

3.4 REPAIR OF SURFACE DEFECTS

- A. Surface defects are depressions in a concrete surface that do not extend all the way through the concrete. Surface defects can result from removal of an embedded item, removal of an intersecting concrete member, physical damage, or unrepaired rock pockets created during original placement. For spalls that result from corroded reinforcing steel or other embedment refer to Article 3.7 of this Section.
- B. Preparation: Perform the following in addition to requirements of Article 3.2 of this Section:
 1. Remove by chipping all loose, damaged concrete to sound material.
 2. Where existing reinforcing is exposed, remove concrete to minimum of one-inch around exposed bars. If existing bars are cut through, cracked, or cross sectional area is reduced by more than 25 percent from original, immediately notify ENGINEER.
 3. Score-cut perimeter of area to be repaired to minimum depth of 1/2-inch and maximum depth that will not cut existing reinforcing steel. Chip out

existing concrete to the score line so that minimum thickness of repair mortar will be 1/2-inch.

C. Repair Material:

1. Completely fill the surface defect with specified repair material, in accordance with material manufacturer's instructions and the Contract Documents.
2. Perform, with repair mortar, repairs of surface defects in concrete normally in contact with water or soil, and interior surfaces of structures that contain water.
3. Repair of other surface defects may be by applying repair mortar, repair concrete, shotcrete, or cement grout, as appropriate.

3.5 PATCHING OF HOLES IN CONCRETE

- A. For holes larger than 8-inch diameter or equivalent area of hole, refer to the Drawings for reinforcing details.
- B. Fill openings less than four inches in their least dimension with Class III non-shrink epoxy grout as specified below.
 1. Pre-packaged, non-shrink, non-metallic, 100 percent solids, solvent-free, moisture-insensitive, three-component epoxy grouting system.
 2. Minimum Seven-day Compressive Strength: 14,000 psi, when tested in accordance with ASTM C579.
 3. Products and Manufacturers: Provide one of the following:
 - a. Euco High Strength Grout, by Euclid Chemical Company.
 - b. Sikadur 42, Grout Pak, by Sika Corporation.
 - c. Five Star Epoxy Grout, by Five Star Products, Inc.
 - d. Or equal.
- C. Openings greater than four inches and less than 16 inches in their least dimension shall be coated with an epoxy bonding agent prior to filling with Class I non-shrink grout as specified below.
 1. Pre-packaged, non-metallic, cementitious grout requiring only the addition of water at the Site.
 2. Minimum 28-day Compressive Strength: 7,000 psi.
 3. Products and Manufacturers: Provide one of the following:
 - a. NS Grout by Euclid Chemical Company.

- b. Set Grout by Master Builders, Inc.
 - c. NBEC Grout by Five Star Products, Inc.
 - d. Or equal.
- D. Openings greater than 16 inches in their least dimension shall be coated with an epoxy bonding agent prior to filling with Class A concrete as specified below.
Proportioning and Design of Class “A” Concrete Mix:
- 1. Minimum compressive strength at 28 days: 4,000 psi.
 - 2. Maximum water-cement ratio by weight: 0.45.
 - 3. Minimum cement content: 564 pounds per cubic yard, Portland Cement: ASTM C150/C150M, Type I/II.
 - 4. Use amounts of admixtures recommended by admixture manufacturer for climatic conditions prevailing at the Site at time of placing. Adjust quantities and types of admixtures as required to maintain quality. Site soil conditions contain acidic soils.
 - 5. Proportion and design mixes to result in concrete slump at point of placement of not less than one inch and not more than four inches.
 - 6. When using high-range water reducers, slump prior to addition of admixture shall not exceed three inches. Slump after adding admixture shall not exceed eight inches at point of placement.
 - 7. Water: Clean, potable
 - 8. Aggregates: ASTM C33/C33M.
 - A. Fine Aggregate: Clean, sharp, natural sand free of loam, clay, lumps, and other deleterious substances. Dune sand, bank run sand, and manufactured sand are unacceptable.
 - B. Coarse Aggregate: Clean, uncoated, processed aggregate containing no clay, mud, loam, or foreign matter. Crushed stone, processed from natural rock or stone. Washed gravel, either natural or crushed. Slag, pit gravel, and bank-run gravel are not allowed. Coarse Aggregate Size: ASTM C33/C33M, Nos. 57 or 67, unless otherwise approved by ENGINEER
- E. Where repaired holes are in contact with water or soil, provide hydrophilic rubber waterstop within the opening, prior to filling with repair material.

3.6 REPAIR OF LINED HOLES

- A. This Article applies to openings with embedded material over all or a portion of inside surface of hole. Where indicated on the Drawings, remove embedded

materials and repair the hole in accordance with Article 3.5 of this Section, as modified in this Article 3.6.

- B. Where embedded material is allowed to remain, remove embedded material to at least two inches into the hole, as measured from the plane surface of concrete wall or slab, as applicable. Embedded material left in place shall be roughened or abraded for proper bonding to repair material. Completely remove substances that interfere with proper bonding.
- C. Completely remove embedded items not securely and permanently anchored into concrete.
- D. Completely remove embedded items larger than 12 inches in their smallest dimension. In lieu of removing the embedded item, where reinforcing is required as shown or indicated in the Contract Documents, weld reinforcing to embedded item to remain, provided embedded item to remain is composed of metal to which reinforcing steel can be welded.

3.7 REPAIR OF DETERIORATED CONCRETE

- A. This Article pertains to deteriorated concrete which has been damaged due to corrosion of reinforcing steel, physical damage due to abrasion, or damage due to chemical attack. Use repair mortar, as specified in this Article, for repairing deteriorated concrete. Where repaired surface will be subsequently covered with plastic liner material, coordinate finishing with requirements for installing plastic liner material.
- B. Surface Preparation: In addition to requirements of Article 3.2 of this Section, perform the following surface preparation:
 - 1. Remove loose, broken, softened, and acid-contaminated concrete by abrasive blasting and chipping to sound, uncontaminated concrete.
 - 2. Upon completion of removal of deteriorated concrete, notify ENGINEER in writing. Allow two weeks for ENGINEER to evaluate the surface, perform testing for acid contamination if required, determine if additional concrete shall be removed, and to develop special repair details (if any) required. Should ENGINEER determine that additional concrete be removed to reach sound, uncontaminated concrete, allow another two-week period for further evaluation and testing following the additional removal.
 - 3. Surface preparation shall conform to recommendations of repair mortar manufacturer.

4. Repair and rehabilitate isolated areas of exposed reinforcing bars in accordance with Article 3.4 of this Section. If extensive areas of reinforcing steel are uncovered after removal of deteriorated concrete, ENGINEER will determine the repair methods required.
- C. Repair Mortar Placing:
1. Conform to manufacturer's recommended procedures for mixing and placing repair mortar.
 2. After initial mixing of repair mortar, addition of water is not allowed.
 3. Minimum Thickness:
 - a. Install repair mortar to not less than minimum thickness recommended by manufacturer, and not less than 1/2-inch.
 - b. Where removal of deteriorated concrete results in repair thickness of less than minimum required thickness to return to original concrete surface in isolated areas totaling less than ten percent of total repair surface area, remove additional concrete to obtain at least the required minimum thickness.
 - c. Where surface area with repair thickness less than minimum required thickness exceeds ten percent of total repair area, notify ENGINEER.
 - d. Provide repair mortar so that minimum cover over existing reinforcing steel is two inches. Do not place repair mortar creating locally raised areas.
 - e. Where transitioning to or from wall surfaces not requiring repair, do not feather-out repair mortar at transition. Instead, form the transition by saw cutting a score line to not less than minimum required repair mortar depth and chip out concrete to the saw cut line. Do not cut or otherwise damage reinforcing steel.
 4. Place repair mortar to an even, uniform plane to restore concrete member to its original surface. Out-of-plane tolerance shall be such that the gap between 12-inch long straight edge and repair mortar surface does not exceed 1/8-inch, and gap between a four-foot long straight edge and repair mortar surface shall not exceed 1/4-inch. Tolerances specified in this paragraph apply to straight edges placed in any orientation at any location.
- D. Finishing:
1. Provide smooth, steel trowel finish to repair mortar.

2. When completed, there shall be no sharp edges. Provide exterior corners, such as at penetrations, one-inch radius. Interior corners shall be square, except corners to receive plastic lining which shall be made with two-inch fillet in repair mortar.

3.8 REPAIR OF EXPOSED REINFORCING

- A. Remove, by abrasive blasting or hydro blasting, all corrosion, foreign materials, and unsound concrete from area to be repaired.
- B. Surface shall be visually dry before applying corrosion inhibitor. Liberally apply corrosion inhibitor to achieve coverage of 100 square feet per gallon in two or more coats, by allowing corrosion inhibitor to soak into substrate. Time between coats shall be the longer of: one hour, or as recommended by corrosion inhibitor manufacturer. Apply using rollers, brushes, or hand-pressure spray equipment.
- C. After applying final coat of corrosion inhibitor, minimum cure time of 24 hours is required.
- D. Provide high-pressure wash to surfaces to be repaired to remove filmy residue from corrosion inhibitor.
- E. For mortar coating, conform to Paragraphs 3.7.C, 3.7.D of this Section.

3.9 CRACK INJECTION

- A. Examine areas under which injection Work will be installed and locate cracks that require injection. Identify and inject cracks greater than 0.010-inch wide in structures that retain or contain water, wastewater, or similar liquid.
- B. Install injection material in accordance with crack injection manufacturer's requirements.
- C. After injecting and curing, verify that injected material penetrated the crack adequately and that there is no visible leakage through the crack. After injecting, if crack continues to leak, re-inject crack at no additional cost to OWNER until structure is watertight.
- D. If proper penetration of crack cannot be achieved, submit to ENGINEER a proposed alternate approach for modifying the specified injection procedure to properly seal the crack. In new concrete and in concrete cracked as a result of CONTRACTOR's operations, perform modifications to crack injection procedure

and fully repair the crack without additional cost to OWNER or extension of the Contract Times.

3.10 SITE QUALITY CONTROL

- A. CONTRACTOR shall employ and pay for services of testing laboratory for Site quality control testing. ENGINEER will direct the number of tests and specimens required, including providing necessary materials for making and facility for storing test specimens. CONTRACTOR shall make standard compression test specimens as specified in this Section under the observation of ENGINEER. CONTRACTOR shall provide:
 - 1. Necessary assistance required by ENGINEER.
 - 2. All labor, material, and equipment required, including rods, molds, thermometer, curing in heated storage box, and all other incidentals required, subject to approval by ENGINEER.
 - 3. All necessary storage, curing, and transportation required for testing.
 - 4. CONTRACTOR will be charged for cost of additional testing and investigation, if any, for Work performed that is not in accordance with the Contract Documents or is otherwise defective.
- B. Site Tests of Cement-based Grouts and Repair Mortar:
 - 1. Obtain compression test specimens during construction from first placement of each type of mortar or grout, and at intervals thereafter as selected by ENGINEER, to verify compliance with the Contract Documents. Specimens will be made by ENGINEER or ENGINEER's representative.
 - 2. Compression tests and fabrication of specimens for repair mortar and non-shrink grout will be performed in accordance with ASTM C109. Set of three specimens will be made for each test. Tests will be made at seven days, 28 days, and additional time periods as deemed appropriate by ENGINEER.
 - 3. Material, already placed, failing to conform to the Contract Documents, is defective.

+ + END OF SECTION + +

SECTION 07 54 23

THERMOPLASTIC POLYOLEFIN (TPO) ROOFING

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Scope:
 - 1. CONTRACTOR shall provide all labor, materials, tools, equipment and incidentals as shown, specified and required to furnish and install all TPO roofing Work.
 - 2. Extent of TPO roofing is shown or specified.
- B. Coordination:
 - 1. Review installation procedures under other Sections and coordinate the installation of items that must be installed with the TPO roofing Work.
- C. Related Sections:
 - 1. Section 06 10 53, Miscellaneous Rough Carpentry.
 - 2. Section 07 62 00, Sheet Metal Flashing and Trim.

1.2 REFERENCES

- A. Standards referenced in this Section are listed below:
 - 1. American Society for Testing and Materials, (ASTM).
 - a. ASTM D 41 - Standard Specification for Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing.
 - b. ASTM E 96 - Standard Test Methods for Water Vapor Transmission of Materials.
 - c. ASTM C 208 - Standard Specification for Cellulosic Fiber Insulating Board.
 - d. ASTM C 578 - Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation.
 - e. ASTM C 1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board.
 - f. ASTM D 226 - Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing.
 - g. ASTM D 312 - Standard Specification for Asphalt Used in Roofing.
 - h. ASTM D 412 - Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers-Tension.
 - i. ASTM D 1079 - Standard Terminology Relating to Roofing, Waterproofing, and Bituminous Materials.
 - j. ASTM D 2178 - Standard Specification for Asphalt Glass Felt Used in Roofing and Waterproofing.

- k. ASTM D 4263 - Standard Test Method for Indicating Moisture in Concrete by the Plastic Sheet Method.
- l. ASTM D 4491 - Standard Test Methods for Water Permeability of Geotextiles by Permittivity.
- m. ASTM D 4491 - Standard Test Methods for Water Permeability of Geotextiles by Permittivity.
- n. ASTM D 4869 - Standard Specification for Asphalt-Saturated Organic Felt Underlayment Used in Steep Slope Roofing.
- o. ASTM D 6878 - Standard Specification for Thermoplastic Polyolefin Based Sheet Roofing.
- 2. Factory Mutual System, (FM).
 - a. Factory Mutual Standard 4470 - Approval Standard for Class 1 Roof Covers.
 - b. Loss Prevention Data Sheets 1-28, 1-29.
- 3. Florida Building Code, (FBC).
- 4. National Roofing Contractors Association (NRCA) - Low Slope Roofing and Waterproofing Manual, Current Edition.
- 5. Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA) - Architectural Sheet Metal Manual.
- 6. Underwriters Laboratories (UL):
 - a. TGFU R1306 - "Roofing Systems and Materials Guide".
 - b. UL-790 - Standard Test Method for Fire Tests of Roof Coverings.
- 7. ANSI/ASHRAE/IESNA Standard 9.1 (2007): Energy Standard for Buildings Except Low-Rise Residential Buildings.

1.3 QUALITY ASSURANCE

- A. Installer's Qualifications:
 - 1. Engage a single installer skilled, trained and with successful experience in the installation of TPO roofings, who is a recognized roofing installer with specific skill and successful experience in the type of roofing specified, and equipped to perform workmanship in accordance with the Contract Documents, manufacturer's written instructions for guaranteed construction and the approved Shop Drawings and who agrees to employ only tradesmen with specific skill and successful experience in this type of Work. Submit names and qualifications to ENGINEER along with the following information on a minimum of three successful projects:
 - a. Names and telephone numbers of owners, architects or engineers responsible for projects.
 - b. Approximate contract cost of the TPO roofing.
 - c. Amount of area installed.
 - 2. The roofing installer shall be an approved roofing applicator who has qualified for appointment and has been trained by the manufacturer.
 - 3. Submit proof of acceptability of installer by manufacturer to ENGINEER.

- B. Component Supply and Compatibility:
1. Obtain elastic sheets from only one manufacturer, who publishes complete information on the specified roofing system, and offers to guarantee the completed roofing installation, as required.
 2. Take field dimensions prior to preparation of Shop Drawings.
- C. Requirements of Regulatory Agencies:
1. Comply with applicable insurance rating bureau requirements as required by the Florida Building Code, unless more restrictive requirements are specified.
 2. Provide materials and roofing systems which have been tested, listed and labeled by Underwriters Laboratories' Incorporated for Class "A" rating, and bear the UL label on each package or are shipped to the Site with a UL Certificate of Compliance.
 3. Provide roofing materials which have been tested, listed and FM labeled for Class "A" maximum flame spread rating.
- D. Allowable Installation Tolerances:
1. Do not install Work until substrate preparation and tolerances have been approved by ENGINEER, TPO roofing manufacturer's Technical Representative and the TPO roofing installer and CONTRACTOR have verified to ENGINEER that substrates are within tolerances specified and acceptable to produce approved Work. Work advanced for any reason without such verification shall be stopped, removed and replaced with new material after substrate is approved, at no additional cost to OWNER.
 2. Substrate Tolerances:
 - a. Out-of-Plane: 1/8-inch maximum in 10 foot-0 inches and 1/16-inch maximum in any 12-inches measured along the plane.
 - b. Maximum Offset in Plane Alignment: 1/16-inch.
 - c. Variation From Slope: 1/8-inch maximum in 10 foot - 0 inches.
- E. Pre-Installation Meeting:
1. Prior to the installation of the TPO roofing and associated Work, CONTRACTOR shall schedule and meet at the Site with the roofing installer, the installer of each component of associated Work, the installers of deck and composite insulating substrate construction to receive roofing Work, the installers of other work in and around roofing which must follow the roofing Work, including mechanical work, ENGINEER and other representatives directly concerned with performance of the Work. Review foreseeable methods and procedures related to the TPO roofing Work, including but not necessarily limited to, the following:
 - a. Review project requirements, including Contract Documents.
 - b. Review required submittals, both completed and yet to be completed.
 - c. Review status of substrate including drying, structural loading limitations and similar considerations.
 - d. Review availability of materials, tradesmen, equipment and facilities required to make progress and avoid delays.

- e. Review required inspection, testing, certifying and accounting procedures.
 - f. Review weather and forecasted weather conditions, and procedures for coping with unfavorable conditions.
 - g. Review regulations concerning code compliance, FM compliance, environmental protection, health, safety, fire and similar considerations.
 - h. Review procedures required for protection of roofing during the remainder of the construction period.
2. Reconvene the meeting at the earliest opportunity if additional information must be developed in order to conclude the subjects under consideration.

1.4 SUBMITTALS

A. Action Submittals: Submit the following:

- 1. Samples
 - a. 12-inch by 12-inch sheet of each item specified and 6-inch long pieces of each required system component to be used in the Work.
 - b. Each fastener type required marked as to type of material and with their intended purpose in the Work.
 - c. All components of the TPO roofing and flashing systems labeled with their intended use in the Work. Compliance with all other requirements is exclusive responsibility of CONTRACTOR.
- 2. Shop Drawings: Submit the following:
 - a. Copies of drawings completely dimensioned using field-verified dimensions on plans of each roof area and the accurate location of all roof penetrations roof mounted equipment, curbs, skylights and other features present on the roof areas specified by ENGINEER to be included under the Work of this Section and all details of construction and erection, including all flashing details coordinated and FM publications specified, and the location of all heavy-duty walkway protection paver patterns required by the manufacturer for warranted construction and as shown. CONTRACTOR shall submit all details requiring consideration and the performance of the details shall be approved by the TPO roofing manufacturer for guaranteed construction as specified.
- 3. Product Data:
 - a. Manufacturer's specifications and product manuals indicating product information correlated to specified requirements, manufacturer's installation instructions, maintenance instructions and other data as may be required by ENGINEER.
 - b. Copies of the FM Loss Prevention Data publications and appropriate Technical Advisory Bulletins published by Factory Mutual indicating compliance with wind uplift pressure-resistant performance criteria, ballast and paver requirements and the requirements for FM Approved 1-90 system construction and perimeter securement conditions.

- B. Informational Submittals: Submit the following:
1. Qualifications Statements:
 - a. Installer's qualifications.
 2. Certificates
 - a. CONTRACTOR'S Review: Accompanying approval request, submit to ENGINEER a written statement signed by CONTRACTOR, stating that the Contract Documents for roofing and flashing have been reviewed with an agent of the roofing material manufacturer and that they are in agreement that the selected systems are proper, compatible and that the details shown are not in conflict with the roofing manufacturer's roofing and flashing details. Show by copy of transmittal form that a copy of the statement has been transmitted to the manufacturer.
 - b. Statement of Application: Upon completion of the Work, submit a statement to ENGINEER signed by CONTRACTOR stating that the Work complies with the requirements of these Specifications and the installation methods comply with the manufacturer's printed instructions and were proper and adequate for the condition of installation and use.
 3. Site Quality Control Submittals:
 - a. Written reports describing results from required field testing as specified in Field Testing section of this specification.
 - b. Final inspection report as specified in Inspection and Acceptance section of this specification.
- C. Closeout Submittals: Submit the following:
1. Guarantee:
 - a. CONTRACTOR shall execute his own written guarantee direct to OWNER warranting all TPO roofing and flashing weather- and watertight and perfect for a period of two years after date of Final Completion. Imperfections, by reason of defective materials, workmanship or arrangement of the various parts shall be made good to the satisfaction of the OWNER at CONTRACTOR'S expense.
 2. Warranty:
 - a. In addition to the above, CONTRACTOR shall provide OWNER with manufacturer's standard ten year warranty.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Delivery of Materials:
1. Deliver materials to the Site in sufficient quantities to ensure uninterrupted progress of the Work.
 2. Deliver materials in manufacturer's original, unopened and undamaged containers and rolls with labels intact and legible.
 3. Materials requiring fire resistance classification shall be delivered to the Site with labels attached and packaged as required by labeling service.

B. Storage of Materials:

1. Store materials in a dry, well ventilated, weather tight place, and in a manner which will ensure that there is no possibility of significant moisture pick-up.
2. Store in a manner which complies with fire and safety regulations.
3. Store emulsions at temperatures above 40°F.
4. Store materials on clean raised platforms with weather protective covering when stored outdoors.

C. Handling of Materials:

1. Handle rolled goods so as to prevent damage to edge or ends.
2. Select and operate material handling equipment so as not to damage existing construction or applied roofing.

1.6 JOB CONDITIONS

A. Environmental Conditions:

1. Proceed with TPO roofing and associated Work only when weather conditions will permit unrestricted use of materials and quality control of the Work being installed, complying with these Specification requirements and with the recommendations of the roofing materials manufacturers.
2. Proceed only when CONTRACTOR and their installer are willing to guarantee the Work as required and without additional reservations and restrictions.
3. Record decisions, conditions and agreements to proceed with the Work when weather conditions might be unfavorable. State the reasons for proceeding, with the names of the persons involved along with the changes, if any, or revisions, requirements or terms of the Contract.

B. Protection: Provide continuous protection of materials against damage primarily by storing materials under cover and above ground and away from other construction traffic.

C. Protection:

1. Provide continuous protection of materials against wetting and moisture absorption.
2. Protect materials against damage by construction traffic.

1.7 SCHEDULING

- A. Proceed with the TPO roofing and associated Work only after curbs, blocking, continuous wood sleepers, vents, drains and projections through the substrate have been installed, and when the substrate construction and framing of openings is completed.
- B. Proceed with and complete the Work only when materials, equipment and skilled tradesmen required for the installation of other TPO roofing components are at the

site and are ready to follow with the Work immediately after composite roof insulation is acceptable for installation of the complete TPO roofing.

- C. Install all TPO roofing and associated Work in a manner that will ensure a complete roofing system at the end of each day's Work. Do not advance the installation of any one material beyond that which is necessary for proper sequencing of the TPO roofing Work.

1.8 GUARANTEE

- A. Provide a roofing guarantee in the form and content specified, covering the TPO roofing and associated Work specified therein, signed by CONTRACTOR and their installer. Provide a two year roofing guarantee period, starting on the date of Final Completion of the completed construction Work, stating that for the duration of the guarantee CONTRACTOR and installer shall be responsible to fix leaks, replace TPO roofing and roof insulation components damaged by moisture penetration, and other defects caused by improper workmanship or the improper arrangement of the various system components.
- B. In addition to above, CONTRACTOR shall provide OWNER with manufacturer's standard ten year warranty.
- C. Specified TPO roofing manufacturer's standard details for guaranteed construction shall represent a minimum standard for the Work. Provide details as shown and in Factory Mutual Publications, where not in direct and irreconcilable conflict with specified TPO roofing manufacturer's requirements for guaranteed construction. Where such details are so considered by the TPO roofing manufacturer, provide a written statement from the manufacturer explaining the technical reasons for such determinations as part of Shop Drawing submittals.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Products and Manufacturers: Provide one of the following:
 - 1. TPO Roofing System by GlobalShield Inc.
 - 2. Or equal.

2.2 GENERAL

- A. Roof System: Provide a waterproof roof system, capable of withstanding uplift forces as specified in the Design Criteria article of this section.
 - 1. Membrane Attachment: Fully Adhered.
- B. Base Flashing: Provide a waterproof, fully adhered base flashing system at all penetrations, plane transitions and terminations.

- C. Insulation: Provide a roof insulation system beneath the finish membrane.

2.3 INSULATION

- A. Polyisocyanurate : Tapered rigid board with fiber reinforced facers on both sides, meeting or exceeding the requirements of ASTM C 1289.
 - 1. Compressive Strength: 20 psi (138 kPa).
 - 2. Density: 2 lb per cubic foot (24 kg/cu m) minimum.
- B. Use manufacturer's standard sheet seaming system for "plastic welding" or lapped joints to create seams of strength equal to sheet strength.
- C. Include edge sealer to cover exposed sheet edges.

2.4 INSULATION ADHESIVE

- A. A spray or extruded applied, two-component polyurethane, low-rise expanding foam adhesive used for attaching approved insulations to compatible substrates.
- B. A two-component, polyurethane construction grade, low-rise expanding adhesive designed for bonding insulation to various substrates using a portable applicator.

2.5 THERMOPLASTIC POLYOLEFIN (TPO) MEMBRANE

- A. Membrane TPO
 - 1. Color: White
 - 2. Membrane Thickness: 60 mil nominal.
 - a. Thickness over Scrim: 0.020 inches (0.508mm).
 - b. Breaking Strength (ASTM D 751): 250 lbf/in (1.1 kN/m) minimum.
 - c. Tear Resistance (ASTM D 751): 55 lbf/in (245 N/m) minimum.
 - d. Elongation (ASTM D 751): 25 percent.

2.6 FLASHING ACCESSORIES

- A. Inside Corners: Pre-molded corner flashing for inside corners. 60 mil thickness. Color to match membrane. Special colors require custom fabrication process.
- B. Outside Corners: Injection molded corner used for flashing outside corners. 60 mil thickness. Color to match membrane. Special colors require custom fabrication process.
- C. TPO T-Joint Covers: Injection molded 60 mil thick TPO formed into a 4.5 inch (114mm) diameter circle used to seal step-offs at splice intersections. Color to match membrane.
- D. TPO Curb Wrap Corners: Pre-fabricated corner flashings made from 45 mil thick reinforced membrane. 6 inch wide base flange and a 12 inch overall height. Sizes

available to fit curbs up to 6 foot by 6 foot (1828 x 1828 mm) in size. Color to match membrane.

- E. Molded Pipe Seals: A pre-molded flashing and clamping ring used for pipe penetrations. Available for 0.75 inch to 8 inch (19 - 203.2mm) diameter pipes. Color to match membrane.
- F. Split Pipe Seals: Pre-fabricated flashing consisting of 45 mil thick reinforced Membrane for pipes 1 inch to 6 inch (25.4 - 152.4mm) in diameter. A split (cut) and overlapped tab is incorporated to allow the pipe seal to be opened and wrapped around the pipe when it is not possible to pull a standard pipe flashing over a round penetration. Gray, tan and special colors require custom order fabrication. Custom sizes available on a special order basis.
- G. TPO Square Tubing Wraps: Pre-fabricated flashings made of 45 mil thick reinforced membrane for square tubing. A split (cut) and overlap tab are incorporated into these parts to allow the seals to be opened and wrapped around a square tubing penetration with an obstruction. Stock sizes include 3- inch, 4-inch, 5-inch and 6 inch (76, 102, 127, 152 mm) diameter square tubing. Gray, tan and special colors require custom order fabrication. Custom sizes available on a special order basis.
- H. TPO Molded Sealant Pockets:
 - 1. A two-piece, interlocking injection molded, flexible pocket with a rigid polypropylene vertical wall and pre-formed deck flanges. Color to match membrane.
 - 2. Used with Thermoplastic One-Part Pourable Sealer as specified in this section for waterproofing pipe clusters or other odd shaped penetrations. The removable built-in extension legs allow the oval pocket to adjust from 7.5 inches to 12 inches (191mm - 305mm) in length while maintaining a 6-inch width.
- I. Pre-Fabricated Sealant Pockets: A two-piece, pre-fabricated sealant pocket that utilizes reinforced TPO membrane and coated metal to form a rigid, oversized sealant pocket with a weldable horizontal deck flange. Color to match membrane.
- J. Pressure-Sensitive Cover Strip: A nominal 6 inch (152mm) wide by 40 mil thick non-reinforced TPO membrane laminated to nominal 35-mil thick cured synthetic rubber pressure-sensitive adhesive. Used in conjunction with TPO Primer to strip in flat metal flanges (i.e., drip edges or rows of fasteners and plates). Color to match membrane.
- K. TPO Pressure-Sensitive.
 - 1. 10 inch (254mm): A nominal 10 inch (254mm) wide, 45 mil thick reinforced TPO membrane with nominal 3 inch (76mm) wide 35mil thick cured synthetic rubber pressure-sensitive adhesive laminated along both ends. The TPO 10-inch RUSS is used in place of narrow sheets to secure membrane in the

perimeter roof area. The use of this product allows field membrane to be utilized over the entire roof area.

- L. Heat Weldable Walkway Rolls: Superior tear, puncture and weather resistance and designed to protect membrane in those areas exposed to repetitive foot traffic or other hazards. Walkway material may be heat welded to membrane using an automated heat welder or hand held heat welder. Walkway Rolls are 34 inches wide by 50 feet long and are nominal 180 mils thick.

2.7 CLEANERS, PRIMERS, ADHESIVES AND SEALANTS

- A. Bonding Adhesive: A high-strength solvent-based contact adhesive used for bonding membrane to various porous and non-porous substrates.
 - 1. Base: Synthetic Rubber.
 - 2. Color: Yellow.
 - 3. Solids: 20.0 percent.
 - 4. VOC: 670 grams/liter.
- B. Water Cut-Off Mastic: A one-component, low viscosity, self-wetting, Butyl blend mastic used as a compression sealing agent between membrane and applicable substrates.
- C. TPO Primer: Solvent-based product designed to prepare TPO membrane for improved adhesion to TPO surfaces prior to the application of pressure-sensitive products and sealant pockets.
- D. Universal Single-Ply Sealant: A 100 percent solids, solvent free, VOC free, one-part polyether sealant that provides a weather tight seal to a variety of building materials. It is used for general caulking such as above termination bars and metal counter flashings and at scupper details.
- E. Thermoplastic One-Part Sealant: Single component, moisture curing, elastomeric polyether sealant that is compatible with Thermoplastic membranes. Provides a flexible, durable and long lasting seal around hard-to-flash penetrations in Thermoplastic Roofing Systems.
- F. Thermoplastic One-Part Sealant: Single component, moisture curing, elastomeric polyether sealant that is compatible with Thermoplastic membranes. Provides a flexible, durable and long lasting seal around hard-to-flash penetrations in Thermoplastic Roofing Systems.
- G. Multi-purpose contact adhesive recommended for enhancing bond of self-adhering sheet products and for bonding board insulation to various substrates.

PART 3 - EXECUTION

3.1 INSPECTION

- A. CONTRACTOR and installer shall examine the substrate and the conditions under which the TPO roofing and base flashing Work is to be performed, and notify ENGINEER, in writing, of unsatisfactory conditions. Do not proceed with the Work until unsatisfactory conditions have been corrected in a manner acceptable to ENGINEER.
- B. Verify adequacy of slope-to-drain, compressive strength, moisture content and other composite roof insulation features important to the successful installation of the TPO roofing and flashing systems before start of Work.

3.2 PREPARATION

- A. Clean the substrate of dust, debris, substances and interferences detrimental to the Work. Where necessary to remove sharp projections, composite insulation surfaces shall be ground.
- B. Test the substrate for excessive moisture as recommended by the TPO roofing manufacturer.

3.3 INSTALLATION

- A. General:
 - 1. Follow all applicable installation instructions and recommendations contained in the TPO roofing manufacturer's written installation and product manuals and the information contained on approved Shop Drawings. Where CONTRACTOR requests to deviate from written installation and product manuals and approved Shop Drawings, all such deviations shall be submitted to ENGINEER for approval along with TPO roofing manufacturer's written agreement and a statement of acceptability for compliance with guaranteed construction.
 - 2. Begin installation only in the presence of the TPO roofing manufacturer's technical representative.
 - 3. Cut sheets to the maximum size possible, in order to minimize seams and to accommodate contours of the deck. Do not seam within four feet of roof drains.
 - 4. Clean all splices and lap areas using manufacturer's recommended splice cleaner.
 - 5. Lap sheets and bond joints using the seaming system recommended by the manufacturer.
 - 6. Cover top edges of each sheet at seams with uniform fillet of special sealant.
 - 7. Install one-way breather vents as recommended by the TPO roofing manufacturer and as shown, but not less than one per 1,000 square feet.

B. Membrane Placement and Attachment (Fully Adhered):

1. Position membrane over the acceptable substrate. Fold membrane sheet back lengthwise so half the underside of the membrane is exposed.
2. Apply Bonding Adhesive in accordance with the manufacturer's published instructions, to the exposed underside of the membrane and the corresponding substrate area. Do not apply Bonding Adhesive along the splice edge of the membrane to be hot air welded over the adjoining sheet. Allow the adhesive to dry until it is tacky but will not string or stick to a dry finger touch.
 - a. Roll the coated membrane into the coated substrate while avoiding wrinkles. Brush down the bonded section of the membrane sheet immediately after rolling the membrane into the adhesive with a soft bristle push broom to achieve maximum contact.
 - b. Fold back the unbonded half of the sheet lengthwise and repeat the bonding procedures.
3. Position adjoining sheets to allow a minimum overlap of 2 inches.
4. Hot-air weld the membrane sheets using the Automatic Hot Air Welding Machine or Hot Air Hand Welder in accordance with the manufacturer's hot air welding procedures. A test weld sample should be made from a piece of scrap TPO to eliminate the need to remove a section from a completed seam. At all splice intersections, roll the seam with a silicone roller to ensure a continuous hot air welded seam.
5. Continue to install adjoining membrane sheets in the same manner, overlapping edges a minimum of 2 inches and complete the bonding procedures as stated previously.

C. Seam Welding:

1. Hot-air weld membrane using an Automatic Hot Air Welding Machine or Hot Air Hand Welder in accordance with the manufacturer's current guidelines. At all splice intersections, roll the seam with a silicone roller to ensure a continuous hot air welded seam.
2. Overlay all splice intersections with T-Joint Cover.
3. Probe all seams once the hot air welds have thoroughly cooled (approximately 30 minutes).
4. Repair all seam deficiencies the same day they are discovered.
5. Apply Edge Sealant on all cut edges of reinforced membrane (where the scrim reinforcement is exposed) after seam probing is complete. Cut Edge Sealant is not required on vertical splices.

D. Flashing:

1. Flashing of parapets, curbs, expansion joints and other parts of the roof must be performed using reinforced membrane or prefabricated accessories. A non-reinforced membrane may be used for flashing pipe penetrations, Sealant Pockets, and scuppers, as well as inside and outside corners, when the use of pre-molded or prefabricated accessories is not feasible.

2. Follow manufacturer's typical flashing procedures for all wall, curb, and penetration flashing including metal edging/coping and roof drain applications.

E. Walkways:

1. Install walkways at all traffic concentration points (such as roof hatches, access doors, rooftop ladders, etc.) and all locations as identified on the Contract Drawings.
2. Hot-air weld walkway pads to the membrane in accordance with the manufacturer's current application guidelines.

3.4 CLEAN UP:

- A. Perform daily clean-up to collect all wrappings, empty containers, paper, and other debris from the project site. Upon completion, all debris must be disposed of in a legally acceptable manner.
- B. Prior to the manufacturer's inspection for warranty, the applicator must perform a pre-inspection to review all work and to verify all flashing has been completed as well as the application of all caulking.

3.5 PROTECTION

- A. Protect TPO roofing from damage during the construction period so that it will be undamaged in any way at the time of Final Completion.
- B. Replace Work which is soiled or otherwise damaged by the performance of the TPO roofing and associated Work and from improper installation techniques.

+ + END OF SECTION + +

THIS PAGE INTENTIONALLY LEFT BLANK

SECTION 07 72 33

ROOF HATCHES

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Scope:
 - 1. CONTRACTOR shall provide all labor, materials, equipment and incidentals as shown, specified and required to furnish and install all roof hatch Work.
 - 2. Extent of roof hatches is shown.
 - 3. Types of products required include the following:
 - a. Stair access roof hatch.
 - b. Ladder access roof hatch.
 - c. Miscellaneous hardware, safety posts, closures, fasteners and other accessories.
- B. Coordination:
 - 1. Review installation procedures under other Sections and coordinate the installation of items that must be installed with the roof hatches Work.
- C. Related Sections:
 - 1. Section 07 54 23, Thermoplastic Polyolefin Membrane Roofing.

1.2 REFERENCES

- A. Standards referenced in this Section are listed below:
 - 1. American Wood Preservers Association, (AWPA).
 - a. AWPA, LP-2, Softwood Lumber, Timber and Plywood Pressure Treatment with Water-Borne Preservatives of Above Ground Use.
 - 2. American Society for Testing and Materials, (ASTM).
 - a. ASTM A 1011, Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability.
 - b. ASTM B 221, Specification for Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles and Tubes.
 - 3. Occupational Safety and Health Administration, (OSHA).
 - a. Occupational Safety and Health Act of 1970, 29 CFR 1910 Subpart D - Walking and Working Surfaces, 1910.27 Fixed Ladders.
 - 4. National Association of Architectural Metal Manufacturers, (NAAMM).
 - a. NAAMM, Metal Finishes Manual.
 - 5. Sheet Metal and Air Conditioning Contractors' National Association, (SMACNA).
 - a. SMACNA, Architectural Sheet Metal Manual.

6. Uniform Building Code, (UBC).

1.3 QUALITY ASSURANCE

- A. Fabrication Criteria:
 1. Stair and Ladder Access Roof Hatches: Provide the following:
 - a. Fabricate access roof hatches to withstand a live load of 40 pounds per square foot over the horizontal plane of the hatch and a concurrently acting point load of 200 pounds located at the center of the hatches. Specified loadings shall not cause any permanent deflections in the hatch or support curbs or cause damage to operating hardware.
- B. Requirements of Regulatory Agencies:
 1. Comply with applicable requirements of the Uniform Building Code for roof accessory fabrication and installation and the requirements for resistance to superimposed loadings.
 2. SMACNA, Architectural Sheet Metal Manual.
 3. OSHA, Section 1910.27.
- C. Component Supply and Compatibility: Obtain materials only from manufacturers that will, if required:
 1. Send a qualified technical representative to the Site, for the purpose of advising the installer of proper procedures and precautions during the installation of the items.
 2. Engage manufacturers who has been successfully providing roof accessories of the type specified and who will submit a list of successful installations along with the telephone numbers of owners, architects or engineers responsible for the Work.

1.4 SUBMITTALS

- A. Action Submittals: Submit the following:
 1. Shop Drawings
 - a. Copies of manufacturers proposed fabrication details and material specifications for each roof accessory item. Include flashing and roughing-in drawings showing this Work coordinated with the roofing Work as appropriate to the location of the item.
 2. Product Data
 - a. Provide manufacturer's specifications, installation and coordination instructions and other data as may be requested by ENGINEER substantiating that products comply with the requirements.
- B. Closeout Submittals: Submit the following:
 1. Maintenance Manuals: Upon completion of the Work, furnish six copies of detailed maintenance manuals including the following information:
 - a. Product name and number.

- b. Name, address and telephone number of fabricator and manufacturer's local distributor.
- 2. Detailed procedures for routine maintenance and cleaning, including cleaning materials, application methods and precautions as to use of materials that may be detrimental to finish when improperly applied.
- 3. Guarantee:
 - a. Guarantee as specified in section 1.7 of this specification.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Delivery of Materials:
 - 1. Deliver all materials without damage and in manufacturer's original undamaged protective wrappings bearing name and model numbers of approved items.
- B. Storage of Materials:
 - 1. Minimize the amount of time roof accessories are stored on Site. If roof hatches do arrive on Site before they can be incorporated into the orderly assembly of the roofing Work store in completely protected and secure enclosures, under cover and away from all construction traffic.
 - 2. Do not store in contact with earth, wood or concrete, or other surfaces which could cause staining or other types of surface marks or blemishes of any kind.
- C. Handling of Materials:
 - 1. Do not subject roof hatches to bending or stress of any kind.
 - 2. Handle and protect units during installation in a manner recommended by the roof hatch manufacturer.

1.6 JOB CONDITIONS

- A. Scheduling:
 - 1. Coordinate the installation of roof hatch Work with roofing and flashing Work in order to provide continuity in the installation of roofing Work and to obtain complete and permanently weather-resistant and waterproof construction.
 - 2. Schedule roof hatch items to arrive at the Site as installation of the roofing Work is proceeding such that roof accessory items can be built into the Work as shown on approved Shop Drawings and without the need for field changes to approved installation details or methods of flashing.
- B. Protection:
 - 1. Provide continuous protection of materials against damage primarily by storing materials under cover and above ground and away from other construction traffic.
- C. Conform to applicable OSHA and the Florida Building Codes.

1.7 GUARANTEE

- A. Stair and Latch Access Roof Hatches: CONTRACTOR shall furnish a written guarantee obtained from the manufacturer of the roof hatches. Guarantee shall state the following:
1. Roof hatch is to operate properly and be free of defects in material and workmanship for a period of five years from date of Final Completion.
 2. Should any part fail to function, or break in normal use during this period, manufacturer shall furnish and install a new part, at no additional cost to the OWNER.

PART 2 - PRODUCTS

2.1 PRODUCTS

- A. Roof Hatch:
1. General:
 - a. Provide manufacturer's standard units, modified as necessary to comply with the requirements of these Specifications. Custom fabricate units wherever necessary for size, type and profile, using manufacturer's standard detailing to the extent applicable.
 - b. Shop fabricate each unit complete with framing, gaskets, structure, curbs, flashing, well liner, hardware, accessories, anchorage provisions and other components. Disassemble only to the extent required for delivery and installation.
 - c. Provide manufacturer's recommended operable steel safety posts mounted at center of roof ladder rungs.
 2. Materials:
 - a. Aluminum: Sheet specified by the manufacturer for strength, durability and proper application of finish.
 - 1) Cover and Curb: 11 gauge, Aluminum.
 - 2) Cover Liner: 18 gauge, Aluminum.
 - 3) Finish: Mill Finish.
 - b. Insulation: One-inch glass fiber, between panels.
 - c. Gaskets: Fingered design; polyvinyl chloride.
 - d. Equip units with standard self-lifting mechanism. Provide stainless steel hardware including hold-open devices, hinges, compression spring operators enclosed in telescopic tubes, latch, and operating handles for inside and outside operation with pad lock hasps.
 - e. Construct units for live loading specified, using manufacturer's standard gauges of metal and fabrication details.
 - f. Products and Manufacturers: Provide one of the following:
 - 1) Type NB-50TB by Bilco Company.
 - 2) Or equal.

PART 3 - EXECUTION

3.1 INSPECTION

- A. CONTRACTOR must examine the substrates to receive roof hatches and the conditions under which the roof hatch Work is to be performed, and notify ENGINEER, in writing, of any conditions detrimental to the proper and timely completion of the Work and performance of the roof hatch. Do not proceed with the Work until unsatisfactory conditions have been corrected in a manner acceptable to ENGINEER.

3.2 INSTALLATION

- A. Protection of Aluminum from Dissimilar Materials: Separate metal surfaces of roof hatch from dissimilar metals, and from wood and cementitious substrates. Coat all aluminum surfaces in contact with dissimilar materials such as concrete, masonry, steel and other metals as specified in Section 09 91 00, Painting.
- B. Bed flanges of set-on accessories in mastic or compound, which is compatible with roofing and flashing. On sloping decks, flash flanges with other work for proper water shed.
- C. Anchor roof hatch Work permanently to the substrate, by approved methods which are adequate for the sizes and locations of units and which will develop load-resistance specified.

3.3 CLEANING AND PROTECTION

- A. Clean surfaces of roof hatches as required preventing deterioration and uneven weathering.
- B. Protect roof hatch Work from damage until Final Completion.

+ + END OF SECTION + +

THIS PAGE INTENTIONALLY LEFT BLANK

SECTION 09 91 00

PAINTING

PART 1 - GENERAL

1.1 DESCRIPTION

A. Scope:

1. CONTRACTOR shall provide all labor, materials, tools, equipment, and incidentals as shown, specified, and required to furnish and apply paint systems.
 - a. CONTRACTOR is responsible for surface preparation and painting of all new and existing interior items and surfaces throughout the Project areas included under this and other Sections.
2. Extent of painting includes the Work specified below. Painting shown in schedules may not provide CONTRACTOR with complete indication of all painting Work. Refer to Article 2.2 of this Section where all surfaces of generic types specified are specified for preparation and painting according to their status, intended function, and location, using the painting system for that surface, function, and location as specified, unless specifically identified on the Drawings as a surface not to receive specified painting system.
 - a. All new and specifically identified existing surfaces and items except where natural finish of material is specified as a corrosion-resistant material not requiring paint; or is specifically shown as indicated by written note, or specified as a surface not to be painted. Where items or surfaces are not specifically mentioned, paint them the same as adjacent similar materials or areas.
 - b. Surface preparation and painting of all new and specifically identified existing items are included in the Work, except as otherwise shown or specified.

B. Coordination:

1. Review installation, removal, and demolition procedures under other Sections and coordinate them with the Work specified in this Section.
2. Coordinate painting of areas that will become inaccessible once equipment and similar fixed items have been installed.
3. Furnish information to ENGINEER on characteristics of finish materials proposed for use and ensure compatibility with prime coats used. Provide barrier coats over incompatible primers or remove and repaint as required. Notify ENGINEER in writing of anticipated problems using specified painting systems with surfaces primed by others. Reprime equipment

primed in factory and other factory-primed items that are damaged or scratched.

C. Related Sections:

1. Section 03 01 30, Repair and Rehabilitation of Cast-In-Place Concrete
2. Section 40 05 53, Process Valves, Four-Inch Diameter And Larger

D. Work Not Included: The following Work is not included as painting Work, or are included under other Sections or in other contracts:

1. Shop Priming: Shop priming of structural metal, miscellaneous metal fabrications, other metal items and fabricated components such as shop-fabricated or factory-painted process equipment, plumbing equipment, heating and ventilating equipment, electrical equipment, and accessories shall conform to applicable requirements of this Section but are included under other Sections or in other contracts.
2. Pre-finished Items:
 - a. Items furnished with such finishes as baked-on enamel, porcelain, and polyvinylidene fluoride shall only be touched up at Site by CONTRACTOR using manufacturer's recommended compatible field-applied touchup paint.
 - b. Items furnished with finishes such as chrome plating or anodizing.
3. Concealed Surfaces: Non-metallic wall or ceiling surfaces in areas not exposed to view, and generally inaccessible areas, such as furred spaces, pipe chases, duct shafts, and elevator shafts.
4. Concrete surfaces below grade, unless otherwise shown or specified.
5. Concrete floors, unless specifically shown as a surface to be painted.
6. Exterior face of architectural precast concrete.
7. Corrosion-Resistant Metal Surfaces: Where the natural oxide of item forms a barrier to corrosion, whether factory- or Site-formed, including such materials as copper, bronze, muntz metal, terne metal, and stainless steel.
8. Operating Parts and Labels:
 - a. Do not paint moving parts of operating units, mechanical and electrical parts such as valve and damper operators, linkages, sensing devices, interior of motors, and fan shafts.
 - b. Do not paint over labels required by governing authorities having jurisdiction at Site, or equipment identification, performance rating, nameplates, and nomenclature plates.
 - c. Cover moving parts and labels during the painting with protective masking. Remove all protective masking upon completion of Work. Remove all paint, coatings, and splatter that comes in contact with such labels.
9. Structural and miscellaneous metals covered with concrete need not receive primers, intermediate, or finish coats of paint.
10. Existing structures, equipment, and other existing surfaces and items unless otherwise shown or specified.

E. Description of Colors and Finishes:

1. Color Selection:
 - a. ENGINEER reserves the right to select non-standard colors for paint systems specified within ability of paint manufacturer to produce such non-standard colors. Provide such colors at no additional expense to OWNER.
2. Color Coding of Pipelines, Valves, Equipment, and Ducts:
 - a. Color-coding of pipelines, valves, equipment and ducts shall comply with applicable standards of ANSI A13.1, ANSI Z535.1, CFR 1910.144, Recommended Standards for Water Works, and Recommended Standards for Wastewater Facilities. For piping and equipment not covered by the above standards, conform to OWNER's color standards.
 - b. For equipment located on roofs and equipment that is exposed-to-view, color will be selected by ENGINEER.

1.2 REFERENCES

- A. Referenced Standards: Standards referenced in this Section are:
1. ANSI A13.1, Scheme for Identification of Piping Systems.
 2. ANSI Z535.1, Safety Color Code.
 3. ASTM D16, Terminology for Paint, Related Coatings, Materials and Applications.
 4. ASTM D2200, Pictorial Surface Preparation Standards for Painting Steel Surfaces.
 5. ASTM D4262, Testing Method for pH of Chemically Cleaned or Etched Concrete Surfaces.
 6. ASTM D4263, Test Method for Indicating Moisture in Concrete by the Plastic Sheet Method.
 7. ASTM D4541, Test Methods for Pull-Off Strength of Coatings Using Portable Adhesion-Testers.
 8. ASTM E329, Specification for Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction.
 9. Great Lakes Upper Mississippi River Board of Public Health and Environmental Managers (GLUMRB) Recommended Standards for Water Works.
 10. GLUMRB, Recommended Standards for Wastewater Facilities.
 11. Ozone Transport Commission, (OTC), OTC Model Rule for Architectural and Industrial Maintenance Coatings.
 12. SSPC PA 2, Measurement of Dry Coating Thickness with Magnetic Gages.
 13. SSPC VIS 1, Visual Standard for Abrasive Blast Cleaned Steel.
 14. SSPC VIS 2, Method of Evaluating Degree of Rusting/Painted Steel Surfaces.
 15. SSPC Volume 2, Systems and Specifications.

1.3 DEFINITIONS

- A. Coating terms defined in ASTM D16 apply to this Section.

1.4 QUALITY ASSURANCE

- A. Applicator Qualifications:
 - 1. Engage a single applicator regularly performing installation of painting systems, with documented skill and successful experience in installing types of products required and agrees to employ only tradesmen trained, skilled, and with successful experience in installing types of products specified.
- B. Testing Agency Qualifications: Provide independent testing agency with experience and capability to satisfactorily conduct testing specified in accordance with ASTM E329. Testing agency shall be selected by OWNER and paid for by CONTRACTOR.
- C. Source Quality Control:
 - 1. Obtain products from manufacturers that will provide services of a qualified manufacturer's representative at Site at commencement of painting Work to advise on products, mock-ups, installation, and finishing techniques, at completion of the Work to advise ENGINEER on acceptability of completed Work, and during course of Work as requested by ENGINEER.
 - 2. Submit "or equal" products, when proposed, with direct comparison to products specified, including information on durability, adhesion, color and gloss retention, percent solids, VOC's grams per liter, and recoatability after curing.
 - 3. "Or equal" manufacturers shall furnish same color selection as manufacturers specified, including intense chroma and custom pigmented colors in painting systems.
 - 4. Color Pigments: Provide pure, non-fading, applicable types to suit surfaces and services indicated. Comply with the following:
 - a. Lead and Chromate: Lead and chromate content shall not exceed amount allowed by authorities having jurisdiction.
 - b. Through CONTRACTOR, paint manufacturer shall notify ENGINEER of colors that are not suitable for long-term color retention in areas subject to hydrogen sulfide fume exposure.
 - c. Manufacturer shall identify colors that meet requirements of authorities having jurisdiction at Site for use in locations subject to contact with potable water or water that will be treated to become potable.
 - d. Comply with paint manufacturers' recommendations on preventing coating contact with levels of carbon dioxide and carbon monoxide that may cause yellowing during application and initial stages of curing of paint coatings.

- D. Regulatory Requirements:
1. Comply with regulatory requirements of authorities having jurisdiction over the Site.
- E. Pre-Painting Conference:
1. Conduct a pre-painting conference at the Site to review specified requirements. Meeting attendees shall include painting applicator and its foreman, paint manufacturer's technical representative, installers of other work in and around painting that must follow painting Work, ENGINEER, and other representatives directly concerned with performance of painting Work.

1.5 SUBMITTALS

- A. Action Submittals: Submit the following:
1. Product Data:
 - a. Copies of manufacturer's technical data sheets, including surface preparation, number of coats, dry film thickness, test performance data including paint analysis, VOC and chemical component content in comparison to maximum allowed by the Contact Documents, and application instructions for each product proposed for use
 - b. Submit proof of acceptability of proposed application techniques by paint manufacturer selected.
 - c. Copies of CONTRACTOR's proposed protection procedures in each area of the Work explaining methods of protecting adjacent surfaces from splatter, for confining application procedures in a manner that allows other work adjacent to surface preparation and painting Work to proceed safely and without interruption, and for maintaining acceptable application, curing, and environmental conditions during and after painting systems application.
 - d. List each material and cross-reference to the specific painting system and application, including a list of site-specific surfaces to which painting system will be applied. Identify by manufacturer's catalog number and general classification. State number of gallons of each product being purchased for delivery to Site and square foot area calculated to be covered by each painting system specified based on theoretical loss of 20 percent. Where actual area to be covered by paint system exceeds area submitted to ENGINEER for that system, proof of additional material purchase shall be provided to ENGINEER. Calculated coverage shall be as specified for each component of each painting system specified. This requirement does not take precedence over CONTRACTOR's responsibility to provide dry film thickness required for each component of each painting system.

- e. Identify maximum exposure times allowable for each paint system component before next coat of paint can be applied. Submit proposed methods for preparing surfaces for subsequent coats if maximum exposure times are exceeded.
 - f. Information on curing times and environmental conditions that affect curing time of each paint system component and proposed methods for accommodating variations in curing time. Identify this information for each painting system in the Work.
 - g. Specification for spray equipment with cross-reference to paint manufacturer's recommended equipment requirements.
- 2. Samples:
 - a. Copies of manufacturer's complete color charts for each coating system.
- B. Informational Submittals: Submit the following:
- 1. Certificates:
 - a. Certificate from paint manufacturer stating that materials meet or exceed Contract Documents requirements.
 - b. CONTRACTOR shall provide notarized statement verifying that all painting systems are compatible with surfaces specified. All painting systems components shall be reviewed by an authorized technical representative of paint manufacturer for use as a compatible system. Verify that all painting systems are acceptable for exposures specified and that paint manufacturer is in agreement that selected systems are proper, compatible, and are not in conflict with paint manufacturer's recommended specifications. Show by copy of transmittal form that a copy of letter has been transmitted to paint applicator.
 - 2. Test Reports:
 - a. Certified laboratory test reports for required performance and analysis testing in compliance with ASTM E329.
 - b. Adhesion testing plan and procedures.
 - c. Results of adhesion testing on existing surfaces containing paints or other coatings to be topcoated with paint systems specified. Prior to adhesion testing, submit a testing plan establishing methods, procedures and number of tests in each area where existing coatings are to remain and become substrate for painting Work. Based on results of adhesion testing, recommend methods, procedures, and painting system modifications, if necessary, for proceeding with Work.
 - d. Proposed methods for testing, handling, and disposal of waste generated during Work.
 - e. Results of alkalinity and moisture content tests performed per ASTM D4262 and ASTM D4263.
 - f. Results of film thickness, holidays, and imperfections tests.
 - 3. Manufacturer's Instructions: Provide paint manufacturer's storage, handling, and application instructions prior to commencing painting Work at Site.

4. Manufacturer's Site Reports: Provide report of paint manufacturer's representative for each visit to Site by paint manufacturer's representative.
 5. Special Procedure Submittals:
 - a. Proposed protection procedures for each area of Work, explaining methods of protecting adjacent surfaces from splatter, for confining application procedures in a manner that allows other work adjacent to surface preparation and painting Work to proceed safely and without interruption.
 - b. Site-specific health and safety plan.
 - c. Procedures for maintaining acceptable application, curing and environmental conditions during and after painting systems application.
 - d. Procedures for providing adequate lighting, ventilation, and personal protection equipment relative to painting Work.
 6. Qualifications:
 - a. Applicator.
 - b. Testing laboratory
- C. Closeout Submittals: Submit the following:
1. Maintenance Manual: Upon completion of the painting Work, furnish ENGINEER five copies of detailed maintenance manual including the following information:
 - a. Complete and updated product catalog of paint manufacturer's currently available products including complete technical information on each product. Identify product names and numbers of each product used in the painting Work.
 - b. Name, address, e-mail address and telephone number of manufacturer, local distributor, applicator and technical representative.
 - c. Detailed procedures for routine maintenance and cleaning.
 - d. Detailed procedures for light repairs such as dents, scratches and staining.
 2. Statement of Application: Upon completion of the painting Work, submit a notarized statement to ENGINEER signed by CONTRACTOR and painting applicator stating that Work complies with requirements of the Contract Documents and that application methods, equipment, and environmental conditions were proper and adequate for conditions of installation and use.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Product Delivery Requirements: Deliver products to Site in original, new, and unopened packages and containers, accurately and legibly and accurately labeled with the following:
1. Container contents, including name and generic description of product.
 2. Manufacturer's stock number and date of manufacture.
 3. Manufacturer's name.
 4. Contents by volume, for major pigment and vehicle constituents.

5. Grams per liter of volatile organic compounds.
6. Thinning instructions, where recommended.
7. Application instructions.
8. Color name and number.

B. Product Storage Requirements:

1. Store acceptable materials at Site.
2. Store in an environmentally controlled location as recommended in paint manufacturer's written product information. Keep area clean and accessible. Prevent freezing of products.
3. Store products that are not in actual use in tightly covered containers.
4. Comply with health and fire regulations of authorities having jurisdiction at Site.

C. Product Handling Requirements:

1. Handle products in a manner that minimizes the potential for contamination, or incorrect product catalyzation.
2. Do not open containers or mix components until necessary preparatory work has been completed and approved by ENGINEER and painting Work will start immediately.
3. Maintain containers used in storing, mixing, and applying paint in a clean condition, free of foreign materials and residue.

1.7 SITE CONDITIONS

A. Site Facilities:

1. Supplemental heat sources, as required to maintain both ambient and surface temperatures within range recommended by paint manufacturer for paint system applications, are not available at the Site.
2. Provision of supplemental heat energy sources, power, equipment, and operating, maintenance, and temperature-monitoring personnel is CONTRACTOR's responsibility.
3. Do not use heat sources that emit carbon dioxide or carbon monoxide into areas being painted. Properly locate and vent heat sources to exterior so that paint systems and personnel are unaffected by exhaust products.

B. Existing Conditions:

1. Existing surfaces to receive painting Work shall have their surfaces prepared to meet requirements of painting systems specified. Prior to initiating painting Work, perform adhesion tests on existing surfaces to be painted. Perform testing per ASTM D4541 or other method acceptable to ENGINEER. Number and location of tests shall be sufficient to determine the condition of existing coatings and suitability of existing coatings to remain to provide an acceptable substrate for new coatings. Submit testing plan prior to testing and provide ENGINEER the adhesion test results.

2. Provide abrasive blasting, scraping, or other abrading or surface film removal, or preparatory techniques accepted by ENGINEER.
 3. Before commencing painting in an area, surfaces to be painted and floors shall be cleaned of dust using commercial vacuum cleaning equipment equipped with high-efficiency particulate air (HEPA) filters and dust containment systems.
 4. After painting operations have started in a given area, cleaning only with commercial vacuum cleaning equipment with high-efficiency particulate air (HEPA) filters and dust containment systems.
- C. Environmental Requirements:
1. Comply with manufacturer's published requirements.
- D. Protection:
1. Cover or otherwise protect finished Work of other trades and those surfaces not being painted concurrently and not to be painted.
 2. During surface preparation and painting, facility shall remain in operation. Use procedures that prevent contamination of process or cause or require facility shutdown.
 3. Coordinate and schedule surface preparation and painting to avoid exposing personnel to hazards associated with painting Work. Provide required personnel safety equipment per requirements of authorities having jurisdiction at Site.
 4. Submit protection procedures to be employed. Do not begin surface preparation and painting Work until ENGINEER accepts protection techniques proposed by CONTRACTOR.
 5. When working with flammable materials, provide fire extinguishers and post temporary signs warning against smoking and open flame.

PART 2 - PRODUCTS

2.1 PAINTING SYSTEM MANUFACTURERS

- A. Products and Manufacturers: Where referenced under painting systems, provide painting systems manufactured by the following:
1. Tnemec Company, Incorporated (TCI).
 2. The Carbolite Company, part of StonCor Group, an RMP Company (TCC).
 3. Sherwin-Williams Company (SWC).
 4. Or equal.

2.2 PAINTING SYSTEMS

- A. New and Existing Concrete associated with all Potable Water Tanks, Reservoirs, and Channels at Ambient Temperature and of Greater Than 1,500 Gallon Capacity; Certified by NSF International in accordance with ANSI/NSF Standard

61; Low VOC Content; Non Submerged, Intermittently Submerged and Submerged, Interior and Exterior:

1. Provide painting system components specified for all cast-in-place concrete surfaces within area of the clearwell beginning at the bottom slab and extending to top of underside of the top slab, including troughs, walls, beams, columns, the underside of roof slab and other locations shown and required.
 2. Surface Preparation: Refer to Part 3.2 and manufacturer's published recommendations for material and surface condition.
 3. Primer: Interior:
 - a. Generic Components:
 - 1) Minimum 61 percent volume solids, moisture curing urethane or modified aromatic polyurethane zinc-rich primer, 334 grams per liter VOC, maximum.
 - b. Products and Manufacturers: Provide one of the following:
 - 1) Series 1 Omnithane (TCI); Corothane I Galvapac Zinc Primer (SWC): One coat, 2.5 to 3.5 dry mils.
 4. Filler, Surfacer and Patching Compound, shallow repairs:
 - a. Generic Components:
 - 1) 100% solids modified polyamine epoxy filler and surfacer.
 - b. Products and Manufacturers: Provide one of the following:
 - 1) Series 215 Filler/Surfacer (TCI); Steel Seam FT 910 Patching/Surfacer (SWC): One coat, 1/8-inch thick.
 5. Intermediate Touchup: Interior:
 - a. Generic Components:
 - 1) Minimum 67 percent solids, polyamindo-amine epoxy or cyloaliphatic amine epoxy; 290 grams per liter VOC.
 - b. Products and Manufacturers: Provide one of the following:
 - 1) Series N140 Pota-Pox Plus (TCI); Macropoxy 646 NSF (SWC): Two coats, 3.0 to 6.0 dry mils.
 6. Finish: Semi-Gloss; Interior:
 - a. Generic Components:
 - 1) Minimum 67 percent solids, polyamindoamine epoxy; 8 grams per liter VOC.
 - b. Products and Manufacturers: Provide one of the following:
 - 1) Series 22 Pota-Pox 100 (TCI); Macropoxy 646 NSF (SWC): One coat, 20.0 to 30.0 dry mils.
- B. New and Existing Ferrous Metals, Interior Surfaces of Potable Water Storage Reservoirs, Galvanized Metals and Non-Ferrous Metals and Exterior Surfaces of Piping; Submerged and Intermittently Submerged, including up to 4.0 feet above liquid surface; Certified per ANSI/NSF Standard 61; Low VOC Content, Interior:
1. Surface Preparation: Comply with manufacturer's published recommendations for material and surface condition.
 2. Prime/Finish: Semi-Gloss:
 - a. Generic Components:

- 1) Minimum 100 percent solids, modified polyamine epoxy or flake-filled epoxy; 8 grams per liter VOC, maximum.
- b. Products and Manufacturers: Provide one of the following:
 - 1) Series 22 Pota-Pox 100 (TCI); Plastite 140 S (TCC); Dura-Plate UHS NSF (SWC): Two coats, 8.0 to 10.0 dry mils, per coat.

2.4 INSTRUMENTS

- A. Instruments:
 1. Provide one new dry-film thickness gauge for checking film thickness, one holiday detector to detect holidays or holes in the coating, and one set of visual standards to check surface preparation. Calibrate dry film thickness gauge at Site using Bureau of Standards standard shim blocks.
 2. Products and Manufacturers: Provide the following:
 - a. Film Thickness Testers: Model FM-III manufactured by Mikrotest, or equal.
 - b. Holiday detector shall be Model M-1 as manufactured by Tinker & Rasor, or equal.
 - c. Visual Standards: ASTM D2200, Swedish Standards, SSPC VIS 1.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Examine areas and conditions under which painting Work is to be performed and notify ENGINEER in writing of conditions detrimental to proper and timely completion of Work. Do not proceed with Work until unsatisfactory conditions have been corrected in a manner acceptable to ENGINEER.
- B. Do not paint over existing paint where there is no assurance that existing paint will provide an acceptable surface for long-term adherence and durability of painting systems specified, or where paint manufacturer requires removal of all existing paint to recommend use of specified painting system.

3.2 PROTECTION OF PROPERTY AND STRUCTURES

- A. Protect property and structures adjacent to the Work from waste residues resulting from cleaning, surface preparation, and painting Work.
- B. Use shrouding, vacuum blasting, or other acceptable methods for cleaning and surface preparation of exterior surfaces.
- C. During blast cleaning and surface preparation of interior and exterior surfaces, control exhausting of dust and grit using shrouding, negative-pressure containment/dust collection systems, or other means to protect adjacent property and structures and prevent dust and grit from escaping. Similarly, control

- removal and temporarily store residues to protect adjacent property and structures.
- D. For painting of exterior surfaces, use rollers, shrouding, or other acceptable methods as required to protect adjacent property and structures from wind-blown paint residues.
 - E. Submit proposed procedures for cleaning, surface preparation, and paint application that describe in detail methods to be used to protect adjacent property and structures from residues. Do not proceed with cleaning, surface preparation, or painting until proposed procedures are accepted by ENGINEER.

3.3 MATERIALS PREPARATION

- A. General: Mix and prepare painting products in strict accordance with paint manufacturer's product data sheets.

3.4 APPLICATION

- A. General:
 - 1. Apply paint systems by brush, roller, or airless spray per paint manufacturer's recommendations and in compliance with Paint Application Specifications No. 1 in SSPC Volume 2, where applicable, and in strict accordance with paint manufacturer's product data sheets.
 - 2. Surfaces of items not normally exposed-to-view do not require same color as other components of system of which they are a part, but require same painting system specified for exposed surfaces of system.
 - 3. Paint interior surfaces of ducts, where visible through registers or grilles, with a flat, non-specular black paint before final installation of registers or grilles.
 - 4. Paint backs of access panels and removable or hinged covers to match exposed surfaces.
 - 5. Omit field-applied primer on metal surfaces that have been primed in the shop. Touch-up paint to shop-primed coats and pre-finished items only when approved by ENGINEER using compatible primers and paint manufacturer's recommended compatible field-applied finishes.
 - 6. Welds shall be stripe-coated with intermediate or finish coat of paint after application of prime coat.
- B. Minimum/Maximum Paint Film Thickness: Comply with manufacturer's published recommendations for coating type and surface.
- C. Scheduling Surface Preparation and Painting: Comply with manufacturer's published recommendations for coating type and surface.

- D. Prime Coats: Recoat primed and sealed walls and ceilings where there is evidence of suction spots or unsealed areas in first coat, to result in a finish coat with no burn-through or other defects caused by insufficient sealing.
- E. Pigmented (Opaque) Finishes: Completely cover to provide an opaque, smooth surface of uniform finish, color, appearance, and coverage.
- F. Brush Application:
 - 1. Brush-out and work all brush coats onto the surfaces in an even film. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections are unacceptable. Neatly draw all glass and color break lines.
 - 2. Brush-apply all primer or first coats, unless otherwise allowed to use mechanical applicators.
- G. Mechanical Applicators:
 - 1. Use mechanical methods for applying paint when allowed by applicable ordinances, paint manufacturer, and approved by ENGINEER.
 - 2. Limit roller applications, if approved by ENGINEER, to interior wall finishes for second and third coats. Apply each roller coat to provide equivalent hiding as brush-applied coats.
 - 3. Where spray application is used, apply each coat to provide equivalent hiding of brush-applied coats. Do not double back with spray equipment for purpose of building up film thickness of two coats in one pass.
- H. Completed Work: Match approved samples for color, texture, and coverage. Remove, refinish, or repaint Work not in compliance with specified requirements as required by ENGINEER.

3.5 FIELD QUALITY CONTROL

- A. Notify ENGINEER after completing each coat of paint. After inspection and checking of film thickness, holidays, and imperfections, and after acceptance by ENGINEER, proceed with succeeding coat. Perform testing using testing instruments specified in Article 2.4 of this Section.
 - 1. ENGINEER will witness all testing and shall be notified of scheduled testing at least twenty-four hours in advance.
 - 2. Apply additional coats, if required, to produce specified film thickness and to correct holidays and to completely fill all surface air holes.
- B. For magnetic substrates, measure thickness of dry film nonmagnetic coatings following recommendations of SSPC PA-2. These procedures supplement manufacturers' approved instructions for manual operation of measurement gauges and do not replace such instructions.

- C. Record time, location, number of coats, dry film thickness, holidays, and other imperfections and submit testing results to ENGINEER.

3.6 PROTECTION

- A. Provide “Wet Paint” signs as required to protect newly painted finishes. After completing painting Work, remove temporary protective wrappings provided for protection of the Work.

3.7 ADJUSTMENT AND CLEAN-UP

- A. Correct damage to work of other trades by cleaning, repairing or replacing, and repainting, as acceptable to ENGINEER.
- B. During progress of the Work, remove from Site all discarded paint products, rubbish, cans, and rags at end of each workday.
- C. Upon completion of painting, clean paint-spattered surfaces. Remove spattered paint by proper methods of washing and scraping, using care not to scratch or otherwise damage finished surfaces.
- D. At completion of Work of other trades, touch-up and restore all damaged or defaced painted surfaces as determined by ENGINEER.

+ + END OF SECTION + +

SECTION 31 23 05.01

DEWATERING

PART 1 – GENERAL

1.1 DESCRIPTION

- A. CONTRACTOR shall provide all labor, materials, equipment, and incidentals required to perform all required dewatering as shown, specified, and required to complete the Work.
- C. Regulatory Requirements:
Perform dewatering work as needed to meet the specifications of the Contract Documents and all regulatory requirements, including applicable stormwater permits.

1.2 SUBMITTALS

- A. Informational Submittals: Submit the following:
 - 1. Procedure Submittals:
 - a. CONTRACTOR shall prepare the following for submittal:
 - 1) Dewatering system plan.
 - b. Drawings shall be prepared by a person qualified in the specialty involved. Do not submit calculations. ENGINEER's review and acceptance of submittal does not imply approval by ENGINEER of the associated Work. CONTRACTOR shall be solely responsible for designing, installing, operating and maintaining the dewatering system.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.1 DEWATERING

- A. Dewatering – General:
 - 1. Provide and maintain adequate drainage and dewatering equipment to remove and dispose of all surface water and ground water entering work areas.
 - 2. Perform diversion and removal of surface water in manner that prevents accumulation of water behind permanent or temporary structures and at any other locations in the construction area where such accumulations may be detrimental.
 - 3. Water used for working or processing, resulting from dewatering operations, or containing oils or sediments that will reduce the quality of the surface water or

groundwater downstream of the point of discharge, shall not be directly discharged. Divert such waters through temporary settling basin or filter before discharging to surface water, groundwater, or drainage routes.

4. CONTRACTOR shall be responsible for condition of piping, conduits, and channels used for drainage and such piping, conduits, and channels shall be clean and free of sediment.

B. Temporary Dewatering System:

1. CONTRACTOR shall design, provide, and operate dewatering system necessary to depress and maintain groundwater level below the base of a clearwell before the clearwell is drained for repair work.
2. Design and operate dewatering system to avoid settlement and damage to existing structures and Underground Facilities.
3. Groundwater table shall be lowered in advance of draining a clearwell cell.
4. Operate dewatering system continuously, 24 hours per day, seven days per week. Provide standby pumping facilities and personnel to maintain the continued effectiveness of the system. Do not discontinue dewatering operations without first obtaining ENGINEER's acceptance for such discontinuation.
6. If, in ENGINEER's opinion, the water levels are not being lowered or maintained as required, provide additional or alternate temporary dewatering devices as necessary, at no additional cost to OWNER.
7. Locate elements of temporary dewatering system to allow continuous dewatering operation without interfering with the Work to the extent practicable.
8. Control of ground water shall continue until the Clearwell provides sufficient dead load to withstand hydrostatic uplift of the normal groundwater.
9. Perform pumping of water from excavations in a manner that avoids damaging the subgrade.
10. Both clearwells shall be refilled prior to discontinuation of dewatering operations.

C. Disposal of Water Removed by Dewatering System:

1. CONTRACTOR's dewatering system shall discharge to the appropriate water body in accordance with the stormwater permits, dewatering permits (if necessary), and in accordance with State laws and regulations.
2. Convey water from excavations in closed conduits. Do not use trench excavations as temporary drainage ditches.
3. Dispose of water removed from excavations in a manner that does not endanger health and safety, property, the Work, and other portions of the Project.
4. Dispose of water in manner that causes no inconvenience to OWNER, others involved in the Project, and adjacent and downstream properties.
5. At a minimum, water removed by the dewatering system shall be treated through a filter to minimize turbidity and total suspended solids prior to

disposal. Additional measures shall be implemented at the CONTRACTOR's expense in order to meet regulatory and permit requirements.

+ + END OF SECTION + +

THIS PAGE INTENTIONALLY LEFT BLANK

SECTION 40 05 53

PROCESS VALVES, FOUR-INCH DIAMETER AND LARGER

PART 1 - GENERAL

1.1 DESCRIPTION

A. Scope:

1. CONTRACTOR shall provide all labor, materials, equipment, and incidentals as shown, specified, and required to furnish and install process valves, four-inch diameter and larger, and appurtenances, complete and operational.

B. Coordination:

1. Review installation procedures under this and other Sections and coordinate installation of items that must be installed with or before process valves Work.

C. Related Sections:

1. Section 01 65 00, Product Delivery Requirements.
2. Section 01 66 00, Product Storage and Handling Requirements.
3. Section 01 78 23, Operations and Maintenance Data.
4. Section 09 91 00, Painting.

1.2 REFERENCES

A. Standards referenced in this Section are listed below:

1. American Bearing Manufacturers Association (ABMA).
2. ANSI B16.1, Cast-Iron Pipe Flanges and Flanged Fittings.
3. ANSI B16.34, Valves-Flanged, Threaded and Welding end. (ASME B16.34).
4. ANSI/NSF 61 Drinking Water Components – Health Effects.
5. API STD 598, Valve Inspection and Testing.
6. API STD 609, Butterfly Valves: Double Flanged, Lug-Type and Wafer-Type.
7. ASTM A126, Specification for Gray Iron Castings for Valves, Flanges and Pipe Fittings.
8. ASTM A193/A193M, Specification for Alloy-Steel and Stainless Steel Bolting Materials for High-Temperature Service.
9. ASTM A194/A194M, Specification for Carbon and Alloy Steel Nuts for Bolts for High Pressure and High Temperature Service, or Both.
10. ASTM A240/A240M, Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications.
11. ASTM A276, Specification for Stainless Steel Bars and Shapes.

12. ASTM A307, Specification for Carbon Steel Bolts and Studs, 60,000 psi Tensile Strength.
13. ASTM A351/A351M, Specification for Castings, Austenitic, Austenitic-Ferritic (Duplex), for Pressure-Containing Parts.
14. ASTM A380, Practice for Cleaning, Descaling and Passivation of Stainless Steel Parts, Equipment and Systems.
15. ASTM A536, Specification for Ductile Iron Castings.
16. ASTM A564/A564M, Specification for Hot-Rolled and Cold-Finished Age-Hardening Stainless Steel Bars and Shapes.
17. ASTM B584, Specification for Copper Alloy Sand Castings for General Applications.
18. ASTM D429, Test Methods for Rubber Property - Adhesion to Rigid Substrates.
19. AWWA C504, Rubber-Seated Butterfly Valves.
20. AWWA C550, Protective Interior Coatings for Valves and Hydrants.
21. AWWA Manual M49, Butterfly Valves: Torque, Head Loss, and Cavitation Analysis.
22. FS TT-C-494, Coating Compound, Bituminous, Solvent Type, Acid-Resistant.

1.3 QUALITY ASSURANCE

A. Manufacturer's Qualifications:

1. Manufacturer shall have minimum of five years of experience producing substantially similar materials and equipment to that required and be able to provide evidence of at least five installations in satisfactory operation for at least five years.

B. Component Supply and Compatibility:

1. Obtain each type of equipment and appurtenances included in this Section, regardless of the component manufacturer, from a single manufacturer of the type of process valve. For each type of valve, do not furnish valves of more than one manufacturer.
2. Supplier of each type of equipment specified shall review and approve or prepare all Shop Drawings and other submittals for all components associated with the type of process valve Supplier is furnishing.
3. Components shall be suitable for use in the specified service conditions. Components shall be integrated into the overall assembly by the process valve manufacturer.

1.4 SUBMITTALS

A. Action Submittals: Submit the following:

1. Shop Drawings:
 - a. Installation drawings showing orientation of valve in both plan and elevation view. Drawings shall clearly identify valve and its

- appurtenances, including actuators, valve stems, and other components. Show dimensions of valves and appurtenances in relation to piping and structural and architectural components, where applicable.
 - b. Calculations for sizing of operating mechanism with extension stems.
 - c. Calculations for sizing of gear actuators.
 - 2. Product Data:
 - a. Product data sheets.
 - b. Complete catalog information, including dimensions, weight, specifications, and identification of materials of construction of all parts.
 - c. Corrosion resistance information to confirm suitability of valve materials for the application. Furnish information on chemical resistance of elastomers from elastomer manufacturer.
 - d. Cv values and hydraulic headloss curves.
 - 3. Testing Plans:
 - a. Submit plan for shop testing of each valve for which shop testing is specified, including testing plan's and test facility's limitations proposed.
- B. Informational Submittals: Submit the following:
- 1. Certificates:
 - a. Certificates of compliance with referenced standards, where applicable, including those of AWWA, NSF, and others required by ENGINEER.
 - 2. Manufacturer Instructions:
 - a. Submit manufacturer's instructions for handling, storing, and installing valves and appurtenances. Provide templates and setting drawings for valves and appurtenances that require anchor bolts or similar anchorages.
 - 4. Source Quality Control Submittals:
 - a. Submit copies of shop test results and inspection data, certified by manufacturer.
 - 5. Field Quality Control Submittals:
 - a. Submit results of field tests required.
 - 6. Supplier's Reports:
 - a. When requested by ENGINEER, submit written report of results of each visit to Site by Supplier's serviceman, including purpose and time of visit, tasks performed and results obtained.
 - 7. Qualifications Statements:
 - a. When requested by ENGINEER, submit manufacturer's qualifications demonstrating compliance with the Specifications, including list of existing installations with contact names and telephone number(s) for each.

- C. Closeout Submittals: Submit the following:
 - 1. Operations and Maintenance Data:
 - a. Furnish operation and maintenance manuals in accordance with Section 01 78 23, Operations and Maintenance Data.
 - b. Furnish in operations and maintenance manuals complete nameplate data for each valve and actuator.
- D. Maintenance Material Submittals: Submit the following:
 - 1. Spare Parts, Extra Stock Materials, and Tools:
 - a. Spare Parts and Extra Stock Materials: Furnish as specified for each valve type.
 - b. Tools: Furnish two sets of special tools (excluding metric tools, if applicable) for each size and type of valve furnished.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Packing, Shipping, Handling, and Unloading:
 - 1. Deliver materials and equipment to Site to ensure uninterrupted progress of the Work. Deliver anchorage products that are to be embedded in concrete in ample time to prevent delaying the Work.
 - 2. Inspect boxes, crates, and packages upon delivery to Site and notify ENGINEER in writing of loss or damage to materials and equipment. Promptly remedy loss and damage to new condition in accordance with manufacturer's instructions.
 - 3. Conform to Section 01 65 00, Product Delivery Requirements.
- B. Storage and Protection:
 - 1. Keep products off ground using pallets, platforms, or other supports. Store equipment in covered storage and prevent condensation and damage by extreme temperatures. Store in accordance with manufacturer's recommendations. Protect steel, packaged materials, and electronics from corrosion and deterioration.
 - 2. Conform to Section 01 66 00, Product Storage and Handling Requirements.

PART 2 - PRODUCTS

2.1 GENERAL

- A. Valves, General:
 - 1. Provide each valve with manufacturer's name and rated pressure cast in raised letters on valve body.
 - 2. Provide valves with brass or Type 316 stainless steel nameplate attached with Type 316 stainless steel screws. Nameplates shall have engraved letters displaying the following minimum information:
 - a. Valve size.
 - b. Pressure and temperature ratings.

- c. Application (other than water and wastewater).
 - d. Date of manufacture.
 - e. Manufacturer's name.
 - 3. Provide valves to turn clockwise to close, unless otherwise specified.
 - 4. Provide valves with permanent markings for direction to open.
 - 5. Manually operated valves, with extension stems, shall require not more than 40-pound pull on manual operator to open or close valve against specified criteria. Gear actuator and valve components shall be able to withstand minimum pull of 200 pounds on manual operator and input torque of 300-foot pounds to actuator nut. Manual operators include handwheel, chainwheel, crank, lever, and T-handle wrench.
- B. Valve Materials:
- 1. Valve materials shall be suitable for the associated valve's service or application, as shown.
 - 2. Protect wetted parts from galvanic corrosion caused by contact of different metals.
 - 3. Wetted components and wetted surfaces of valves used with potable water or water that will be treated to become potable shall conform to ANSI/NSF 61.
 - 4. Clean and descale fabricated stainless steel items in accordance with ASTM A380 and the following:
 - a. Passivate all stainless steel welded fabricated items after manufacture by immersing in pickling solution of six percent nitric acid and three percent hydrofluoric acid. Temperature and detention time shall be sufficient for removing oxidation and ferrous contamination without etching surface. Perform complete neutralizing operation by immersing in trisodium phosphate rinse followed by clean water wash.
 - b. Scrub welds with same pickling solution or pickling paste and clean with stainless steel wire brushes or by grinding with non-metallic abrasive tools to remove weld discoloration, and then neutralize and wash clean.
- C. Valve Joints:
- 1. Exposed Valves: Unless otherwise specified, provide with flanged ends conforming to ANSI B16.1. Pressure class of flanges shall be equal to or greater than specified pressure rating of the associated valve.
 - 2. For stainless steel bolting, except where nitrided nuts are required, use graphite-free anti-seize compound to prevent galling. Strength of joint shall not be affected by using anti-seize compound.

2.2 BUTTERFLY VALVES

- A. Manufacturers: Provide products of one of the following:
- 1. DeZurik.
 - 2. Henry Pratt Company.

3. Or equal.

B. General:

1. Provide butterfly valves conforming to AWWA C504 and as specified herein.
2. Sizes:
 - a. Flanged: 36-inch diameter valve size.
3. Rated Working Pressure: 150 psig, Class 150B.
4. Maximum Fluid Temperature: 90 degrees F.
5. Valves shall provide drip-tight bi-directional shutoff at rated pressures.
6. Mount valve seats in valve body. Rubber seats for 24-inch diameter and larger valves shall be replaceable in the field.
7. Valves shall be capable of being maintained in open or partially open position for manual operation. When valve disc is maintained, there shall be no chatter or vibration of disc or operating mechanism.
8. Valve packing shall be replaceable without dismantling valve.
9. Disc shall be offset from shaft to provide uninterrupted 360-degree seat seal.
10. Maximum flange outside diameter: 46-inches
11. Provide enclosed neck extension and extended shaft as shown. Neck extension shall match diameter of neck extension of existing butterfly valves to be replaced.

C. Materials of Construction: materials of construction shall conform to AWWA C504 and shall be as follows:

1. Body: Cast-iron, ductile iron, or alloy cast-iron.
2. Shaft: Type 316 stainless steel.
3. Discs:
 - a. Valves 30-inch Diameter and Larger: Ductile iron.
4. Seats: Buna-N or other synthetic rubber suitable for the application.
5. Seating Surfaces: Type 316 stainless steel.
6. Bearings:
 - a. Valves 24-inch Diameter and Larger: Fiberglass with Teflon lining.
7. Shaft Seals: Externally adjustable, material same as for seats. For services that are either buried or submerged, self-adjusting V-type chevron, material same as for seats.
8. Tapered Pins for Attachment of Shaft to Disc: Type 316 stainless steel.
9. Internal and external bolting and other hardware; including pins, set screws, studs, bolts, nuts, and washers shall be Type 316 stainless steel.

D. Painting:

1. Valves shall be painted inside and outside in accordance with Section 09 91 00, Painting and AWWA C550.

E. Testing:

1. Test each valve in the manufacturer's shop in accordance with AWWA C504.

- F. Gear Actuators for Manual Valves:
 - 1. Provide gear actuators conforming to AWWA C540.
 - 2. Gear actuators for valves 24-inch diameter and larger shall be constructed for maximum differential pressures and velocities as specified below:
 - a. Valve Size and Location: 36-inch. Clearwell with potable water
 - b. Maximum Differential Pressure Across Closed Valve: 30 psi.
 - c. Maximum Port Velocity through Full Open Valve: 1.5 feet per second.

2.3 APPURTENANCES FOR EXPOSED METALLIC VALVES

- A. General:
 - 1. For valves located less than five feet above operating floor, provide handwheels on all valves, unless otherwise shown or specified.
- B. Handwheels:
 - 1. Conform to applicable AWWA standards.
 - 2. Material of Construction: Ductile iron, or cast aluminum.
 - 3. Arrow indicating direction of opening and word "OPEN" shall be cast on trim of handwheel.
 - 4. Maximum Handwheel Diameter: 2.5 feet.

2.4 TOOLS, LUBRICANTS, AND SPARE PARTS

- A. Lubricants: For valves, actuators, and appurtenances requiring lubricants, provide suitable lubricants for initial operation and for first year of use following Substantial Completion. Lubricants for equipment associated with conveying potable water or water that will be treated to become potable shall be food-grade and ANSI/NSF 61-listed.

2.5 PAINTING OF EXPOSED VALVES AND APPURTENANCES

- A. Exterior steel, cast-iron, and ductile iron surfaces, except machined surfaces of exposed valves and appurtenances, shall be finish painted in manufacturer's shop. Surface preparation, priming, finish painting, and field touch-up painting shall conform to Section 09 91 00, Painting.

2.6 INSPECTION AND WITNESS SHOP TESTS

- A. Allow for ENGINEER and OWNER to inspect and witness valve tests at valve manufacturer's facility for the following:
 - 1. Valve Type: Butterfly
 - 2. Valve Sizes: 36-inch.
 - 3. Number of Valves to be Inspected and Witness Tested: three (3).

- B. Costs for travel and expenses for ENGINEER and OWNER to witness shop tests shall be covered by the OWNER and shall not be part of the CONTRACTOR's cost.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Examine conditions under which materials and equipment are to be installed and notify ENGINEER in writing of conditions detrimental to proper and timely completion of the Work. Do not proceed with the Work until unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. General:
1. Install valves and appurtenances in accordance with:
 - a. Supplier's instructions and the Contract Documents.
 - b. Requirements of applicable AWWA standards.
 2. Install valves plumb and level. Install all valves to be free from distortion and strain caused by misaligned piping, equipment, and other causes.
- B. Exposed Valves:
1. Provide supports for large or heavy valves and appurtenances as shown or required to prevent strain on adjoining piping.
 2. Operators:
 - a. Install valves so that operating handwheels or levers can be conveniently turned from operating floor without interfering with access to other valves, piping, structure, and equipment, and as approved by ENGINEER.
 - b. Avoid placing operators at angles to floors or walls.
 - c. Install valves so that indicator arrows are visible from floor level.
 3. Stems:
 - a. Provide lateral restraints for extension bonnets and extension stems as shown and as recommended by manufacturer.
 - c. Provide sleeves where operating stems pass through floor. Extend sleeves two inches above floor.

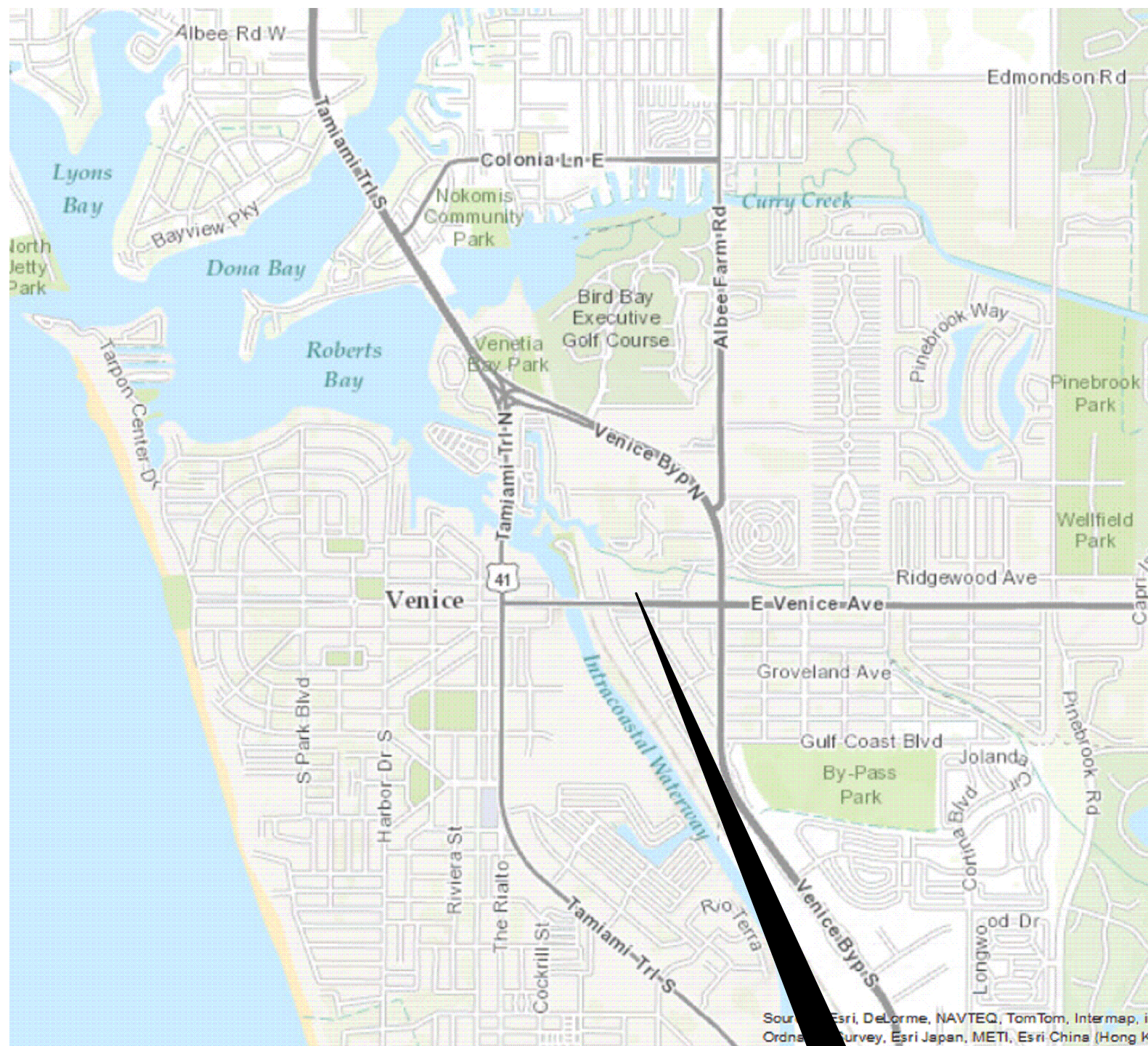
3.3 FIELD QUALITY CONTROL

- A. Field Tests:
1. Adjust all parts and components as required to provide correct operation of valves.
 2. Conduct functional field test on each valve in presence of ENGINEER to demonstrate that each valve operates correctly.
 3. Verify satisfactory operation and controls of motor operated valves.

4. Demonstrate satisfactory opening and closing of valves at specified criteria requiring not more than 40 pounds effort on manual actuators.
5. Test valves by applying 200 pounds effort on manual operators. There shall be no damage to gear actuator or valve.

+ + END OF SECTION + +

THIS PAGE INTENTIONALLY LEFT BLANK



LOCATION MAP
NOT TO SCALE
200 WARFIELD AVENUE,
VENICE FL, 34285

PROJECT
SITE

CITY OF VENICE UTILITIES DEPT.
CITY OF VENICE, FL



RO WTP CLEARWELL INTERIOR IMPROVEMENTS

MARCH 2017
BID DOCUMENTS

CITY COUNCIL

JOHN HOLIC	MAYOR
KIT McKEON	VICE MAYOR
JEANETTE GATES	COUNCIL MEMBER
BOB DANIELS	COUNCIL MEMBER
RICHARD CAUTERO	COUNCIL MEMBER
FRED FRAIZE	COUNCIL MEMBER
DEBORAH ANDERSON	COUNCIL MEMBER

ORIGINAL
SIGNED AND
SEALED SET
ON FILE



ARCADIS-US, INC.
CERTIFICATION OF AUTHORIZATION NO. 7917
3109 W. DR. MARTIN LUTHER KING JR. BLVD.,
SUITE 350, TAMPA, FL 33607
PH: (813) 903-3100 FAX: (813) 903-9115

REGISTERED ENGINEERS/ STATE OF FLORIDA

GENERAL
MECHANICAL

SEAN KEOKI CHAPARRO
NO. 75865

STRUCTURAL

ADARSH B. SHAH
NO. 79948

User:SWANER, Spec:US,NC,MOD File:U:\ACAD PROJ\5710 - CITY OF VENICE\028\SHEETS\GENERAL\G-02.DWG Scale:1/4"=1'-0" Plot Date: Summer, Anthony, 2/28/2017, 17:11:11 Layout:2

SHEET INDEX:

SHEET NO.	GENERAL
G-1	COVER SHEET
G-2	INDEX, ABBREVIATIONS, GENERAL NOTES, LEGENDS AND SYMBOLS
G-3	OVERALL SITE PLAN
SHEET NO.	MECHANICAL
M-1	CLEARWELL PLAN & SECTION
SHEET NO.	STRUCTURAL
S-01	CLEARWELL REPAIR PLAN AND DETAIL
S-02	CLEARWELL SECTION & PHOTOS
S-03	TYPICAL REPAIR DETAILS



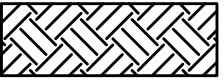

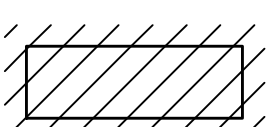

ABBREVIATIONS

AB	ANCHOR BOLT	HORIZ	HORIZONTAL
ABAN	ABANDONED	HP	HIGH POINT
ADDL	ADDITIONAL	ID	INSIDE DIAMETER
ADJ	ADJUSTABLE	IN	INCHES
ACS PNL	ACCESS PANEL	INF	INFLUENT
ALT	ALTERNATE	JT	JOINT
BF	BLIND FLANGE	LR	LONG RADIUS
BL	BASLINE	LSH	LEVEL SWITCH HIGH
BLDG	BUILDING	LSLL	LEVEL SWITCH LOW LOW
BOP	BOTTOM OF PIPE	MAX	MAXIMUM
BOT	BOTTOM	MFG	MANUFACTURER
BRG	BEARING	MGD	MILLION GALLONS PER DAY
BRP	BUILDING REFERENCE POINT	MH	MANHOLE
		MIN	MINIMUM
CL	CENTERLINE	o.c.	ON CENTER
CJ	CONSTRUCTION JOINT	OD	OUTSIDE DIAMETER
CIP	CLEAN IN PLACE	O/F	OVER FLOW
CO	CLEAN OUT	OPNG	OPENING
CLR	CLEAR	OPP	OPPOSITE
CONC	CONCRETE	PE	PLAIN END
CONT	CONTINUED	PI	POINT OF INTERSECTION
CPLG	COUPLING	PPL	PLATE OR PROPERTY LINE
CU YD	CUBIC YARD(S)	PSF	PRESSURIZED SOLUTION FEED
DET	DETAIL	PSI	POUNDS PER SQUARE INCH
DIP	DUCTILE IRON PIPE	R	RISER
DIA	DIAMETER	RED	REDUCER
DISCH	DISCHARGE	REINF	REINFORCEMENT OR REINFORCE
DN	DOWN		
EA	EACH	REQ	REQUIRED
EFF	EFFLUENT	RJ	RESTRAINED JOINT
EJ	EXPANSION JOINT	RO	REVERSE OSMOSIS
EL	ELEVATION	ROW	RIGHT OF WAY
ELEC	ELECTRIC	SHT	SHEET
EQ	EQUAL	SPA	SPACING
EXIST	EXISTING	SR	SHORT RADIUS
FF	FINISHED FLOOR	STD	STANDARD
FDTN	FOUNDATION	STRUCT	STRUCTURAL
FIN	FINISHED	S/W	SIDEWALK
FLEX	FLEXIBLE	T	TREAD
FLG	FLANGE	T&B	TOP AND BOTTOM
FCA	FLANGED COUPLING ADAPTER	THK	THICK / THICKNESS
FLR	FLOOR	TYP	TYPICAL
FT	FEET	UON	UNLESS OTHERWISE NOTED
GA	GAGE OR GAUGE	VERT	VERTICAL
G	GROUND	W/	WITH
GRTG	GRATING	WTP	WATER TREATMENT PLANT

LEGEND

—————	NEW EQUIPMENT, PIPING, STRUCTURE, ETC.
—— ———	NEW BURIED EQUIPMENT, PIPING, STRUCTURE, ETC.
—————	EXIST. EQUIPMENT, PIPING, STRUCTURE, ETC.
—— ———	EXIST. BURIED EQUIPMENT, PIPING, STRUCTURE, ETC.
—————	CENTERLINE

SYMBOLS

	BUTTERFLY VALVE (BV)
	UNDISTURBED SOIL
	GROUND SURFACE
	CONCRETE
	DEMOLITION
	CONSTRUCTION STAGING

GENERAL NOTES:

- PLANT OPERATIONS SHALL NOT BE INTERRUPTED BY CONSTRUCTION ACTIVITIES. CONTRACTOR SHALL COORDINATE HIS WORK WITH PLANT STAFF TO PREVENT FACILITY DISRUPTION. CONTRACTOR SHALL MAINTAIN ACCESS TO THE CLEARWELL IN SERVICE AT ALL TIMES.
- CONTRACTOR SHALL SUBMIT A CONSTRUCTION STAGING PLAN FOR APPROVAL BY THE ENGINEER.
- THE INFORMATION PROVIDED IN THESE DRAWINGS IS SOLELY TO ASSIST THE CONTRACTOR IN ASSESSING THE NATURE AND EXTENT OF CONDITIONS THAT MIGHT BE ENCOUNTERED DURING THE COURSE OF THE WORK. THE BIDDERS ARE DIRECTED, PRIOR TO BIDDING, TO CONDUCT WHATEVER INVESTIGATIONS THEY DEEM NECESSARY TO ARRIVE AT THEIR OWN CONCLUSIONS REGARDING THE ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED, AND UPON WHICH THEIR BIDS WILL BE BASED.
- PORTIONS OF CONSTRUCTION OF THE PROJECT, AUTHORIZED BY PERMIT OR LICENSE AGREEMENT, WILL BE SUBJECT TO INSPECTION AND TESTS AS MAY BE NECESSARY BY THE PERMIT GRANTING AUTHORITY. ALL CONTRACTOR SUPERVISORY PERSONNEL SHALL FURNISH INFORMATION TO AND COOPERATE WITH THESE AUTHORITIES IN CONDUCTING THEIR TESTING AND INSPECTION PROGRAM.
- ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST APPLICABLE FEDERAL, STATE AND LOCAL AGENCY'S REGULATIONS AND STANDARDS. WHEN CONFLICTS OCCUR BETWEEN REQUIREMENTS SHOWN ON THESE DRAWINGS AND SPECIFICATIONS AND REGULATORY CRITERIA, THE MORE STRINGENT REQUIREMENT SHALL PREVAIL. THE CONTRACTOR SHALL VERBALLY BRING ANY CONFLICT TO THE ATTENTION OF THE ENGINEER IMMEDIATELY FOLLOWED BY AN OFFICIAL WRITTEN NOTIFICATION WITHIN 24 HOURS.
- THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND PAYING FOR SITE AND BUILDING PERMITS THAT MAY BE REQUIRED THAT PERTAIN TO HIS CONTRACTED WORK. SUCH PERMITS SHALL BE OBTAINED BY THE CONTRACTOR PRIOR TO THE CONTRACTOR BEGINNING WORK ON THE PORTION OF THE PROJECT REQUIRING SAID PERMITS.
- THE CONTRACTOR IS RESPONSIBLE FOR ALL CONSTRUCTION STAKING TO INCLUDE HORIZONTAL AND VERTICAL CONTROL FOR ALIGNMENT OF WORK. ALL SURVEY WORK TO ESTABLISH THE HORIZONTAL AND VERTICAL CONTROL SHALL BE UNDER THE GUIDANCE AND DIRECT SUPERVISION OF A REGISTERED PROFESSIONAL SURVEYOR AND MAPPER. ARCADIS-US, INC. DOES NOT SUPPORT TO THE ACCURACY OF THE SURVEY INFORMATION PROVIDED IN THESE DRAWINGS.
- OSHA'S EXCAVATION SAFETY STANDARDS 29, CFR PART 1926.650-652 SUBPART P, ARE CONSIDERED AS COMPLIMENTARY TO THESE CONTRACT DOCUMENTS. IF THERE IS ANY DUPLICATION, REDUNDANCY OR CONFLICT BETWEEN THE STIPULATIONS OF THESE CONTRACT DOCUMENTS AND THOSE STANDARDS, THE MOST STRINGENT REQUIREMENT SHALL GOVERN.
- UNLESS OTHERWISE SPECIFIED, THE CONTRACTOR SHALL REPLACE ALL EXISTING PAVEMENT, STABILIZED EARTH CURBS, DRIVEWAYS, SIDEWALKS, DRAINAGE CULVERTS, LANDSCAPING, FENCES, MAILBOXES, IRRIGATION SYSTEMS, SIGNS, AND OTHER ITEMS DISTURBED BY CONSTRUCTION TO A CONDITION EQUAL TO OR BETTER THAN PRE-CONSTRUCTION CONDITIONS. CONTRACTOR SHALL REPAINT/RESTRIPE ALL RESURFACED PAVEMENT TO MATCH PRE-CONSTRUCTION CONDITIONS.
- ALL SIDEWALK THAT BECOMES UNDERMINED OR DAMAGED SHALL BE REMOVED AND REPLACED. SIDEWALKS SHALL BE RECONSTRUCTED WITHIN TWO (2) WEEKS AFTER REMOVAL UNLESS OTHERWISE APPROVED BY THE ENGINEER OR OWNER. WHEN EXISTING SIDEWALK IS REMOVED, IT SHALL BE REMOVED TO THE NEAREST JOINT. ALL SIDEWALK RECONSTRUCTION SHALL BE HANDICAP ACCESSIBLE AND SHALL MEET OR EXCEED THE MOST RECENT ADA AND FLORIDA ACCESSIBILITY STANDARDS. SEE DETAIL SHEETS FOR SIDEWALK DETAIL.
- CONTRACTOR SHALL USE EXTREME CAUTION AROUND ALL BURIED AND AERIAL ELECTRICAL FACILITIES.
- ALL ELEVATIONS SHOWN HEREON ARE IN FEET AND ARE BASED ON THE NATIONAL GEODETIC VERTICAL DATUM OF 1929, NGVD 1929. THE CONTROL BENCHMARK FOR THE PROJECT IS NGS BENCHMARK "X 38", BRASS DISK IN CONCRETE, LOCATED ALONG THE CSX RAILROAD APPROXIMATELY 270 FEET NORTH OF VENICE AVENUE AND 26.5 WEST OF THE WEST RAIL OF THE CSX TRACKS, HAVING AN ELEVATION OF 7.76 NGVD.
- LOCATIONS, ELEVATIONS AND DIMENSIONS OF EXISTING UTILITIES, STRUCTURES AND OTHER FEATURES ARE SHOWN ACCORDING TO THE BEST INFORMATION AVAILABLE AT THE TIME OF THE PREPARATION OF THESE DRAWINGS AND DO NOT PURPORT TO BE ABSOLUTELY CORRECT. THE CONTRACTOR SHALL VERIFY THE LOCATIONS, ELEVATIONS AND DIMENSIONS OF ALL EXISTING UTILITIES, STRUCTURES, ETC. AFFECTING THE WORK PRIOR TO CONSTRUCTION.
- ALL UTILITIES SHALL BE KEPT IN OPERATION EXCEPT WITH THE EXPRESS WRITTEN CONSENT OF THE UTILITY OWNER. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PRESERVE EXISTING UTILITIES AND ANY AND ALL DAMAGE TO EXISTING UTILITIES AS A RESULT OF THE CONTRACTOR'S ACTIONS SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR SHALL CONTACT THE ENGINEER PRIOR TO PROCEEDING WITH ANY SITE WORK WITH WHICH A CONFLICT HAS ARISEN DURING CONSTRUCTION OF ANY IMPROVEMENTS SHOWN ON THESE DRAWINGS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPLYING RECORD DRAWING INFORMATION INCLUDING, BUT NOT LIMITED TO, FINISHED GRADE ELEVATIONS, TIES TO WATER LINES, VALVES, BENDS, SERVICE CONNECTIONS AND ELEVATIONS OF PIPES WHERE DEPTH OF COVER VARIES FROM DESIGN, TIES TO SANITARY SEWER LINES, MANHOLE RIM AND INVERT ELEVATIONS, CLEANOUTS AND SERVICE CONNECTIONS, TIES TO STORM SEWERS LINES, STRUCTURE TOP AND INVERT ELEVATIONS, PLUS LOCATIONS, DIMENSIONS AND ELEVATIONS OF ALL OTHER CONSTRUCTION COMPONENTS WHICH VARY FROM THE DESIGN.
- ALL WORK TO BE PERFORMED FOR THE COMPLETION OF THIS PROJECT SHALL BE CONSTRUCTED ACCORDING TO THE BEST PRACTICES OF THE INDUSTRY AND IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE, COUNTY AND/OR CITY CODES, ORDINANCES, STANDARDS AND PERMIT CONDITIONS.
- NEW SYSTEMS SHALL NOT BE PLACED IN SERVICE (FOR TEMPORARY OR PERMANENT USE) UNTIL ALL TESTING AND INSPECTIONS HAVE BEEN COMPLETED, TEST REPORTS AND "AS-BUILTS" FOR THOSE SYSTEMS SUBMITTED, AND CLEARANCE HAS BEEN OBTAINED FROM THE OWNER.
- THESE DRAWINGS MAY BE ALTERED SIZE BY REPRODUCTION. THIS MUST BE CONSIDERED WHEN OBTAINING SCALED DATA.
- ALL MATERIALS NOT CLAIMED BY THE CITY SHALL BECOME PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED BY THE CONTRACTOR IN AREAS PROVIDED BY THE CONTRACTOR.
- THE SYMBOLS AND ABBREVIATIONS LIST IS A STANDARD GUIDE INTENDED FOR GENERAL USE. THEREFORE, NOT ALL SYMBOLS AND ABBREVIATIONS CONTAINED ARE NECESSARILY USED ON THIS PARTICULAR PROJECT AND SHOULD BE USED FOR CLARIFICATION ONLY.
- THE CONTRACTOR SHALL READ AND UNDERSTAND THE ENTIRE SET OF CONSTRUCTION DOCUMENTS TO ENSURE S/H UNDERSTANDS THE FULL SCOPE OF THE PROJECT AND CAN CONVEY THE REQUIRED MATERIALS AND METHODS OF INSTALLATION TO THE CONTRACTORS, SUPPLIERS, AND INSTALLERS.
- ALL EXISTING DIMENSIONS AND ELEVATIONS ARE ± (APPROXIMATE)
- THE CONTRACTOR SHALL PROTECT ALL EXISTING STRUCTURES, STORM DRAINS, SEWERS, UTILITIES, AND OTHER FACILITIES IN THE CONSTRUCTION AREA. THE CONTRACTOR SHALL REPAIR ANY DAMAGES DUE TO HIS CONSTRUCTION ACTIVITIES AT NO ADDITIONAL COST TO THE OWNER.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO BLIND FLANGE OR OTHERWISE PLUG EXISTING AND PROPOSED WORK AS REQUIRED TO KEEP THE PLANT IN OPERATION AND CLOSE OFF PIPING CONNECTED TO OPERATING SYSTEMS.
- AT VARIOUS TIMES DURING THE WORK INCLUDED UNDER THIS CONTRACT, IT SHALL BE NECESSARY TO SHUTDOWN CERTAIN OPERATING PLANT SYSTEMS. ALL REQUIRED SYSTEM OR PARTIAL SYSTEM SHUTDOWNS SHALL BE COORDINATED WITH, AND SCHEDULED AT TIMES SUITABLE TO THE OWNER AND IN ACCORDANCE WITH SECTION 01 14 16, COORDINATION WITH OWNER'S OPERATIONS SHUT DOWN SHALL NOT COMMENCE UNTIL ALL REQUIRED MATERIALS ARE IN HAND AND READY FOR INSTALLATION.
- CONTRACTOR SHALL STORE CONSTRUCTION EQUIPMENT AND MATERIALS ONLY IN STAGING AREAS APPROVED BY THE ENGINEER. SECURITY OF CONSTRUCTION EQUIPMENT AND MATERIALS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. PUBLIC RIGHTS-OF-WAY MAY NOT BE UTILIZED FOR STORAGE OF EQUIPMENT OR MATERIALS WITHOUT PRIOR WRITTEN APPROVAL FROM THE ENTITY THAT OWNS THE RIGHT-OF-WAY. CONTRACTOR SHALL PROVIDE PROTECTIVE MATTING, FUEL CONTAINMENT, AND ALL OTHER MATERIALS, EQUIPMENT AND LABOR TO PROTECT THE STAGING AREA DURING CONSTRUCTION.
- THE CONTRACTOR SHALL CONDUCT WORK INCLUDED UNDER THIS CONTRACT IN SUCH A MANNER TO PERMIT NORMAL OPERATIONS OF THE PLANT AT ALL TIMES.

GENERAL (STRUCTURAL)

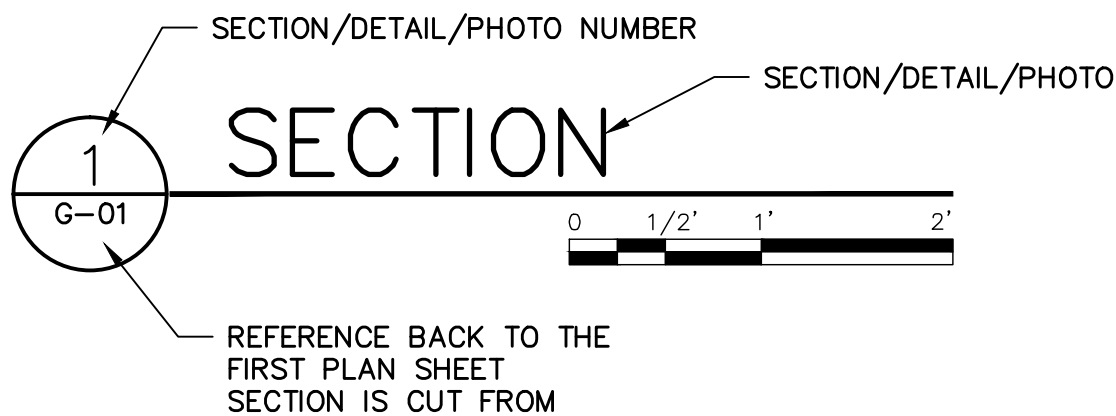
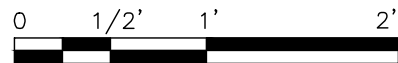
- THESE NOTES ARE GENERAL AND SUPPLEMENTAL TO THE SPECIFICATIONS. THESE NOTES APPLY TO THE ENTIRE PROJECT UNLESS MODIFIED OR NOTED OTHERWISE IN THE CONTRACT DOCUMENTS.
- TYPICAL REPAIR DETAILS, SHOWN ON STRUCTURAL DRAWINGS, SHALL BE USED WHEN REFERRED TO, OR WHEN NO DETAILS ARE SHOWN ON THE DRAWINGS.
- DESIGN IS IN ACCORDANCE WITH AND CONSTRUCTION SHALL COMPLY WITH THE 2014 FLORIDA BUILDING CODE EXCEPT WHERE OTHER APPLICABLE CODES AND THE CONTRACT DOCUMENTS ARE MORE RESTRICTIVE.
- LIVE LOADS:
FLOOR LIVE LOAD = 250 PSF
ROOF LIVE LOAD = 20 PSF (U.O.N.)
STAIRS, WALKWAYS
ELEVATED PLATFORMS: 100 PSF (U.O.N.)
PLATFORMS WITH EQUIPMENT: 150 PSF (U.O.N.)
- WIND DESIGN:
ULTIMATE DESIGN WIND SPEED = 170 MPH
EXPOSURE CATEGORY = C
RISK CATEGORY = IV
ENCLOSURE CLASSIFICATION = ENCLOSED
- ALL DIMENSIONS INDICATED (*) ARE TO BE VERIFIED EITHER BY FIELD MEASUREMENTS FOR EXISTING STRUCTURES OR BY SHOP DRAWINGS FOR EQUIPMENT FURNISHED. STRUCTURAL DIMENSIONS NOT SHOWN BUT CONTROLLED BY OR RELATED TO EQUIPMENT SHALL BE VERIFIED BY THE CONTRACTOR WITH THE MANUFACTURER PRIOR TO CONSTRUCTION.
- EQUIPMENT ANCHOR BOLT SIZES, TYPES, AND PATTERNS SHALL BE VERIFIED WITH THE MANUFACTURER. ALL BOLT PATTERNS SHALL BE TEMPLATED TO INSURE ACCURACY OF PLACEMENT.
- STRUCTURAL DRAWINGS SHALL BE USED IN COORDINATION WITH DRAWINGS OF ALL OTHER DISCIPLINES AND MANUFACTURER'S SHOP DRAWINGS.
- IF A CONFLICT IS FOUND BETWEEN DIFFERENT PORTIONS OF THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY. CONTINUED CONSTRUCTION OF THE AREA IN CONFLICT SHALL BE AT THE CONTRACTOR'S OWN RISK UNTIL THE CONFLICT IS RESOLVED BY THE ENGINEER.
- STRUCTURES HAVE BEEN DESIGNED FOR OPERATIONAL LOADS ON THE COMPLETED STRUCTURE. DURING CONSTRUCTION, THE STRUCTURES SHALL BE PROTECTED BY BRACING AND TEMPORARY SUPPORTS WHEREVER EXCESSIVE CONSTRUCTION LOADS MAY OCCUR. OVERSTRESSING OF ANY STRUCTURAL ELEMENT IS PROHIBITED.
- NO COLD WEATHER CONSTRUCTION OR HOT WEATHER CONSTRUCTION, AS DEFINED IN SPECIFICATIONS, IS PERMITTED WITHOUT WRITTEN APPROVAL OF THE ENGINEER.
- OPENINGS AND PENETRATIONS:
THE CONTRACTOR SHALL SUBMIT COMPOSITE DRAWINGS INDICATING ALL FLOOR OPENINGS AND PENETRATIONS THROUGH STRUCTURAL MEMBERS REQUIRED TO ACCOMMODATE ALL OTHER WORK. THE CONTRACTOR SHALL FOLLOW THE TYPICAL FRAMING DETAILS AT OPENINGS AND REINFORCEMENT DETAILS AT PENETRATIONS THROUGH STRUCTURAL MEMBERS. ACCORDINGLY, THE CONTRACTOR SHALL SUBMIT SHOP DETAILS TO THE ENGINEER FOR REVIEW.
- ELEVATIONS SHOWN ARE BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1929, NGVD 29.

EXISTING CONCRETE

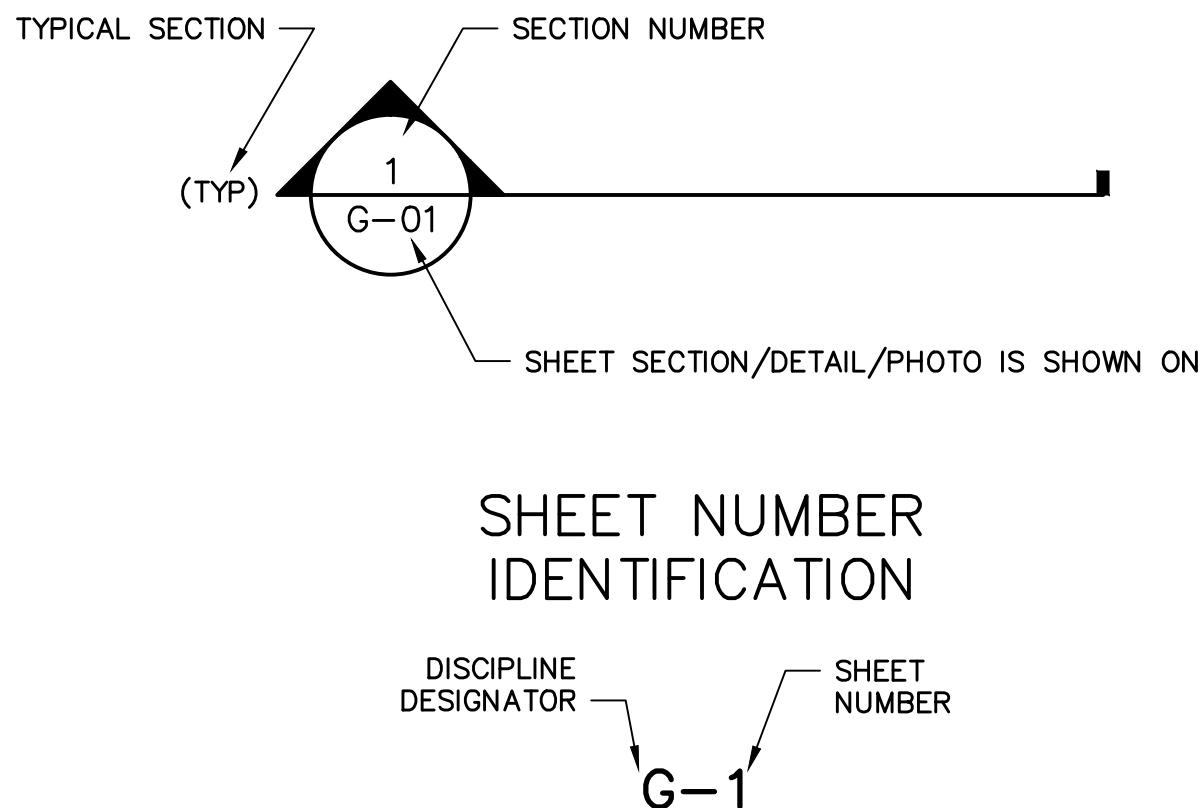
- WHERE NEW REINFORCING DOWELS ARE SHOWN TO BE EMBEDDED INTO THE EXISTING CONCRETE, OR WHERE REQUIRED TO REPLACE INADVERTENTLY CUT EXISTING REINFORCING, THE NEW DOWELS SHALL BE INSTALLED INTO THE DEPTH OF HOLE NOTED OR REQUIRED TO FULLY DEVELOP THE TENSILE STRENGTH OF THE REINFORCING BAR. USE ADHESIVE MATERIAL, HOLE DIAMETERS AND DEPTH, AND INSTALLATION PROCEDURES AS REQUIRED BY THE MANUFACTURER AND AS OUTLINED IN SPECIFICATIONS.

TITLE MARKERS

PLAN



SECTION MARKERS



401 WEST VENICE AVENUE
VENICE, FLORIDA 34285
941-486-2626
WWW.VENICEGOV.COM

PROJECT NO.: 05710028.0000



CERTIFICATION OF
AUTHORIZATION NO. 7917
3109 W. DR. MARTIN LUTHER KING JR.
BLVD., STE. 350
TAMPA, FL 33607

BID DOCUMENTS

SEALS

ORIGINAL
SIGNED AND
SEALED SET
ON FILE

SEAN CHAPARRO, P.E.
LIC. NO. 75865

DATE

VENICE, FLORIDA

REVERSE OSMOSIS WATER
TREATMENT PLANT
CLEARWELL
IMPROVEMENTS

COPYRIGHT:

DATE: MARCH 2017

PROJECT NO.: 05710028.0000

FILE NAME: G-02

DESIGNED BY: J. ROJAS

DRAWN BY: V. VIEIRA

CHECKED BY: J. ROJAS

APPROVED BY: S. CHAPARRO

SHEET TITLE GENERAL

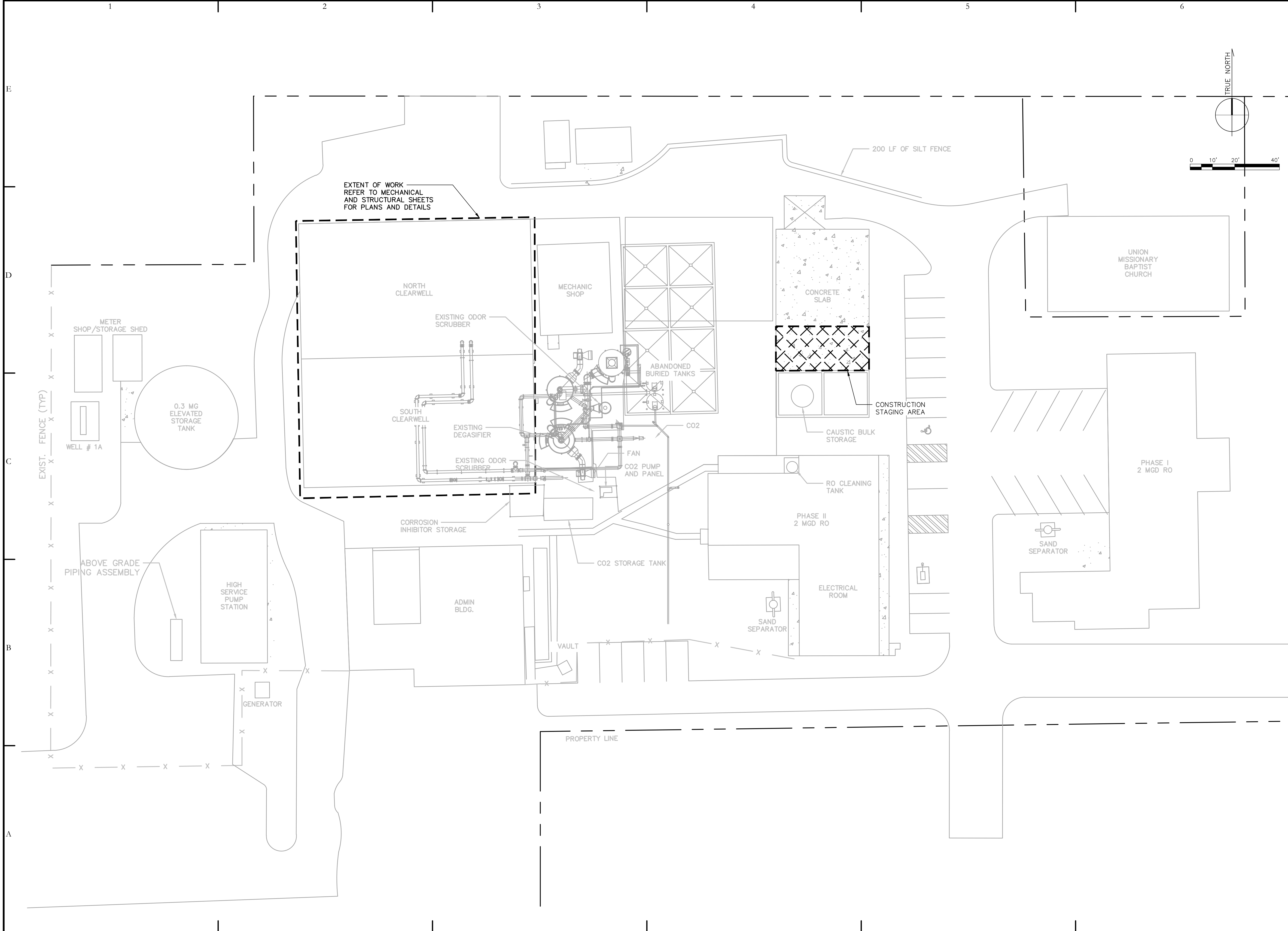
INDEX, ABBREVIATIONS,
GENERAL NOTES,
LEGENDS & SYMBOLS

SCALE:

N.T.S.

G-02

SHEET 2 OF 7



401 WEST VENICE AVENUE
VENICE, FLORIDA 34285
941-486-2626
WWW.VENICEGOV.COM

PROJECT NO.: 05710028.0000



CERTIFICATION OF
AUTHORIZATION NO. 7917
3109 W. DR. MARTIN LUTHER KING JR.
BLVD., STE. 350
TAMPA, FL 33607

BID DOCUMENTS

SEALS

ORIGINAL
SIGNED AND
SEALED SET
ON FILE

SEAN CHAPARRO, P.E.
LIC. NO. 75865

DATE

VENICE, FLORIDA

REVERSE OSMOSIS WATER
TREATMENT PLANT
CLEARWELL
IMPROVEMENTS

REV.	DATE	DESCRIPTION	BY

COPYRIGHT:

DATE: MARCH 2017

PROJECT NO.: 05710028.0000

FILE NAME: G-03

DESIGNED BY: V. VIEIRA

DRAWN BY: V. VIEIRA

CHECKED BY: J. ROJAS

APPROVED BY: S. CHAPARRO

SHEET TITLE

GENERAL

OVERALL SITE PLAN

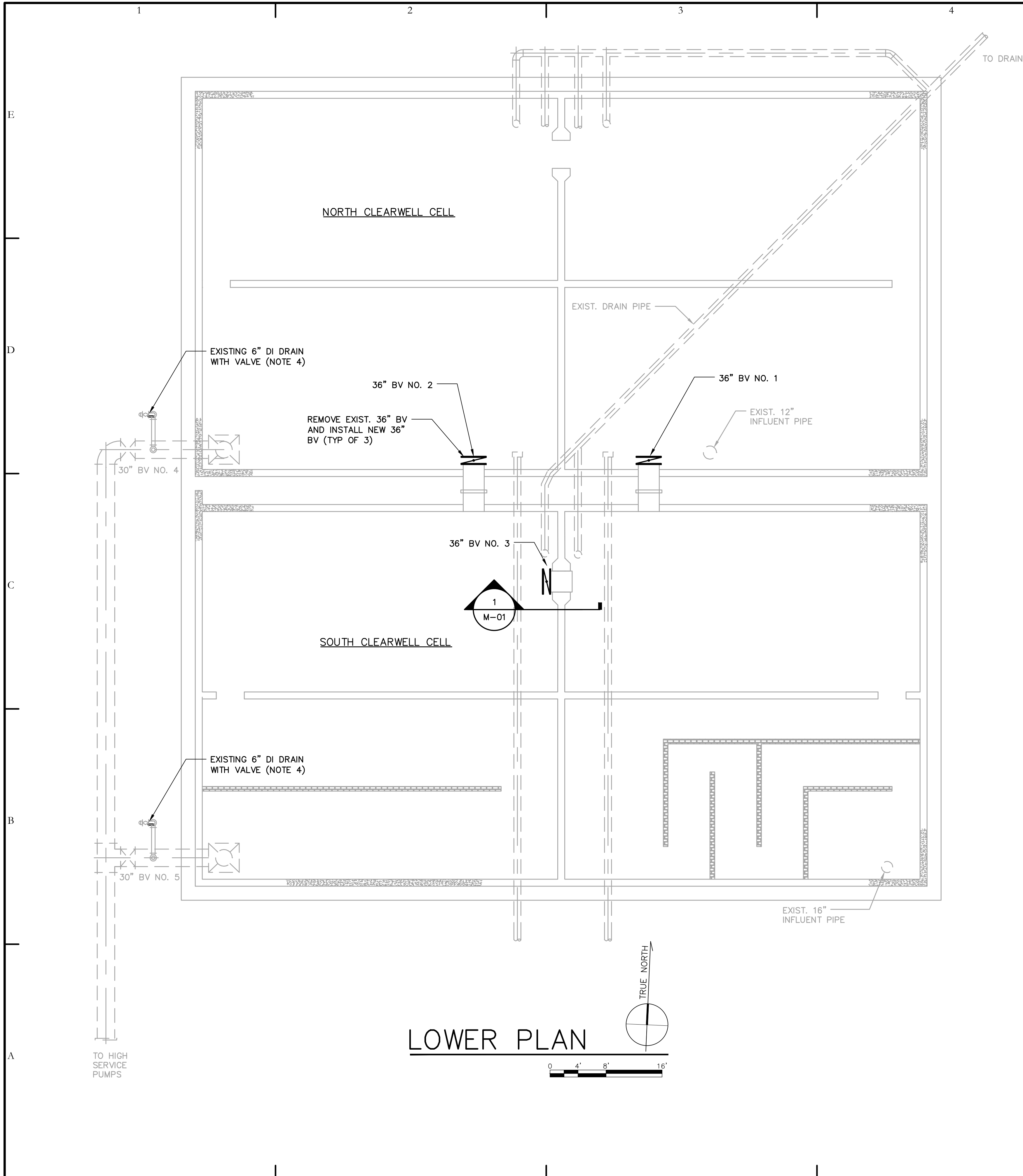
SCALE:

AS SHOWN

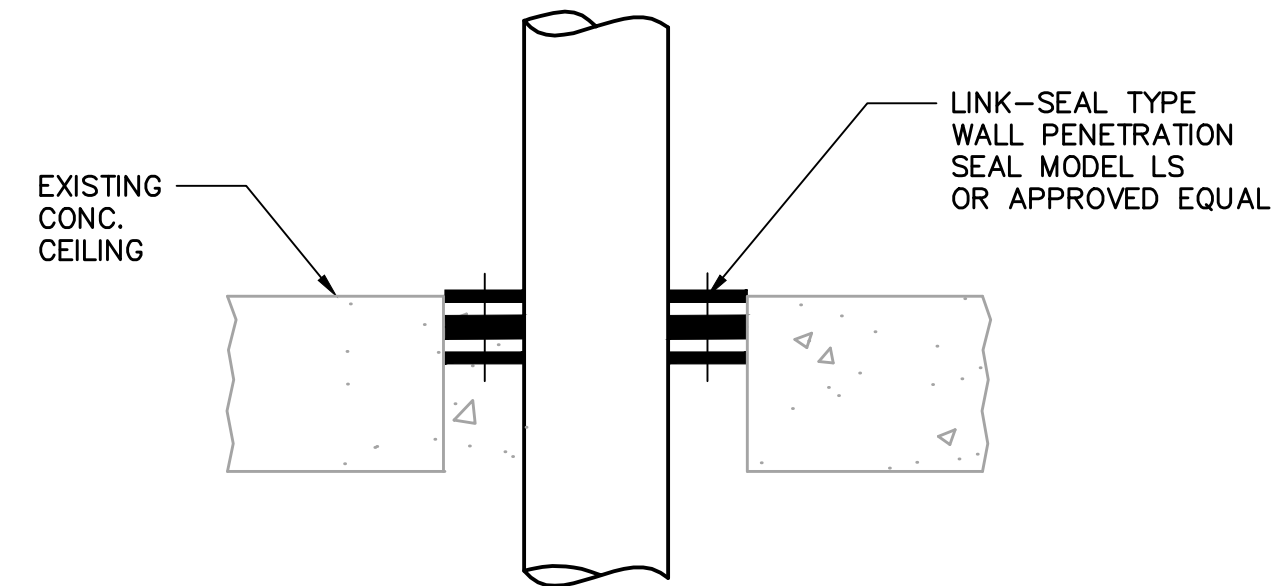
G-03

SHEET 3 OF 7

User:RUNNER_Spec\US\NC\MOD_Files\ACAD\PROJ\5710 - CITY OF VENICE\DWG\SHEETS\MECHANICAL\M-01.DWG Scale:1:1 Sheet Date:2/28/2017 Time:17:15 Plot Date:Summer, Anthony:2/28/2017, 17:15, Layout:4



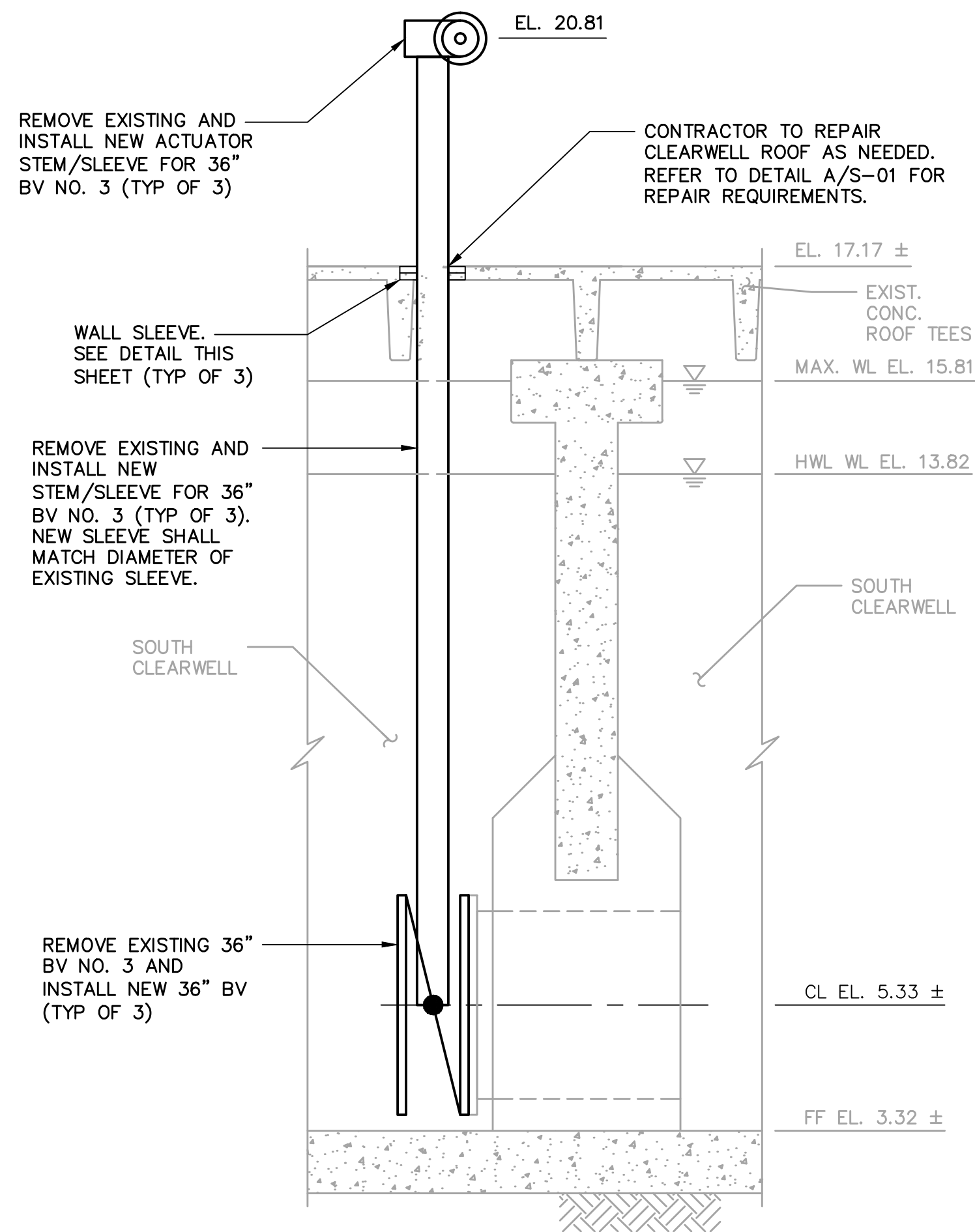
LOWER PLAN



WALL SLEEVE DETAIL

NOT TO SCALE

NOTE:
1. ALL METAL PARTS OF WALL PENETRATION SHALL BE TYPE 316 SS (INCLUDING BOLTS, NUTS, AND WASHERS)



1 SECTION
M-01

- NOTES:
- CONTRACTOR SHALL MAINTAIN ONE CLEARWELL IN SERVICE AT ALL TIMES DURING THE WORK. REFER TO SPECIFICATION SECTION 01 14 16 COORDINATION WITH OWNER'S OPERATIONS FOR SEQUENCE OF CONSTRUCTION AND DETAILED PHASING AND SHUTDOWN REQUIREMENTS.
 - CONTRACTOR SHALL DISINFECT AND TEST EACH CLEARWELL PRIOR TO PLACING BACK IN SERVICE. SAMPLE ANALYSIS FOR BACTERIOLOGICAL TESTING SHALL BE CONDUCTED BY CONTRACTOR. CONTRACTOR TO PROVIDE CLEARWELL DISINFECTION AND TESTING PLAN TO THE ENGINEER FOR APPROVAL PRIOR TO PERFORMING WORK. REFER TO SPECIFICATION SECTION 01 45 53 AND AWWA C652 STANDARDS FOR TANK DISINFECTION AND TESTING REQUIREMENTS.
 - CONTRACTOR SHALL NOT PLACE ANY HEAVY EQUIPMENT, INCLUDING THE 36" BUTTERFLY VALVES, ON CLEARWELL ROOF AT ANYTIME DURING CONSTRUCTION. ALL EQUIPMENT SHALL BE HANDLED WITH WITH A CRANE ADJACENT TO THE CLEARWELL TO AVOID ANY ADDITIONAL LOADS ON THE CLEARWELL ROOF.
 - WHEN DRAINING A CLEARWELL CELL, CONTRACTOR SHALL DRAIN AS MUCH OF THE CELL AS POSSIBLE THROUGH THE 30" LINE FEEDING THE HIGH SERVICE PUMPS. REMAINING WATER WITHIN THE CELL SHALL BE DRAINED THROUGH THE EXISTING 6" DRAIN. CONTRACTOR SHALL CONNECT A TEMPORARY PUMP TO THE EXISTING 6" DI DRAIN TO PUMP ANY REMAINING WATER IN THE CLEARWELL CELL TO A LOCATION APPROVED BY THE OWNER AND ENGINEER.



401 WEST VENICE AVENUE
VENICE, FLORIDA 34285
941-486-2626
WWW.VENICEGOV.COM

PROJECT NO.: 05710028.0000



CERTIFICATION OF
AUTHORIZATION NO. 7917
3109 W. DR. MARTIN LUTHER KING JR.
BLVD., STE. 350
TAMPA, FL 33607

BID DOCUMENTS

SEALS

ORIGINAL
SIGNED AND
SEALED SET
ON FILE

SEAN CHAPARRO, P.E.
LIC. NO. 75865

DATE

VENICE, FLORIDA

REVERSE OSMOSIS WATER
TREATMENT PLANT
CLEARWELL
IMPROVEMENTS

REV.	DATE	DESCRIPTION	BY

COPYRIGHT:

DATE: MARCH 2017

PROJECT NO.: 05710028.0000

FILE NAME: M-01

DESIGNED BY: J. ROJAS

DRAWN BY: V. VIEIRA

CHECKED BY: J. ROJAS

APPROVED BY: S. CHAPARRO

SHEET TITLE MECHANICAL

CLEARWELL PLAN &
SECTION

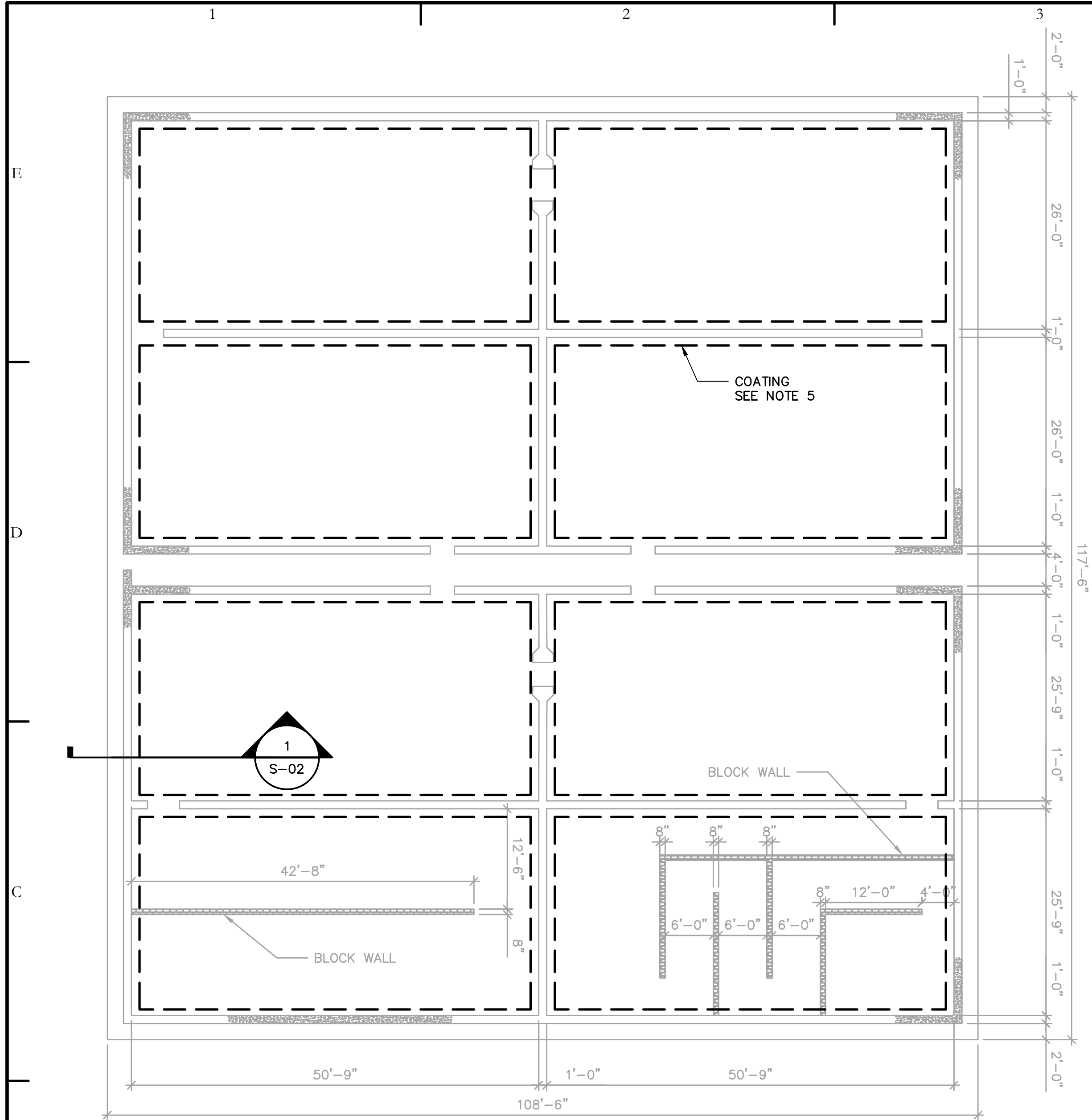
SCALE:

AS SHOWN

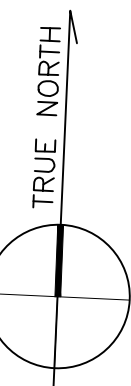
M-01

SHEET 4 OF 7

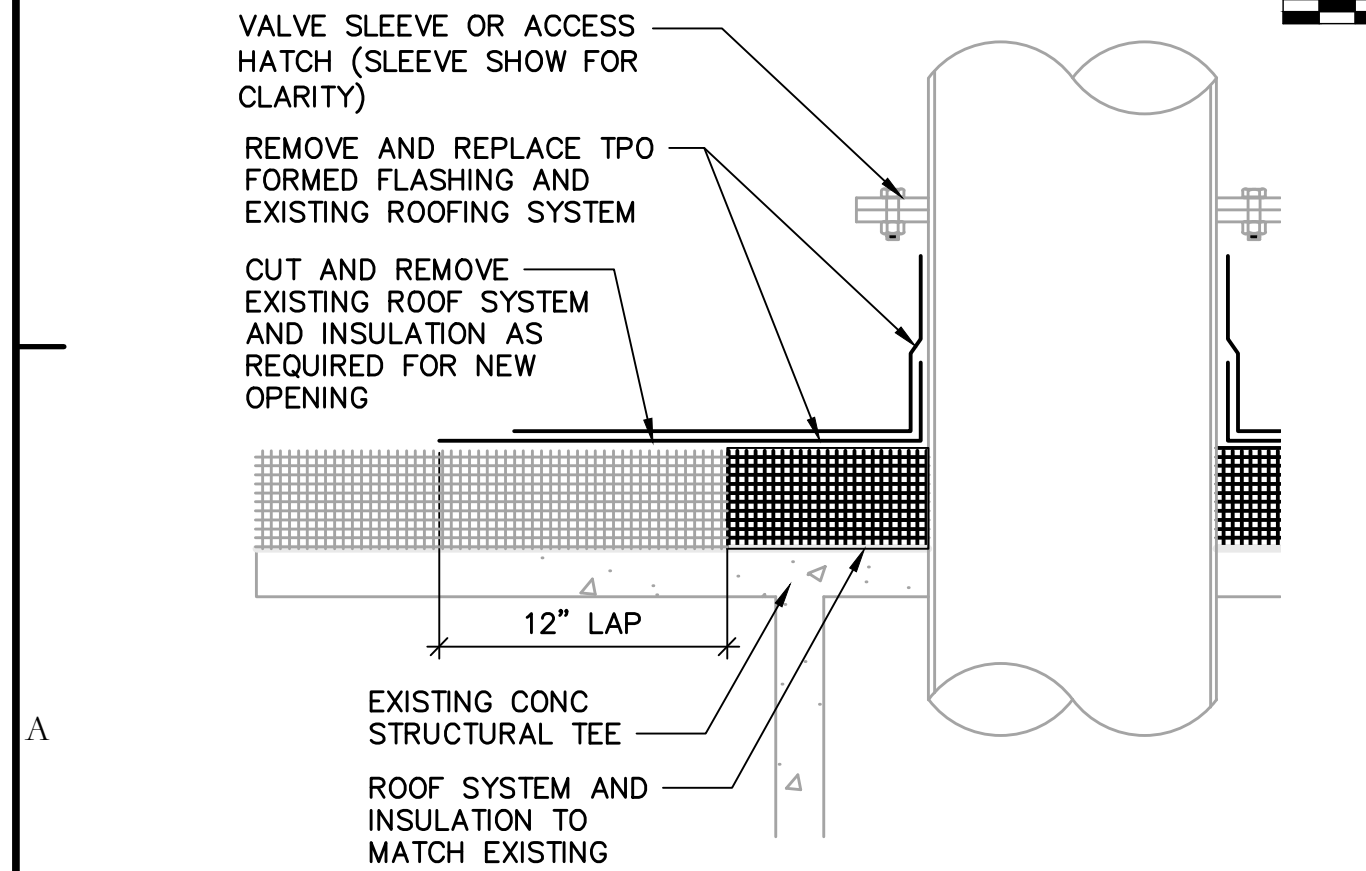
User:SUMNER, Spec:US-CANMOD, File:V:\ACAD\PROJ\5710 - CITY OF VENICE\DWG\SHEETS\STRUCTURAL\S-01.DWG, Scale:1/4" = 1'-0", Plot Date: Summer, Author: 2/28/2017, 17:20, Layout:5



LOWER PLAN



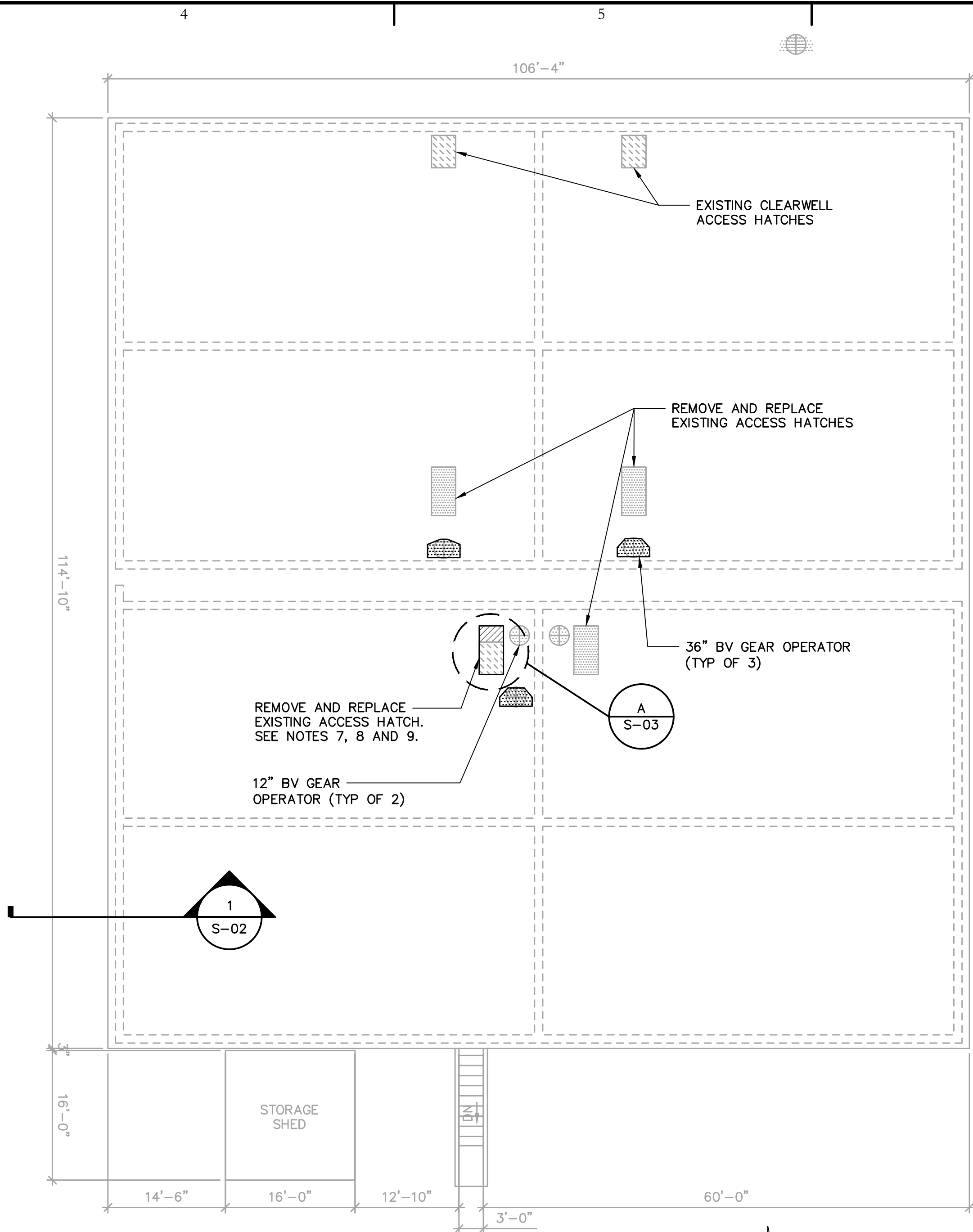
0 8' 16' 24'



TYPICAL ROOF REPAIR DETAIL

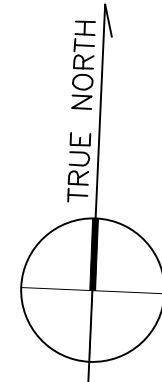
SCALE: 1 1/2" = 1'-0"

0 1' 2'



ROOF PLAN

0 8' 16' 24'



NOTES:

- ENTRANCE INTO CLEARWELL IS CONSIDERED A CONFINED SPACE ENTRY (PERMIT REQUIRED). CONTRACTOR SHALL ADMINISTER, MONITOR, AND PROVIDE ALL NECESSARY REQUIREMENTS FOR ENTRANCE INTO THE CLEARWELLS PER LAWS AND REGULATIONS.
- PRIOR TO START OF WORK, CONTRACTOR SHALL COORDINATE SCHEDULE AND SHUTDOWNS WITH OWNER.
- ONLY ONE CLEARWELL SHALL BE TAKEN OUT OF SERVICE AT A TIME.
- OWNER WILL FACILITATE DRAINING OF EACH CLEARWELL. ONCE TAKEN OUT OF SERVICE, CONTRACTOR SHALL REMOVE AND DISPOSE ALL SLUDGE AND DEBRIS FROM CLEARWELL. CONTRACTOR SHALL THEN EXAMINE ALL INTERIOR SURFACES FOR DETERIORATION AND CRACKS. CONTRACTOR SHALL IDENTIFY AREAS OF DETERIORATION AND CRACKS GREATER THAN 0.01-INCH IN WIDTH. ONCE IDENTIFIED, ENGINEER WILL REVIEW AREAS IDENTIFIED WITH CONTRACTOR TO CONFIRM REPAIR, REPAIR LIMITS, AND REPAIR METHOD.
- REMOVE EXISTING COATING, PREPARE SURFACE, AND APPLY COATING IN CONFORMANCE WITH SPECIFICATIONS AND MANUFACTURER'S REQUIREMENTS. CONTRACTOR SHALL MAINTAIN AMBIENT CONDITIONS DURING INSTALLATION IN CONFORMANCE TO MANUFACTURER'S REQUIREMENTS.
- PRIOR TO PUTTING A CLEARWELL BACK INTO SERVICE, CLEARWELL SHALL BE CLEANED AND DISINFECTED.
- REMOVE EXISTING ACCESS HATCH AND CURB PRIOR TO ENLARGING THE EXISTING OPENING. CUT BACK EXISTING ROOFING SYSTEM AS REQUIRED.
- FIELD VERIFY LOCATION OF DOUBLE TEE BEAMS PRIOR TO SAW CUT. SAW CUT DOUBLE TEE ROOF FOR REQUIRED OPENING SIZE FOR ACCESS HATCH (DO NOT CUT STEMS OF DOUBLE TEE BEAMS).
- INSTALL 4'-0" X 1'-9" ACCESS HATCH (WIDTH TO MATCH EXISTING HATCH) AND CURB AFTER EXISTING OPENING HAS BEEN ENLARGED AND REPAIR ROOF SYSTEM PER DETAIL A/-03.
- CONTRACTOR SHALL REPAIR ROOF IN AREAS IMPACTED BY NEW 36" BU EXTENSION SLEEVE PENETRATIONS THROUGH ROOF AND FOR THE NEW ACCESS HATCH INSTALLED.
- CONTRACTOR SHALL REPAIR AREA OF ROOF DAMAGED BY CONSTRUCTION TO ORIGINAL CONDITIONS AT NO ADDITIONAL COST TO OWNER.
- CONTRACTOR TO TAKE ALL NECESSARY PRECAUTIONS TO PREVENT BUOYANCY OF THE STRUCTURE WHEN THE CLEARWELL IS EMPTY TO PREVENT POSSIBLE DAMAGE TO THE CLEARWELL FOUNDATION SLAB. REFER TO SPECIFICATION 312305 FOR DEWATERING REQUIREMENTS.
- CONTRACTOR SHALL SUBMIT A BUOYANCY PREVENTION PLAN FOR REVIEW AND APPROVAL BY THE ENGINEER PRIOR TO INITIATING ANY WORK ON THE CLEARWELL STRUCTURES.
- CONTRACTOR SHALL NOT PLACE ANY HEAVY EQUIPMENT, INCLUDING THE 36" BUTTERFLY VALVES, ON CLEARWELL ROOF AT ANYTIME DURING CONSTRUCTION. ALL EQUIPMENT SHALL BE HANDLED WITH A CRANE ADJACENT TO THE CLEARWELL TO AVOID ANY ADDITIONAL LOADS ON THE CLEARWELL ROOF.



401 WEST VENICE AVENUE
VENICE, FLORIDA 34285
941-486-2626
WWW.VENICEGOV.COM

PROJECT NO.: 05710028.0000



CERTIFICATION OF
AUTHORIZATION NO. 7917
3109 W. DR. MARTIN LUTHER KING JR.
BLVD., STE. 350
TAMPA, FL 33607

BID DOCUMENTS

SEALS

ORIGINAL
SIGNED AND
SEALED SET
ON FILE

ADARSH B. SHAH, P.E.
LIC. NO. 79948

DATE

VENICE, FLORIDA

REVERSE OSMOSIS WATER
TREATMENT PLANT
CLEARWELL
IMPROVEMENTS

REV.	DATE	DESCRIPTION	BY

COPYRIGHT:

DATE: MARCH 2017

PROJECT NO.: 05710028.0000

FILE NAME: S-01

DESIGNED BY: V. VIEIRA

DRAWN BY: V. VIEIRA

CHECKED BY: M. PALTE

APPROVED BY: A. SHAH

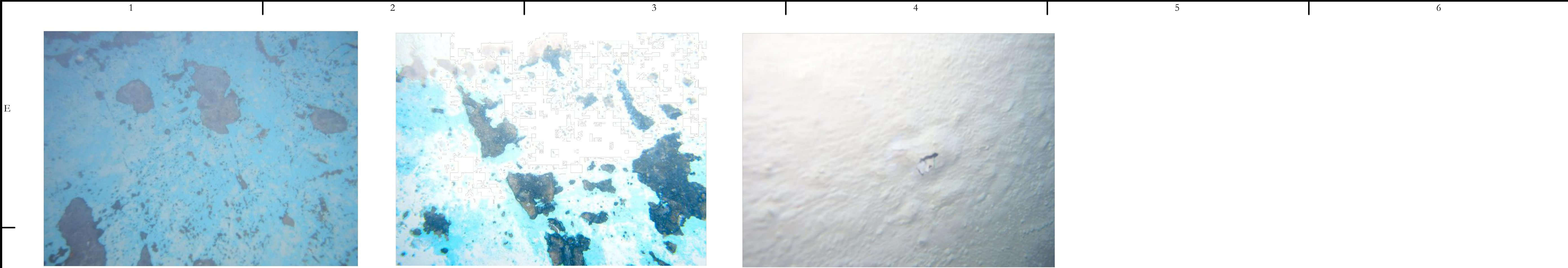
SHEET TITLE STRUCTURAL

CLEARWELL REPAIR
PLAN AND DETAIL

SCALE: AS SHOWN

S-01

SHEET 5 OF 7

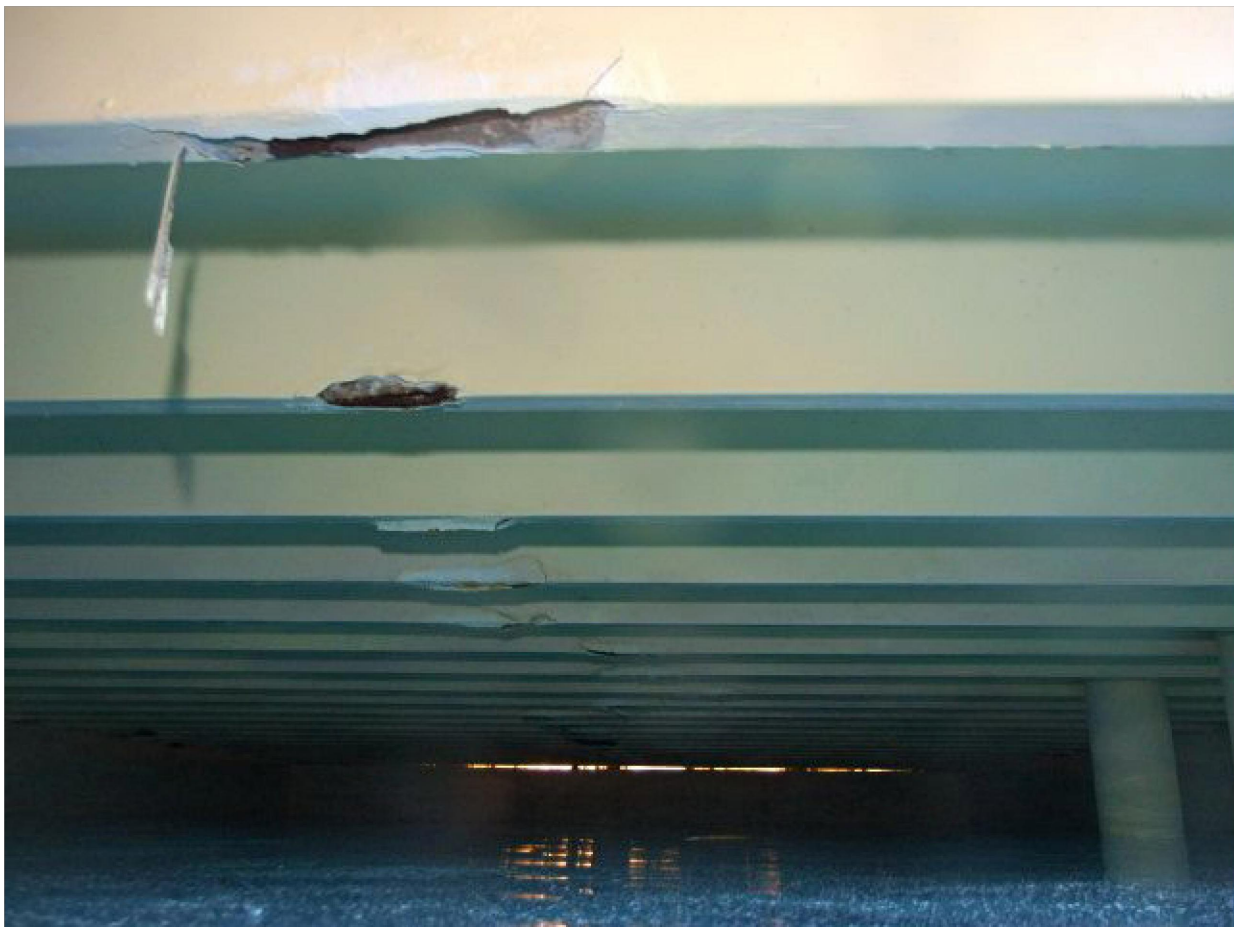


TYPICAL PAINT SYSTEM FAILURE PHOTOS

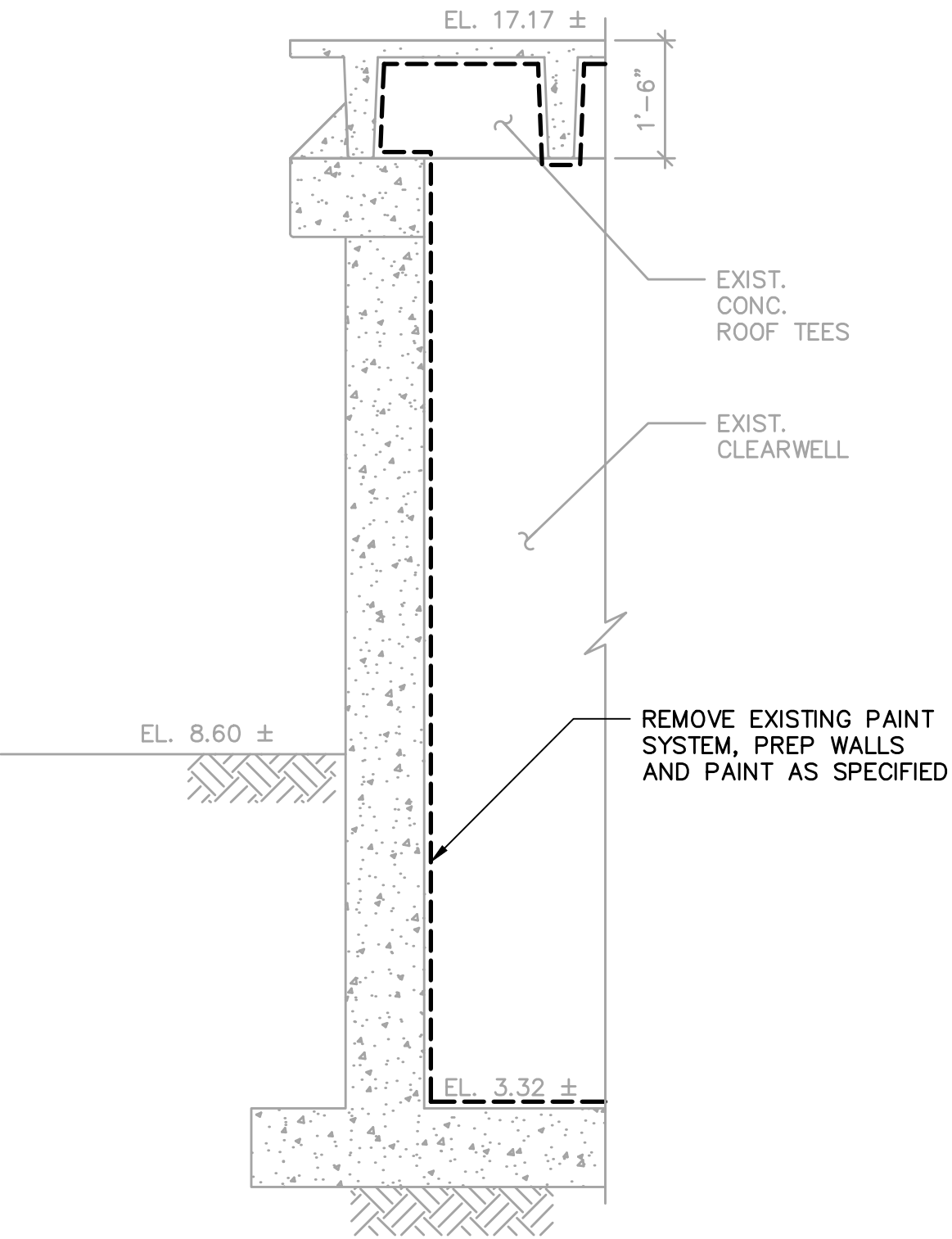


TYPICAL SPALL/EXPOSED REINFORCING PHOTOS

TYPICAL CRACK PHOTO



TYPICAL SPALL PHOTOS



1 SECTION
S-01

- SHEET NOTES:
- SEE SHEET S-03 FOR TYPICAL CONCRETE REPAIR DETAILS.
 - SEE SHEET S-03 FOR REPAIR AND PAINTING QUANTITIES.



401 WEST VENICE AVENUE
VENICE, FLORIDA 34285
941-486-2626
WWW.VENICEGOV.COM

PROJECT NO.: 05710028.0000



CERTIFICATION OF
AUTHORIZATION NO. 7917
3109 W. DR. MARTIN LUTHER KING JR.
BLVD., STE 350
TAMPA, FL 33607

BID DOCUMENTS

SEALS

ORIGINAL
SIGNED AND
SEALED SET
ON FILE

ADARSH B. SHAH, P.E.
LIC. NO. 79948

DATE

VENICE, FLORIDA

REVERSE OSMOSIS WATER
TREATMENT PLANT
CLEARWELL
IMPROVEMENTS

REV.	DATE	DESCRIPTION	BY

COPYRIGHT:

DATE: MARCH 2017

PROJECT NO.: 05710028.0000

FILE NAME: S-02

DESIGNED BY: V. VIEIRA

DRAWN BY: V. VIEIRA

CHECKED BY: A. SHAH

APPROVED BY: A. SHAH

SHEET TITLE

STRUCTURAL
CLEARWELL SECTION &
PHOTOS

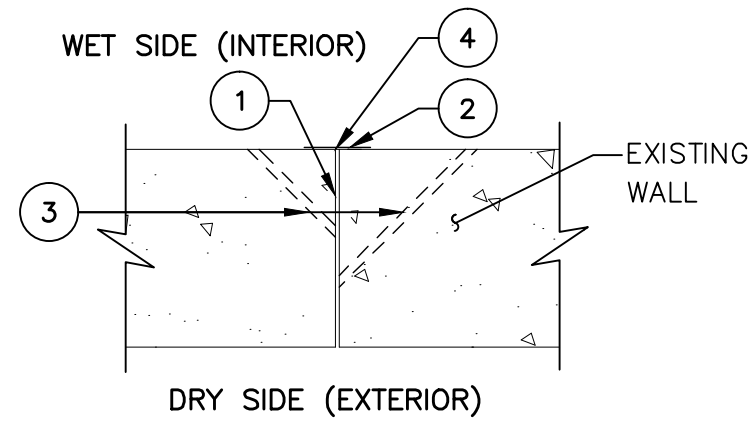
SCALE:

AS SHOWN

S-02

SHEET 6 OF 7

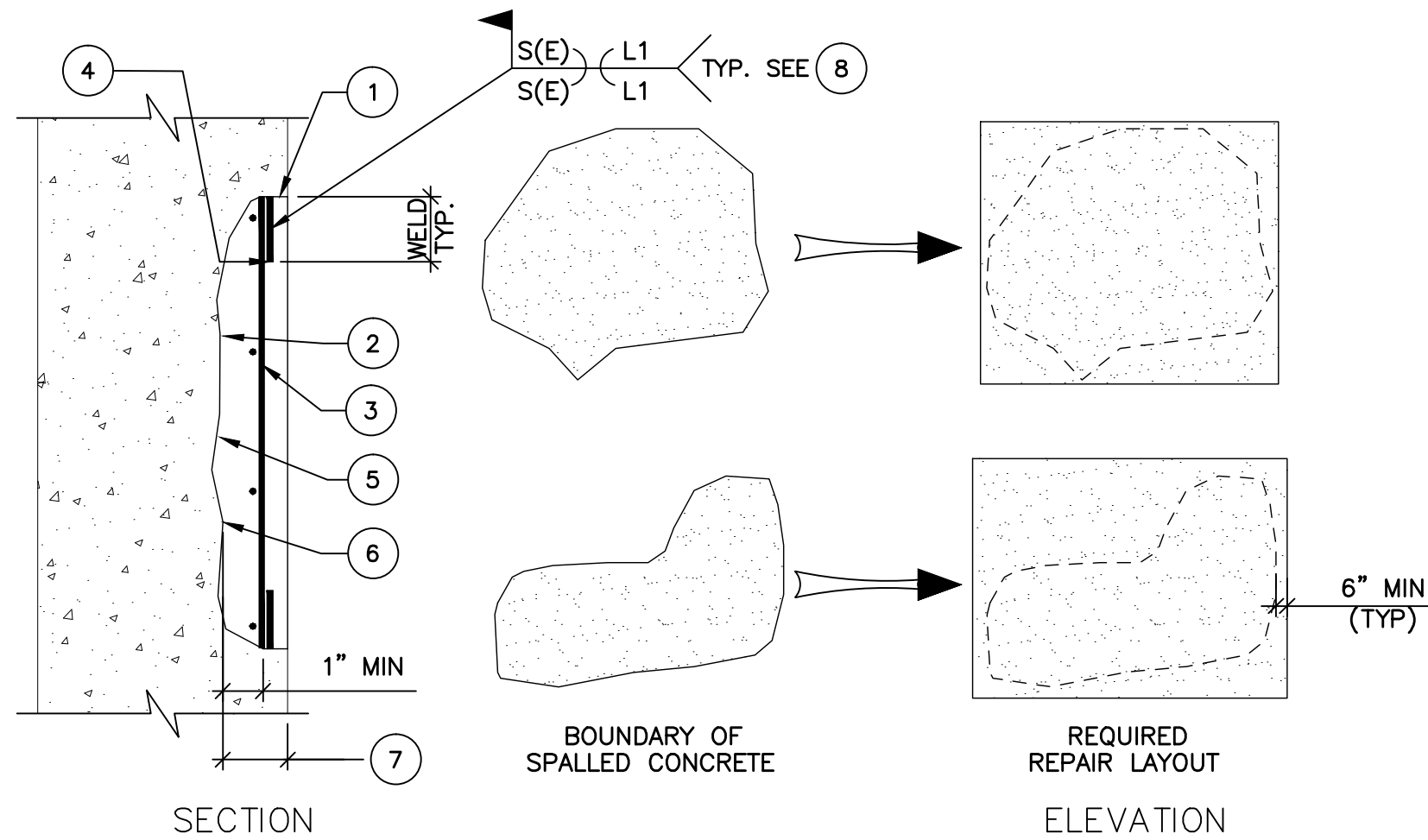
User:SUMNER, Spec:US,NC,MOD File:U:\ACAD\PROJ\5710 - CITY OF VENICE\DWG\SHEETS\STRUCTURAL\S-03.DWG Scale:1:1 SavedDate:2/7/2017 Time:09:46 Plot Date: Summer, Anthony, 2/28/2017, 17:22, 1 Layout:7



TYPICAL CRACK REPAIR DETAIL

SCALE: NO SCALE

- 1 LEAKING CRACK
- 2 APPLY GEL EPOXY SEALER PRIOR TO INJECTING CRACK INJECTION MATERIAL. REMOVE GEL EPOXY SEALER AFTER SEALING WORK IS COMPLETE
- 3 INJECTION PORTS FOR HYDROPHILIC CRACK INJECTION MATERIAL.



TYPICAL CONCRETE SURFACE SPALL REPAIR DETAIL

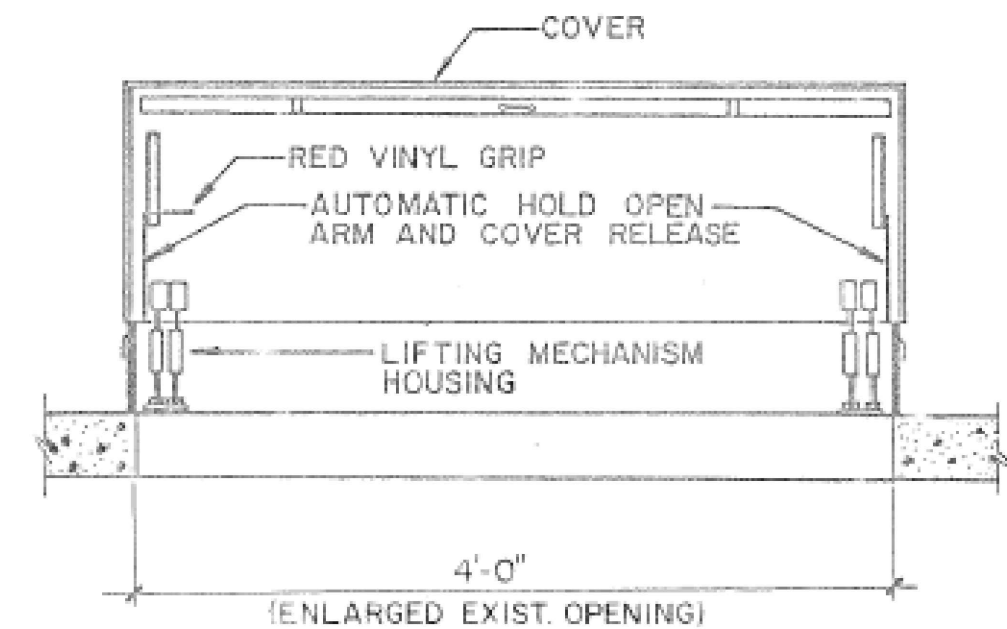
SCALE: NO SCALE

- 1 DO NOT CUT REINFORCING UNLESS NECESSARY TO REMOVE ALL DETERIORATED CONCRETE.
- 2 REMOVE ALL DETERIORATED CONCRETE TO SOUND CONCRETE. CHIP CONCRETE SUBSTRATE TO OBTAIN A SURFACE PROFILE OF 1/8-INCH IN DEPTH WITH A NEW FRACTURED AGGREGATE SURFACE.
- 3 WHERE REINFORCING STEEL WITH ACTIVE CORROSION IS ENCOUNTERED, ENGINEER WILL REVIEW CONDITION OF CORRODED REBARS PRIOR TO REPAIR. REPLACEMENT IS REQUIRED WHERE LOSS ON REBAR CROSS SECTION IS OVER 25%. AFTER REPAIR WHERE REINFORCING REMAINS, CLEAN REINFORCING STEEL TO REMOVE ALL CONTAMINANTS AND RUST. REMOVE CONCRETE TO A DEPTH OF 1-INCH MINIMUM BEHIND REINFORCING BAR AS SHOWN.
- 4 IF REINFORCING REPLACEMENT IS REQUIRED, CUT EXISTING CORRODED REINFORCING BAR AS REQUIRED AND WELD NEW REBAR OF SAME SIZE, AS SHOWN.
- 5 SURFACE PREPARATION SHALL COMPLY WITH REPAIR MORTAR MANUFACTURER'S INSTRUCTIONS.
- 6 INSTALL REPAIR MORTAR PER THE MANUFACTURER'S REQUIREMENTS.
- 7 FOR BID PURPOSES, ASSUME TOTAL DEPTH OF REPAIR IS 6 INCHES.
- 8 S, (E), AND L1 DEFINITIONS CORRESPOND TO ANSI/AWS D1.4. MINIMUM L1 FOR BIDDING PURPOSES IS 3 INCHES.

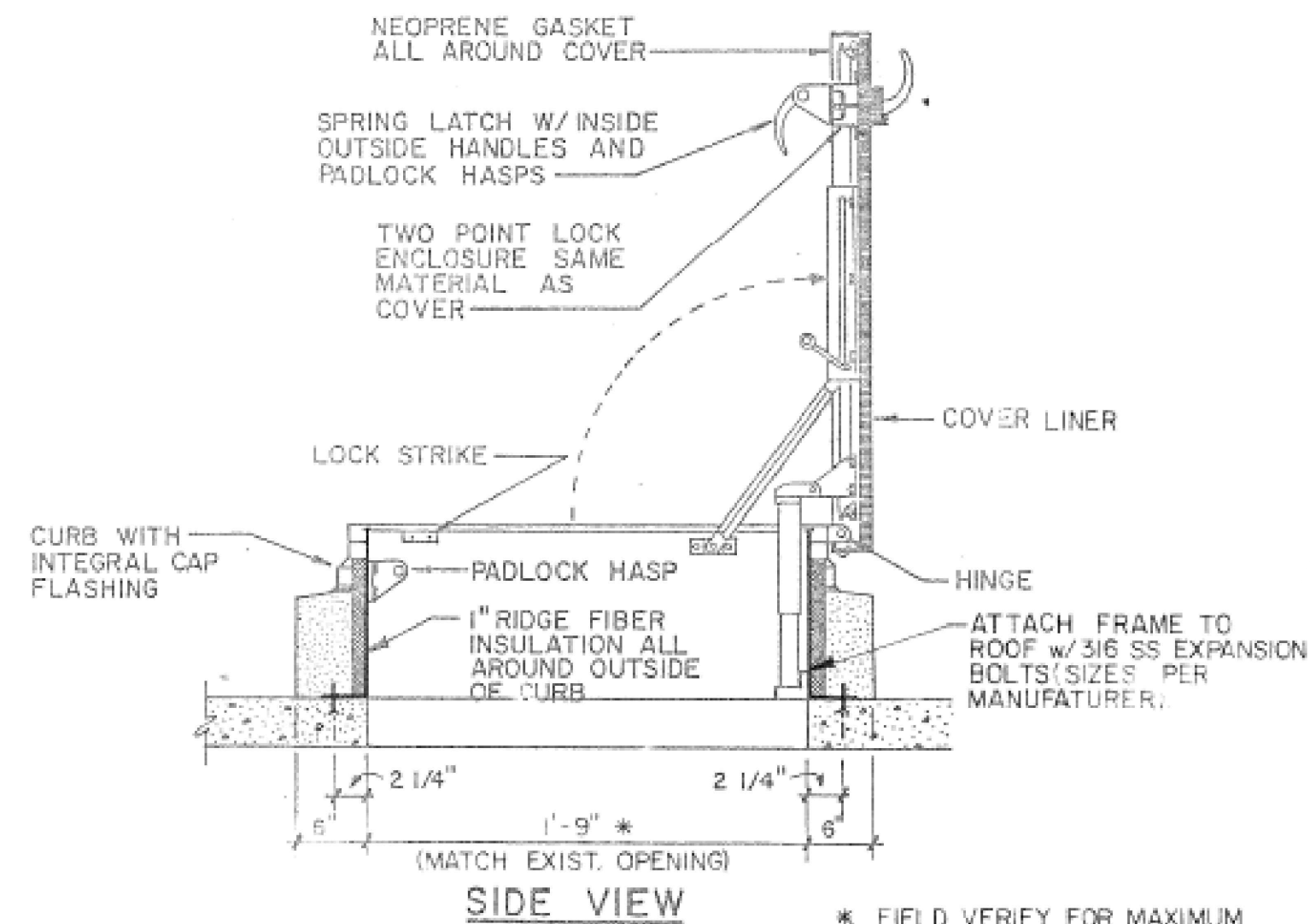
REPAIR AND PAINTING SCHEDULE

	REPAIR TYPE	DETAIL REFERENCE NUMBER	BID QUANTITY		NOTES
INTERIOR CLEARWELL	CRACK REPAIR	DETAIL 1	400	LF	
	SURFACE SPALL REPAIR	DETAIL 2	600	SF	SEE NOTE 3
	PAINTING SYSTEM		50,000	SF	REFER TO SPECIFICATION SECTION 09 91 00

- REPAIR SCHEDULE NOTES:
1. PAYMENT OF CONCRETE REPAIR AND REHABILITATION WORK SHALL BE BASED ON ACTUAL MEASURED REPAIR QUANTITIES MULTIPLIED BY THE ASSOCIATED UNIT PRICES INCLUDED ON THE PROPOSAL BID FORM.
 2. ENGINEER MAY DIRECT CONTRACTOR TO PERFORM REPAIR WORK THAT IS GREATER THAN OR LESS THAN THE ESTIMATED QUANTITIES STATED ON THE PROPOSAL BID FORM. CONTRACTOR WILL BE COMPENSATED AT THE UNIT PRICES ON THE PROPOSAL BID FORM FOR THE ACTUAL QUANTITY OF CONCRETE REPAIR WORK AS SHOWN, SPECIFIED OR ORDERED.
 3. FOR BIDDING PURPOSE, ASSUME REPAIR WIDTH TO BE 8 INCHES.



FRONT VIEW



SIDE VIEW

ACCESS HATCH

A ACCESS HATCH DETAIL

SCALE: N.T.S.



401 WEST VENICE AVENUE
VENICE, FLORIDA 34285
941-486-2626
WWW.VENICEGOV.COM

PROJECT NO.: 05710028.0000



CERTIFICATION OF
AUTHORIZATION NO. 7917
3109 W. DR. MARTIN LUTHER KING JR.
BLVD., STE. 350
TAMPA, FL 33607

BID DOCUMENTS

SEALS

ORIGINAL
SIGNED AND
SEALED SET
ON FILE

ADARSH B. SHAH, P.E. DATE
LIC. NO. 79948

VENICE, FLORIDA

REVERSE OSMOSIS WATER
TREATMENT PLANT
CLEARWELL
IMPROVEMENTS

REV.	DATE	DESCRIPTION	BY

COPYRIGHT:
DATE: MARCH 2017
PROJECT NO.: 05710028.0000
FILE NAME: S-03
DESIGNED BY: V. VIEIRA
DRAWN BY: V. VIEIRA
CHECKED BY: A. SHAH
APPROVED BY: A. SHAH

SHEET TITLE
STRUCTURAL
TYPICAL REPAIR
DETAILS

SCALE:
NONE

S-03
SHEET 7 OF 7

**CITY OF VENICE PROCUREMENT-
FINANCE DEPARTMENT**

**401 W. VENICE AVE. - ROOM # 204
VENICE, FL. 34285
(941) 486-2626
FAX (941) 486-2790**

ADDENDUM NO. 1

Date: April 7, 2017

To: All Prospective Proposers

Re: ITB-3060-17: RO WTP Clearwell Interior Improvements

This addendum sets forth changes and/or information as referenced and is hereby made part of and should be attached to the subject Contract Documents. Receipt of this Addendum shall be acknowledged below and in the submitted proposal. It shall be the responsibility of each proposer, prior to submitting a proposal, to contact the City of Venice- Procurement- Finance Department to determine if addenda were issued and to make such addenda a part of their proposal.

The following is to clarify and provide additional information requested during the pre-bid meeting held March 28, 2017 at 2:00 P.M.

SUMMARY:

Peter Boers, Procurement Manager, opened the meeting

1. **Important dates:** Bids are due April 19, 2017 at 2:00 p.m. at City Hall room #204. Bids are to be delivered to Suite 204 in City Hall. The bid opening will take place in the Community Hall (room #114).
2. The Cut-Off for questions will be April 7, 2017 at 1:00 PM
3. Mr. Boers advised the bidders to read through *Instructions to Bidders*, but made note of the following Articles.
4. Article 10 Bid Security - 5% Bid Security is required.
5. Article 11 Contract Times – time to completion is 240 days from NTP.
6. Article 12 Liquidated Damages - Mr. Boers advised that the stipulated damages for this project are \$1532 per day.

7. Article 23 Contract Securities - The awarded contractor will be required to provide a Performance and Payment Bond equaling 100% of the contact amount. **EXHIBIT A**
8. Article 24 Contractors Insurance -Mr. Boers reviewed **EXHIBIT B: Insurance Requirements**.
 - a. General Liability -\$1,000,000 per occurrence/1,000,000 aggregate
 - b. Business Auto Liability - \$1,000,000 combined single limit
 - c. Worker's Comp per State Statute
 - d. Installation Floater/Installation Builders' Risk- Property Coverage
9. Article 29 Local Preference – Local preference is applicable to this bid.
10. Bid Form- Bid Items #9 & #10
11. Mr. Boers reviewed the required forms that must be returned with each firm's submittal. These required forms are listed in the Appendix of the bid document. Mr. Boers advised, even if a form does not pertain to said company - to still mark it with a "N/A" and return it with each submittal. Mr. Boers also advised that the *Required Forms List* could be used as a "check off" sheet for firms to use.
12. Bidders are asked to also complete and return the *Bidder's Qualification Statement* with their bid.
13. Mr. Sean Chaparro, the City's consulting Engineer from Arcadis, reviewed the scope of work and provided a brief overview of the project.
14. Mr. Boers opened the floor for bidder's questions. He advised the attendees to follow up in writing if they do not see an answer to their question published in an addendum and to not assume a change is in effect unless published in an addendum.

REVISIONS:

This addendum includes (4) attachments as follows:

- Attachment 1 - REV A Specifications
 - Section 07 54 23 Thermoplastic Polyolefin (TPO) Roofing
 - Section 09 90 00 – Painting
- Attachment 2 – REV A Drawings
 - S-01 – Clearwell Repair Plan
 - S-02- Clearwell Section and Photos
- Attachment 3 – Clearwell Roof Firestone and Crowther Warranties
- Attachment 4 - As-Built Drawings of Existing Clearwells
 - Water Treatment Plant - Clearwell Modifications (1988)
 - Sheet 12 – 1974 Addition to Venice Water Works
 - Sheet 13 – 1974 Addition to Venice Water Works

Roofing Repair Additional Requirements: The existing clearwell roof is a Firestone Building Products (Firestone) TPO roof installed by Crowther Inc. in 2016 and is currently under warranties for both Firestone and Crowther, Inc. Any activities on the clearwell roof required under this project shall be in accordance to the Firestone and Crowther Inc. recommendations and warranty requirements to ensure the warranties remain in full effect after the repairs are completed. A copy of the Firestone and Crowther Inc. warranties is included with this addendum.

Any alternations and repairs required as part of this project shall be completed by a licensed Firestone Licensed Applicator. Alterations and repairs shall be completed in accordance with Firestone's published specifications and proper notification shall be provided to Firestone prior to making modifications. Additional information and reporting forms for roof alterations are available at www.firestonebpc.com.

Contractor shall also provide proper prior notification to Crowther Inc. regarding planned modifications to the clearwell roof and shall comply with roofing application recommendations provided by Crowther Inc.

See attached revised Specification Section 07 54 23 Thermoplastic Polyolefin (TPO) Roofing.

- 1. Question.** What items will the Owner wish to keep (i.e. 36" BVs, stems, operators, and hatches)?

Answer. Owner does not wish to keep any of the components removed as part of this project. The 36" butterfly valves, stems, operators and hatches removed under this project shall become property of the Contractor
- 2. Question.** Who is the contact onsite for access to the site and how much advanced notice is needed?

Answer. Project contact is Tony Wierzbicki (TWierzbicki@Venicegov.com); RO WTP site contact is Jim Anderson (wanderson@venicegov.com). A minimum 24-hour notice must be provided to request site access.
- 3. Question.** Drawing M-01 – Are there shop drawings available for the existing 36-inch butterfly valves, valve stems and valve operators?

Answer. See attached Water Treatment Plant - Clearwell Modifications (1988) record drawings.
- 4. Question.** Drawing M-01 – Is there only one hatch opening that needs to be enlarged, which is on the South Clearwell, for the new 36-inch BV No. 3?

Answer. That is correct – only the access hatch for BV No. 3 needs to be enlarged.
- 5. Question.** Drawing S-01 – Note 8. Are there shop drawings available for the existing roof tees.

Answer. See attached Water Treatment Plant – Clearwell Modifications (1988) and 1974 Addition to Water Works record drawings for available information on the existing roof tees.
- 6. Question.** Drawing S-01 – Notes 12 and 13. Do you know the thickness of the North and South Clearwell foundation or do you have any structural drawings for these clearwells?

Answer. See attached Water Treatment Plant – Clearwell Modifications (1988) and 1974 Addition to Water Works record drawings for available information on the existing clearwells.

7. Question. Drawing S-01 – Do you know the elevation the groundwater table is? Or does it vary with the tide?

Answer. Groundwater elevation does not seem to be affected by tides at the site. Depending on the time of year, the groundwater table can be 6-inches to more than a foot below the ground surface.

8. Question. Drawing S-01 – Is the groundwater fresh, brackish or salt? I would need to know this for dewatering purposes

Answer. Groundwater in the area is expected to be brackish based on nearby wells. There is no salt water intrusion in the groundwater in this area.

9. Question. Spec Section 40 05 53-2.2C.2. Is this correct – 316SST shaft is pretty rare.

Answer. Butterfly valve shaft shall be 316 stainless steel as specified.

10. Question. After visiting the site yesterday, we are requesting that removal of all existing coatings be reduced to brush blast, removing only loose or flaking coating.

The existing coating is hard and seems to be in good condition. If it is blasted and removed entirely, the concrete could be damaged, which could raise the concrete repairs to more than \$10 per foot.

Answer. See attached revised sheets S-01 and S-02 and revised specification 09 91 00 Painting for surface preparation and painting requirements.

Peter A. Boers
Procurement Department

Acknowledgment is required with your proposal response. A designated management representative must sign the receipt for this addendum.

Receipt Acknowledged:

Signature

Company

Date

A copy of the addendum (excluding attachments) is to be included with the proposal response.

SECTION 07 54 23

THERMOPLASTIC POLYOLEFIN (TPO) ROOFING

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Scope:
 - 1. CONTRACTOR shall provide all labor, materials, tools, equipment and incidentals as shown, specified and required to furnish and install all TPO roofing Work.
 - 2. Extent of TPO roofing is shown or specified.
- B. Coordination:
 - 1. Review installation procedures under other Sections and coordinate the installation of items that must be installed with the TPO roofing Work.
- C. Roofing Repair Additional Requirements:
 - 1. The existing clearwell roof is a Firestone Building Products (Firestone) TPO roof installed by Crowther Inc. in 2016 and is currently under warranties for both Firestone and Crowther, Inc. Any activities on the clearwell roof required under this project shall be in accordance to the Firestone and Crowther Inc. recommendations and warranty requirements to ensure the warranties remain in full effect after the repairs are completed. A copy of the Firestone and Crowther Inc. warranties is included.
 - 2. Any alternations and repairs required as part of this project shall be completed by a licensed Firestone Licensed Applicator. Alterations and repairs shall be completed in accordance with Firestone's published specifications and proper notification shall be provided to Firestone prior to making modifications. Additional information and reporting forms for roof alterations are available at www.firestonebpco.com.
 - 3. Contractor shall also provide proper prior notification to Crowther Inc. regarding planned modifications to the clearwell roof and shall comply with roofing application recommendations provided by Crowther Inc.
- D. Related Sections:
 - 1. Section 06 10 53, Miscellaneous Rough Carpentry.
 - 2. Section 07 62 00, Sheet Metal Flashing and Trim.

1.2 REFERENCES

- A. Standards referenced in this Section are listed below:
 - 1. American Society for Testing and Materials, (ASTM).
 - a. ASTM D 41 - Standard Specification for Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing.

- b. ASTM E 96 - Standard Test Methods for Water Vapor Transmission of Materials.
 - c. ASTM C 208 - Standard Specification for Cellulosic Fiber Insulating Board.
 - d. ASTM C 578 - Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation.
 - e. ASTM C 1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board.
 - f. ASTM D 226 - Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing.
 - g. ASTM D 312 - Standard Specification for Asphalt Used in Roofing.
 - h. ASTM D 412 - Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers-Tension.
 - i. ASTM D 1079 - Standard Terminology Relating to Roofing, Waterproofing, and Bituminous Materials.
 - j. ASTM D 2178 - Standard Specification for Asphalt Glass Felt Used in Roofing and Waterproofing.
 - k. ASTM D 4263 - Standard Test Method for Indicating Moisture in Concrete by the Plastic Sheet Method.
 - l. ASTM D 4491 - Standard Test Methods for Water Permeability of Geotextiles by Permittivity.
 - m. ASTM D 4491 - Standard Test Methods for Water Permeability of Geotextiles by Permittivity.
 - n. ASTM D 4869 - Standard Specification for Asphalt-Saturated Organic Felt Underlayment Used in Steep Slope Roofing.
 - o. ASTM D 6878 - Standard Specification for Thermoplastic Polyolefin Based Sheet Roofing.
- 2. Factory Mutual System, (FM).
 - a. Factory Mutual Standard 4470 - Approval Standard for Class 1 Roof Covers.
 - b. Loss Prevention Data Sheets 1-28, 1-29.
 - 3. Florida Building Code, (FBC).
 - 4. National Roofing Contractors Association (NRCA) - Low Slope Roofing and Waterproofing Manual, Current Edition.
 - 5. Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA) - Architectural Sheet Metal Manual.
 - 6. Underwriters Laboratories (UL):
 - a. TGFU R1306 - "Roofing Systems and Materials Guide".
 - b. UL-790 - Standard Test Method for Fire Tests of Roof Coverings.
 - 7. ANSI/ASHRAE/IESNA Standard 9.1 (2007): Energy Standard for Buildings Except Low-Rise Residential Buildings.

1.3 QUALITY ASSURANCE

A. Installer's Qualifications:

1. Engage a single installer skilled, trained and with successful experience in the installation of TPO roofings, who is a recognized roofing installer with specific skill and successful experience in the type of roofing specified, and equipped to perform workmanship in accordance with the Contract Documents, manufacturer's written instructions for guaranteed construction and the approved Shop Drawings and who agrees to employ only tradesmen with specific skill and successful experience in this type of Work. Submit names and qualifications to ENGINEER along with the following information on a minimum of three successful projects:
 - a. Names and telephone numbers of owners, architects or engineers responsible for projects.
 - b. Approximate contract cost of the TPO roofing.
 - c. Amount of area installed.
2. The roofing installer shall be an approved roofing applicator who has qualified for appointment and has been trained by the manufacturer.
3. Submit proof of acceptability of installer by manufacturer to ENGINEER.

B. Component Supply and Compatibility:

1. Obtain elastic sheets from only one manufacturer, who publishes complete information on the specified roofing system, and offers to guarantee the completed roofing installation, as required.
2. Take field dimensions prior to preparation of Shop Drawings.

C. Requirements of Regulatory Agencies:

1. Comply with applicable insurance rating bureau requirements as required by the Florida Building Code, unless more restrictive requirements are specified.
2. Provide materials and roofing systems which have been tested, listed and labeled by Underwriters Laboratories' Incorporated for Class "A" rating, and bear the UL label on each package or are shipped to the Site with a UL Certificate of Compliance.
3. Provide roofing materials which have been tested, listed and FM labeled for Class "A" maximum flame spread rating.

D. Allowable Installation Tolerances:

1. Do not install Work until substrate preparation and tolerances have been approved by ENGINEER, TPO roofing manufacturer's Technical Representative and the TPO roofing installer and CONTRACTOR have verified to ENGINEER that substrates are within tolerances specified and acceptable to produce approved Work. Work advanced for any reason without such verification shall be stopped, removed and replaced with new material after substrate is approved, at no additional cost to OWNER.
2. Substrate Tolerances:
 - a. Out-of-Plane: 1/8-inch maximum in 10 foot-0 inches and 1/16-inch maximum in any 12-inches measured along the plane.
 - b. Maximum Offset in Plane Alignment: 1/16-inch.

- c. Variation From Slope: 1/8-inch maximum in 10 foot - 0 inches.

E. Pre-Installation Meeting:

1. Prior to the installation of the TPO roofing and associated Work, CONTRACTOR shall schedule and meet at the Site with the roofing installer, the installer of each component of associated Work, the installers of deck and composite insulating substrate construction to receive roofing Work, the installers of other work in and around roofing which must follow the roofing Work, including mechanical work, ENGINEER and other representatives directly concerned with performance of the Work. Review foreseeable methods and procedures related to the TPO roofing Work, including but not necessarily limited to, the following:
 - a. Review project requirements, including Contract Documents.
 - b. Review required submittals, both completed and yet to be completed.
 - c. Review status of substrate including drying, structural loading limitations and similar considerations.
 - d. Review availability of materials, tradesmen, equipment and facilities required to make progress and avoid delays.
 - e. Review required inspection, testing, certifying and accounting procedures.
 - f. Review weather and forecasted weather conditions, and procedures for coping with unfavorable conditions.
 - g. Review regulations concerning code compliance, FM compliance, environmental protection, health, safety, fire and similar considerations.
 - h. Review procedures required for protection of roofing during the remainder of the construction period.
2. Reconvene the meeting at the earliest opportunity if additional information must be developed in order to conclude the subjects under consideration.

1.4 SUBMITTALS

A. Action Submittals: Submit the following:

1. Samples
 - a. 12-inch by 12-inch sheet of each item specified and 6-inch long pieces of each required system component to be used in the Work.
 - b. Each fastener type required marked as to type of material and with their intended purpose in the Work.
 - c. All components of the TPO roofing and flashing systems labeled with their intended use in the Work. Compliance with all other requirements is exclusive responsibility of CONTRACTOR.
2. Shop Drawings: Submit the following:
 - a. Copies of drawings completely dimensioned using field-verified dimensions on plans of each roof area and the accurate location of all roof penetrations roof mounted equipment, curbs, skylights and other features present on the roof areas specified by ENGINEER to be included under the Work of this Section and all details of construction and erection, including

all flashing details coordinated and FM publications specified, and the location of all heavy-duty walkway protection paver patterns required by the manufacturer for warranted construction and as shown. CONTRACTOR shall submit all details requiring consideration and the performance of the details shall be approved by the TPO roofing manufacturer for guaranteed construction as specified.

3. Product Data:
 - a. Manufacturer's specifications and product manuals indicating product information correlated to specified requirements, manufacturer's installation instructions, maintenance instructions and other data as may be required by ENGI-NEER.
 - b. Copies of the FM Loss Prevention Data publications and appropriate Technical Advisory Bulletins published by Factory Mutual indicating compliance with wind uplift pressure-resistant performance criteria, ballast and paver requirements and the requirements for FM Approved 1-90 system construction and perimeter securement conditions.

B. Informational Submittals: Submit the following:

1. Qualifications Statements:
 - a. Installer's qualifications.
2. Certificates
 - a. CONTRACTOR'S Review: Accompanying approval request, submit to ENGINEER a written statement signed by CONTRACTOR, stating that the Contract Documents for roofing and flashing have been reviewed with an agent of the roofing material manufacturer and that they are in agreement that the selected systems are proper, compatible and that the details shown are not in conflict with the roofing manufacturer's roofing and flashing details. Show by copy of transmittal form that a copy of the statement has been transmitted to the manufacturer.
 - b. Statement of Application: Upon completion of the Work, submit a statement to ENGINEER signed by CONTRACTOR stating that the Work complies with the requirements of these Specifications and the installation methods comply with the manufacturer's printed instructions and were proper and adequate for the condition of installation and use.
3. Site Quality Control Submittals:
 - a. Written reports describing results from required field testing as specified in Field Testing section of this specification.
 - b. Final inspection report as specified in Inspection and Acceptance section of this specification.

C. Closeout Submittals: Submit the following:

1. Guarantee:
 - a. CONTRACTOR shall execute his own written guarantee direct to OWNER warranting all TPO roofing and flashing weather- and watertight and perfect for a period of two years after date of Final Completion.

Imperfections, by reason of defective materials, workmanship or arrangement of the various parts shall be made good to the satisfaction of the OWNER at CONTRACTOR'S expense.

2. Warranty:
 - a. In addition to the above, CONTRACTOR shall provide OWNER with manufacturer's standard ten year warranty.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Delivery of Materials:
 1. Deliver materials to the Site in sufficient quantities to ensure uninterrupted progress of the Work.
 2. Deliver materials in manufacturer's original, unopened and undamaged containers and rolls with labels intact and legible.
 3. Materials requiring fire resistance classification shall be delivered to the Site with labels attached and packaged as required by labeling service.
- B. Storage of Materials:
 1. Store materials in a dry, well ventilated, weather tight place, and in a manner which will ensure that there is no possibility of significant moisture pick-up.
 2. Store in a manner which complies with fire and safety regulations.
 3. Store emulsions at temperatures above 40°F.
 4. Store materials on clean raised platforms with weather protective covering when stored outdoors.
- C. Handling of Materials:
 1. Handle rolled goods so as to prevent damage to edge or ends.
 2. Select and operate material handling equipment so as not to damage existing construction or applied roofing.

1.6 JOB CONDITIONS

- A. Environmental Conditions:
 1. Proceed with TPO roofing and associated Work only when weather conditions will permit unrestricted use of materials and quality control of the Work being installed, complying with these Specification requirements and with the recommendations of the roofing materials manufacturers.
 2. Proceed only when CONTRACTOR and their installer are willing to guarantee the Work as required and without additional reservations and restrictions.
 3. Record decisions, conditions and agreements to proceed with the Work when weather conditions might be unfavorable. State the reasons for proceeding, with the names of the persons involved along with the changes, if any, or revisions, requirements or terms of the Contract.

- B. Protection: Provide continuous protection of materials against damage primarily by storing materials under cover and above ground and away from other construction traffic.
- C. Protection:
 - 1. Provide continuous protection of materials against wetting and moisture absorption.
 - 2. Protect materials against damage by construction traffic.

1.7 SCHEDULING

- A. Proceed with the TPO roofing and associated Work only after curbs, blocking, continuous wood sleepers, vents, drains and projections through the substrate have been installed, and when the substrate construction and framing of openings is completed.
- B. Proceed with and complete the Work only when materials, equipment and skilled tradesmen required for the installation of other TPO roofing components are at the site and are ready to follow with the Work immediately after composite roof insulation is acceptable for installation of the complete TPO roofing.
- C. Install all TPO roofing and associated Work in a manner that will ensure a complete roofing system at the end of each day's Work. Do not advance the installation of any one material beyond that which is necessary for proper sequencing of the TPO roofing Work.

1.8 GUARANTEE

- A. Provide a roofing guarantee in the form and content specified, covering the TPO roofing and associated Work specified therein, signed by CONTRACTOR and their installer. Provide a two year roofing guarantee period, starting on the date of Final Completion of the completed construction Work, stating that for the duration of the guarantee CONTRACTOR and installer shall be responsible to fix leaks, replace TPO roofing and roof insulation components damaged by moisture penetration, and other defects caused by improper workmanship or the improper arrangement of the various system components.
- B. In addition to above, CONTRACTOR shall provide OWNER with manufacturer's standard ten year warranty.
- C. Specified TPO roofing manufacturer's standard details for guaranteed construction shall represent a minimum standard for the Work. Provide details as shown and in Factory Mutual Publications, where not in direct and irreconcilable conflict with specified TPO roofing manufacturer's requirements for guaranteed construction. Where such details are so considered by the TPO roofing manufacturer, provide a written statement from the manufacturer explaining the technical reasons for such determinations as part of Shop Drawing submittals.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Products and Manufacturers: Provide one of the following:
 - 1. TPO Roofing System by Firestone Building Products.
 - 2. Or equal.

2.2 GENERAL

- A. Roof System: Provide a waterproof roof system, capable of withstanding uplift forces as specified in the Design Criteria article of this section.
 - 1. Membrane Attachment: Fully Adhered.
- B. Base Flashing: Provide a waterproof, fully adhered base flashing system at all penetrations, plane transitions and terminations.
- C. Insulation: Provide a roof insulation system beneath the finish membrane.

2.3 INSULATION

- A. Polyisocyanurate : Tapered rigid board with fiber reinforced facers on both sides, meeting or exceeding the requirements of ASTM C 1289.
 - 1. Compressive Strength: 20 psi (138 kPa).
 - 2. Density: 2 lb per cubic foot (24 kg/cu m) minimum.
- B. Use manufacturer's standard sheet seaming system for "plastic welding" or lapped joints to create seams of strength equal to sheet strength.
- C. Include edge sealer to cover exposed sheet edges.

2.4 INSULATION ADHESIVE

- A. A spray or extruded applied, two-component polyurethane, low-rise expanding foam adhesive used for attaching approved insulations to compatible substrates.
- B. A two-component, polyurethane construction grade, low-rise expanding adhesive designed for bonding insulation to various substrates using a portable applicator.

2.5 THERMOPLASTIC POLYOLEFIN (TPO) MEMBRANE

- A. Membrane TPO
 - 1. Color: White
 - 2. Membrane Thickness: 60 mil nominal.
 - a. Thickness over Scrim: 0.020 inches (0.508mm).
 - b. Breaking Strength (ASTM D 751): 250 lbf/in (1.1 kN/m) minimum.
 - c. Tear Resistance (ASTM D 751): 55 lbf/in (245 N/m) minimum.
 - d. Elongation (ASTM D 751): 25 percent.

2.6 FLASHING ACCESSORIES

- A. Inside Corners: Pre-molded corner flashing for inside corners. 60 mil thickness. Color to match membrane. Special colors require custom fabrication process.
- B. Outside Corners: Injection molded corner used for flashing outside corners. 60 mil thickness. Color to match membrane. Special colors require custom fabrication process.
- C. TPO T-Joint Covers: Injection molded 60 mil thick TPO formed into a 4.5 inch (114mm) diameter circle used to seal step-offs at splice intersections. Color to match membrane.
- D. TPO Curb Wrap Corners: Pre-fabricated corner flashings made from 45 mil thick reinforced membrane. 6 inch wide base flange and a 12 inch overall height. Sizes available to fit curbs up to 6 foot by 6 foot (1828 x 1828 mm) in size. Color to match membrane.
- E. Molded Pipe Seals: A pre-molded flashing and clamping ring used for pipe penetrations. Available for 0.75 inch to 8 inch (19 - 203.2mm) diameter pipes. Color to match membrane.
- F. Split Pipe Seals: Pre-fabricated flashing consisting of 45 mil thick reinforced Membrane for pipes 1 inch to 6 inch (25.4 - 152.4mm) in diameter. A split (cut) and overlapped tab is incorporated to allow the pipe seal to be opened and wrapped around the pipe when it is not possible to pull a standard pipe flashing over a round penetration. Gray, tan and special colors require custom order fabrication. Custom sizes available on a special order basis.
- G. TPO Square Tubing Wraps: Pre-fabricated flashings made of 45 mil thick reinforced membrane for square tubing. A split (cut) and overlap tab are incorporated into these parts to allow the seals to be opened and wrapped around a square tubing penetration with an obstruction. Stock sizes include 3- inch, 4-inch, 5-inch and 6 inch (76, 102, 127, 152 mm) diameter square tubing. Gray, tan and special colors require custom order fabrication. Custom sizes available on a special order basis.
- H. TPO Molded Sealant Pockets:
 - 1. A two-piece, interlocking injection molded, flexible pocket with a rigid polypropylene vertical wall and pre-formed deck flanges. Color to match membrane.
 - 2. Used with Thermoplastic One-Part Pourable Sealer as specified in this section for waterproofing pipe clusters or other odd shaped penetrations. The removable built-in extension legs allow the oval pocket to adjust from 7.5 inches to 12 inches (191mm - 305mm) in length while maintaining a 6-inch width.

- I. Pre-Fabricated Sealant Pockets: A two-piece, pre-fabricated sealant pocket that utilizes reinforced TPO membrane and coated metal to form a rigid, oversized sealant pocket with a weldable horizontal deck flange. Color to match membrane.
- J. Pressure-Sensitive Cover Strip: A nominal 6 inch (152mm) wide by 40 mil thick non-reinforced TPO membrane laminated to nominal 35-mil thick cured synthetic rubber pressure-sensitive adhesive. Used in conjunction with TPO Primer to strip in flat metal flanges (i.e., drip edges or rows of fasteners and plates). Color to match membrane.
- K. TPO Pressure-Sensitive.
 - 1. 10 inch (254mm): A nominal 10 inch (254mm) wide, 45 mil thick reinforced TPO membrane with nominal 3 inch (76mm) wide 35mil thick cured synthetic rubber pressure-sensitive adhesive laminated along both ends. The TPO 10-inch RUSS is used in place of narrow sheets to secure membrane in the perimeter roof area. The use of this product allows field membrane to be utilized over the entire roof area.
- L. Heat Weldable Walkway Rolls: Superior tear, puncture and weather resistance and designed to protect membrane in those areas exposed to repetitive foot traffic or other hazards. Walkway material may be heat welded to membrane using an automated heat welder or hand held heat welder. Walkway Rolls are 34 inches wide by 50 feet long and are nominal 180 mils thick.

2.7 CLEANERS, PRIMERS, ADHESIVES AND SEALANTS

- A. Bonding Adhesive: A high-strength solvent-based contact adhesive used for bonding membrane to various porous and non-porous substrates.
 - 1. Base: Synthetic Rubber.
 - 2. Color: Yellow.
 - 3. Solids: 20.0 percent.
 - 4. VOC: 670 grams/liter.
- B. Water Cut-Off Mastic: A one-component, low viscosity, self-wetting, Butyl blend mastic used as a compression sealing agent between membrane and applicable substrates.
- C. TPO Primer: Solvent-based product designed to prepare TPO membrane for improved adhesion to TPO surfaces prior to the application of pressure-sensitive products and sealant pockets.
- D. Universal Single-Ply Sealant: A 100 percent solids, solvent free, VOC free, one-part polyether sealant that provides a weather tight seal to a variety of building materials. It is used for general caulking such as above termination bars and metal counter flashings and at scupper details.

- E. Thermoplastic One-Part Sealant: Single component, moisture curing, elastomeric polyether sealant that is compatible with Thermoplastic membranes. Provides a flexible, durable and long lasting seal around hard-to-flash penetrations in Thermoplastic Roofing Systems.
- F. Thermoplastic One-Part Sealant: Single component, moisture curing, elastomeric polyether sealant that is compatible with Thermoplastic membranes. Provides a flexible, durable and long lasting seal around hard-to-flash penetrations in Thermoplastic Roofing Systems.
- G. Multi-purpose contact adhesive recommended for enhancing bond of self-adhering sheet products and for bonding board insulation to various substrates.

PART 3 - EXECUTION

3.1 INSPECTION

- A. CONTRACTOR and installer shall examine the substrate and the conditions under which the TPO roofing and base flashing Work is to be performed, and notify ENGINEER, in writing, of unsatisfactory conditions. Do not proceed with the Work until unsatisfactory conditions have been corrected in a manner acceptable to ENGINEER.
- B. Verify adequacy of slope-to-drain, compressive strength, moisture content and other composite roof insulation features important to the successful installation of the TPO roofing and flashing systems before start of Work.

3.2 PREPARATION

- A. Clean the substrate of dust, debris, substances and interferences detrimental to the Work. Where necessary to remove sharp projections, composite insulation surfaces shall be ground.
- B. Test the substrate for excessive moisture as recommended by the TPO roofing manufacturer.

3.3 INSTALLATION

- A. General:
 - 1. Follow all applicable installation instructions and recommendations contained in the TPO roofing manufacturer's written installation and product manuals and the information contained on approved Shop Drawings. Where CONTRACTOR requests to deviate from written installation and product

manuals and approved Shop Drawings, all such deviations shall be submitted to ENGINEER for approval along with TPO roofing manufacturer's written agreement and a statement of acceptability for compliance with guaranteed construction.

2. Begin installation only in the presence of the TPO roofing manufacturer's technical representative.
3. Cut sheets to the maximum size possible, in order to minimize seams and to accommodate contours of the deck. Do not seam within four feet of roof drains.
4. Clean all splices and lap areas using manufacturer's recommended splice cleaner.
5. Lap sheets and bond joints using the seaming system recommended by the manufacturer.
6. Cover top edges of each sheet at seams with uniform fillet of special sealant.
7. Install one-way breather vents as recommended by the TPO roofing manufacturer and as shown, but not less than one per 1,000 square feet.

B. Membrane Placement and Attachment (Fully Adhered):

1. Position membrane over the acceptable substrate. Fold membrane sheet back lengthwise so half the underside of the membrane is exposed.
2. Apply Bonding Adhesive in accordance with the manufacturer's published instructions, to the exposed underside of the membrane and the corresponding substrate area. Do not apply Bonding Adhesive along the splice edge of the membrane to be hot air welded over the adjoining sheet. Allow the adhesive to dry until it is tacky but will not string or stick to a dry finger touch.
 - a. Roll the coated membrane into the coated substrate while avoiding wrinkles. Brush down the bonded section of the membrane sheet immediately after rolling the membrane into the adhesive with a soft bristle push broom to achieve maximum contact.
 - b. Fold back the unbonded half of the sheet lengthwise and repeat the bonding procedures.
3. Position adjoining sheets to allow a minimum overlap of 2 inches.
4. Hot-air weld the membrane sheets using the Automatic Hot Air Welding Machine or Hot Air Hand Welder in accordance with the manufacturer's hot air welding procedures. A test weld sample should be made from a piece of scrap TPO to eliminate the need to remove a section from a completed seam. At all splice intersections, roll the seam with a silicone roller to ensure a continuous hot air welded seam.
5. Continue to install adjoining membrane sheets in the same manner, overlapping edges a minimum of 2 inches and complete the bonding procedures as stated previously.

C. Seam Welding:

1. Hot-air weld membrane using an Automatic Hot Air Welding Machine or Hot Air Hand Welder in accordance with the manufacturer's current guidelines.

At all splice intersections, roll the seam with a silicone roller to ensure a continuous hot air welded seam.

2. Overlay all splice intersections with T-Joint Cover.
3. Probe all seams once the hot air welds have thoroughly cooled (approximately 30 minutes).
4. Repair all seam deficiencies the same day they are discovered.
5. Apply Edge Sealant on all cut edges of reinforced membrane (where the scrim reinforcement is exposed) after seam probing is complete. Cut Edge Sealant is not required on vertical splices.

D. Flashing:

1. Flashing of parapets, curbs, expansion joints and other parts of the roof must be performed using reinforced membrane or prefabricated accessories. A non-reinforced membrane may be used for flashing pipe penetrations, Sealant Pockets, and scuppers, as well as inside and outside corners, when the use of pre-molded or prefabricated accessories is not feasible.
2. Follow manufacturer's typical flashing procedures for all wall, curb, and penetration flashing including metal edging/coping and roof drain applications.

E. Walkways:

1. Install walkways at all traffic concentration points (such as roof hatches, access doors, rooftop ladders, etc.) and all locations as identified on the Contract Drawings.
2. Hot-air weld walkway pads to the membrane in accordance with the manufacturer's current application guidelines.

3.4 CLEAN UP:

- A. Perform daily clean-up to collect all wrappings, empty containers, paper, and other debris from the project site. Upon completion, all debris must be disposed of in a legally acceptable manner.
- B. Prior to the manufacturer's inspection for warranty, the applicator must perform a pre-inspection to review all work and to verify all flashing has been completed as well as the application of all caulking.

3.5 PROTECTION

- A. Protect TPO roofing from damage during the construction period so that it will be undamaged in any way at the time of Final Completion.
- B. Replace Work which is soiled or otherwise damaged by the performance of the TPO roofing and associated Work and from improper installation techniques.

+ + END OF SECTION + +

THIS PAGE INTENTIONALLY LEFT BLANK

SECTION 09 91 00

PAINTING

PART 1 - GENERAL

1.1 DESCRIPTION

A. Scope:

1. CONTRACTOR shall provide all labor, materials, tools, equipment, and incidentals as shown, specified, and required to furnish and apply paint systems.
 - a. CONTRACTOR is responsible for surface preparation and painting of all new and existing interior items and surfaces throughout the Project areas included under this and other Sections.
2. Extent of painting includes the Work specified below. Painting shown in schedules may not provide CONTRACTOR with complete indication of all painting Work. Refer to Article 2.2 of this Section where all surfaces of generic types specified are specified for preparation and painting according to their status, intended function, and location, using the painting system for that surface, function, and location as specified, unless specifically identified on the Drawings as a surface not to receive specified painting system.
 - a. All new and specifically identified existing surfaces and items except where natural finish of material is specified as a corrosion-resistant material not requiring paint; or is specifically shown as indicated by written note, or specified as a surface not to be painted. Where items or surfaces are not specifically mentioned, paint them the same as adjacent similar materials or areas.
 - b. Surface preparation and painting of all new and specifically identified existing items are included in the Work, except as otherwise shown or specified.

B. Coordination:

1. Review installation, removal, and demolition procedures under other Sections and coordinate them with the Work specified in this Section.
2. Coordinate painting of areas that will become inaccessible once equipment and similar fixed items have been installed.
3. Furnish information to ENGINEER on characteristics of finish materials proposed for use and ensure compatibility with prime coats used. Provide barrier coats over incompatible primers or remove and repaint as required. Notify ENGINEER in writing of anticipated problems using specified painting systems with surfaces primed by others. Reprime equipment

primed in factory and other factory-primed items that are damaged or scratched.

C. Related Sections:

1. Section 03 01 30, Repair and Rehabilitation of Cast-In-Place Concrete
2. Section 40 05 53, Process Valves, Four-Inch Diameter And Larger

D. Work Not Included: The following Work is not included as painting Work, or are included under other Sections or in other contracts:

1. Shop Priming: Shop priming of structural metal, miscellaneous metal fabrications, other metal items and fabricated components such as shop-fabricated or factory-painted process equipment, plumbing equipment, heating and ventilating equipment, electrical equipment, and accessories shall conform to applicable requirements of this Section but are included under other Sections or in other contracts.
2. Pre-finished Items:
 - a. Items furnished with such finishes as baked-on enamel, porcelain, and polyvinylidene fluoride shall only be touched up at Site by CONTRACTOR using manufacturer's recommended compatible field-applied touchup paint.
 - b. Items furnished with finishes such as chrome plating or anodizing.
3. Concealed Surfaces: Non-metallic wall or ceiling surfaces in areas not exposed to view, and generally inaccessible areas, such as furred spaces, pipe chases, duct shafts, and elevator shafts.
4. Concrete surfaces below grade, unless otherwise shown or specified.
5. Concrete floors, unless specifically shown as a surface to be painted.
6. Exterior face of architectural precast concrete.
7. Corrosion-Resistant Metal Surfaces: Where the natural oxide of item forms a barrier to corrosion, whether factory- or Site-formed, including such materials as copper, bronze, muntz metal, terne metal, and stainless steel.
8. Operating Parts and Labels:
 - a. Do not paint moving parts of operating units, mechanical and electrical parts such as valve and damper operators, linkages, sensing devices, interior of motors, and fan shafts.
 - b. Do not paint over labels required by governing authorities having jurisdiction at Site, or equipment identification, performance rating, nameplates, and nomenclature plates.
 - c. Cover moving parts and labels during the painting with protective masking. Remove all protective masking upon completion of Work. Remove all paint, coatings, and splatter that comes in contact with such labels.
9. Structural and miscellaneous metals covered with concrete need not receive primers, intermediate, or finish coats of paint.
10. Existing structures, equipment, and other existing surfaces and items unless otherwise shown or specified.

E. Description of Colors and Finishes:

1. Color Selection:
 - a. ENGINEER reserves the right to select non-standard colors for paint systems specified within ability of paint manufacturer to produce such non-standard colors. Provide such colors at no additional expense to OWNER.
2. Color Coding of Pipelines, Valves, Equipment, and Ducts:
 - a. Color-coding of pipelines, valves, equipment and ducts shall comply with applicable standards of ANSI A13.1, ANSI Z535.1, CFR 1910.144, Recommended Standards for Water Works, and Recommended Standards for Wastewater Facilities. For piping and equipment not covered by the above standards, conform to OWNER's color standards.
 - b. For equipment located on roofs and equipment that is exposed-to-view, color will be selected by ENGINEER.

1.2 REFERENCES

- A. Referenced Standards: Standards referenced in this Section are:
1. ANSI A13.1, Scheme for Identification of Piping Systems.
 2. ANSI Z535.1, Safety Color Code.
 3. ASTM D16, Terminology for Paint, Related Coatings, Materials and Applications.
 4. ASTM D2200, Pictorial Surface Preparation Standards for Painting Steel Surfaces.
 5. ASTM D4262, Testing Method for pH of Chemically Cleaned or Etched Concrete Surfaces.
 6. ASTM D4263, Test Method for Indicating Moisture in Concrete by the Plastic Sheet Method.
 7. ASTM D4541, Test Methods for Pull-Off Strength of Coatings Using Portable Adhesion-Testers.
 8. ASTM E329, Specification for Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction.
 9. Great Lakes Upper Mississippi River Board of Public Health and Environmental Managers (GLUMRB) Recommended Standards for Water Works.
 10. GLUMRB, Recommended Standards for Wastewater Facilities.
 11. Ozone Transport Commission, (OTC), OTC Model Rule for Architectural and Industrial Maintenance Coatings.
 12. SSPC PA 2, Measurement of Dry Coating Thickness with Magnetic Gages.
 13. SSPC VIS 1, Visual Standard for Abrasive Blast Cleaned Steel.
 14. SSPC VIS 2, Method of Evaluating Degree of Rusting/Painted Steel Surfaces.
 15. SSPC Volume 2, Systems and Specifications.

1.3 DEFINITIONS

- A. Coating terms defined in ASTM D16 apply to this Section.

1.4 QUALITY ASSURANCE

- A. Applicator Qualifications:
 - 1. Engage a single applicator regularly performing installation of painting systems, with documented skill and successful experience in installing types of products required and agrees to employ only tradesmen trained, skilled, and with successful experience in installing types of products specified.
- B. Testing Agency Qualifications: Provide independent testing agency with experience and capability to satisfactorily conduct testing specified in accordance with ASTM E329. Testing agency shall be selected by OWNER and paid for by CONTRACTOR.
- C. Source Quality Control:
 - 1. Obtain products from manufacturers that will provide services of a qualified manufacturer's representative at Site at commencement of painting Work to advise on products, mock-ups, installation, and finishing techniques, at completion of the Work to advise ENGINEER on acceptability of completed Work, and during course of Work as requested by ENGINEER.
 - 2. Submit "or equal" products, when proposed, with direct comparison to products specified, including information on durability, adhesion, color and gloss retention, percent solids, VOC's grams per liter, and recoatability after curing.
 - 3. "Or equal" manufacturers shall furnish same color selection as manufacturers specified, including intense chroma and custom pigmented colors in painting systems.
 - 4. Color Pigments: Provide pure, non-fading, applicable types to suit surfaces and services indicated. Comply with the following:
 - a. Lead and Chromate: Lead and chromate content shall not exceed amount allowed by authorities having jurisdiction.
 - b. Through CONTRACTOR, paint manufacturer shall notify ENGINEER of colors that are not suitable for long-term color retention in areas subject to hydrogen sulfide fume exposure.
 - c. Manufacturer shall identify colors that meet requirements of authorities having jurisdiction at Site for use in locations subject to contact with potable water or water that will be treated to become potable.
 - d. Comply with paint manufacturers' recommendations on preventing coating contact with levels of carbon dioxide and carbon monoxide that may cause yellowing during application and initial stages of curing of paint coatings.

- D. Regulatory Requirements:
1. Comply with regulatory requirements of authorities having jurisdiction over the Site.
- E. Pre-Painting Conference:
1. Conduct a pre-painting conference at the Site to review specified requirements. Meeting attendees shall include painting applicator and its foreman, paint manufacturer's technical representative, installers of other work in and around painting that must follow painting Work, ENGINEER, and other representatives directly concerned with performance of painting Work.

1.5 SUBMITTALS

- A. Action Submittals: Submit the following:
1. Product Data:
 - a. Copies of manufacturer's technical data sheets, including surface preparation, number of coats, dry film thickness, test performance data including paint analysis, VOC and chemical component content in comparison to maximum allowed by the Contact Documents, and application instructions for each product proposed for use
 - b. Submit proof of acceptability of proposed application techniques by paint manufacturer selected.
 - c. Copies of CONTRACTOR's proposed protection procedures in each area of the Work explaining methods of protecting adjacent surfaces from splatter, for confining application procedures in a manner that allows other work adjacent to surface preparation and painting Work to proceed safely and without interruption, and for maintaining acceptable application, curing, and environmental conditions during and after painting systems application.
 - d. List each material and cross-reference to the specific painting system and application, including a list of site-specific surfaces to which painting system will be applied. Identify by manufacturer's catalog number and general classification. State number of gallons of each product being purchased for delivery to Site and square foot area calculated to be covered by each painting system specified based on theoretical loss of 20 percent. Where actual area to be covered by paint system exceeds area submitted to ENGINEER for that system, proof of additional material purchase shall be provided to ENGINEER. Calculated coverage shall be as specified for each component of each painting system specified. This requirement does not take precedence over CONTRACTOR's responsibility to provide dry film thickness required for each component of each painting system.

- e. Identify maximum exposure times allowable for each paint system component before next coat of paint can be applied. Submit proposed methods for preparing surfaces for subsequent coats if maximum exposure times are exceeded.
 - f. Information on curing times and environmental conditions that affect curing time of each paint system component and proposed methods for accommodating variations in curing time. Identify this information for each painting system in the Work.
 - g. Specification for spray equipment with cross-reference to paint manufacturer's recommended equipment requirements.
2. Samples:
- a. Copies of manufacturer's complete color charts for each coating system.
- B. Informational Submittals: Submit the following:
- 1. Certificates:
 - a. Certificate from paint manufacturer stating that materials meet or exceed Contract Documents requirements.
 - b. CONTRACTOR shall provide notarized statement verifying that all painting systems are compatible with surfaces specified. All painting systems components shall be reviewed by an authorized technical representative of paint manufacturer for use as a compatible system. Verify that all painting systems are acceptable for exposures specified and that paint manufacturer is in agreement that selected systems are proper, compatible, and are not in conflict with paint manufacturer's recommended specifications. Show by copy of transmittal form that a copy of letter has been transmitted to paint applicator.
 - 2. Test Reports:
 - a. Certified laboratory test reports for required performance and analysis testing in compliance with ASTM E329.
 - b. Adhesion testing plan and procedures.
 - c. Results of adhesion testing on existing surfaces containing paints or other coatings to be topcoated with paint systems specified. Prior to adhesion testing, submit a testing plan establishing methods, procedures and number of tests in each area where existing coatings are to remain and become substrate for painting Work. Based on results of adhesion testing, recommend methods, procedures, and painting system modifications, if necessary, for proceeding with Work.
 - d. Proposed methods for testing, handling, and disposal of waste generated during Work.
 - e. Results of alkalinity and moisture content tests performed per ASTM D4262 and ASTM D4263.
 - f. Results of film thickness, holidays, and imperfections tests.
 - 3. Manufacturer's Instructions: Provide paint manufacturer's storage, handling, and application instructions prior to commencing painting Work at Site.

4. Manufacturer's Site Reports: Provide report of paint manufacturer's representative for each visit to Site by paint manufacturer's representative.
 5. Special Procedure Submittals:
 - a. Proposed protection procedures for each area of Work, explaining methods of protecting adjacent surfaces from splatter, for confining application procedures in a manner that allows other work adjacent to surface preparation and painting Work to proceed safely and without interruption.
 - b. Site-specific health and safety plan.
 - c. Procedures for maintaining acceptable application, curing and environmental conditions during and after painting systems application.
 - d. Procedures for providing adequate lighting, ventilation, and personal protection equipment relative to painting Work.
 6. Qualifications:
 - a. Applicator.
 - b. Testing laboratory
- C. Closeout Submittals: Submit the following:
1. Maintenance Manual: Upon completion of the painting Work, furnish ENGINEER five copies of detailed maintenance manual including the following information:
 - a. Complete and updated product catalog of paint manufacturer's currently available products including complete technical information on each product. Identify product names and numbers of each product used in the painting Work.
 - b. Name, address, e-mail address and telephone number of manufacturer, local distributor, applicator and technical representative.
 - c. Detailed procedures for routine maintenance and cleaning.
 - d. Detailed procedures for light repairs such as dents, scratches and staining.
 2. Statement of Application: Upon completion of the painting Work, submit a notarized statement to ENGINEER signed by CONTRACTOR and painting applicator stating that Work complies with requirements of the Contract Documents and that application methods, equipment, and environmental conditions were proper and adequate for conditions of installation and use.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Product Delivery Requirements: Deliver products to Site in original, new, and unopened packages and containers, accurately and legibly and accurately labeled with the following:
1. Container contents, including name and generic description of product.
 2. Manufacturer's stock number and date of manufacture.
 3. Manufacturer's name.
 4. Contents by volume, for major pigment and vehicle constituents.

5. Grams per liter of volatile organic compounds.
6. Thinning instructions, where recommended.
7. Application instructions.
8. Color name and number.

B. Product Storage Requirements:

1. Store acceptable materials at Site.
2. Store in an environmentally controlled location as recommended in paint manufacturer's written product information. Keep area clean and accessible. Prevent freezing of products.
3. Store products that are not in actual use in tightly covered containers.
4. Comply with health and fire regulations of authorities having jurisdiction at Site.

C. Product Handling Requirements:

1. Handle products in a manner that minimizes the potential for contamination, or incorrect product catalyzation.
2. Do not open containers or mix components until necessary preparatory work has been completed and approved by ENGINEER and painting Work will start immediately.
3. Maintain containers used in storing, mixing, and applying paint in a clean condition, free of foreign materials and residue.

1.7 SITE CONDITIONS

A. Site Facilities:

1. Supplemental heat sources, as required to maintain both ambient and surface temperatures within range recommended by paint manufacturer for paint system applications, are not available at the Site.
2. Provision of supplemental heat energy sources, power, equipment, and operating, maintenance, and temperature-monitoring personnel is CONTRACTOR's responsibility.
3. Do not use heat sources that emit carbon dioxide or carbon monoxide into areas being painted. Properly locate and vent heat sources to exterior so that paint systems and personnel are unaffected by exhaust products.

B. Existing Conditions:

1. Existing surfaces to receive painting Work shall have their surfaces prepared to meet requirements of painting systems specified. Prior to initiating painting Work, perform adhesion tests on existing surfaces to be painted. Perform testing per ASTM D4541 or other method acceptable to ENGINEER. Number and location of tests shall be sufficient to determine the condition of existing coatings and suitability of existing coatings to remain to provide an acceptable substrate for new coatings. Submit testing plan prior to testing and provide ENGINEER the adhesion test results.

2. Provide abrasive blasting, scraping, or other abrading or surface film removal, or preparatory techniques accepted by ENGINEER.
 3. Before commencing painting in an area, surfaces to be painted and floors shall be cleaned of dust using commercial vacuum cleaning equipment equipped with high-efficiency particulate air (HEPA) filters and dust containment systems.
 4. After painting operations have started in a given area, cleaning only with commercial vacuum cleaning equipment with high-efficiency particulate air (HEPA) filters and dust containment systems.
- C. Environmental Requirements:
1. Comply with manufacturer's published requirements.
- D. Protection:
1. Cover or otherwise protect finished Work of other trades and those surfaces not being painted concurrently and not to be painted.
 2. During surface preparation and painting, facility shall remain in operation. Use procedures that prevent contamination of process or cause or require facility shutdown.
 3. Coordinate and schedule surface preparation and painting to avoid exposing personnel to hazards associated with painting Work. Provide required personnel safety equipment per requirements of authorities having jurisdiction at Site.
 4. Submit protection procedures to be employed. Do not begin surface preparation and painting Work until ENGINEER accepts protection techniques proposed by CONTRACTOR.
 5. When working with flammable materials, provide fire extinguishers and post temporary signs warning against smoking and open flame.

PART 2 - PRODUCTS

2.1 PAINTING SYSTEM MANUFACTURERS

- A. Products and Manufacturers: Where referenced under painting systems, provide painting systems manufactured by the following:
1. Tnemec Company, Incorporated (TCI).
 2. The Carbolite Company, part of StonCor Group, an RMP Company (TCC).
 3. Sherwin-Williams Company (SWC).
 4. Or equal.

2.2 PAINTING SYSTEMS

- A. New and Existing Concrete associated with all Potable Water Tanks, Reservoirs, and Channels at Ambient Temperature and of Greater Than 1,500 Gallon

Capacity; Certified by NSF International in accordance with ANSI/NSF Standard 61; Low VOC Content; Non Submerged, Intermittently Submerged and Submerged, Interior and Exterior:

1. Provide painting system components specified for all cast-in-place concrete surfaces within area of the clearwell beginning at the bottom slab and extending to top of underside of the top slab, including troughs, walls, beams, columns, the underside of roof slab and other locations shown and required.
2. Surface Preparation: Refer to Part 3.2 and manufacturer's published recommendations for additional material and surface condition requirements.
 - a) Remove all loose paint, grease, oil, dirt, dust, mold, mildew, and other contaminants. At a minimum, high pressure water washed or hydro blasted all surfaces. High pressure wash shall be a minimum of 3,500 pounds per square inch at a rate of 3 to 5 gallons per minute. High pressure and hydro water shall be potable water. A cleaning detergent such as trisodium phosphate may be utilized to facilitate cleaning.
 - b) Remove all loose existing coatings and provide a surface profile on bare concrete equal to a minimum ICRI-CSP5. Where coatings are not loose and remain, thoroughly and uniformly abrasive blast to scarify and de-gloss them. Provide a minimum anchor profile of 1.5 mils.
 - c) All bare concrete surfaces shall have a minimum pH of 9 prior to the application of the coating system.
 - d) All surfaces shall be clean and dry prior to the application of the coating system in accordance to manufacturer's requirements.
 - e) Areas where existing coating is removed and bare concrete is exposed apply one coat of Surfacer, minimum 1/16-inch thick as noted in 4.b. below.
3. Primer: Interior:
 - a. Generic Components:
 - 1) Minimum 61 percent volume solids, moisture curing urethane or modified aromatic polyurethane zinc-rich primer, 334 grams per liter VOC, maximum.
 - b. Products and Manufacturers: Provide one of the following:
 - 1) Series 1 Omnithane (TCI); Corothane I Galvapac Zinc Primer (SWC): One coat, 2.5 to 3.5 dry mils.
4. Filler, Surfacer and Patching Compound, shallow repairs:
 - a. Generic Components:
 - 1) 100% solids modified polyamine epoxy filler and surfacer.
 - b. Products and Manufacturers: Provide one of the following:
 - 1) Series 215 Filler/Surfacer (TCI); Steel Seam FT 910 Patching/Surfacer (SWC): One coat, 1/8-inch thick.
5. Intermediate Touchup: Interior:
 - a. Generic Components:

- 1) Minimum 67 percent solids, polyamindo-amine epoxy or cyloaliphatic amine epoxy; 290 grams per liter VOC.
 - b. Products and Manufacturers: Provide one of the following:
 - 1) Series N140 Pota-Pox Plus (TCI); Macropoxy 646 NSF (SWC): Two coats, 3.0 to 6.0 dry mils.
- 6. Finish: Semi-Gloss; Interior:
 - a. Generic Components:
 - 1) Minimum 67 percent solids, polyamindoamine epoxy; 8 grams per liter VOC.
 - b. Products and Manufacturers: Provide one of the following:
 - 1) Series 22 Pota-Pox 100 (TCI); Macropoxy 646 NSF (SWC): One or two coats, 20.0 to 30.0 dry mils.
- B. New and Existing Ferrous Metals, Interior Surfaces of Potable Water Storage Reservoirs, Galvanized Metals and Non-Ferrous Metals and Exterior Surfaces of Piping; Submerged and Intermittently Submerged, including up to 4.0 feet above liquid surface; Certified per ANSI/NSF Standard 61; Low VOC Content, Interior:
 - 1. Surface Preparation: Comply with manufacturer's published recommendations for material and surface condition.
 - 2. Prime/Finish: Semi-Gloss:
 - a. Generic Components:
 - 1) Minimum 100 percent solids, modified polyamine epoxy or flake-filled epoxy; 8 grams per liter VOC, maximum.
 - b. Products and Manufacturers: Provide one of the following:
 - 1) Series 22 Pota-Pox 100 (TCI); Plastite 140 S (TCC); Dura-Plate UHS NSF (SWC): Two coats, 8.0 to 10.0 dry mils, per coat.

2.4 INSTRUMENTS

- A. Instruments:
 - 1. Provide one new dry-film thickness gauge for checking film thickness, one holiday detector to detect holidays or holes in the coating, and one set of visual standards to check surface preparation. Calibrate dry film thickness gauge at Site using Bureau of Standards standard shim blocks.
 - 2. Products and Manufacturers: Provide the following:
 - a. Film Thickness Testers: Model FM-III manufactured by Mikrotest, or equal.
 - b. Holiday detector shall be Model M-1 as manufactured by Tinker & Rasor, or equal.
 - c. Visual Standards: ASTM D2200, Swedish Standards, SSPC VIS 1.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Examine areas and conditions under which painting Work is to be performed and notify ENGINEER in writing of conditions detrimental to proper and timely completion of Work. Do not proceed with Work until unsatisfactory conditions have been corrected in a manner acceptable to ENGINEER.
- B. Do not paint over existing paint where there is no assurance that existing paint will provide an acceptable surface for long-term adherence and durability of painting systems specified, or where paint manufacturer requires removal of all existing paint to recommend use of specified painting system.

3.2 PROTECTION OF PROPERTY AND STRUCTURES

- A. Protect property and structures adjacent to the Work from waste residues resulting from cleaning, surface preparation, and painting Work.
- B. Use shrouding, vacuum blasting, or other acceptable methods for cleaning and surface preparation of exterior surfaces.
- C. During blast cleaning and surface preparation of interior and exterior surfaces, control exhausting of dust and grit using shrouding, negative-pressure containment/dust collection systems, or other means to protect adjacent property and structures and prevent dust and grit from escaping. Similarly, control removal and temporarily store residues to protect adjacent property and structures.
- D. For painting of exterior surfaces, use rollers, shrouding, or other acceptable methods as required to protect adjacent property and structures from wind-blown paint residues.
- E. Submit proposed procedures for cleaning, surface preparation, and paint application that describe in detail methods to be used to protect adjacent property and structures from residues. Do not proceed with cleaning, surface preparation, or painting until proposed procedures are accepted by ENGINEER.

3.3 MATERIALS PREPARATION

- A. General: Mix and prepare painting products in strict accordance with paint manufacturer's product data sheets.

3.4 APPLICATION

A. General:

1. Apply paint systems by brush, roller, or airless spray per paint manufacturer's recommendations and in compliance with Paint Application Specifications No. 1 in SSPC Volume 2, where applicable, and in strict accordance with paint manufacturer's product data sheets.
2. Surfaces of items not normally exposed-to-view do not require same color as other components of system of which they are a part, but require same painting system specified for exposed surfaces of system.
3. Paint interior surfaces of ducts, where visible through registers or grilles, with a flat, non-specular black paint before final installation of registers or grilles.
4. Paint backs of access panels and removable or hinged covers to match exposed surfaces.
5. Omit field-applied primer on metal surfaces that have been primed in the shop. Touch-up paint to shop-primed coats and pre-finished items only when approved by ENGINEER using compatible primers and paint manufacturer's recommended compatible field-applied finishes.
6. Welds shall be stripe-coated with intermediate or finish coat of paint after application of prime coat.

B. Minimum/Maximum Paint Film Thickness: Comply with manufacturer's published recommendations for coating type and surface.

C. Scheduling Surface Preparation and Painting: Comply with manufacturer's published recommendations for coating type and surface.

D. Prime Coats: Recoat primed and sealed walls and ceilings where there is evidence of suction spots or unsealed areas in first coat, to result in a finish coat with no burn-through or other defects caused by insufficient sealing.

E. Pigmented (Opaque) Finishes: Completely cover to provide an opaque, smooth surface of uniform finish, color, appearance, and coverage.

F. Brush Application:

1. Brush-out and work all brush coats onto the surfaces in an even film. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections are unacceptable. Neatly draw all glass and color break lines.
2. Brush-apply all primer or first coats, unless otherwise allowed to use mechanical applicators.

G. Mechanical Applicators:

1. Use mechanical methods for applying paint when allowed by applicable ordinances, paint manufacturer, and approved by ENGINEER.

2. Limit roller applications, if approved by ENGINEER, to interior wall finishes for second and third coats. Apply each roller coat to provide equivalent hiding as brush-applied coats.
 3. Where spray application is used, apply each coat to provide equivalent hiding of brush-applied coats. Do not double back with spray equipment for purpose of building up film thickness of two coats in one pass.
- H. Completed Work: Match approved samples for color, texture, and coverage. Remove, refinish, or repaint Work not in compliance with specified requirements as required by ENGINEER.

3.5 FIELD QUALITY CONTROL

- A. Notify ENGINEER after completing each coat of paint. After inspection and checking of film thickness, holidays, and imperfections, and after acceptance by ENGINEER, proceed with succeeding coat. Perform testing using testing instruments specified in Article 2.4 of this Section.
1. ENGINEER will witness all testing and shall be notified of scheduled testing at least twenty-four hours in advance.
 2. Apply additional coats, if required, to produce specified film thickness and to correct holidays and to completely fill all surface air holes.
- B. For magnetic substrates, measure thickness of dry film nonmagnetic coatings following recommendations of SSPC PA-2. These procedures supplement manufacturers' approved instructions for manual operation of measurement gauges and do not replace such instructions.
- C. Record time, location, number of coats, dry film thickness, holidays, and other imperfections and submit testing results to ENGINEER.

3.6 PROTECTION

- A. Provide "Wet Paint" signs as required to protect newly painted finishes. After completing painting Work, remove temporary protective wrappings provided for protection of the Work.

3.7 ADJUSTMENT AND CLEAN-UP

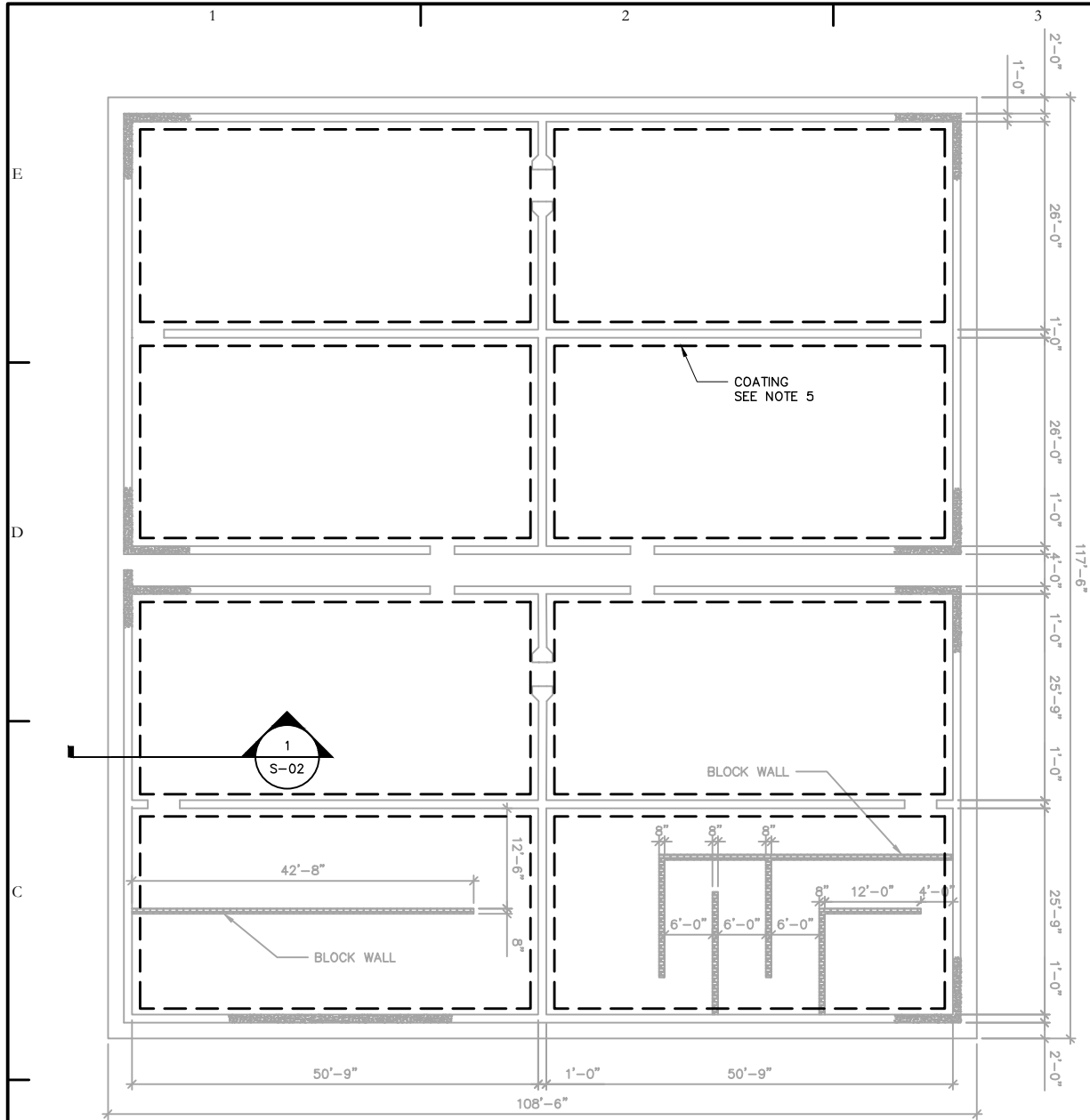
- A. Correct damage to work of other trades by cleaning, repairing or replacing, and repainting, as acceptable to ENGINEER.
- B. During progress of the Work, remove from Site all discarded paint products, rubbish, cans, and rags at end of each workday.

- C. Upon completion of painting, clean paint-spattered surfaces. Remove spattered paint by proper methods of washing and scraping, using care not to scratch or otherwise damage finished surfaces.
- D. At completion of Work of other trades, touch-up and restore all damaged or defaced painted surfaces as determined by ENGINEER.

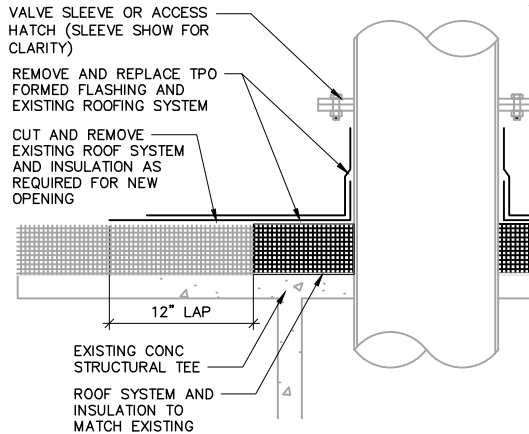
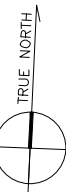
+ + END OF SECTION + +

THIS PAGE INTENTIONALLY LEFT BLANK

Use: UNREGISTERED USER: Spec: A US NC SMOOD File: G:\CADD\PROJECTS\7100 - CITY OF VENICE\VENICE\STRUCTURAL\Sheet11 Saved: 7/17/2017 1:22 PM Plot Date: 7/17/2017 1:41:11 Layout: 5

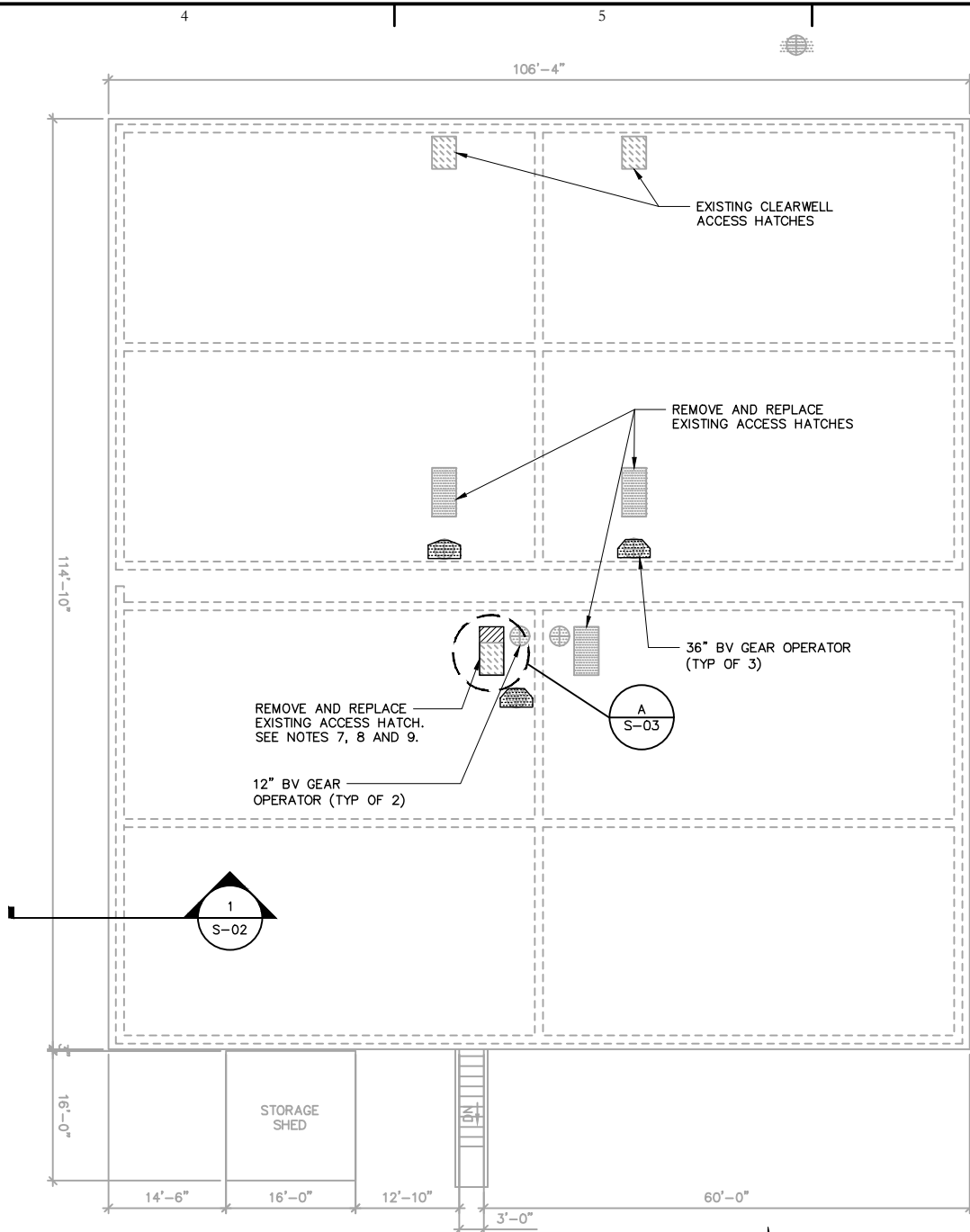


LOWER PLAN

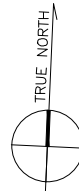


TYPICAL ROOF REPAIR DETAIL

SCALE: 1 1/2" = 1'-0"



ROOF PLAN



NOTES:

- ENTRANCE INTO CLEARWELL IS CONSIDERED A CONFINED SPACE ENTRY (PERMIT REQUIRED). CONTRACTOR SHALL ADMINISTER, MONITOR, AND PROVIDE ALL NECESSARY REQUIREMENTS FOR ENTRANCE INTO THE CLEARWELLS PER LAWS AND REGULATIONS.
- PRIOR TO START OF WORK, CONTRACTOR SHALL COORDINATE SCHEDULE AND SHUTDOWNS WITH OWNER.
- ONLY ONE CLEARWELL SHALL BE TAKEN OUT OF SERVICE AT A TIME.
- OWNER WILL FACILITATE DRAINING OF EACH CLEARWELL. ONCE TAKEN OUT OF SERVICE, CONTRACTOR SHALL REMOVE AND DISPOSE ALL SLUDGE AND DEBRIS FROM CLEARWELL. CONTRACTOR SHALL THEN EXAMINE ALL INTERIOR SURFACES FOR DETERIORATION AND CRACKS. CONTRACTOR SHALL IDENTIFY AREAS OF DETERIORATION AND CRACKS GREATER THAN 0.01-INCH IN WIDTH. ONCE IDENTIFIED, ENGINEER WILL REVIEW AREAS IDENTIFIED WITH CONTRACTOR TO CONFIRM REPAIRS, REPAIR LIMITS, AND REPAIR METHOD.
- REFER TO PAINTING SPEC 09 91 00 FOR SURFACE PREPARATION, AND APPLY COATING IN CONFORMANCE WITH SPECIFICATIONS AND MANUFACTURER'S REQUIREMENTS. CONTRACTOR SHALL MAINTAIN AMBIENT CONDITIONS DURING INSTALLATION IN CONFORMANCE TO MANUFACTURER'S REQUIREMENTS.
- PRIOR TO PUTTING A CLEARWELL BACK INTO SERVICE, CLEARWELL SHALL BE CLEANED AND DISINFECTED.
- REMOVE EXISTING ACCESS HATCH AND CURB PRIOR TO ENLARGING THE EXISTING OPENING. CUT BACK EXISTING ROOFING SYSTEM AS REQUIRED.
- FIELD VERIFY LOCATION OF DOUBLE TEE BEAMS PRIOR TO SAW CUT. SAW CUT DOUBLE TEE ROOF FOR REQUIRED OPENING SIZE FOR ACCESS HATCH (DO NOT CUT STEMS OF DOUBLE TEE BEAMS).
- INSTALL 4'-0" X 1'-9" ACCESS HATCH (WIDTH TO MATCH EXISTING HATCH) AND CURB AFTER EXISTING OPENING HAS BEEN ENLARGED AND REPAIR ROOF SYSTEM PER DETAIL A/-03.
- CONTRACTOR SHALL REPAIR ROOF IN AREAS IMPACTED BY NEW 36" BU EXTENSION SLEEVE PENETRATIONS THROUGH ROOF AND FOR THE NEW ACCESS HATCH INSTALLED.
- CONTRACTOR SHALL REPAIR AREA OF ROOF DAMAGED BY CONSTRUCTION TO ORIGINAL CONDITIONS AT NO ADDITIONAL COST TO OWNER.
- CONTRACTOR TO TAKE ALL NECESSARY PRECAUTIONS TO PREVENT BUOYANCY OF THE STRUCTURE WHEN THE CLEARWELL IS EMPTY TO PREVENT POSSIBLE DAMAGE TO THE CLEARWELL FOUNDATION SLAB. REFER TO SPECIFICATION 312305 FOR DEWATERING REQUIREMENTS.
- CONTRACTOR SHALL SUBMIT A BUOYANCY PREVENTION PLAN FOR REVIEW AND APPROVAL BY THE ENGINEER PRIOR TO INITIATING ANY WORK ON THE CLEARWELL STRUCTURES.
- CONTRACTOR SHALL NOT PLACE ANY HEAVY EQUIPMENT, INCLUDING THE 36" BUTTERFLY VALVES, ON CLEARWELL ROOF AT ANYTIME DURING CONSTRUCTION. ALL EQUIPMENT SHALL BE HANDLED WITH A CRANE ADJACENT TO THE CLEARWELL TO AVOID ANY ADDITIONAL LOADS ON THE CLEARWELL ROOF.



401 WEST VENICE AVENUE
VENICE, FLORIDA 34285
941-486-2626
WWW.VENICEGOV.COM

PROJECT NO.: 05710028.0000



CERTIFICATION OF
AUTHORIZATION NO. 7917
3109 W. DR. MARTIN LUTHER KING JR.
BLVD., STE 350
TAMPA, FL 33607

SEALS

ORIGINAL
SIGNED AND
SEALED SET
ON FILE

ADARSH B. SHAH, P.E.
LIC. NO. 79948

DATE

VENICE, FLORIDA

REVERSE OSMOSIS WATER
TREATMENT PLANT
CLEARWELL
IMPROVEMENTS

REV.	DATE	DESCRIPTION	BY
1	04/07/2017	ADDENDUM NO. 1	ABS

COPYRIGHT:

DATE: DECEMBER 2016

PROJECT NO.: 05710028.0000

FILE NAME: S-01

DESIGNED BY: V. VIEIRA

DRAWN BY: V. VIEIRA

CHECKED BY: M. PALTE

APPROVED BY: A. SHAH

SHEET TITLE

STRUCTURAL
CLEARWELL REPAIR
PLAN

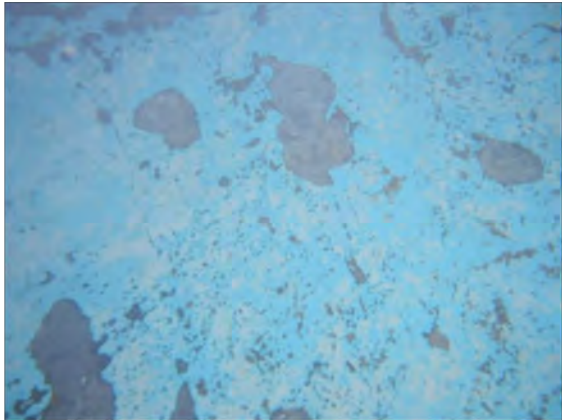
SCALE:

AS SHOWN

S-01

SHEET 5 OF 7

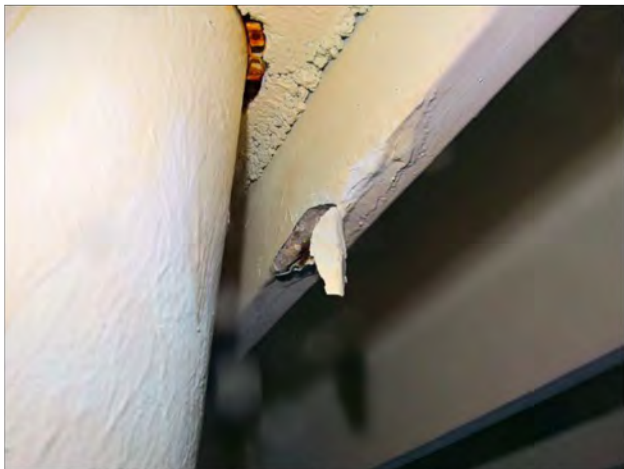
User:VNEGRO\VEIRA.Spec\AUS\NC\MOD File\G\CADD\ACAD\BROJ\5710 - CITY OF VENICE\03\08\09\01\02\DWG Scale:1:1 Saved Date: 7/7/2017 Time: 1:17 Plot Date: N/A Venice, Vanessa 4/7/2017 1:13:41 Layout: 6



TYPICAL PAINT SYSTEM FAILURE PHOTOS



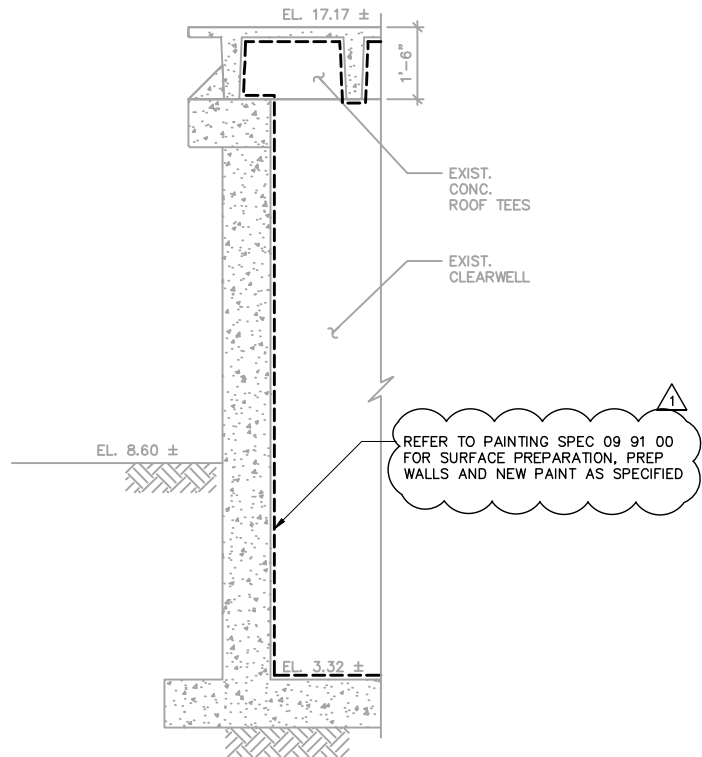
TYPICAL SPALL/EXPOSED REINFORCING PHOTOS



TYPICAL SPALL PHOTOS



TYPICAL CRACK PHOTO



- SHEET NOTES:
- SEE SHEET S-03 FOR TYPICAL CONCRETE REPAIR DETAILS.
 - SEE SHEET S-03 FOR REPAIR AND PAINTING QUANTITIES.



401 WEST VENICE AVENUE
VENICE, FLORIDA 34285
941-486-2626
WWW.VENICEGOV.COM

PROJECT NO.: 05710028.0000



CERTIFICATION OF
AUTHORIZATION NO. 7917
3109 W. DR. MARTIN LUTHER KING JR.
BLVD., STE 350
TAMPA, FL 33607

SEALS

ORIGINAL
SIGNED AND
SEALED SET
ON FILE

ADARSH B. SHAH, P.E.
LIC. NO. 79948

DATE

VENICE, FLORIDA

REVERSE OSMOSIS WATER
TREATMENT PLANT
CLEARWELL
IMPROVEMENTS

REV.	DATE	DESCRIPTION	BY
1	04/07/2017	ADDENDUM NO. 1	ABS

COPYRIGHT:

DATE:	DECEMBER 2016
PROJECT NO.:	05710028.0000
FILE NAME:	S-02
DESIGNED BY:	V. VIEIRA
DRAWN BY:	V. VIEIRA
CHECKED BY:	A. SHAH
APPROVED BY:	A. SHAH

SHEET TITLE

STRUCTURAL
CLEARWELL SECTION &
PHOTOS

SCALE:

AS SHOWN

S-02

SHEET 6 OF 7

Crowther Roofing Guarantee

Whereas Crowther Roofing & Sheet Metal of Florida, Inc. of 2543 Rockfill Road, Fort Myers, Florida 33916
Herein called "the contractor", has completed application of the following roof:

Project Name: City of Venice RO WTP Odor Control

Guarantee #: OO3972

Project Address: 200 N Warfield Avenue

City: Venice

State: FL

Zip Code: 34285

Owner: City of Venice

Owner Address: 401 W. Venice Avenue

City: Venice

State: FL

Zip Code: 34285

Total Area: 124 Squares

Roof Type: TPO

Term: 5 yrs

Warranty Start Date: 1/23/2017

Warranty End Date: 1/22/2022

Whereas at the inception of such work the contractor agreed to guarantee the aforesaid roof against faulty materials or workmanship for a limited period and subject to the conditions forth; Now, Therefore, the Contractor hereby Guarantees, subject to the conditions herein set forth, that during a period of 5 years from the date of completion of said roof, it will at its own cost and expense, make or cause to be made such repairs to said roof and composition flashing resulting solely from faults or defects in materials or workmanship applied by or through the Contractor as may be necessary to maintain said roof in watertight conditions.

This guarantee is made subject to the following conditions:

1. Specifically excluded from this guarantee is any and all damage to said roof, the building or content caused by the acts or omissions of other trades or contractors; lightning, hailstorm, or other unusual phenomena or the elements; foundation settlement; failure or cracking of the roof deck; defects or failure of material used as a roof base over which roof is applied, faulty construction of parapet walls, copings, chimneys, skylights, vents, supports, or other parts of the building; vapor condensation beneath the roof; penetrations for pitch boxes; or fire. If the roof is damaged by reason of any of the foregoing this guarantee shall thereupon become null and void for the balance of the guarantee unless such damage is repaired by the Contractor at the expense of the party requesting such repairs.
2. The Contractor is not liable for consequential damage to the building or contents resulting from any defects in said roof or composition flashing.
3. No work shall be done on said roof, including, but without limitations, work in connection with flues, vents, drains, sign braces, railings, platforms, or other equipment fastened to or set on the roof and no repairs or alterations shall be made to said roof, unless the Contractor shall be first notified, shall be given the

- opportunity to make necessary roofing application recommendations with respect thereto, and such recommendations are complied with. Failure to observe this condition shall render this guarantee null and void. The contractor shall be paid for time and material expended in making recommendations or repairs occasioned by the work of others on said roof.
4. This guarantee shall become null and void if roof is used as a promenade or work deck or is sprayed or flooded, unless such use was originally specified and the specification is noted in paragraph 8 below. Areas that pond to water shall not be covered by this guarantee.
 5. This guarantee shall not be or become effective unless and until the Contractor has been paid in full for said roof in accordance with the agreement pursuant to which such roof was applied.
 6. The guarantee shall become null and void unless the Contractor is promptly notified of any alleged defect in materials or workmanship and provided an opportunity to inspect the roof.
 7. This guarantee is in lieu of all other guarantees and warranties, express or implied. THERE ARE NO WARRANTIES OR GUARANTEES WHICH EXTEND BEYOND THE DESCRIPTION OF THE FACE HEREOF.
 8. Additional conditions or exclusions _____

In Witness Whereof, this instrument has been duly executed this 1 Day of March, 2017

Crowther Roofing & Sheet Metal of Florida, Inc.

By



Lee S Crowther - Chief Executive Officer



MEMBER
FORT MYERS CHAMBER OF COMMERCE
NATIONAL ROOFING CONTRACTORS ASSOC.
FLORIDA ROOFING AND SHEET METAL ASSOCIATION
Florida Contractors License # CCC 039822

RED SHIELD WARRANTY



RED SHIELD ROOFING SYSTEM LIMITED WARRANTY

Warranty No: RO111112

FBPCO # BG6553

Square Footage: 12400 s.f.

Building Owner: CITY OF VENICE

Building Identification: CITY OF VENICE RO WTP ODOR CONTROL SYSTEM REPLACEMENT

Building Address: 200 WARFIELD AVE N, VENICE, FL, 34285-4637

Warranty Period Of: TWENTY (20) Years, Beginning On: 01/23/17

Roofing Contractor: CROWTHER INC (05017)

For the warranty period indicated above, Firestone Building Products Company, LLC ("Firestone"), an Indiana limited liability company, warrants to the Building Owner ("Owner") named above that Firestone will, subject to the Terms, Conditions and Limitations set forth below, repair any leak in the Firestone Roofing System ("System").

TERMS, CONDITIONS AND LIMITATIONS

- Products Covered.** The System shall mean only the Firestone brand roofing membranes, Firestone brand roofing insulations, Firestone brand roofing metal, and other Firestone brand roofing accessories when installed in accordance with Firestone technical specifications by a Firestone-licensed applicator.
- Notice.** In the event any leak should occur in the System, the Owner must give notice in writing or by telephone to Firestone within thirty (30) days of any occurrence of a leak. Written notice may be sent to Firestone at the street address or fax number shown on the reverse side of this Limited Warranty. Evidence of this notice shall be the receipt by Owner of a Firestone Leak Notification Acknowledgement. By so notifying Firestone, the Owner authorizes Firestone or its designee to investigate the cause of the leak.
- Investigation.** If upon investigation, Firestone determines that the leak is not excluded under the Terms, Conditions and Limitations set forth in this Red Shield Roofing System Limited Warranty (the "Limited Warranty"), the Owner's sole and exclusive remedy and Firestone's total liability shall be limited to the repair of the leak. Should the investigation reveal that the leak is excluded under the Terms, Conditions and Limitations, the Owner shall be responsible for payment of the investigation costs. Failure by Owner to pay for these costs shall render this Limited Warranty null and void. Firestone will advise the Owner of the type and/or extent of repairs required to be made at the Owner's expense that will permit this Limited Warranty to remain in effect for the unexpired portion of its term. Failure by the Owner to properly make these repairs in a reasonable manner using a Firestone-licensed applicator and within 60 days shall render this Limited Warranty null and void.
- No Dollar Limit (NDL).** There is no dollar limit placed on warranted leak repairs to the extent such repairs are covered by this Limited Warranty.
- Disputes.** Any dispute, controversy or claim between the Owner and Firestone concerning this Limited Warranty shall be settled by mediation. In the event that the Owner and Firestone do not resolve the dispute, controversy or claim in mediation, the Owner and Firestone agree that neither party will commence or prosecute any suit, proceeding, or claim other than in the courts of Hamilton County in the state of Indiana or the United States District Court, Southern District of Indiana, Indianapolis Division. Each party irrevocably consents to the jurisdiction and venue of the above-identified courts.
- Payment Required.** Firestone shall have no obligation under this Limited Warranty unless and until Firestone and the licensed applicator have been paid in full for all materials, supplies, services, approved written change orders, warranty costs and other costs which are included in, or incidental to, the System. In the event that repairs not covered by this Limited Warranty are necessary in the future, Firestone reserves the right to suspend this Limited Warranty until such repairs have been completed and the licensed applicator and/or Firestone has been paid in full for such repairs.
Exclusions. Firestone shall have no obligation under this Limited Warranty, or any other liability, now or in the future if a leak or damage is caused by: (a) Natural forces, disasters, or acts of God including, but not limited to, fires, hurricanes, tornadoes, hail, wind-blown debris, lightning, earthquakes, volcanic activity, atomic radiation, insects or animals; (b) Winds of peak gust speed at or in excess of 55 MPH calculated at ten(10) meters above ground using available meteorological data; (c) Act(s), conduct or omission(s) by any person, or act(s) of war, terrorism or vandalism, which damage the System or which impair the System's ability to resist leaks; (d) Failure by the Owner to use reasonable care in maintaining the System, said maintenance to include, but not be limited to, those items listed on the reverse side of this Limited Warranty entitled "Building Envelope Care and Maintenance Guide"; (e) Deterioration or failure of building components, including, but not limited to, the roof substrate, walls, mortar, HVAC units, skylights etc.; (f) Construction generated moisture, condensation or infiltration of moisture in, from, through, or around the walls, copings, rooftop hardware or equipment, skylights, building structure or underlying or surrounding materials; (g) Acid, oil, harmful chemicals, or the reaction between them; (h) Alterations or repairs to the System that are not completed in accordance with Firestone's published specifications, not completed by an approved contractor, and/or not completed with proper notice to Firestone; (i) The design of the roofing system: Firestone does not undertake any analysis of the architecture or engineering required to evaluate what type of System is appropriate for a building and makes no warranty express or implied as to the suitability of its Products for any particular structure; such a determination is the responsibility of the architect, engineer or design professional; (j) Improper selection of materials for the roof assembly or the failure to accurately calculate wind uplift and/or roof loads; (k) Deterioration to metal roofing materials and accessories caused by marine salt water, atmosphere, or by regular spray of either salt or fresh water; or, (l) Change in building use or purpose.
- Transfer.** This Limited Warranty shall be transferable subject to Owner's payment of the current transfer fee set by Firestone.
- Term.** The term of this Limited Warranty shall be for the period set forth above and such term shall not be extended under any circumstances.
- Roof Access.** During the term of this Limited Warranty, Firestone's designated representative or employees shall have free access to the roof during regular business hours. In the event that roof access is limited due to security or other restrictions, Owner shall reimburse Firestone for all reasonable cost incurred during inspection and/or repair of the System that are due to delays associated with said restrictions. Owner shall be responsible for the damage caused by, removal and replacement of any overburdens, superstrata or overlays, either permanent or temporary, excluding accepted stone ballast or pavers, as necessary to expose the system for inspection and/or repair.
- Waiver.** Firestone's failure to enforce any of the terms or conditions stated herein shall not be construed as a waiver of such provision or of any other terms and conditions of this Limited Warranty.
- Governing Law.** This Limited Warranty shall be governed by and construed in accordance with the laws of the State of Indiana without regard to that State's rules on conflict of laws.
- Severability.** If any portion of this Limited Warranty is held by a court of competent jurisdiction to be invalid, void or unenforceable, the remaining provisions shall nevertheless continue in full force.

FIRESTONE DOES NOT WARRANT PRODUCTS INCORPORATED OR UTILIZED IN THIS INSTALLATION THAT WERE NOT FURNISHED BY FIRESTONE. FIRESTONE SPECIFICALLY DISCLAIMS LIABILITY UNDER ANY THEORY OF LAW ARISING OUT OF THE INSTALLATION OF, PERFORMANCE OF, OR DAMAGES SUSTAINED BY OR CAUSED BY, PRODUCTS NOT FURNISHED BY FIRESTONE.

THIS LIMITED WARRANTY SUPERSEDES AND IS IN LIEU OF ALL OTHER WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, AND FIRESTONE HEREBY DISCLAIMS ALL SUCH WARRANTIES. THIS LIMITED WARRANTY SHALL BE THE OWNER'S SOLE AND EXCLUSIVE REMEDY AGAINST FIRESTONE, AND FIRESTONE SHALL NOT BE LIABLE FOR ANY CONSEQUENTIAL, SPECIAL, INCIDENTAL OR OTHER DAMAGES INCLUDING, BUT NOT LIMITED TO, LOSS OF PROFITS OR DAMAGES TO THE BUILDING OR ITS CONTENTS OR THE ROOF DECK. THIS LIMITED WARRANTY CANNOT BE AMENDED, ALTERED OR MODIFIED IN ANY WAY EXCEPT IN WRITING SIGNED BY AN AUTHORIZED OFFICER OF FIRESTONE. NO OTHER PERSON HAS ANY AUTHORITY TO BIND FIRESTONE WITH ANY REPRESENTATION OR WARRANTY WHETHER ORAL OR WRITTEN.

FIRESTONE BUILDING PRODUCTS COMPANY, LLC

By: Chris Huettig

Authorized

Signature:

Title:

Director, Quality Building Services

Firestone

BUILDING ENVELOPE CARE AND MAINTENANCE GUIDE (For Red Shield Warranted Roofing Systems)

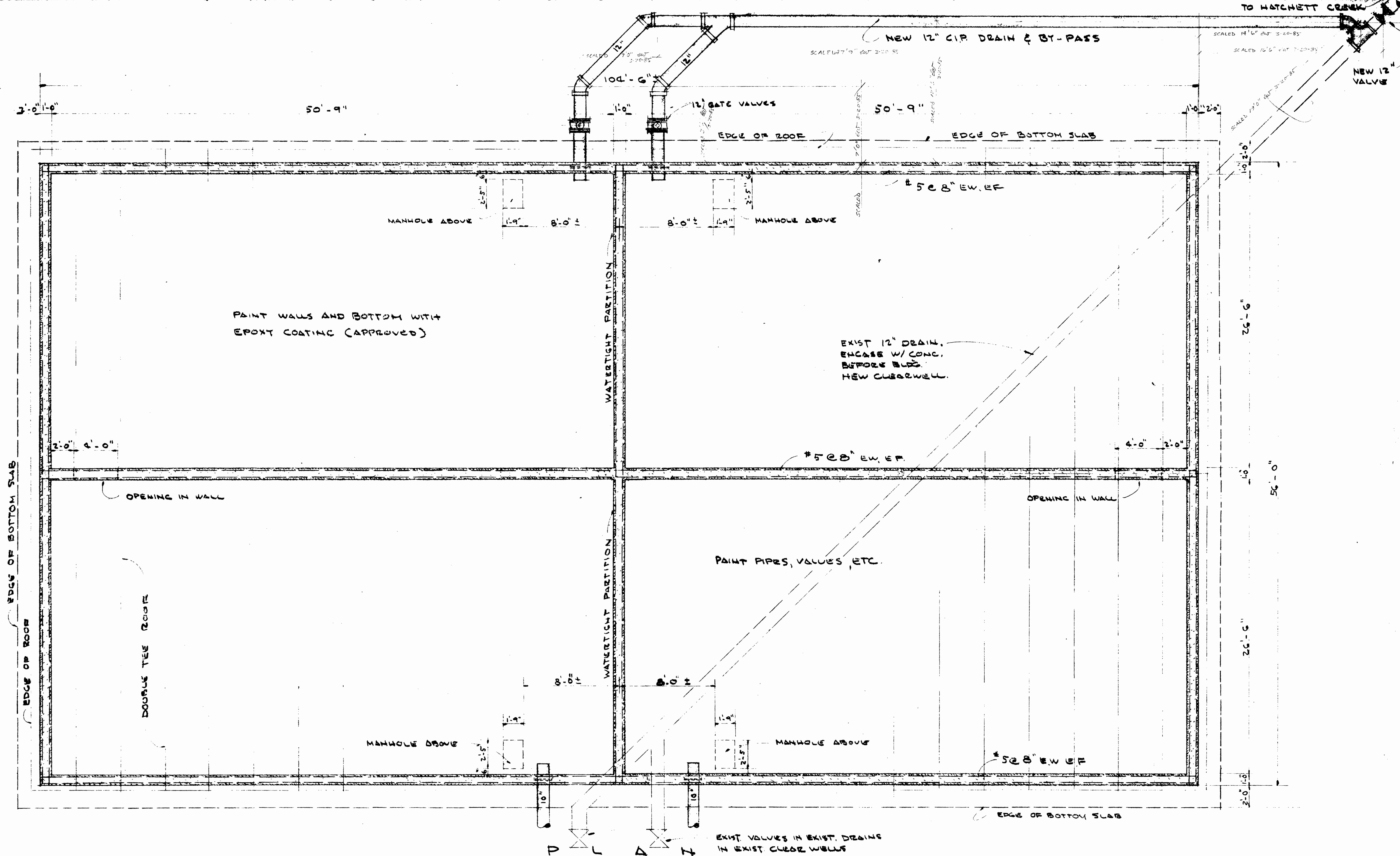
Congratulations on your purchase of a Firestone Roofing System! Your roof is a valuable asset that should be properly maintained. **Firestone Building Products recommends that all roofs and roofing systems receive periodic inspections and maintenance to ensure that they perform as designed.**

1. The roof should be inspected at least twice yearly and after any severe storms. A record of all inspection and maintenance activities should be maintained, including a listing of the date and time of each activity as well as the identification of the parties performing the activity.
2. Proper maintenance and good roofing practice require that ponded water (defined as water standing on the roof forty-eight hours after it stops raining) not be allowed on the roof. Roofs should have slope to drain, and all drain areas must remain clean. Bag and remove all debris from the roof since such debris can be quickly swept into drains by rain. This will allow for proper water run-off and avoid overloading the roof.
3. The Firestone Roofing System should not be exposed to acids, solvents, greases, oil, fats, chemicals and the like. If the Firestone Roofing System is in contact with any such materials, these contaminants should be removed immediately and any damaged areas should be inspected by a Firestone Licensed Applicator and repaired if necessary.
4. The Firestone Roofing System is designed to be a waterproofing membrane and not a traffic surface. Roof traffic other than periodic traffic to maintain rooftop equipment and conduct periodic inspections should be prohibited. In any areas where periodic roof traffic may be required to service rooftop equipment or to facilitate inspection of the roof, protective walkways should be installed by a Firestone Licensed Applicator as needed to protect the roof surface from damage.
5. Firestone recommends periodic maintenance for some roofing membranes:
 - a. **Smooth-surfaced Firestone APP membranes** should be coated with an approved liquid coating, such as Firestone Aluminum Roof Coating or Firestone AcryliTop applied in accordance with Firestone specifications, in order to maximize the service life of the membrane. If this coating is not applied as part of the initial roofing installation, it should be applied within the first five years after the roof is installed to help protect the membrane from surface crazing and cracking. In addition, this coating should be maintained as needed to re-coat any areas that have blistered, peeled or worn through.
 - b. **Granule-surfaced Firestone APP and SBS membranes** do not normally need surface maintenance other than periodic inspection for contaminants, cuts or punctures. If areas of granular loss are discovered during inspection, these areas should be coated with Firestone AcryliTop or other Firestone-approved coating applied in accordance with Firestone specifications.
 - c. **Gravel-surfaced Firestone BUR membranes** do not normally need surface maintenance other than periodic inspection for contaminants or damage. If areas of gravel loss are discovered during inspection, gravel shall be reinstalled into hot asphalt to protect the surface of the membrane. Coatings on smooth surface BUR membranes shall be maintained as needed to re-coat any areas that have blistered, peeled or worn through.
 - d. **Firestone EPDM and TPO roofing membranes** do not normally need surface maintenance other than periodic inspection for contaminants, cuts or punctures. Occasionally, approved liquid roof coatings, such as Firestone AcryliTop, are applied to the surface of EPDM membranes in order to provide a lighter surface color. Such coatings do not need to be maintained to assure the performance of the underlying EPDM roof membrane, but some maintenance and re-coating may be necessary in order to maintain a uniform surface appearance.
 - e. **Firestone Una-Clad metal roofing panels and trim** do not normally need surface maintenance other than periodic inspection for contaminants or damage. In addition, periodic cleaning of the surface may be needed to remove dirt and maintain the aesthetic appearance of the coated metal. Simple washing with plain water using hoses or pressure spray equipment is usually adequate. If cleaning with agents other than water is contemplated, several precautions should be observed: (1) do not use wire brushes, abrasives, or similar cleaning tools which will mechanically abrade the coating surface, and (2) cleaning agents should be tested in an inconspicuous area before use on a large scale.
6. All metal work, including counter-flashings, drains, skylights, equipment curbs and supports, and other Firestone brand rooftop accessories should be properly maintained at all times. Particular attention should be paid to sealants at joints in metal work and flashings. If cracking or shrinkage is observed, the joint sealant should be removed and replaced with new sealant.
7. Any alterations to the roof, including but not limited to roof curbs, pipe penetrations, roof-mounted accessories, and tie-ins to building additions must be performed by a licensed Firestone Licensed Applicator and reported to Firestone. Additional information and reporting forms for roof alterations are available at www.firestonebpco.com.
8. Should you experience a leak:
 - (a) Check for the obvious: clogged roof drains, loose counterflashings, broken skylights, open grills or vents, broken water pipes.
 - (b) Note conditions resulting in leakage. Heavy or light rain, wind direction, temperature and time of day that the leak occurs are all-important clues to tracing roof leaks. Note whether the leak stops shortly after each rain or continues to drip until the roof is dry. If you are prepared with the facts, the diagnosis and repair of the leak can proceed more rapidly.
 - (c) Contact Firestone Warranty Claims at 1-800-830-5612 as soon as possible...but please don't call until you are reasonably sure that the Firestone Roofing System is the cause of the leak.

Firestone feels that the preceding requirements will assist you, the building owner, in maintaining a watertight roof for many years. Your roof is an investment, and maintenance is essential to maximize your return on this important investment.

Firestone
BUILDING PRODUCTS
NOBODY COVERS YOU BETTER.®

250 West 96th Street – Indianapolis, IN 46260
1-800-428-4442 * 1-317-575-7000 * FAX 1-317-575-7100
www.firestonebp.com



ALL PIPES C.I., 150 PSI CLASS

SCALE: 1/4" = 1'-0"

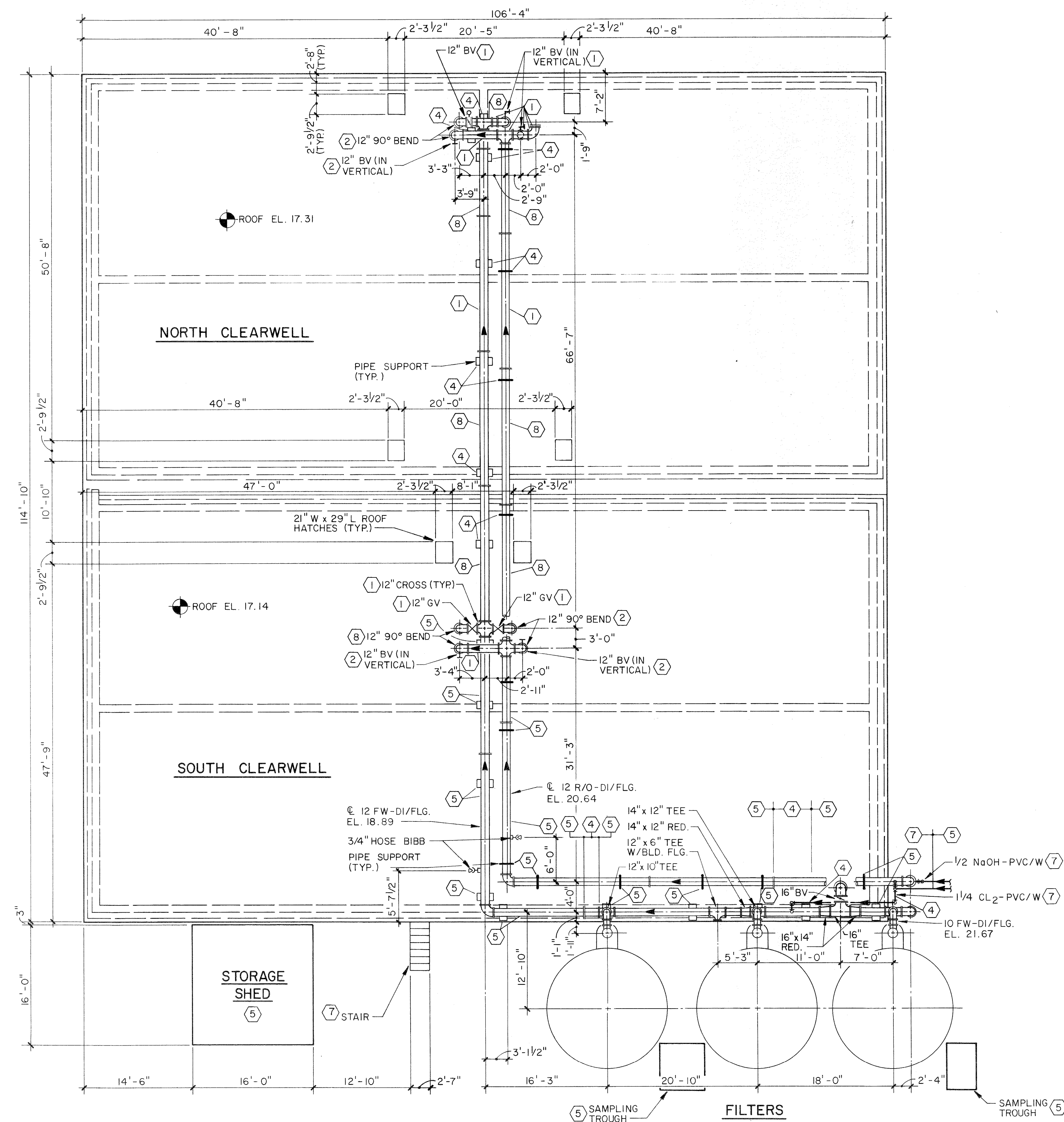
C L E A R W E L L P L A N

REVISD JUNE 13, 1975, "AS BUILT"

SHEET 12 OF 13

LEGEND

- (1) TO BE REMOVED, SALVAGED AND STORED AT PLANT SITE
- (2) TO BE REMOVED, RENOVATED AND REUSED IN PROJECT
- (3) TO BE ABANDONED
- (4) TO BE REMOVED
- (5) TO REMAIN IN SERVICE
- (6) TO BE REHABILITATED/RETROFITTED
- (7) TO BE REMOVED AND REPLACED WITH NEW EQUIPMENT, PIPING, VALVES, FITTINGS, ETC.
- (8) TO BE RELOCATED

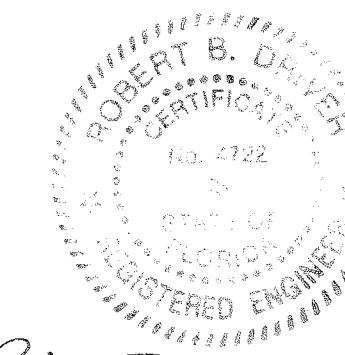
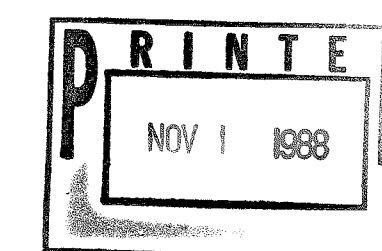


UPPER PLAN

SCALE: 1/8" = 1'-0"

NOTES

1. ALL EXIST. 12" BUTTERFLY VALVES ARE WAFER TYPE. WHEN RELOCATING PROVIDE NEW BOLTS OF ADEQUATE LENGTH FOR INSTALLATION.



CONFORMED

Robert B. Driver

WATER TREATMENT PLANT - CLEARWELL MODIFICATIONS

CLEARWELLS - UPPER PLAN
EXISTING & DEMOLITION

CITY OF VENICE, FLORIDA

CAMP DRESSER & MCKEE INC.

CDM

DESIGNED BY: JWS
DRAWN BY: ALS
CHECKED BY: RBD
APPROVED BY: RDM
DATE: JULY 1, 1988

REMARKS

PROJECT NO.

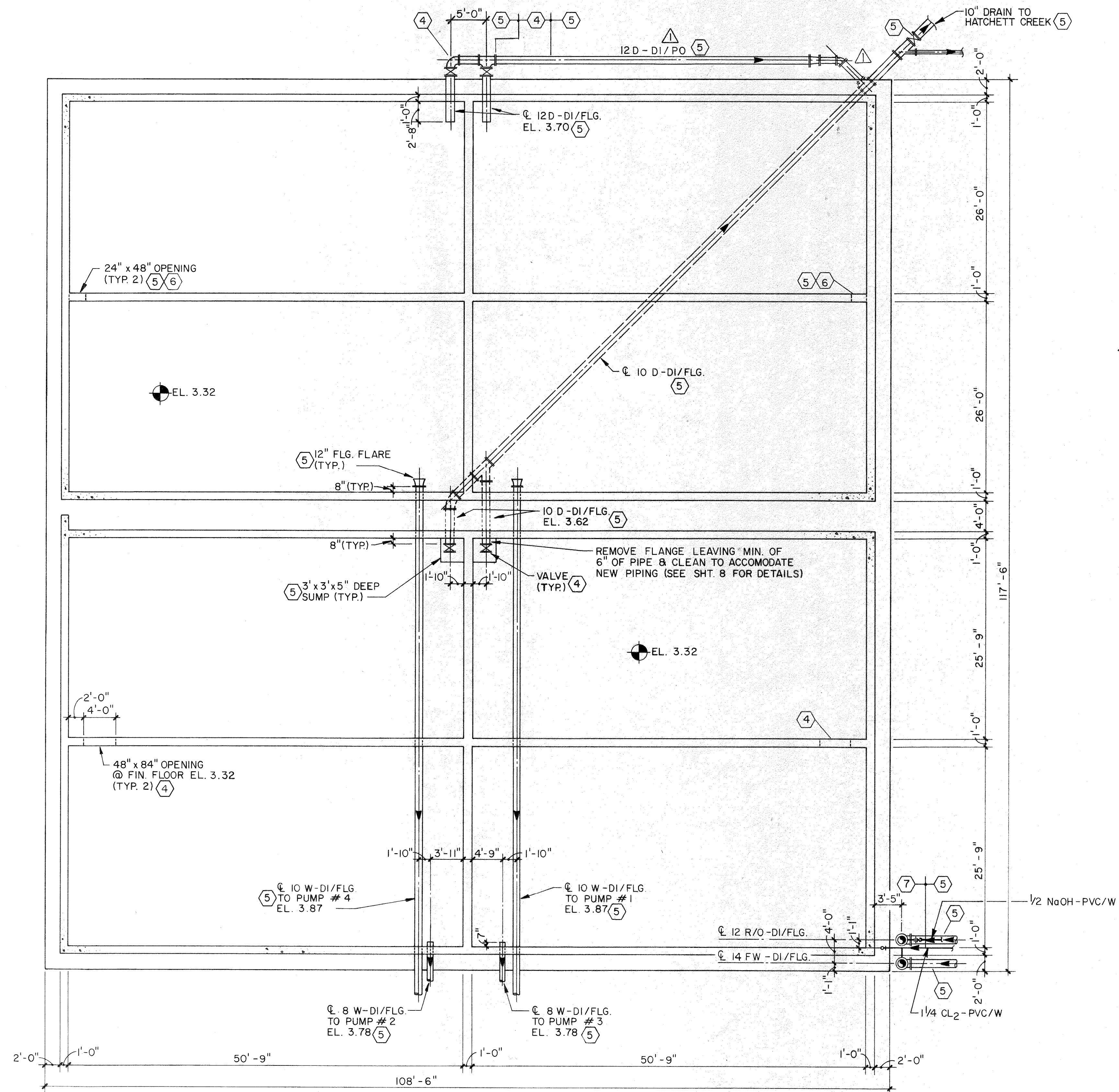
6067 - 29

SHEET NO.

5

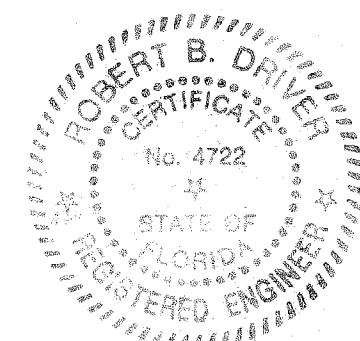
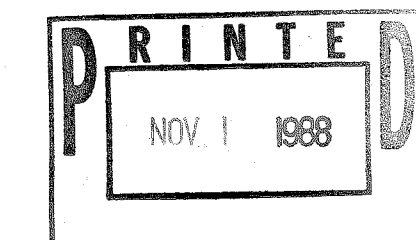
LEGEND

- (1) TO BE REMOVED, SALVAGED AND STORED AT PLANT SITE
- (2) TO BE REMOVED, RENOVATED AND REUSED IN PROJECT
- (3) TO BE ABANDONED
- (4) TO BE REMOVED
- (5) TO REMAIN IN SERVICE
- (6) TO BE REHABILITATED/RETROFITTED
- (7) TO BE REMOVED AND REPLACED WITH NEW EQUIPMENT, PIPING, VALVES, FITTINGS, ETC.
- (8) TO BE RELOCATED



LOWER PLAN

SCALE: 1/8" = 1'-0"



CONFORMED

Robert B. Driver

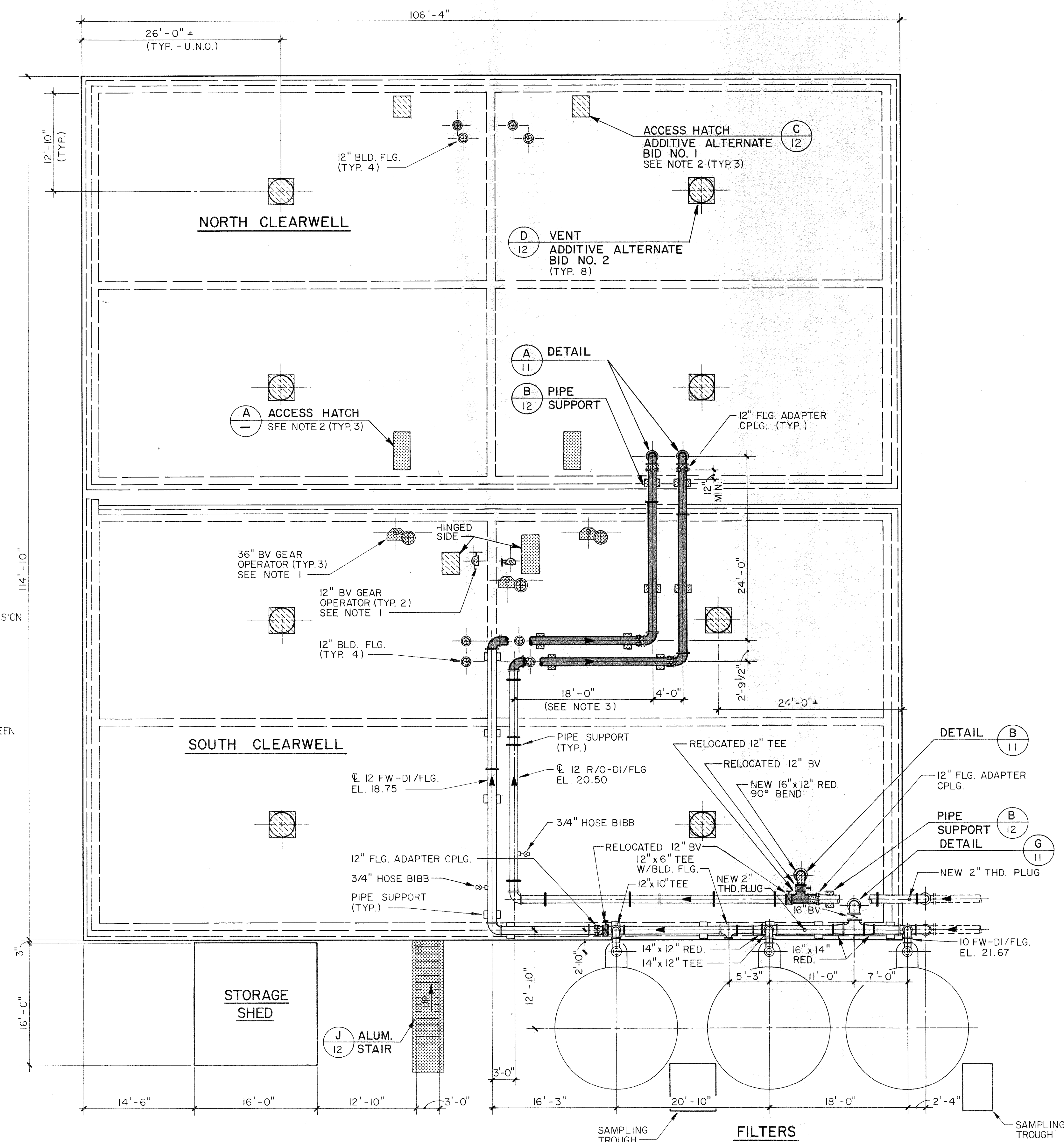
WATER TREATMENT PLANT - CLEARWELL MODIFICATIONS										CAMP DRESSER & MCKEE INC.										DESIGNED BY JWS										REV NO										DATE										DRWN										CHKD										REMARKS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
CLEARWELLS - LOWER PLAN - EXISTING & DEMOLITION										CITY OF VENICE, FLORIDA										DRAWN BY ALS										CHECKED BY RBD										APPROVED BY RDM										DATE JULY 1988										8/25/88										ALS										RBD										CHANGED 12" VCP/PO TO 12" DI/PO, AND PIPE ROUTE AS SHOWN - ADDENDUM NO. 1																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
PROJECT NO										6067 - 29										SHEET NO										6																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															

FRONT VIEW

SIDE VIEW

ACCESS HATCH

DETAIL (A)
N.T.S.



UPPER PLAN

SCALE : 1/8" = 1'-0"

NOTES

1. FOR LOCATION OF GEAR OPERATORS
SEE VALVE LOCATIONS AS SHOWN
ON LOWER PLAN ON SHT. 8.
2. PRIOR TO THE INSTALLATION OF NEW
ACCESS HATCHES (& ADDITIVE ALTERNATE
BID NO. 1), EXISTING HATCHES AND
FRAMES MUST BE REMOVED.
3. FIELD VERIFY LOCATION OF DOUBLE TEE
BEAMS PRIOR TO INSTALLATION OF
"WALL SLEEVES".
4. ALL DIMENSIONS ARE TO BE FIELD
VERIFIED.

PRINTED
NOV 1 1988

ROBERT B. DRIVER
CERTIFICATE
No. 4722
STATE OF
FLORIDA

CONFORMED

Robert B. Prince

PROJECT NO
6067 - 29

SHEET NO. _____

7

CAMP DRESSER & MCKEE INC.

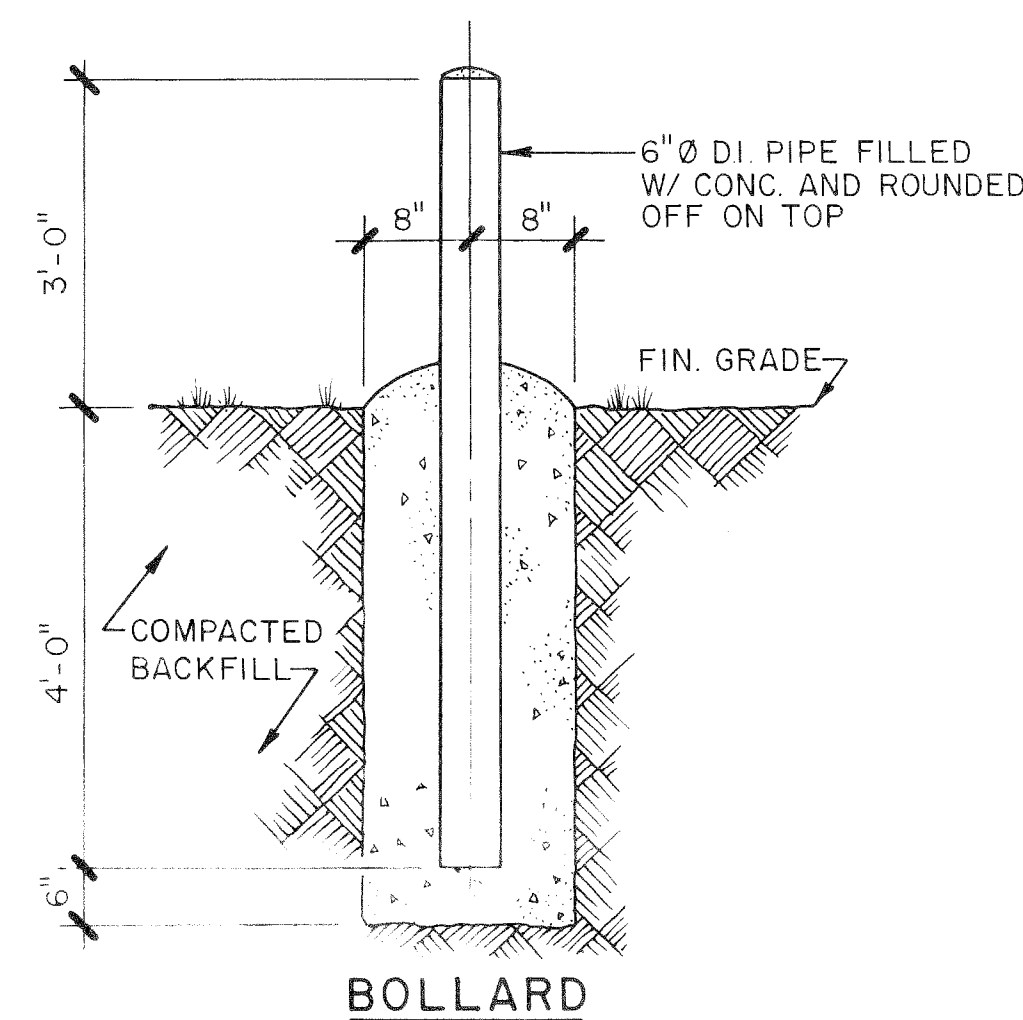
WATER TREATMENT PLANT - CLEARWELL MODIFICATIONS
CLEARWELLS - MODIFIED UPPER PLANS

CITY OF VENICE, FLORIDA

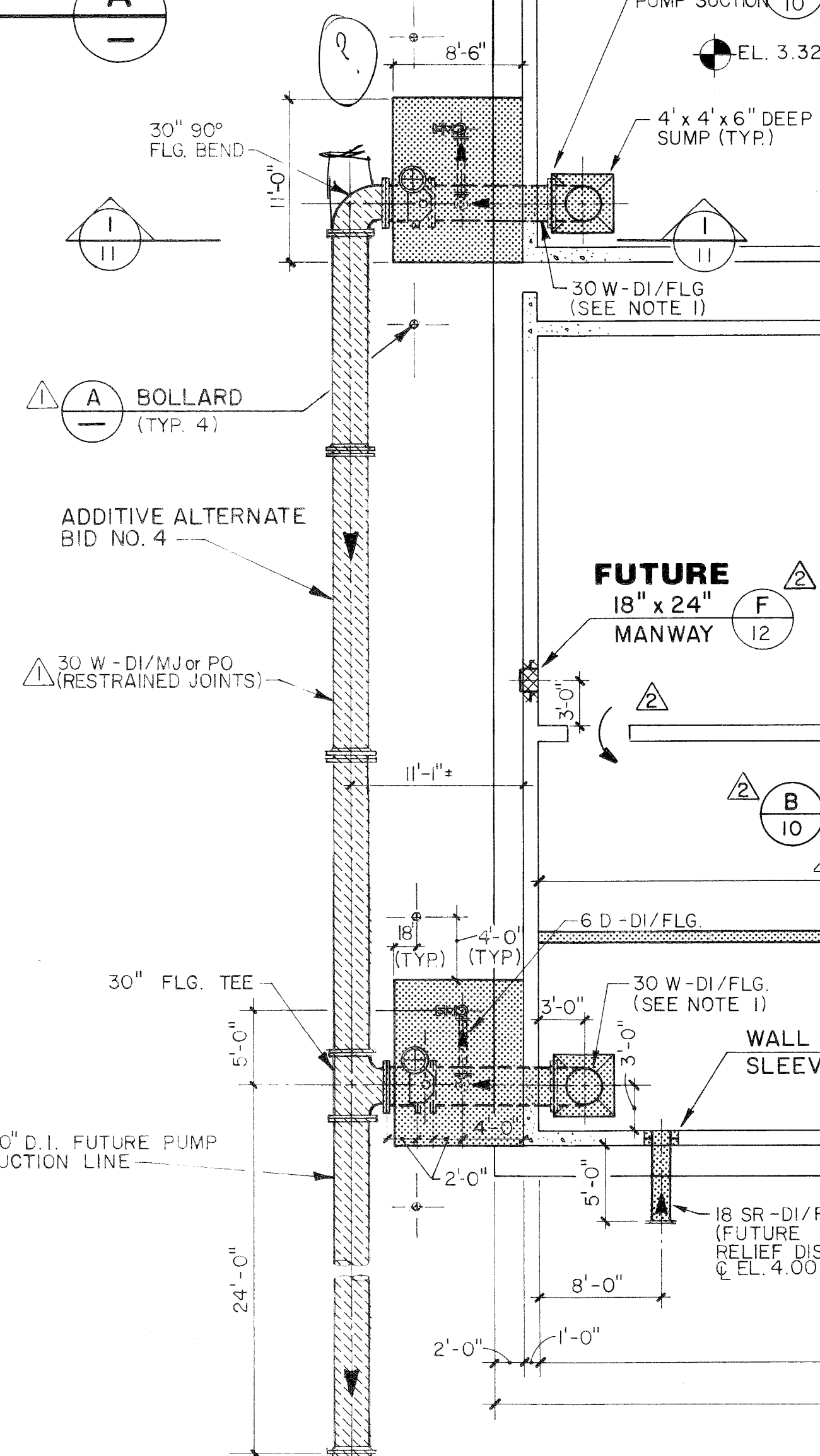
CDM
environmental engineers scientists
planners & management consultants

DESIGNED BY	JWS
DRAWN BY	ALS
CHECKED BY	RBD
APPROVED BY	RDM
DATE	JULY, 1988

REV.	DATE	DRWN	CHKD	REMARKS
------	------	------	------	---------



DETAIL A
N.T.S.



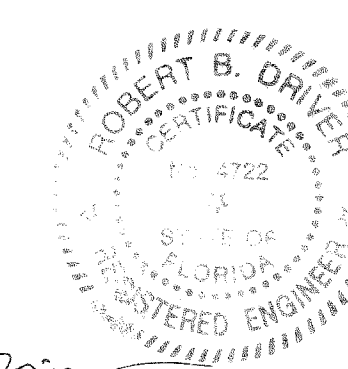
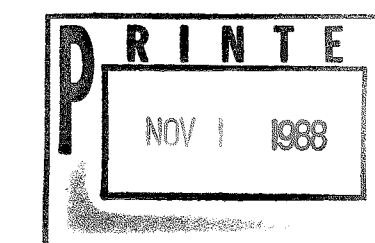
NOTES:

- CONTRACTOR IS ADVISED THAT ALL EXCAVATION FOR THE FUTURE 30" PUMP SUCTION LOCATED ON THE WEST SIDE OF THE CLEARWELLS AND THE 12" EMERGENCY OVERFLOWS LOCATED ON THE NORTH SIDE OF THE CLEARWELLS SHALL NOT BE MACHINE EXCAVATED WITHIN 3' OF THE CLEARWELL WALLS. UNLESS OTHERWISE DIRECTED BY THE ENGINEER SHALL BE PERFORMED BY HAND.
- CONTRACTOR SHALL VERIFY SIZE, LOCATION, WALL THICKNESS, HEIGHTS, GRADES, ETC. OF ALL EQUIPMENT, PIPING, VALVES, FITTINGS AND APPURTENANCES PRIOR TO PURCHASE AND/OR FABRICATION OF MATERIALS.

LOWER PLAN

SCALE: 1/8" = 1'-0"

FROM 2nd TANK



CONFORMED

Robert B. Driver

WATER TREATMENT PLANT - CLEARWELL MODIFICATIONS
CLEARWELLS - MODIFIED LOWER PLAN

CITY OF VENICE, FLORIDA

CAMP DRESSER & MCKEE INC.

CDM

DESIGNED BY	DATE	CHKD	REMARKS
JWS	8/25/88	ALS	REVALT NO. 4 PS SUCTION JTS. ADD BOLLARD DETAIL AND NOTE 2 - ADDENDUM NO. 1
DRAWN BY	DATE	CHKD	
ALS	9/30/88	DLC	REVISED WALLS
CHECKED BY	DATE	CHKD	
RBD	JULY	RBD	
APPROVED BY	DATE	CHKD	
RDH			

PROJECT NO.
6067-29

SHEET NO.

8

DESIGN CRITERIA
CODES:

- STANDARD BUILDING CODE -- 1985 (REV. 1986)
- SANITARY STRUCTURES: ACI-350R-83 "CONCRETE SANITARY ENGINEERING STRUCTURES"
- OTHER STRUCTURES: ACI318-83 "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE"

ALL ACCESSORIES SHALL BE IN CONFORMANCE WITH ACI-315 REQUIREMENTS.

THE CONTRACTOR SHALL PREPARE DETAIL PLACEMENT DRAWINGS AND SCHEDULES IN CONFORMANCE WITH ACI-315 REQUIREMENTS.

DESIGN CRITERIA:

-- DESIGN COMP. STRENGTH OF MASONRY AT 28 DAYS -- $f'_m = 1350$ PSI

-- ALLOWABLE STEEL STRESS ----- $f_s = 24,000$ PSI

- THE NATIONAL CONCRETE MASONRY ASSOCIATION "SPECIFICATIONS FOR DESIGN AND CONSTRUCTION OF LOAD BEARING STRUCTURES."
- ACI 531-79 "BUILDING CODE REQUIREMENTS FOR REINFORCED MASONRY STRUCTURES."

- BLOCK: CONFORM TO ASTM C-90 -- GRADE N, TYPE I TWO-CELL, 8"x8"x16" (COMPRESSIVE STRENGTH, GROSS AREA 1000 PSI)
- MORTAR: CONFORM TO ASTM C476, TYPE PM. MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS -- 2500 psi
- GROUT: CONFORM TO C476, COARSE GROUT. MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS -- 2500 psi
- STEEL: DUR-O-WAL OR EQUAL JOINT REINFORCEMENT AT EVERY THIRD COURSE (24" O.C.) BOND BEAM AND FILLED CELL. REINFORCEMENT AS PER DRAWINGS -- ASTM A615 -- GRADE 60

- ALL FILLED CELLS AND COLUMNS SHALL BE POURED AT LEAST TWO (2) HOURS PRIOR TO POURING UNTEL BLOCK OR THE BEAMS.
- MAX. CONSTRUCTION HEIGHT OF MASONRY WALLS WITHOUT FILLED CELL OR COLUMN POIRS IS TO BE 8'-0". THE CONCRETE FOR FILLED CELLS SHALL BE RODDED OR PUDDLED DURING PLACEMENT TO INSURE COMPLETE FILLING TO THE BLOCK CORE.
- PROVIDE CLEAN OUT AND INSPECTION BLOCK OUTS IN CELLS CONTAINING REINF.

STRUCTURES WERE DESIGNED TO BE NON-BOUYANT AFTER THE FOUNDATION EXCAVATIONS ARE TOTALLY BACKFILLED. THEREFORE, THE STRUCTURE MAY BE BOUYANT DURING CONSTRUCTION. GENERAL CONTRACTOR SHALL PROTECT ALL STRUCTURES FROM FLOTATION DURING CONSTRUCTION, REGARDLESS OF GROUND WATER LEVELS, UNTIL STRUCTURES ARE PLACED IN OPERATION.

REINFORCING STEEL

- ALL BARS ASTM A615-60	60,000 PSI
- WELDED WIRE FABRIC ASTM 185	---

— SEE REINFORCED CONCRETE MASONRY NOTES.

ALL STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH THE ARCHITECTURAL, MECHANICAL, CIVIL, ELECTRICAL, AND SHOP DRAWINGS AND SPECIFICATIONS.

THE CONTRACTOR SHALL REVIEW AND VERIFY DIMENSIONS SHOWN IN ALL PLANS AND REVIEW ALL FIELD CONDITIONS THAT MAY AFFECT THE INSTALLATION OF THE FACILITY. SHOULD DISCREPANCIES APPEAR, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING TO OBTAIN ENGINEER'S CLARIFICATION BEFORE COMMENCING THE WORK.

THE CONTRACTOR SHALL TAKE ANY AND ALL NECESSARY MEASURES TO PROTECT EXISTING STRUCTURES FROM DAMAGE WHEN WORKING IN AND AROUND EXISTING STRUCTURES PERFORMING WORK SUCH AS DEMOLITION, FOUNDATION EXCAVATION, AND OTHERS.

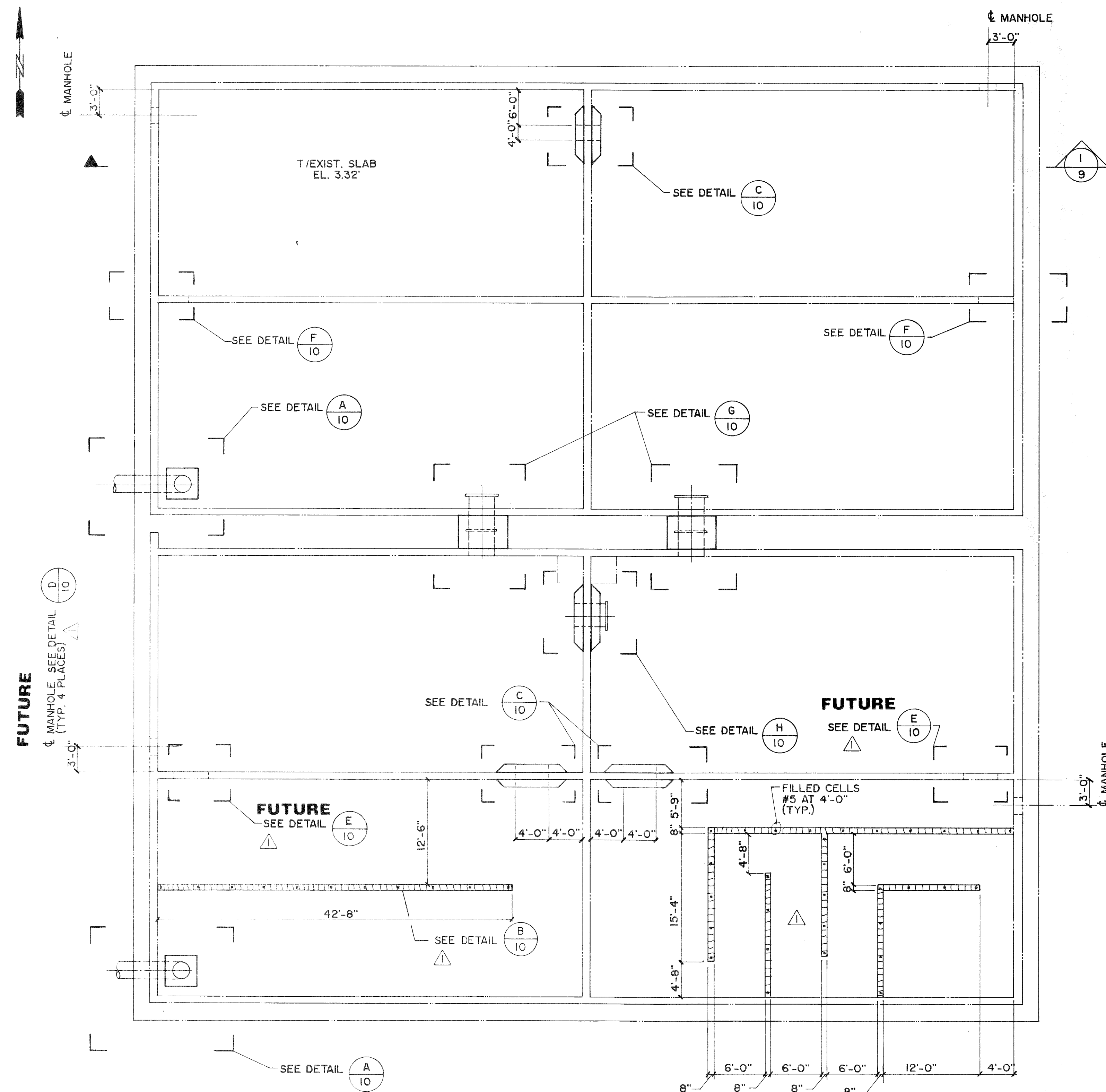
ALL MATERIALS AND METHODS OF CONSTRUCTION SHALL BE IN ACCORDANCE WITH ACI-318-83 REQUIREMENTS.

ALL CONCRETE SHALL BE AIR-ENTRAINED WITH 4000 PSI COMPRESSIVE STRENGTH AT 28 DAYS. WORKING SLAB CONCRETE SHALL HAVE A 28-DAY COMPRESSIVE STRENGTH OF 2500 PSI.


WATER REDUCING AGENT SHALL BE IN ACCORDANCE WITH ASTM C494.

ALL CONCRETE SURFACES EXPOSED TO AIR, UNLESS OTHERWISE NOTED IN SPECIFICATIONS, SHALL BE TREATED WITH AN APPROPRIATE CURING COMPOUND AS SOON AS CEMENT FINISHING IS COMPLETED OR FORMS ARE REMOVED.

ALL EXPOSED CORNERS OF CONCRETE SHALL HAVE A MINIMUM CHAMFER OF 3/4" UNLESS OTHERWISE NOTED.

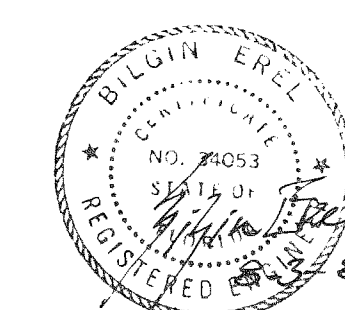


SECTION 1
9
1/8" = 1'-0"



PRINTED
NOV 1 1988

CONFORMED



STI structural technologies inc.
CONSULTING ENGINEERS
Wakiva Business Center
Suite 120, 1428 East Semoran Blvd., Apopka, Florida 32703
(407) 889-9660

DRAWN BY : MSR
CHECKED BY : MFS
APPROVED BY : BE
DATE : JULY 1988
SCALE : AS SHOWN
88-142

SINOCOLOGICAL PLAN AND NOTES

CITY OF VENICE, FLORIDA

DAVID DUNLOP & MCKEE LTD.

Barriers & management consultants

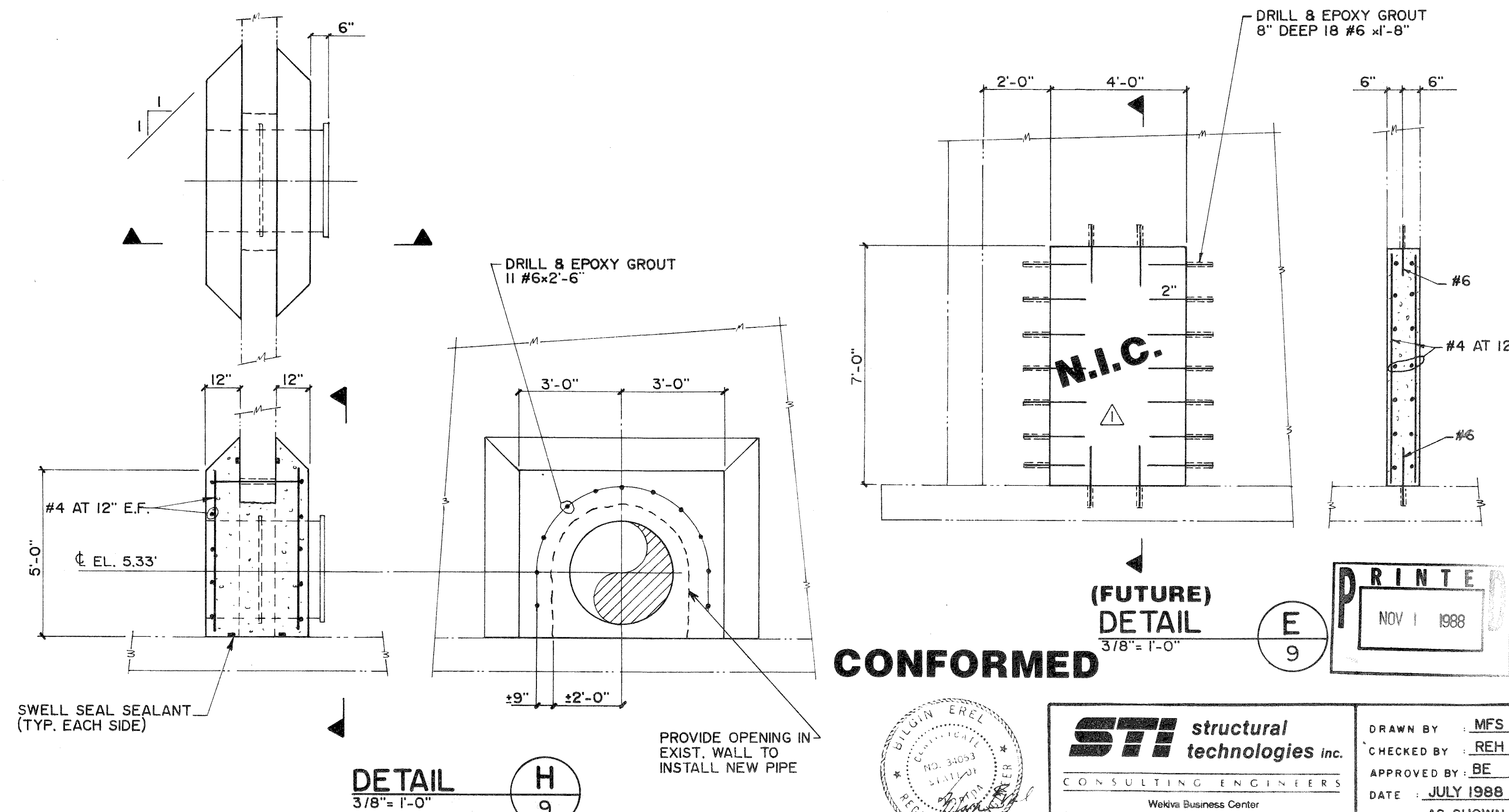
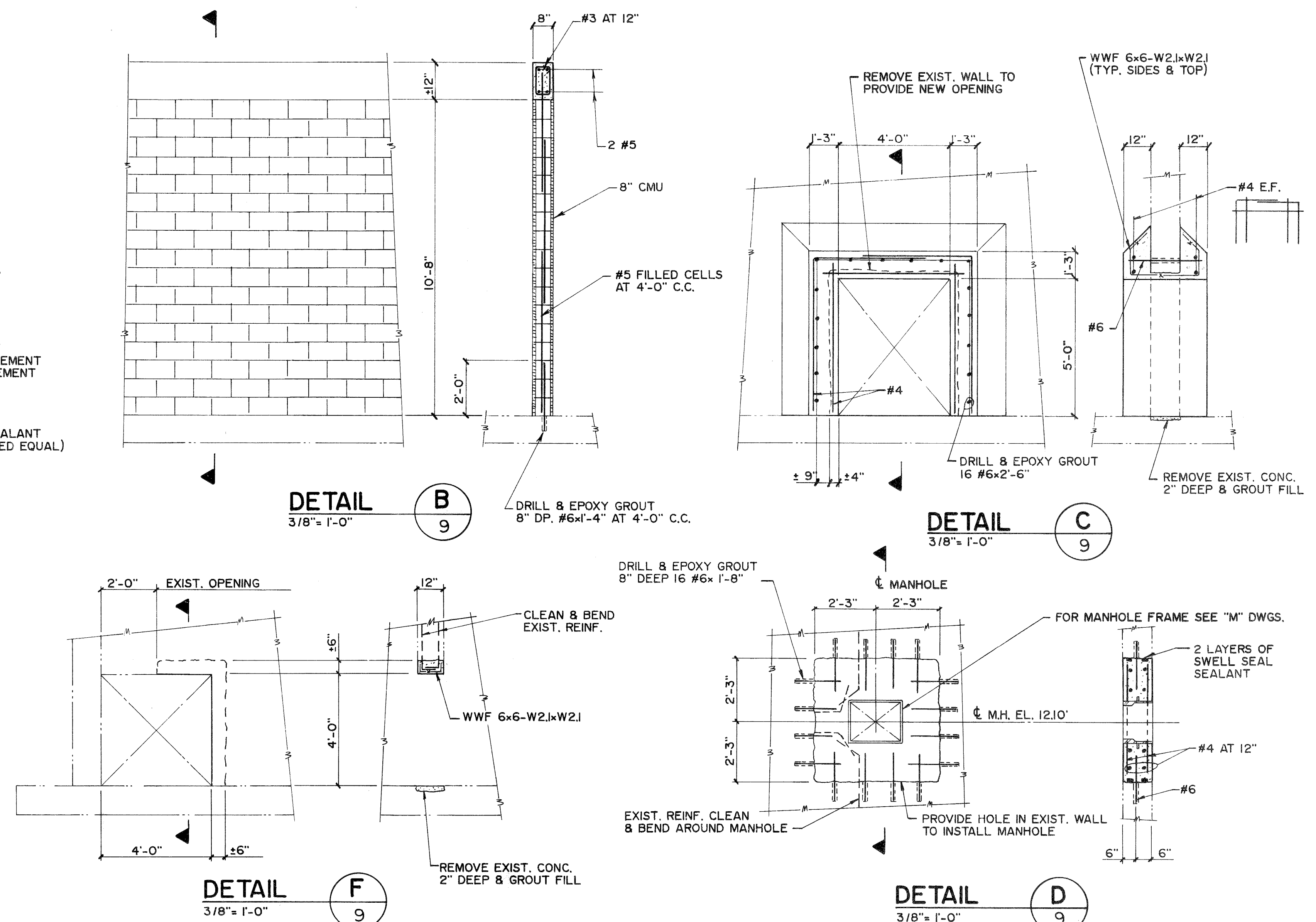
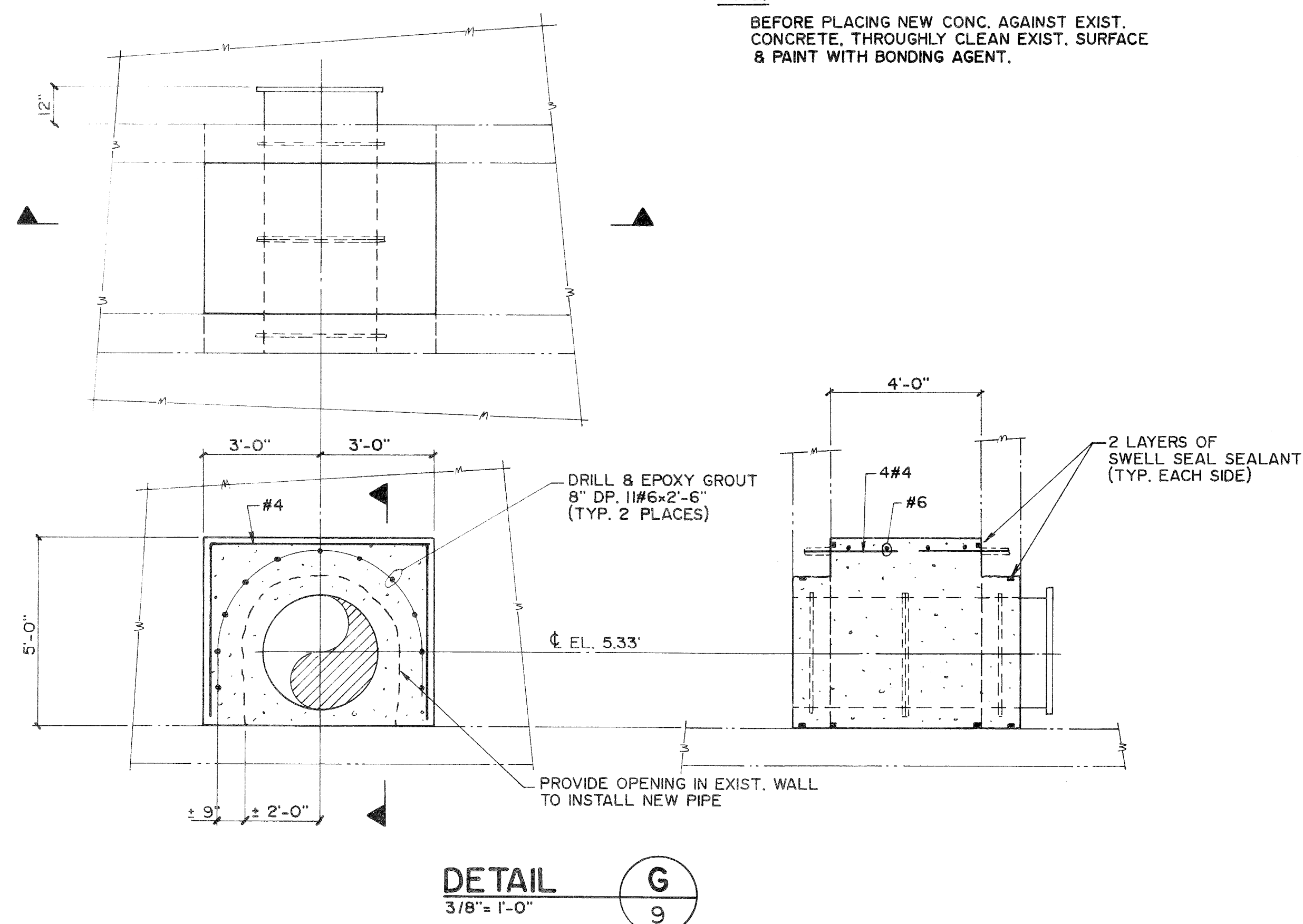
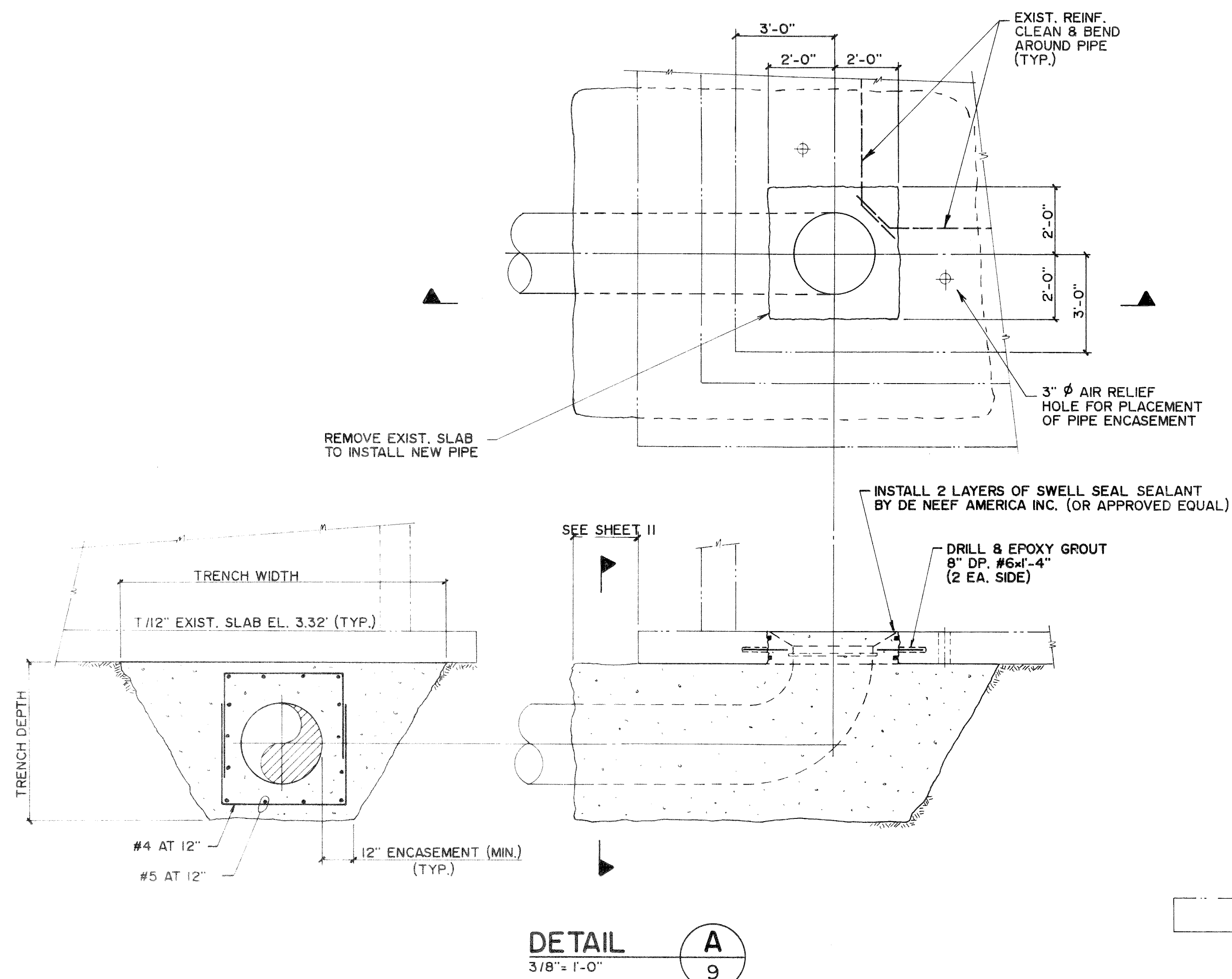
DESIGNED BY _____
DRAWN BY _____
CHECKED BY _____
APPROVED BY _____
DATE _____

NO	1	10/4/88	ALS	RBD

8 MANWAYS

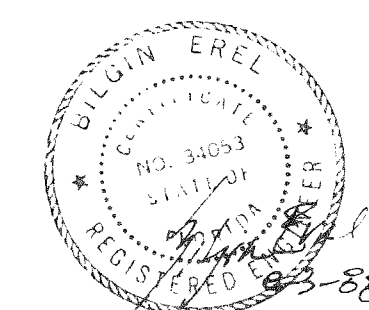
PROJECT NO
6067-29

SHEET NO



NOTE:
BEFORE PLACING NEW CONC. AGAINST EXIST. CONCRETE, THOROUGHLY CLEAN EXIST. SURFACE & PAINT WITH BONDING AGENT.

CONFORMED



STI structural technologies inc.
CONSULTING ENGINEERS
Wekiva Business Center
Suite 120, 1428 East Semoran Blvd., Apopka, Florida 32703
(407) 889-6650

DRAWN BY: MFS
CHECKED BY: REH
APPROVED BY: BE
DATE: JULY 1988
SCALE: AS SHOWN
88-142

WATER TREATMENT PLANT - CLEARWELL MODIFICATIONS

STRUCTURAL DETAILS

CITY OF VENICE, FLORIDA

PROJECT NO.
6067-29

SHEET NO.

10

CAMP DRESSER & MCKEE INC.

CDM

REMARKS

CONFORMED

RED

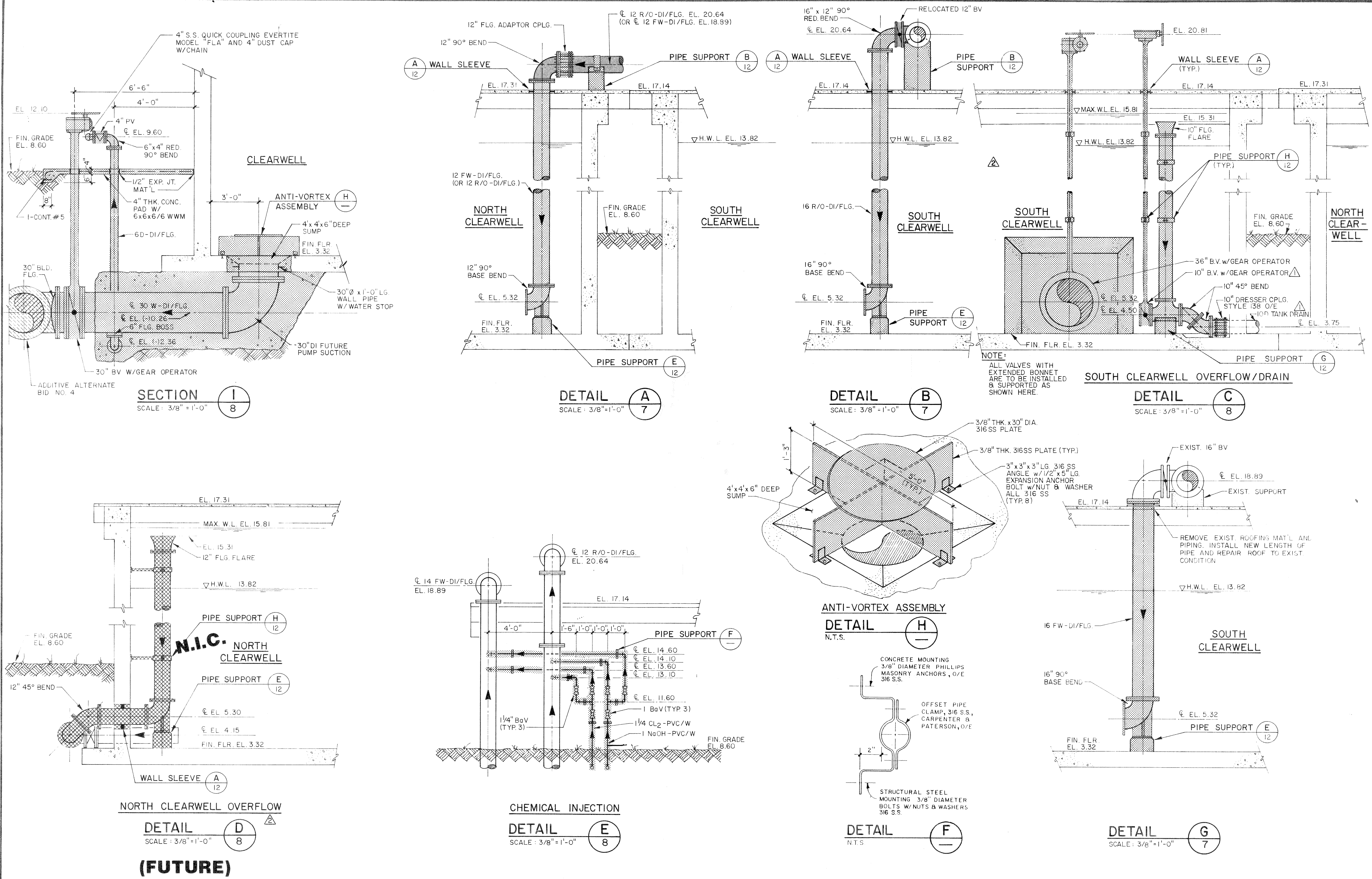
10/4/88

DESIGNED BY

CHECKED BY

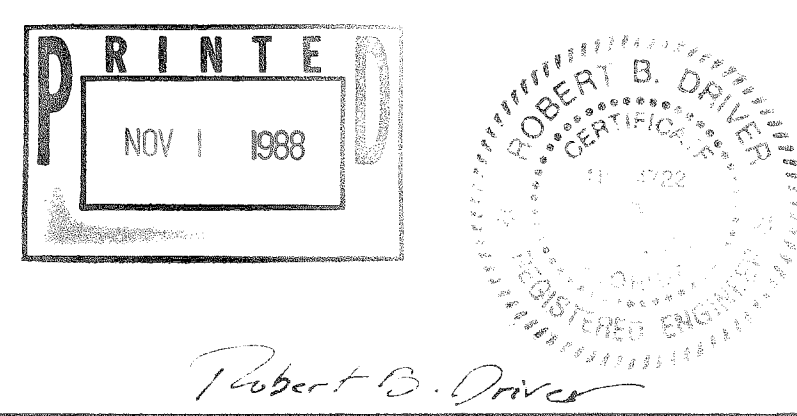
APPROVED BY

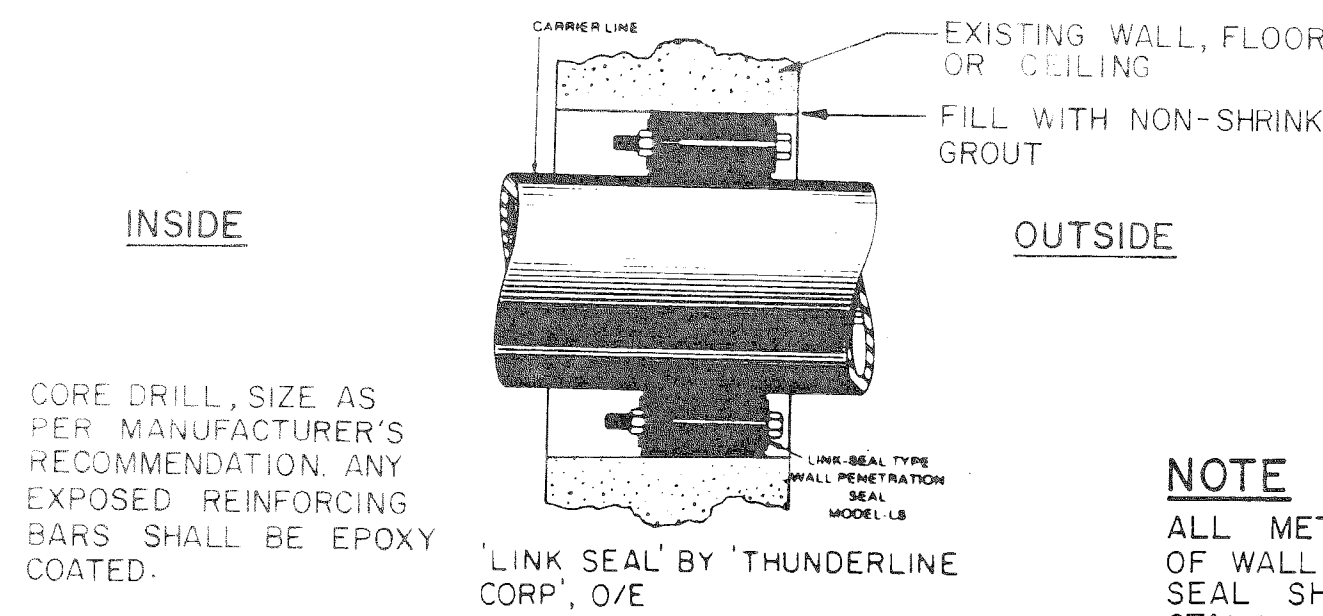
DATE



REMARKS	REVISED BY FROM 12 TO 10, ADDED LABEL TO 10" TANK DRAIN, ADDENDUM NO. 1
	10" TANK DRAIN, ADDENDUM NO. 1
	10" TANK DRAIN, ADDENDUM NO. 1
	10" TANK DRAIN, ADDENDUM NO. 1
DESIGNED BY	DATE
	DATE
	DATE
	DATE
DRAWN BY	DATE
	DATE
	DATE
	DATE
CHECKED BY	DATE
	DATE
	DATE
	DATE
APPROVED BY	DATE
	DATE
	DATE
	DATE
CAMP DRESSER & MCKEE INC.	
WATER TREATMENT PLANT - CLEARWELL MODIFICATIONS	
SECTIONS & DETAILS	
CITY OF VENICE, FLORIDA	
PROJECT NO. 6067 - 29	
SHEET NO. 11	

CONFORMED

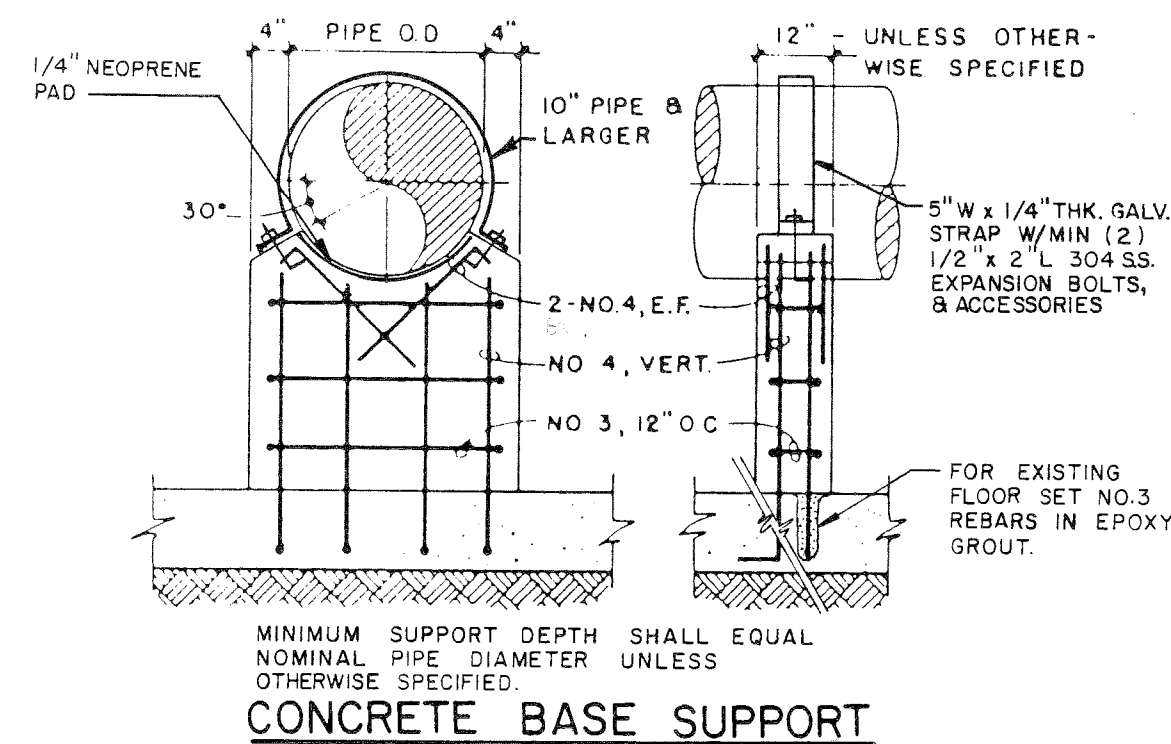




'LINK SEAL' WALL SLEEVE

DETAIL A
N.T.S.

NOTE:
ALL METAL PARTS OF WALL PENETRATION SEAL SHALL BE 316 STAINLESS STEEL (INCLUDING BOLTS, NUTS AND WASHERS.)



CONCRETE BASE SUPPORT

DETAIL B
N.T.S.

NOTE:

VENTILATOR & ROOF CURB SHALL BE OF ALUMINUM CONSTRUCTION. ANY BOLTS, NUTS, WASHERS, ETC., SHALL BE 316 SS.

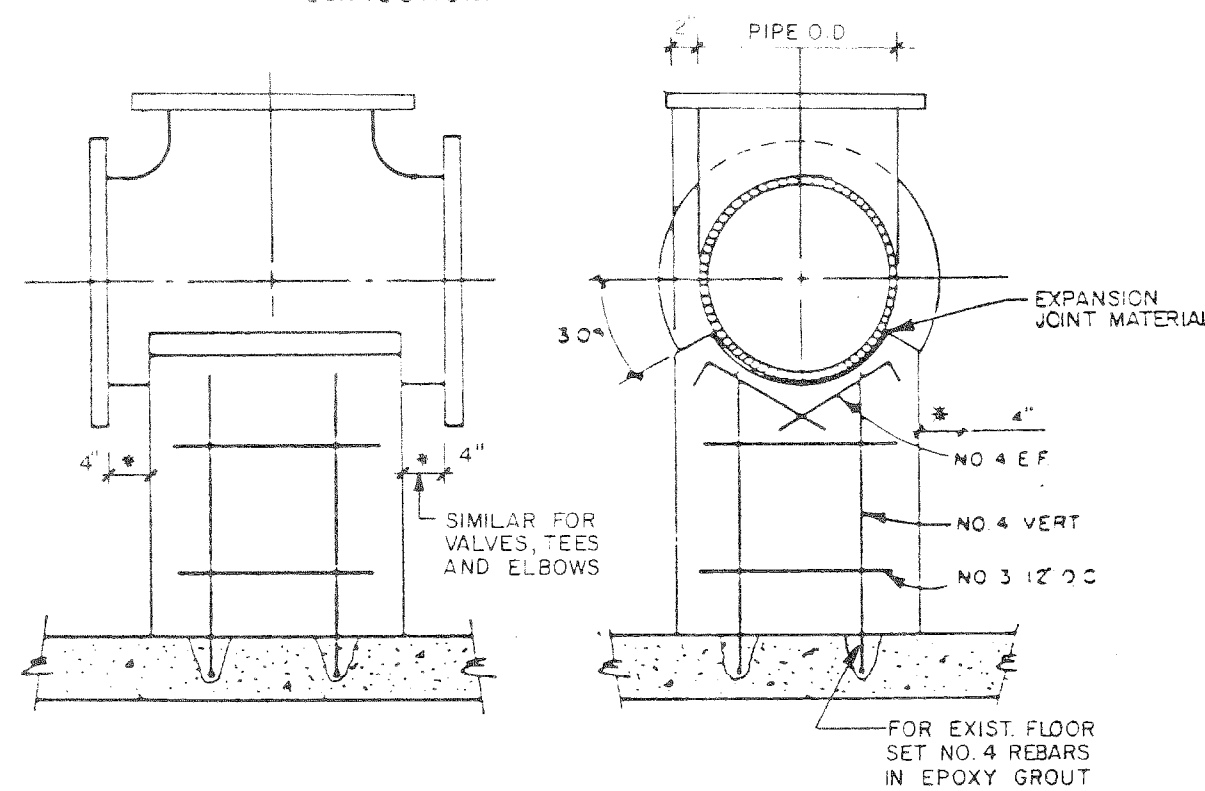
FLASH & COAT AS REQ'D FOR WATERPROOFING

FIELD TO CUT 15" W x 29" LG OPENING IN EXISTING ROOF.

ALUMINUM VENTILATOR
ADDITIVE ALTERNATE BID NO. 2

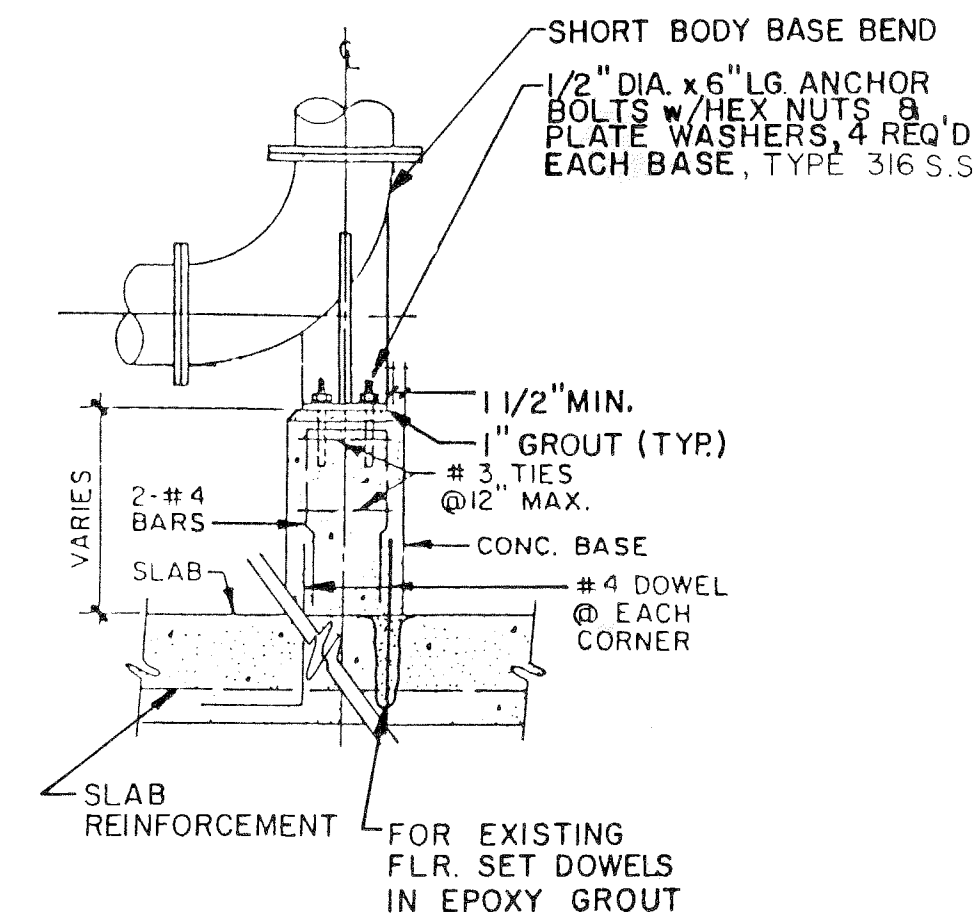
DETAIL D
N.T.S.

* INCREASE 4" CLEARANCE AS REQ'D IF BOLT HAS TO BE INSERTED FROM THE SUPPORT SIDE OF THE CONNECTION.



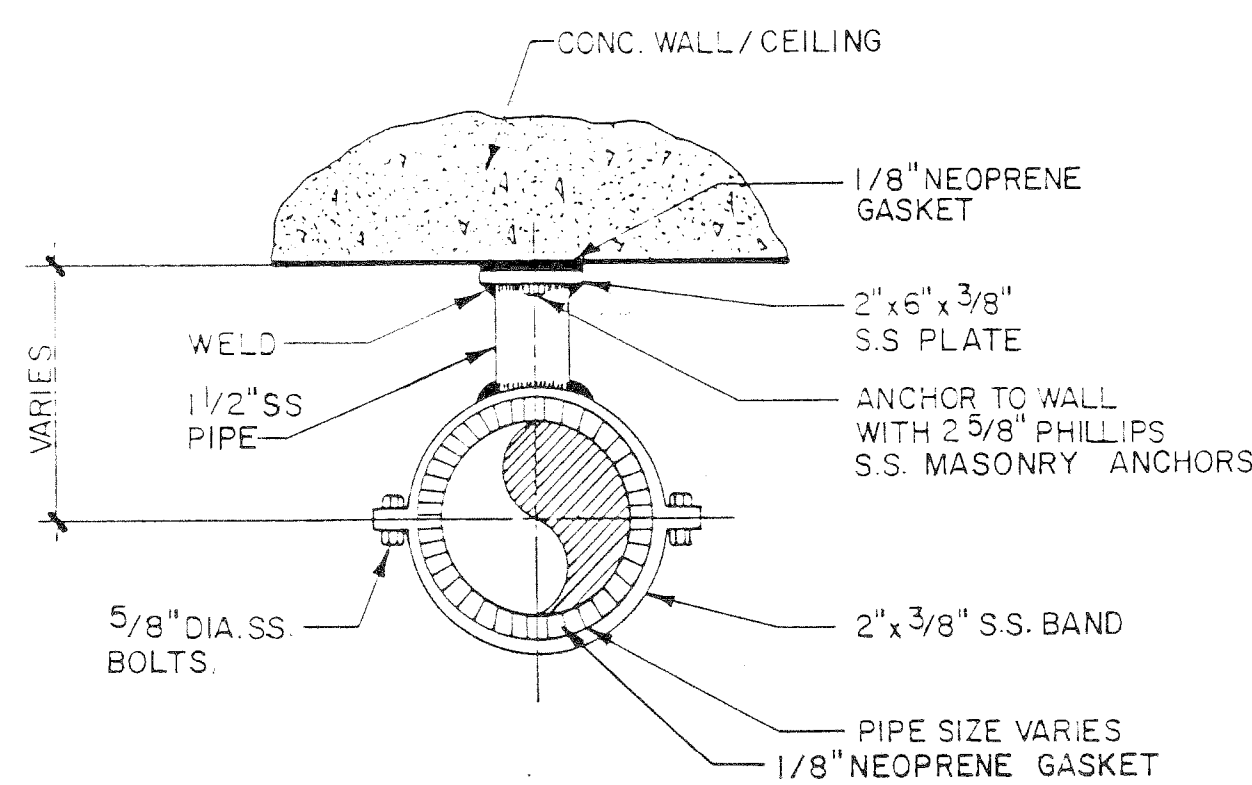
CONCRETE BASE SUPPORT

DETAIL G
N.T.S.



TYPICAL BASE BENDS

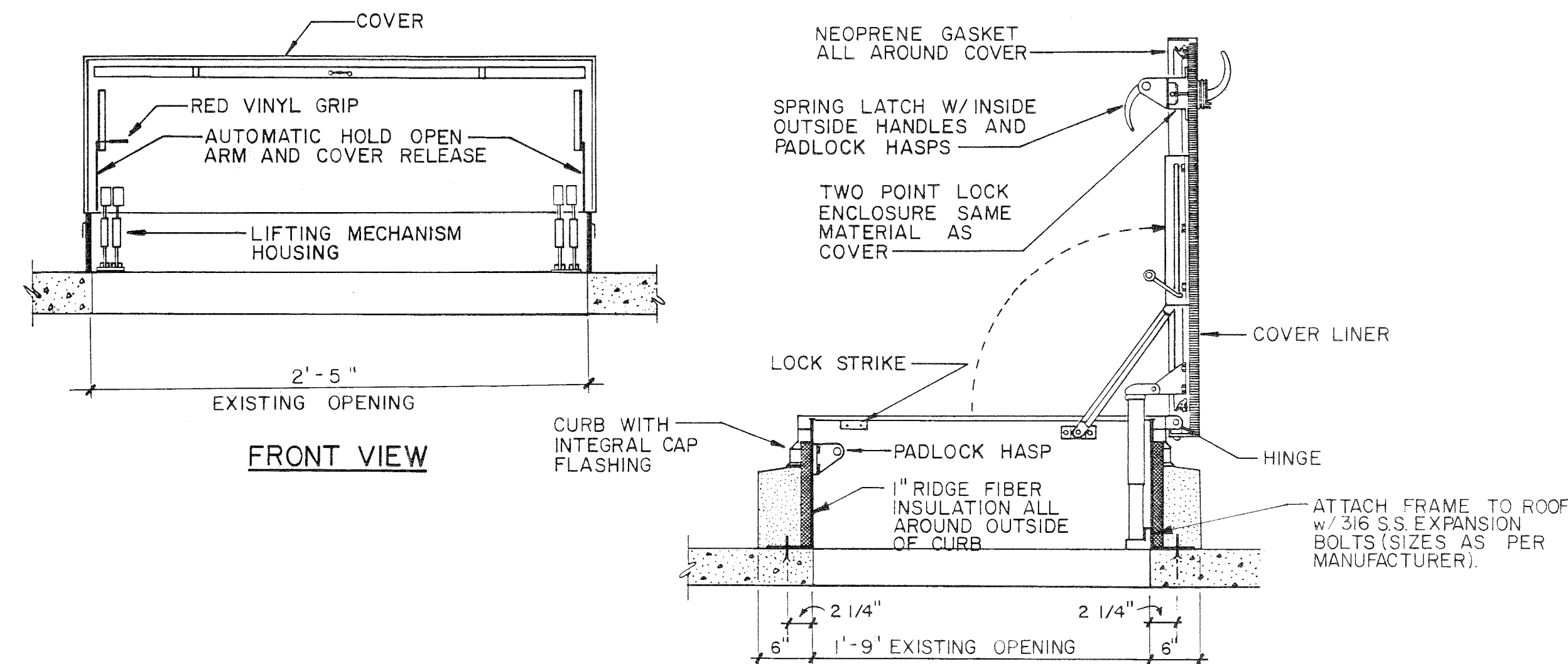
DETAIL E
N.T.S.



WALL MOUNT STRAP SUPPORT

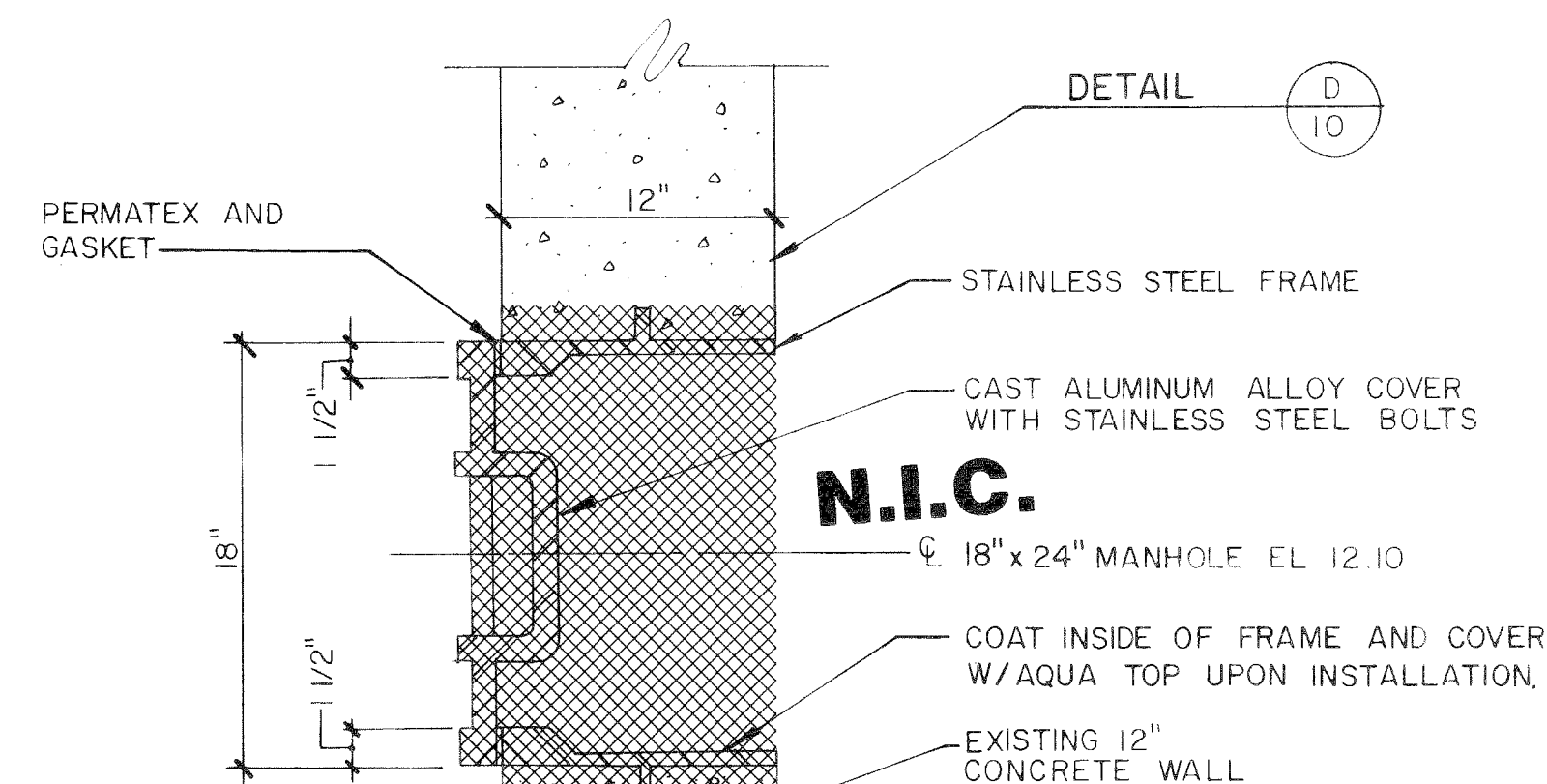
DETAIL H
N.T.S.

NOTE: ALL S.S. SHALL BE TYPE 316.



ACCESS HATCH
ADDITIVE ALTERNATE BID NO. 1

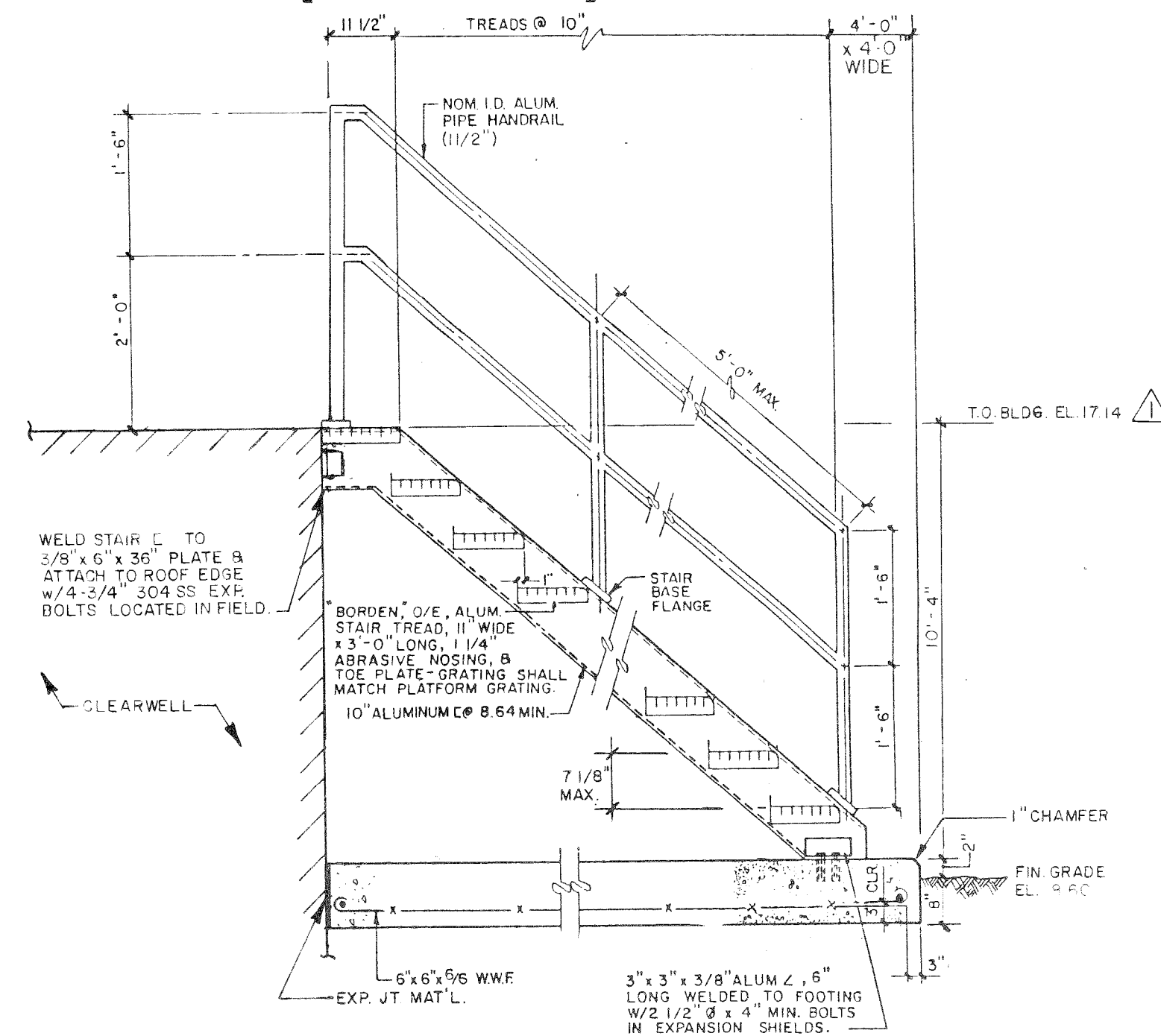
DETAIL C
N.T.S.



WALL INLET

DETAIL F
N.T.S.

(FUTURE)



CONFORMED

DETAIL J
N.T.S.

Robert B. Driver

PROJECT NO		6067 - 29	
SHEET NO		12	
WATER TREATMENT PLANT - CLEARWELL MODIFICATIONS			
MISCELLANEOUS DETAILS			
CAMP DRESSER & MCKEE INC.			
DESIGNED BY	JWS	CHECKED	
DRAWN BY	CHB	RBD	CHANGE STAIR TOP EL FROM 1732 TO 1714 - ADDENDUM NO.1
CHECKED BY	RED	RBD	CHANGED MANHOLE TO FUTURE
APPROVED BY	RLM		
DATE	JULY, 1988		
CDM			
ENGINEERING EMPLOYEES: 10-0035			