

CONTRACT DOCUMENTS AND SPECIFICATIONS

SUBGRADE PREPARATION AND INSTALLATION OF CURB AND GUTTER FOR  
FOXLAND PHASE 3 SECTION 1 (LOTS 1100-1107)

CITY OF GALLATIN

ENGINEERING DIVISION  
132 WEST MAIN STREET  
GALLATIN, TENNESSEE 37066

DATE: \_\_\_\_\_

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INVITATION TO BID  
&  
INFORMATION FOR BIDDERS

SECTION A

## INVITATION TO BID

Sealed bids will be received by the City of Gallatin in the office of the City Engineer, Room 204, City Hall, 132 West Main Street, Gallatin, Tennessee until 1:00 p.m. local time, 6-4-2015, at which time they will be opened and read aloud for the SUBGRADE PREPARATION AND INSTALLATION OF CURB AND GUTTER FOR FOXLAND PHASE 3 SECTION 1 (LOTS 1100-1107)

Plans, Specifications, Proposal Forms, and Contract Documents may be inspected at, and obtained from, the City Engineer's Office after 1:00 p.m. local time, 5-21-2015 or by downloading from the City's home page <http://www.gallatintn.us/> under "I Want To – Get-City Bid Information".

All bidders must be licensed contractors and eligible to bid Contracts in the State of Tennessee. The City of Gallatin reserves the right to reject any or all bids.

## INFORMATION FOR BIDDERS

All bidders must satisfy themselves by personal examination of the locations of the proposed work, by examination of the specifications and requirements of the work and the accuracy of the estimate of the quantities of the work to be done, and shall not at any time after the submission of a bid dispute or complain of such estimate nor assert that there was any misunderstanding in regard to the nature or amount of work to be done. The City shall not be responsible for bidders' errors and misjudgments, nor any information on local conditions or general laws and regulations.

The Documents and Specifications contain the provisions required for the build of SUBGRADE PREPARATION AND INSTALLATION OF CURB AND GUTTER FOR FOXLAND PHASE 3 SECTION 1 (LOTS 1100-1107). No information obtained from any officer, agent, or employee of the City on any such matters shall in any way affect the risk or obligations assumed by the Contractor, or relieve him from fulfilling any of the conditions of the contract.

All bids must be made on the blank form of **Proposal** attached hereto. **Bids must be submitted in a sealed envelope clearly marked "BID – SUBGRADE PREPARATION AND INSTALLATION OF CURB AND GUTTER FOR FOXLAND PHASE 3 SECTION 1 (LOTS 1100-1107)."** Bids arriving after the announced opening time or absent of the aforementioned markings will not be accepted.

All bidders must be licensed contractors and eligible to bid Contracts in the State of Tennessee. **No bid will be opened if the following information does not appear on the envelope containing the bid.**

1. Bidder's Name
2. Address
3. Tennessee Contractor's License Number
4. License Classification Applying to Bid
5. License Expiration Date
6. Name of Project for which Bid is submitted
7. Name and License information for all Subcontractors who will perform work.

Proposals which are incomplete, unbalanced, conditional, or obscure or which contain additions not called for, erasures, alterations or irregularities of any kind or which do not comply with the Invitation to Bid and Information for Bidders may be rejected at the option of the City. Bids must be written with typewriter, ink or indelible pencil; otherwise they may not be considered. Faxed bids will not be accepted.

The City of Gallatin reserves the right to disregard all nonconforming, nonresponsive, or conditional bids; to reject any or all bids; to limit quantities; to waive informalities; and to evaluate proposals and accept any proposal or any part of any proposal that is judged, in our opinion, to be of the best quality, value, and service to the City of Gallatin.

A bidder may withdraw any proposal he has submitted at any time prior to the hour set for the closing of the bids, provided the request for withdrawal is signed in a manner identical with the

proposal being withdrawn. No withdrawal or modification will be permitted for 60 days after the hour and date designated for opening the bids.

All questions or explanations requested by Bidders shall be submitted in writing to the City in ample time to permit consideration before the bid date. Necessary replies will be issued to all bidders of record as Addenda and receipt thereof shall be acknowledged on the proposal. Bidders shall check with the City prior to bid opening to secure any Addenda that may affect bidding. Oral instructions will not be given and do not form a part of the Bidding Documents.

Contractor will be paid based on quantities as measured.

In case of default of the Contractor, the City may procure the articles of services from other services and hold the Contractor responsible for any excess cost occasioned thereby.

Bids must be executed in the Company name and signed by an officer or individual who has authority to bind the Company.

No bid shall be altered or amended after the specified time for opening bids.

All material and workmanship shall be subject to inspection. In case any articles are found to be defective in material or workmanship, or otherwise not in conformity with the specification requirements, the City shall have the right to reject such articles or require their correction. Final inspection shall be conclusive except as regards latent defects, fraud, or such gross mistakes as amount to fraud.

A change order will be issued only in the event of a change in the scope of work.

All bid proposals must include the following:

1. Sealed envelope with required information on the outside.
2. Bid Proposal Form
3. Bid Surety or Certified check in the amount of 10% of the total bid.
4. Drug-Free Workplace Affidavit.

The successful bidder must provide the following, each of which shall be in accordance with the contract documents:

1. Performance surety covering and including labor and materials in the amount of one hundred percent (100%) of the contract price. The performance bond is to remain in place for a period of one year after project completion.
2. Certificate of Insurance naming the **City of Gallatin** additionally insured with any exclusions listed, including
  - General Liability
  - Worker's Comp
  - Auto Insurance
3. Proof of Worker's Comp for all Subcontractors
4. W-9 Form, if a new vendor

Additional Requirements:

- The successful bidder will also be responsible for payment of all taxes levied under the laws of the State of Tennessee.
- The successful bidder shall have the responsibility to insure that all persons employed under a contract with the City, whether directly or by subcontract, be legal residents and be authorized to work in the United States.
- Affirmative Action compliance is required.

All interested parties, without regard to race, color, or national origin, shall be afforded the opportunity to bid and shall receive equal consideration.

Additional information may be obtained by contacting the City of Gallatin Engineering Division, Zach Wilkinson, Project Engineer, at (615) 451-5965.

<b><i>EQUAL OPPORTUNITY TITLE VI POLICY STATEMENT</i></b>
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It is the policy of the City of Gallatin to ensure compliance with Title VI of the Civil Rights Act of 1964; 49 CFR, Part 21; related statutes and regulations to the end that no person shall be excluded from participation in or be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance from the U. S. Department of Transportation on the grounds of race, color, sex, age, disability or national origin.

**BID PROPOSAL  
INCLUDING DRUG FREE AFFIDAVIT**

**SECTION B**

## **PROPOSAL**

ENGINEERING DIVISION  
GALLATIN, TENNESSEE 37066

In response to the Invitation to Bid, the undersigned Bidder submits the following proposal for SUBGRADE PREPARATION AND INSTALLATION OF CURB AND GUTTER FOR FOXLAND PHASE 3 SECTION 1 (LOTS 1100-1107) within the City of Gallatin as described and specified in the contract documents and conditions.

The Bidder declares that he has examined the site of the work and informed himself fully in regard to all conditions pertaining to the scope; that he has examined the Plans, Specifications, and Contract Documents for the work, and has read all the Special Provisions furnished prior to the opening of bids; and that he has satisfied himself relative to the work to be performed.

The Bidder agrees that this bid shall be good and may not be withdrawn for a period of 60 calendar days after the scheduled closing time for receiving bids.

The Bidder hereby agrees that if he is awarded the Contract for this Work, he will complete within 90 days of execution of the Notice of Award.

The undersigned Bidder does hereby declare and stipulate that this Proposal is made in good faith, without collusion or connection with any other person or persons bidding for the same work, and that it is made in pursuance of and subject to all the terms and conditions of the Contract, the Specifications, and the Plans pertaining to the Work to be done.

Attached is the required Bid Surety or Certified Check in the amount of 10% of the total bid which the Bidder agrees will be retained by the City as liquidated damages in the event that the Bidder's proposal is accepted and the Bidder fails to execute the contract within the time stated in the proposal.

**BID PROPOSAL**  
**SUBGRADE PREPARATION AND INSTALLATION OF CURB AND GUTTER FOR**  
**FOXLAND PHASE 3 SECTION 1 (LOTS 1100-1107)**

In compliance with your legal Invitation to Bid for the City of Gallatin SUBGRADE PREPARATION AND INSTALLATION OF CURB AND GUTTER FOR FOXLAND PHASE 3 SECTION 1 (LOTS 1100-1107), the undersigned Bidder, a corporation organized and existing under the laws of the State of \_\_\_\_\_, or a partnership of \_\_\_\_\_, or an individual doing business as \_\_\_\_\_ of the City of \_\_\_\_\_

State of \_\_\_\_\_, having examined the Specifications and Contract forms thereto attached, and being fully advised as to the extent and character of the work to be performed, and the equipment to be furnished, hereby proposes to furnish all labor, tools, material and equipment necessary for the Project.

The Bidder shall complete all tables to establish his Bid. The undersigned further proposes to provide design and supporting calculations, perform all work, and furnish all equipment in accordance with the Specifications and Contract stipulations thereof, within the time limit specified, for the price so stated below.

**BID SCHEDULE:**

UNIT PRICE WORK					
Item No.	Description	Unit	Estimated Quantity	Unit Price	Total Price
1.0	CONSTRUCTION STAKES, LINES, AND GRADES	LS	1		
2.0	MOBILIZATION	LS	1		
3.0	CLEARING AND GRUBBING	LS	1		
4.0	BORROW EXCAVATION (UNCLASSIFIED)	CY	800		
4.1	UNDERCUT (ROADWAY)	CY	100		
5.0	MINERAL AGGREGATE TYPE A BASE GRADING "D" (PUG)	TON	800		
6.0	CONCRETE CURB AND GUTTER (6- 18)	LF	1100		

7.0	ELECTRIC CONDUIT INSTALLATION	EA	3		
8.0	18" HDPE	LF	112		
8.1	15" RCP CLASS III	LF	26		
9.0	SINGLE INLET CATCHBASIN	EACH	1		
9.1	DOUBLE INLET CATCHBASIN	EACH	1		
10.0	JBS 3300 FRAME AND GRATE	EACH	3		
11.0	18" HEADWALL WITH DISSIPATORS	EACH	1		
13.0	TOPSOIL, FURNISHING AND SPREADING	CY	250		
14.0	SEEDING WITH MULCH	SY	1445		
15.0	TEMPORARY SILT FENCE	LF	750		
16.0	INLET PROTECTION	EA	3		
17.0	OUTFALL PROTECTION	EA	1		
<b>Total Price</b>					
<b>Total Price</b>	(words)			(numerals)	

**TOTAL BID:** Bidder agrees to perform all work and provide all materials as described in the specifications, plans, and conditions shown on the bid schedule for the sum of \_\_\_\_\_ (\$\_\_\_\_\_)

(Amount shall be shown in both words and figures. In case of discrepancy, the amount shown in words will govern.)

Respectfully submitted:

\_\_\_\_\_  
Contractor

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

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

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

Contractor's License No: \_\_\_\_\_

Telephone Number: \_\_\_\_\_



# NOTICE OF AWARD

## SECTION C

NOTICE OF AWARD

TO: \_\_\_\_\_

PROJECT DESCRIPTION: SUBGRADE PREPARATION AND INSTALLATION OF CURB AND GUTTER FOR ROADWAY OF FOXLAND PHASE 3 SECTION 1 (LOTS 1100-1107)

We have considered the Bid submitted by you for the above-described Work in response to our Invitation to Bid and are pleased to award the contract to your company.

You are required to execute the enclosed Agreement and furnish the required Contractor's Performance and Payment Bond within 10 calendar days from the date of this Notice.

If you fail to execute said Agreement and to furnish said bonds within 10 calendar days from the date of this Notice, said OWNER will be entitled to consider all your rights arising out of the OWNER'S acceptance of your Bid as abandoned and as a forfeiture of your Bid Bond. The OWNER will be entitled to such other rights as may be granted by law.

You are required to return an acknowledged copy of this NOTICE OF AWARD to the OWNER.

Dated this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

\_\_\_\_\_  
City of Gallatin  
(Owner)

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

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

ACCEPTANCE OF NOTICE

Receipt of the above Notice of Award is hereby acknowledged.

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

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

This the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_

# CONTRACT AGREEMENT

## SECTION D

AGREEMENT BETWEEN  
OWNER AND CONTRACTOR

THIS AGREEMENT made as of the \_\_\_\_\_ day of \_\_\_\_\_, 2015 by  
and between the OWNER: CITY OF GALLATIN, TENNESSEE, and

---

WITNESSETH THAT the OWNER and the CONTRACTOR, in consideration of the mutual covenants hereinafter set forth, agree as follows:

Article 1. WORK. The CONTRACTOR will perform all Work as shown in the Contract Documents for the completion of the Project generally described as follows: SUBGRADE PREPARATION AND INSTALLATION OF CURB AND GUTTER FOR FOXLAND PHASE 3 SECTION 1 (LOTS 1100-1107)

Article 2. ENGINEER. The City Engineer will act as the ENGINEER in connection with completion of the Project in accordance with the Contract Documents.

Article 3. CONTRACT TIME. The Work for this Contract shall be completed by **90 days from the execution of the Notice of Award.**

Article 4. CONTRACT PRICE. The OWNER will pay the CONTRACTOR for performance of the Work and completion of the Project in accordance with the Contract Documents subject to adjustment by actual quantities installed:

---

Contract Amount

Article 5. PAYMENT. The OWNER will pay the CONTRACTOR upon completion and acceptance of all the Work covered in this Contract.

Article 6. MISCELLANEOUS.

6.1 Neither the OWNER nor the CONTRACTOR shall, without the prior consent of the other, assign or sublet in whole or in part his interest under any of the Contract Documents and, specifically, the CONTRACTOR shall not assign any monies due or to become due without consent of the OWNER.

6.2 The OWNER and the CONTRACTOR each binds himself, his partners, successors, assigns, and legal representatives to the other party hereto in respect to all covenants, agreements, and obligation contained in the Contract Documents.

6.3 The Contract Documents constitute the entire agreement between the OWNER and the CONTRACTOR and may only be altered, amended, or repealed by a duly-executed written instrument.

Article 7. TIME FOR COMPLETION AND LIQUIDATED DAMAGES. It is hereby understood and mutually agreed, by and between the CONTRACTOR and the OWNER, that the

time for completion as specified in the Contract is an ESSENTIAL CONDITION of this Contract; and it is further mutually understood and agreed that the work embraced in this Contract shall be commenced on a date to be specified in the Notice of Award, and that said Work shall be prosecuted regularly, diligently, and uninterruptedly at such rate of progress as will insure full completion by **90 days from the execution of the Notice of Award.** It is expressly understood and agreed, by and between the CONTRACTOR and the OWNER, that the time for the completion of Work described herein is a reasonable time for the completion of the same, taking into consideration the average climatic range and usual industrial conditions prevailing in this locality. If the said CONTRACTOR shall neglect, fail, or refuse to complete the Work within the time herein specified, or any proper extension thereof granted the OWNER, then the CONTRACTOR does hereby agree, as a partial consideration for the awarding of this Contract, to pay to the OWNER, not as a penalty but as liquidated damages for such breach of Contract as hereinafter set forth, \$300 for each and every calendar day that the CONTRACTOR shall be in default after the time stipulated for completing the Work of the total Contract.

The same amount is fixed and agreed upon by and between the CONTRACTOR and the OWNER because of the impracticability and extreme difficulty of fixing and ascertaining the actual damages the OWNER would in such event sustain, and said amount shall be retained from time to time by the OWNER from current periodical estimates.

It is further agreed that time is of the essence of each and every portion of this Contract and of the specifications wherein a definite and certain length of time is fixed for the performance of any act whatsoever and, where under the Contract, an additional time is allowed for the completion of any Work, the new time limit fixed by such extension shall be of the essence of this Contract. Provided, that the CONTRACTOR shall not be charged with liquidated damages or any excess cost when the delay in completion of the Work is due:

7.1 To any preference, priority, or allocation order duly issued by the Government;

7.2 To unforeseeable cause beyond the control and without the fault or negligence of the CONTRACTOR, including, but not restricted to, acts of God or of the public enemy, acts of the OWNER, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and unusually severe weather; and

7.3 To any delays of subcontractors or suppliers occasioned by any of the causes specified in subsections 7.1 and 7.2 of this article;

Provided, further, that the CONTRACTOR shall, within ten days from the beginning of such delay, unless the OWNER shall grant a further period of time prior to the date of final settlement of the Contract, notify the OWNER, in writing, of the causes of the delay, who shall ascertain the facts and extent of the delay and notify the CONTRACTOR within a reasonable time of its decision in the matter.

## Article 8. - CONTRACT DOCUMENTS.

8.01 The Contract Documents will consist of the following:

- This Agreement (3 pages, inclusive).
- General Conditions of the Construction Contract (68 pages)
- Special Conditions (1 page)
- Technical Specifications (48 pages)
- Construction Plans (9 pages)

8.02 There are no Contract Documents other than those listed above in this Article 8. Approved Shop Drawings and Samples, other Contractor's submittals and the reports and drawings of subsurface and physical conditions are not Contract Documents.

8.03 The Contract Documents may only be amended, modified or supplemented in writing and in accordance with Article 9 of the General Conditions.

IN WITNESSETH WHEREOF the parties hereto have executed this Agreement the day and year first above written.

OWNER: CITY OF GALLATIN,  
TENNESSEE

CONTRACTOR: \_\_\_\_\_

BY: \_\_\_\_\_

BY: \_\_\_\_\_  
PAIGE BROWN, MAYOR

ATTEST:

\_\_\_\_\_  
CONNIE KITTRELL, CITY RECORDER

# STANDARD GENERAL CONDITIONS

## SECTION E

This document has important legal consequences; consultation with an attorney is encouraged with respect to its use or modification. This document should be adapted to the particular circumstances of the contemplated Project and the controlling Laws and Regulations.

## STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared by

**ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE**

and

Issued and Published Jointly by



AMERICAN COUNCIL OF ENGINEERING COMPANIES

ASSOCIATED GENERAL CONTRACTORS OF AMERICA

AMERICAN SOCIETY OF CIVIL ENGINEERS

PROFESSIONAL ENGINEERS IN PRIVATE PRACTICE  
*A Practice Division of the*  
NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS

Endorsed by



CONSTRUCTION SPECIFICATIONS INSTITUTE

These General Conditions have been prepared for use with the Suggested Forms of Agreement Between Owner and Contractor (EJCDC C-520 or C-525, 2007 Editions). Their provisions are interrelated and a change in one may necessitate a change in the other. Comments concerning their usage are contained in the Narrative Guide to the EJCDC Construction Documents (EJCDC C-001, 2007 Edition). For guidance in the preparation of Supplementary Conditions, see Guide to the Preparation of Supplementary Conditions (EJCDC C-800, 2007 Edition).

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# STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

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## 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 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*—The individual or entity with whom Owner has entered into the Agreement.
16. *Cost of the Work*—See Paragraph 11.01 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*—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 1 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*—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 discussed in Paragraph 1.02.B through F 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 the 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. In no event will the Contract Times commence to run later than the sixtieth day after the day of Bid opening or the thirtieth day after the Effective Date of the Agreement, whichever date is earlier.

## 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 indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract Documents;
  - 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 Representatives*

- 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 Supplier, then 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, or 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 its 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. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which the Work is to be performed and Owner's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.
- C. 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 known to Owner of explorations and tests of subsurface conditions at or contiguous to the Site; and
2. those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities).

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.

#### 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 written notice to Contractor: (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, Owner shall indemnify and hold harmless Contractor, Subcontractors, 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, provided that such Hazardous Environmental Condition: (i) was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be included within the scope of the Work, and (ii) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06.G shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- H. 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.H shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

- I. 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 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 coverage:
  - a. Such insurance shall remain in effect for two years after final payment.
  - 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 *Property Insurance*

- A. Unless otherwise provided in the Supplementary Conditions, Owner shall purchase and maintain property insurance upon the Work at the Site in the amount of the full replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:

1. include the interests of Owner, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as a loss payee;
  2. be written on a Builder's Risk "all-risk" policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, falsework, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire, lightning, extended coverage, theft, vandalism and malicious mischief, earthquake, collapse, debris removal, demolition occasioned by enforcement of Laws and Regulations, water damage (other than that caused by flood), and such other perils or causes of loss as may be specifically required by the Supplementary Conditions.
  3. include expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects);
  4. cover materials and equipment stored at the Site or at another location that was agreed to in writing by Owner prior to being incorporated in the Work, provided that such materials and equipment have been included in an Application for Payment recommended by Engineer;
  5. allow for partial utilization of the Work by Owner;
  6. include testing and startup; and
  7. be maintained in effect until final payment is made unless otherwise agreed to in writing by Owner, Contractor, and Engineer with 30 days written notice to each other loss payee to whom a certificate of insurance has been issued.
- B. Owner shall purchase and maintain such equipment breakdown insurance or additional property insurance as may be required by the Supplementary Conditions or Laws and Regulations which will include the interests of Owner, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as a loss payee.
- C. All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with this Paragraph 5.06 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other loss payee to whom a certificate of insurance has been issued and will contain waiver provisions in accordance with Paragraph 5.07.
- D. Owner shall not be responsible for purchasing and maintaining any property insurance specified in this Paragraph 5.06 to protect the interests of Contractor, Subcontractors, or others in the Work to the extent of any deductible amounts that are identified in the Supplementary Conditions. The risk of loss within such identified deductible amount will be borne by Contractor, Subcontractors, or others suffering any such loss, and if any of them wishes property

insurance coverage within the limits of such amounts, each may purchase and maintain it at the purchaser's own expense.

- E. If Contractor requests in writing that other special insurance be included in the property insurance policies provided under this Paragraph 5.06, Owner shall, if possible, include such insurance, and the cost thereof will be charged to Contractor by appropriate Change Order. Prior to commencement of the Work at the Site, Owner shall in writing advise Contractor whether or not such other insurance has been procured by Owner.

#### 5.07 *Waiver of Rights*

- A. Owner and Contractor intend that all policies purchased in accordance with Paragraph 5.06 will protect Owner, Contractor, Subcontractors, and Engineer, and all other individuals or entities identified in the Supplementary Conditions as loss payees (and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them) in such policies and will provide primary coverage for all losses and damages caused by the perils or causes of loss covered thereby. All such policies shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any of the insureds or loss payees thereunder. Owner and Contractor waive all rights against each other and their respective 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 or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Subcontractors and Engineer, and all other individuals or entities identified in the Supplementary Conditions as loss payees (and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them) under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by Owner as trustee or otherwise payable under any policy so issued.
- B. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them for:
  - 1. loss due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Work caused by, arising out of, or resulting from fire or other perils whether or not insured by Owner; and
  - 2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by Owner during partial utilization pursuant to Paragraph 14.05, after Substantial Completion pursuant to Paragraph 14.04, or after final payment pursuant to Paragraph 14.07.
- C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss referred to in Paragraph 5.07.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery

against Contractor, Subcontractors, or Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them.

5.08 *Receipt and Application of Insurance Proceeds*

- A. Any insured loss under the policies of insurance required by Paragraph 5.06 will be adjusted with Owner and made payable to Owner as fiduciary for the loss payees, as their interests may appear, subject to the requirements of any applicable mortgage clause and of Paragraph 5.08.B. Owner shall deposit in a separate account any money so received and shall distribute it in accordance with such agreement as the parties in interest may reach. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the moneys so received applied on account thereof, and the Work and the cost thereof covered by an appropriate Change Order.
- B. Owner as fiduciary shall have power to adjust and settle any loss with the insurers unless one of the parties in interest shall object in writing within 15 days after the occurrence of loss to Owner's exercise of this power. If such objection be made, Owner as fiduciary shall make settlement with the insurers in accordance with such agreement as the parties in interest may reach. If no such agreement among the parties in interest is reached, Owner as fiduciary shall adjust and settle the loss with the insurers and, if required in writing by any party in interest, Owner as fiduciary shall give bond for the proper performance of such duties.

5.09 *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.

5.10 *Partial Utilization, Acknowledgment of Property Insurer*

- A. If Owner finds it necessary to occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in Paragraph 14.05, no such use or occupancy shall commence before the insurers providing the property insurance pursuant to Paragraph 5.06 have acknowledged notice thereof and in writing effected any changes in coverage necessitated thereby. The insurers providing the property insurance shall consent by endorsement on the policy or policies, but the property insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy.

## 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.

### 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;
      - 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.
    - 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 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, Owner shall indemnify and hold harmless Contractor, and its officers, directors, members, partners, employees, agents, consultants, and subcontractors 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 specified in the Contract Documents, but not identified as being subject to payment of any license fee or royalty to others required by patent rights or copyrights.
- C. 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 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 or 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, if any. The Supplementary Conditions identify any 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 program 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 the indicated application, 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

Drawings 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. 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 is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom but only to the extent caused by any negligent 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 .
- 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 extend to the liability of Engineer and Engineer's officers, directors, members, partners, employees, agents, consultants and subcontractors arising out of:
1. the preparation or approval of, or the failure to prepare or approve maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or
  2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

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 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, that Contractor may cut or alter others' work 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 *Coordination*

- A. If Owner intends to contract with others for the performance of other work on the Project at the Site, the following will be set forth in Supplementary Conditions:
1. the individual or entity who will have authority and responsibility for coordination of the activities among the various contractors will be identified;
  2. the specific matters to be covered by such authority and responsibility will be itemized; and
  3. the extent of such authority and responsibilities will be provided.
- B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination.

7.03 *Legal Relationships*

- A. Paragraphs 7.01.A and 7.02 are 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 wrongful 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 wrongful 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 *Replacement of Engineer*

- A. In case of termination of the employment of Engineer, Owner shall appoint an engineer to whom Contractor makes no reasonable objection, whose status under the Contract Documents shall be that of the former Engineer.

8.03 *Furnish Data*

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

8.04 *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.

8.05 *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 the Site.

8.06 *Insurance*

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

8.07 *Change Orders*

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

8.08 *Inspections, Tests, and Approvals*

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

8.09 *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.

8.10 *Undisclosed Hazardous Environmental Condition*

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

8.11 *Evidence of Financial Arrangements*

- A. Upon request of Contractor, Owner shall furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract Documents.

8.12 *Compliance with Safety Program*

- A. While at 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.D.

**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.

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, 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.

#### 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, as to design calculations and design drawings submitted in response to a delegation of professional design services, if any, see Paragraph 6.21.
- C. In connection with Engineer's authority as to Change Orders, see Articles 10, 11, and 12.
- D. In connection with Engineer's authority 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 Program*

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

**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.D.

### 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: (i) ordered by Owner pursuant to Paragraph 10.01.A, (ii) required because of acceptance of defective Work under Paragraph 13.08.A or Owner's correction of defective Work under Paragraph 13.09, or (iii) 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, as 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 Paragraphs 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. If Owner, Engineer, or other contractors 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.
- C. 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 utility owners not under the

control of Owner, 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.C.

- D. Owner, Engineer, and their officers, directors, members, partners, employees, agents, consultants, or subcontractors 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.
- E. 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.

## **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 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 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 Agreement.

*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, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 9.07, and 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: (i) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (ii) 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 repeated disregard of the authority of Engineer; or
  4. Contractor's 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. 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.
- B. 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.
- C. 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 invoke any dispute resolution process provided for in the Supplementary Conditions; or
  2. agrees with the other party to submit the Claim to another dispute resolution process; or
  3. gives written notice to the other party of the intent to submit the Claim to a court of competent jurisdiction.

## 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.

### 17.05 Governing Law, Jurisdiction, Venue

This contract shall be governed and construed in accordance with the laws of the State of Tennessee without resort to any jurisdiction's conflict of laws, rules or doctrines. Any claim, action, suit or proceeding (collectively, "the claim") between the Owner and the Contractor that arises from or relates to this contract shall be brought and conducted solely and exclusively within the Circuit Court of Sumner County for the State of Tennessee. If, however, the claim must be brought in a federal forum, then it shall be brought and conducted solely and exclusively within the United States District Court for the District of Middle Tennessee filed in Davidson County, Tennessee. Contractor, by the signature herein of its authorized representative, hereby consents to the in personam jurisdiction of said courts. In no event shall this section be construed as a waiver by Owner of any form of defense or immunity, based on the Eleventh Amendment to the United States Constitution; or otherwise, from any claim or from the jurisdiction.

# SPECIAL CONDITIONS

## SECTION F

## **SPECIAL CONDITIONS**

### **GENERAL**

The scope of this project covers construction of the subgrade up to the base stone level and installation of appropriate drainage infrastructure and curb/gutter. Prior to acceptance of work, both the subgrade and the base stone shall be proof rolled and accepted by a City representative. The binder course is not part of this contract and will be done under a separate contract already in place. The construction plans only apply to the applicable portions of construction for the subgrade, drainage work, electrical conduit installation, curb/gutter and appropriate EPSC measures. Coordination with the gas company may be required for gas line service installation.

### **FILL MATERIAL**

All fill material will be paid for as Borrow Excavation. Contractor is responsible for finding suitable material. Measurement will be based upon survey performed after subgrade fill material is placed, but prior to base stone placement.

### **DISPOSAL OF MATERIAL**

All debris and related appurtenances removed as part of this contract shall be stored in a manner compliant with all local, state and federal regulations for the storage of such materials. The City of Gallatin will be responsible for hauling off of all materials. Recycling of materials, where possible, is encouraged.

### **UTILITIES**

Sewer and Gas line bedding and backfill shall meet Gallatin Public Utilities Standards.

If excavation occurs around power pole, pole shall be secured during construction to the satisfaction of Gallatin Electric Department.

### **WORK ZONE SAFETY**

Contractor shall at all times maintain work zone safety standards in accordance with latest OSHA and TOSHA standards.

### **MAINTENANCE OF TRAFFIC**

The maintenance of traffic shall be included in prices bid. Total road closures are typically not permitted on arterial or collector roadways. Total road closures on local streets will be considered on a case-by-case basis.

# TECHNICAL SPECIFICATIONS

## SECTION G

## CONTENTS OF TECHNICAL SPECIFICATIONS

- 1.0 Construction Staking
- 2.0 Mobilization of Forces, Supplies, and Equipment
- 3.0 Clearing and Grubbing
- 4.0 Grading
- 5.0 Mineral Aggregate Base
- 6.0 Concrete Curb, Gutter, and Combined Curb and Gutter
- 7.0 Electric conduit installation
- 8.0 Storm Sewers and Pipe Culverts
- 9.0 Manholes, Catch Basins, Inlets, and Junction Boxes
- 10.0 Gray Iron Castings
- 11.0 Headwall
- 12.0 Rip Rap
- 13.0 Topsoil
- 14.0 Seeding
- 15.0 Erosion Control
- 16.0 Inlet Protection
- 17.0 Outlet Protection

## Section 1.0

### TECHNICAL SPECIFICATIONS FOR CONSTRUCTION STAKING

#### 1. Description

All lines profiles, grades and measurements necessary to the proper construction of the project will be furnished by the Engineer. The Contractor shall cooperate in the matter of setting and preserving stakes, bench marks, etc. for controlling the construction. Such stakes and markings as the Engineer may set for either his own or the Contractor's guidance shall be scrupulously preserved by the Contractor. In case of negligence on the part of the Contractor or his employees resulting in the destruction of such stakes or markings, an amount equal to the cost of replacing the same may be deducted from subsequent estimates due the Contractor, at the discretion of the City.

If Construction Stakes, Lines and grades is included in the Proposal form as a bid item the following shall apply:

The Contractor shall be responsible for the placement and preservation of adequate ties to all control points, whether established by him or found on the project, necessary for the accurate reestablishment of all base lines or center lines shown on the plans.

The Department reserves to itself the responsibility for making all measurements and surveys that involve the determination of final pay quantities, including original and final cross sections for all earthwork. In addition, sufficient field checks of existing streams, drainage, structures, pavement elevations, road and street tie points, etc., shall be conducted by the contractor to ensure the plan proposed work will correspond with the existing and/or proposed surroundings

All staking shall be performed by qualified engineering or surveying personnel who are trained, experienced and skilled in construction layout and staking of the type required under the contract and who are acceptable to the Engineer. The personnel shall perform this staking under the direct supervision of a Tennessee licensed Professional Engineer, of engineering background experienced in the direction of such work and acceptable to the Engineer.

#### 2. Basis of Payment

Partial payments for Construction Stakes, Lines and Grades will be made on the basis of a percentage of the lump sum price bid as indicated in the Payment Schedule above. The quantity, determined as provided above, will be paid for at the contract unit price bid for Construction Stakes, Lines and Grades, which price and payment shall be full compensation for furnishing, setting, maintaining, and resetting, when necessary, the stakes, and for furnishing all engineering personnel, equipment, materials, and all incidentals thereto.

Section 2.0

TECHNICAL SPECIFICATIONS  
FOR  
MOBILIZATION OF FORCES, SUPPLIES, AND EQUIPMENT

1. Description

This work shall consist of the mobilization of forces, supplies, equipment, and incidentals at the project site. It shall include all preconstruction costs incurred after award of the contract which are necessary costs to the project and are of a general nature rather than directly attributable to other pay items.

2. Method of Measurement

Mobilization will be measured by the unit for the completion of the work as described above, and payment will be made on a lump sum basis.

% of Total Contract Amount on Estimate	% Allowed This Item
Not less than	
5%	40%
10%	70%
25%	100%
Amount of Contract	Maximum Amount Allowed
0 - \$100,000	8% of Contract Amount
\$100,000 - \$500,000	\$4,000 + 3% of Contract Amount
\$500,000 or greater	\$14,000 + 1% of Contract Amount

3. Basis of Payment

Partial payments for Mobilization will be made on the basis of a percentage of the lump sum price bid or of the current maximum allowable as indicated in the Payment Schedule above, whichever is smaller. Full payment for Mobilization will be made in accordance with the provisions set out in the Payment Schedule above, which price shall be full compensation for organizing the moving all forces, supplies, equipment, and incidentals to the project site, regardless of the number of times such moves are made and also for all preconstruction costs incurred after award of the contract.

## Section 3.0

### TECHNICAL SPECIFICATIONS FOR CLEARING AND GRUBBING

#### 1. Description

This work shall consist of clearing, grubbing, removal, and satisfactory disposal of all materials within the project limits, except those items designated to remain, or to be removed in accordance with other sections of these Specifications.

#### 2. Construction Methods

- a. The project area shall be cleared of all dead trees, stumps, brush, hedges, weeds, logs and other objectionable material and vegetation within 6" of the ground surface.
- b. In areas where excavation is to be made and 5 feet beyond the excavation limits, all trees, stumps, roots, brush, hedge, heavy growth of vegetation, etc., shall be cleared and grubbed.
- c. In areas where embankments are to be constructed, all trees, stumps, roots, brush, hedge, heavy growth of vegetation, etc., shall be cleared and grubbed to a point 5 feet beyond slope intercepts. All depressions made below the ground surface shall be refilled with suitable material and compacted before the embankment is started. Unsatisfactory material such as brush, hedge, roots, stump, branches and logs of trees, heavy vegetation, etc. shall not be embedded or buried within the embankment.
- d. This work shall include the preservation from injury of all trees and other vegetation that are not within designated areas of clearing and grubbing, unless marked for removal by the Engineer.
- e. Branches of trees extending over the roadway shall be trimmed symmetrically to provide a clear height of twenty feet above the finished roadway elevation.
- f. All slopes of cuts, embankments, ditches, channels, waterways and all structures, both old and new, shall be cleared and cleaned of all brush, hedges, weeds, heavy vegetation, obstruction, rubbish and other objectionable material or growth; and shall be maintained in a neat, serviceable and satisfactory condition until the project is accepted.
- g. Borrow pits and other material pits shall be cleared and grubbed of all trees, stumps, roots, brush, hedge, and other heavy growths of vegetation, and in addition shall be stripped of overburden laying above the material to be obtained. This work is to be completed before any excavation is made in the pit area.
- h. All clearing and grubbing shall be completed a satisfactory distance ahead of the construction operations before construction stakes are set.

- i. All materials and debris from the clearing and grubbing operation shall be burned, completely destroyed, or otherwise disposed of from the project limits by the Contractor in a satisfactory manner. The Contractor must obtain written permission from any property owner if private property is used for disposal, and furnish a copy to the Engineer. All Federal, State, County, and City laws, regulations and ordinances related to burning or disposal shall be observed.

### 3. Method of Measurement

- a. Clearing and Grubbing shall be of all areas indicated in the Contract Documents and paid for as a lump sum. No measurement of area will be made.
- b. When changes in the Contract Documents affect the area to be cleared and grubbed, a proportionate adjustment for increased or decreased area will be made.

### 4. Basis of Payment

- a. This item will be paid for at the Contract unit price per lump sum for Clearing and Grubbing. This price will be full compensation for completing the Clearing and Grubbing as outlined in the Plans and these Specifications including all labor, materials, and equipment necessary to complete the work.
- b. When proportionate payments are made, they will be based on the completed percentage of the total clearing and grubbing specified.

## Section 4.0

### TECHNICAL SPECIFICATIONS FOR GRADING

#### 1. Description

This work shall consist of excavating and grading the roadway, borrow pits, waterways, ditches, intersections, and other specified items, within the project limits; excavation of unsuitable material from roadbed and beneath embankment areas; excavating select material found in the roadway which is ordered for specific use in the construction; the construction and removal of detours authorized by the Engineer; trimming, shaping and dressing of all slopes; preparation of the roadbed; and disposing of all excavated materials all in accordance with the Specifications and in reasonably close conformity with the lines, grades, and typical cross-sections indicated on the Plans or established by the Engineer. It shall include the constructing of roadway embankments and the placing and compacting of approved material in the project area.

#### 2. Classification

##### a. Excavation (Unclassified)

All excavation performed under this section, including Portland cement concrete located above subgrade elevation, other than Borrow Excavation, Channel Excavation and Undercutting will be considered Unclassified Excavation regardless of the nature of the material excavated.

##### b. Common Excavation

Common Excavation shall consist of the removal and satisfactory placement of material classified as loam, sand, clay, loose chert, loose gravel, cemented chert, cemented gravel, gravel, soft shale, soft slate, and all pavements except those using Portland cement as a bonding agent, decomposed rock, loose rock boulders, slabs or fragments of rock of less than one-half cubic yard in volume and all other material not otherwise classified in these specifications.

This item shall also consist of the removal and satisfactory disposal of unsatisfactory materials below grade in cut sections, from areas upon which embankments are to be placed, and undercutting for pipe and box culverts where required. Common Excavation does not include the stripping, stockpiling and placing of topsoil, nor does it include step benching in preparation of embankment areas on hillsides.

c. Rock Excavation

Rock excavation shall consist of the removal and satisfactory disposal of non-degradable rock which, in place, rings under the hammer or which cannot be economically excavated by the proper use of a power shovel or without the use of explosives; and any boulder, slab or fragment of rock having a volume of ½ cubic yard or more.

d. Borrow Excavation

Borrow Excavation shall consist of material required for the construction of embankments or other portions of the work, and shall be obtained from approved sources outside the right-of-way limits, unless otherwise designated in the Plans. This item shall consist of the satisfactory removal and placement of the approved material.

e. Channel Excavation

This item shall consist of the removal and satisfactory disposal of all material, regardless of its nature or the manner in which it may be removed, that is excavated for channel changes in widening, deepening and straightening existing channels or constructing new channels, which have a width at the bottom of more than fourteen feet as indicated on the Plans. All other similar excavation with a bottom width fourteen feet or less, as shown on the Plans, shall be paid for as Common and Rock excavation.

3. Construction Requirements

a. General

1. Prior to the beginning of grading, all necessary clearing and grubbing, removal of structures and obstructions, and placement of erosion control in that area shall have been completed.
2. All suitable materials removed from the excavation shall be used in the construction of the embankments, intersecting road approaches and at such other places as indicated or directed.
3. The material to be used in excavations shall be removed in such a manner that the slopes may be neatly trimmed to the slope lines given, when being dressed. Cuts may be widened or the slopes varied during the progress of the construction, according to the stability of the material excavated or the necessity of securing additional material, and without additional compensation.
4. Excavation material shall not be wasted, deposited, or disposed of outside of the Construction lines unless directed, in writing, by the Engineer.

5. Only excess or unsuitable material will be considered for disposal outside the construction limits. The material that cannot be used to widen or flatten the slopes, or other locations, and for such purposes as may be directed by the Engineer, shall be disposed of by the Contractor to the satisfaction of the Engineer.
6. Old roadways shall be obliterated by the grading operation in a manner that will incorporate the old roadway into the new roadway and the surroundings in a pleasing appearance from the new roadway.
7. The Contractor shall be responsible until final acceptance for the stability of all embankments and cut slopes made under the contract and shall replace at his own expense any portion which, in the opinion of the Engineer, has become displaced or damaged due to carelessness or negligent work by the Contractor or by normal rainfall and weathering.
8. Final clearing up shall be performed in accordance with the provisions set out in the Conditions of the Contract.

b. Rock Excavation

Rock, including boulders, shall be removed to a depth of not less than 12 inches below subgrade and the cavities thus formed shall be backfilled with suitable material and compacted. All loose rock on the cut slopes shall be removed immediately.

c. Borrow Excavation

1. The Contractor shall notify the Engineer 14 days in advance of the opening of any borrow pit so that the borrow material can be tested and cross-sections taken.
2. If the Contractor places more borrow than is required and thereby causes a waste of excavation, the amount of such waste will be deducted from the borrow volume.
3. The borrow pit shall be excavated in such a manner as to be self-draining whenever possible and have a neat appearance. The pit shall be covered with topsoil and seeded in accordance with the Specifications for Seeding and Topsoil, but no direct payment will be made for these items as they shall be included in prices bid for other items of construction.
4. All local, state, and federal laws must be complied with for any borrow pits that are not self-draining.

d. Undercutting

1. Unsuitable or unsatisfactory materials shall be removed to a depth not less than 2 feet below subgrade in cut sections and areas upon which embankments are to be placed. Undercutting for pipes and box culverts may also be required. These areas are to be refilled with suitable material and properly compacted.
2. The Contractor shall conduct his operation in such a manner as to allow the Engineer to take necessary cross-sections.
3. This unsuitable material can be used to flatten or widen slopes or for such purposes as the Engineer may direct. Excess material shall be disposed of by the Contractor to the satisfaction of the Engineer.

e. Embankments

1. Preparation of Embankment Areas

- a. All depression and holes below ground surface, whether caused by grubbing or otherwise, shall be filled with suitable matter and properly compacted.
- b. The original ground surface or the surface of embankment layers shall not be frozen, and shall be free from quantities of ice and mud when the subsequent layer is placed thereon.
- c. Backfilling around a structure, or any unit thereof, shall have been completed and thoroughly compacted to ground surface before any embankment materials are placed thereon.
- d. When embankment is to be placed and compacted on hillsides or when new embankment is to be compacted against existing embankments or when embankment is built in phases, the slopes that are steeper than 4:1 when measured at right angles to the roadway shall be continuously benched over those areas where it is required as the work is brought up in layers. Benching shall be of sufficient width to permit operations of placing and compacting equipment. Each successive cut shall begin at the intersection of the original ground and the vertical sides of the previous cuts. Material thus cut shall be recompacted along with the new embankment material at the Contractor's expense.
- e. Where embankments are three feet or less in height, the entire surface upon which the embankment is to be placed shall have all vegetation and unsuitable material removed and replaced with suitable material, be thoroughly plowed and scarified, have all cleavage planes destroyed, and be recompacted.

- f. Every portion of existing pavement upon which an embankment is to be constructed at an elevation higher than two feet below subgrade shall be removed and paid for as described in Section 2 (e & f) of Removal of Structures and Obstructions.

Every portion of existing pavement upon which an embankment is to be constructed more than two feet below subgrade shall be broken as described in same sections as above.

## 2. Embankment Materials

- a. Unsuitable or perishable materials such as brush, hedge, stumps, roots, logs, rubbish heavy vegetation, etc. shall not be incorporated, buried or embedded in the embankment.
- b. All rock shall be broken into sizes not to exceed one foot in maximum direction and have enough common excavation to fill all voids between the rocks.
- c. Stones or rock four inches or greater in their greatest dimension will not be allowed in the top one foot of any embankment.

## 3. Formation of Embankments

- a. Embankments shall be formed of suitable materials placed in successive level layers level layers of not more than eight (8) inches in compacted depth, unless otherwise stipulated, for the full width of the cross-section. Each layer shall be thoroughly rolled and compacted by the use of compacting equipment that will produce the required compaction of 95 percent of maximum density. At all times the contractor shall keep the embankment in such form as to insure proper surface drainage.
- b. When the embankment material consists of rock fragments of such size that the material cannot be placed in layers of the thickness prescribed without crushing or further breaking down the pieces resulting from excavation methods, such material may be placed in the embankment in layers not exceeding in thickness the approximate average size of the larger rocks. Each layer shall be leveled and smoothed with suitable leveling equipment and by distribution of spalls and finer fragments of earth. The lifts shall not be constructed above an elevation two feet below the finished subgrade. At no time shall any layer exceed two feet in depth.
- c. The top six inches in both cut and fill sections shall be compacted to a density equal to 100% of maximum density.

- d. The moisture content of the material being compacted shall meet both the following conditions: (1) The moisture content shall be within the range of values at which 95 percent of the maximum density can be obtained as indicated by the moisture-density relationship curve and (2) the moisture content shall not exceed the optimum moisture content to the extent that the material pumps under loads applied by the construction equipment. Where 100 percent of maximum density is required, the moisture content of the material being compacted shall meet condition 3(d)2 above and shall not vary from the optimum moisture content by more than plus or minus three percentage points.
  - e. Determination of optimum moisture and maximum density will be made by the Engineer in accordance with the "Standard Method of Test for Moisture Density Relationship of Soils Using a 5.5 Pound Rammer and a 12-inch Drop," AASHTO Designation: T 99, Method C. The determination of the density of the soil in place will be in accordance with an approved AASHTO method.
  - f. Embankment materials shall not be placed within 50 feet of any structure until the structure has sufficiently cured in the opinion of the Engineer. The backfill material used within 50 feet shall be as free of rock as possible and carefully selected to the satisfaction of the Engineer. Special precautions shall be used to prevent any damage to the structure.
  - g. Each layer of embankment formation shall be compacted to the required density before the formation of the next layer is begun.
- f. Shaping and Dressing
- 1. The roadbed shoulders, ditches, channels, borrow pits, and slopes shall be shaped within close conformity to the specified lines, grades, and cross-sections.
  - 2. Rock cuts shall be scaled of all loose fragments and left in a neat safe and workmanlike condition.
  - 3. The Contractor shall clean the entire right-of-way of all rubbish, brush, sediment, etc. and dispose of the excess material.
- g. Subgrade Preparation
- 1. The subgrade shall be prepared to the lines and grades staked by the Engineer and to the cross-sectional shape as indicated on the plans or as directed.
  - 2. The finished subgrade shall be compacted to a minimum density of 100% of the maximum density as specified in subsection referring to Formation of Embankments.
  - 3. All soft, yielding material which will not compact readily shall be reworked or removed and replaced, and the replacement material shall be compacted to the specified density.

4. The subgrade shall be graded in a manner that will provide ready drainage of water from the subgrade. Ditches and drains shall be maintained to provide proper drainage during construction.
5. The Contractor shall protect the subgrade from damage. Only hauling essential to the construction of the project will be allowed. Any ruts or rough places that develop will be reshaped and recompacted.
6. The subgrade will be checked after rolling and adjusted to conform to the lines, grades and cross-section as indicated or directed. After conforming to the proper lines, grades, and cross-sections, being free of dust and loose material, and of a uniform bearing the subgrade will be approved at least 500 feet in advance of the placing of materials, except when the distance is reduced due to unusual circumstances by the Engineer.

#### 4. Method of Measurement

##### a. General

1. All excavation shall be computed by the cubic yard.
2. The volume of all accepted excavation shall be measured by cross-sectioning the area excavated and computed by the average-end-area method.
3. Initial cross-sections will be taken during design if necessary as determined by the Engineer, and final cross-sections will be taken after topsoil has been placed. Topsoil will be deducted from the final cross sections to determine the volume of road and drainage excavation.
4. Additional measurements will be taken to determine the volume of materials, removed and satisfactorily disposed of, whose volume cannot be secured by cross-section methods.
5. The volume of all materials will be measured and computed for only one pay item, unless material which has been deposited as specified, must be removed and disposed of again to conform to a change of the plans, or as directed. The volume of such material shall be reclassified and remeasured for its proper class of excavation.
6. Where excavation of different classifications overlap, the following order of measurement and computation for payment is designated as a contract provision, namely:

Excavation included in lump sum items shall supersede all other excavations.

Excavation (unclassified) shall supersede common excavation, rock excavation, and channel excavation.

Common excavation and solid rock excavation shall supersede channel excavation.

7. Hauling of excavation and borrow materials shall be considered incidental to this construction and the costs thereof shall be included in the unit price bid for excavation items.
8. Embankment construction, sloping, shaping, dressing, subgrade preparation, disposal of excess, or unsuitable material, final clearing up, etc., and completing all incidentals connected therewith will not be paid for directly but will be considered to be contingent items, payment for which is included in the contract price for excavation items.
9. Excavation (unclassified) and common excavation shall be measured by initial cross-sections. The method of measurement will be the average end-area method (utilizing the initial cross-section and the design cut and fill slopes and roadway template).

b. Rock Excavation

1. Measurements of solid rock will be taken to include only 12 inches below grade, unless the Contractor is directed, in writing, by the Engineer to excavate the rock to a depth greater than 12 inches.
2. Measurements will include over-breakage from the back slopes beyond 12 inches if it is not attributable to Contractor's carelessness.

c. Borrow Excavation

1. Initial cross-sections will be taken after the borrow pit is cleared and grubbed, cleared of topsoil and unsuitable material, and smoothed in a manner to make cross-sectioning possible. Final cross-sections will be taken after all material is removed and before topsoil is replaced.
2. Topsoil shall be replaced and the pit seeded as instructed without any direct payment and the cost thereof shall be included in the unit price for borrow excavation.

d. Undercutting

1. The volume of unsuitable or unsatisfactory material actually excavated, removed, and disposed of will be measured by the most feasible method and included in the volume of common excavation computed.
2. Topsoil undercut from proposed embankment areas will not be measured as common excavation unless the depth of undercut exceeds six (6) inches. All undercut exceeding six (6) inches shall be paid as Common Excavation.

e. Embankments

1. Embankments will not be measured. The construction of embankments is the responsibility of the Contractor as specified.
2. Excavation of embankment will not be measured for payment unless specified by the Engineer.

f. Channel Excavation

1. Channel excavation will be measured only for material indicated, or directed, to be removed in construction of a channel.
2. If channel excavation is not listed in the Bid Schedule excavation (unclassified), common excavation and/or rock excavation will be measured and computed as applicable.

5. Basis of Payment

- a. The accepted quantities of the items listed below will be paid for at the Contract Unit Price per cubic yard, complete in place, and shall be full compensation for all work, materials, including water, labor and other incidentals required to complete the work in accordance with the Plans and Specifications.
- b. Payment will be made under the following bid items as set forth in the Bid Schedule:

Excavation (Unclassified)	-	per cubic yard
Common Excavation	-	per cubic yard
Rock Excavation	-	per cubic yard
Borrow Excavation	-	per cubic yard
Channel Excavation	-	per cubic yard

- c. Embankments, shaping and dressing, subgrade preparation, and water will not be paid for directly as the cost of these items is to be included in the pay items for grading as listed in the Bid Schedule.

Section 5.0

STANDARD SPECIFICATIONS  
FOR  
MINERAL AGGREGATE BASE

1. Description

This work shall consist of furnishing and placing one or more courses of aggregates and additives, if required, on a prepared subgrade in accordance with these Specifications and in reasonably close conformity with the lines, grades, thicknesses, and typical cross sections shown on the Plans or established by the Engineer. This work also includes furnishing and placing Maintenance Stone and Backfill Stone in accordance with these Specifications and the Plans.

2. Materials

All materials used in this construction, in addition to the general requirements of these Specifications, unless otherwise stipulated, shall conform to the following:

- a. Mineral Aggregate Base shall be crushed stone, Class A Aggregate Grading D, as specified in Subsection 903.05 of the TDOTSS, 1995, and all Special provisions pertaining thereto through the date of advertisement for this Contract.

Sieve Size	Total Percentage by Weight
	_____ Passing Sieves _____
1-1/2 inch	100
1 inch	85-100
3/4 inch	60- 95
3/8 inch	50- 80
No. 4	40- 65
No. 16	20- 40
No. 100	9- 18

- b. Calcium Chloride shall meet the requirements of the AASHTO Specification for Calcium Chloride, Designation M-144 and shall be Type 2.

- c. Maintenance Stone and Backfill Stone shall be of quality and gradation as specified in Subsection 2a above. The Backfill Stone in the roadway shall be compacted to 100 percent of the Standard Proctor Density at 2 percent less than the optimum moisture content as determined by AASHTO T99 Method D.

### 3. Equipment and Construction Requirements

- a. Equipment and Construction Requirements shall conform to Subsections 303.05 to 303.12 of the TDOTSS, 2006, and all special Provisions pertaining thereto through the date of advertisement of this Contract. In addition, the following compaction will be required: Mineral Aggregate Base shall be compacted to 100 percent of the Standard Proctor Density at 2 percent less than the optimum moisture content as determined by AASHTO T99 Method D.
- b. The maximum speed of trucks hauling or traveling over any part of the project under construction shall be 20 m.p.h.

### 4. Basis of Payment

- a. Mineral aggregate payment for stone backfill around pipes will be included in cost of pipe (Section 20.0).
- b. The accepted quantity of mineral aggregate base stone, complete in place, will be paid for at the Contract Unit Price per ton and constructed in accordance with the Plans and Specifications.

## Section 6.0

### TECHNICAL SPECIFICATIONS FOR CONCRETE CURB, GUTTER, AND COMBINED CURB AND GUTTER

#### 1. Description

This work shall consist of Curb, Extruded Curb, Gutter, or Combined Curb and Gutter constructed of Portland cement concrete in accordance with these Specifications and in conformity with the lines, grades and dimensions shown on the Plans, or established by the Engineer.

#### 2. Materials

- a. Concrete shall be Portland cement air entrained Class "A" meeting the requirements of Section 15.0 of these Specifications.
- b. Materials shall meet the applicable requirements of Section 702 of TDOTSS, 2006, and all Special Provisions thereto dated prior to the advertisement of the Contract.

#### 3. Equipment and Construction Requirements

Equipment and construction shall meet the requirements of Subsection 702.03 and 702.05 through 702.11 TDOTSS, 2006.

#### 4. Method of Measurement

- a. Concrete curb, extruded curb, concrete gutter, and concrete combined curb and gutter will be measured for payment by the linear foot, complete in place. Sections formed by curb inlets shall not be measured for payment under this item.
- b. No measurement for payment will be made for excavation in preparing the foundation or for backfill materials, unless otherwise indicated on the plans, as these are a necessary part of the construction and a responsibility to be assumed by the Contractor.

#### 5. Basis of Payment

These items will be paid for at the Contract unit price per linear foot for concrete curb, extruded curb, gutter, and combined curb and gutter, complete in place, which price shall be full compensation for work, materials, labor, and incidentals required to complete this item in accordance with the Plans and Specifications.

## Section 7.0

### STANDARD SPECIFICATIONS FOR ELECTRIC CONDUIT INSTALLATION

#### 1. Description

This work shall consist of furnishing and placing one or more conduits for installation of future electric service lines to the satisfaction of the Gallatin Electric Department.

#### 2. Materials

All materials used in this construction, in addition to the general requirements of these Specifications, unless otherwise stipulated, shall conform to the following:

- a. Conduit and fittings must be 3" diameter schedule 40 PVC pipe meeting ASTM D1785 standards.
- b. Pipe primer and cement shall meet ASTM D2672
- c. Bedding and backfill material shall be #57 stone.

#### 3. Equipment and Construction Requirements

Conduit shall be installed from right of way line to right of way line in locations determined by City of Gallatin Electric Department. Conduits shall have 24" elbow at each end of conduit with stub out above existing grade. Ends shall be capped. Placement of conduit shall be on 6" bed of 57 stone with minimum of 6" of #57 stone surrounding entire diameter of conduit. Conduit shall be installed minimum of 30" below final grade of roadway and backfilled and compacted suitably.

#### 4. Basis of Payment

Payment will be made per road crossing.

## Section 8.0

### TECHNICAL SPECIFICATIONS FOR STORM SEWERS AND PIPE CULVERTS

#### 1. Description

This work shall consist of the placing of precast concrete pipe, plastic pipe, corrugated metal pipe, structural plate pipe and pipe arches, and all fittings as called for in the Plans and in accordance with the Specification including trench excavation, bedding, and backfill (excluding flowable fill).

#### 2. Materials

##### a. Pipe Materials

1. Reinforced concrete pipe shall conform to AASHTO M 170 for the specified diameters and strength classes. Horizontal and vertical elliptical pipe shall conform to AASHTO M 207. Precast end sections shall conform to the above specifications to the extent to which they apply. The pipe shall have tongue and groove joints for mortar joints, or bell and spigot joints suitable for the use of a rubber gasket to be provided as a part of this item.
2. Corrugated metal pipe, pipe arches, and their coupling bands shall conform to AASHTO M 36 for the specified sectional dimensions and gauges. Special sections such as elbows and end sections shall be the same gauge as the pipe and conform to the applicable requirements of AASHTO M 36. All pipes and pipe arches shall be bituminous coated as specified on the Plans and conforming to AASHTO M 190 Specifications.
3. Plastic pipe shall be HDPE smooth interior pipe (ADS N-12 or equivalent).  
  
Pipe shall conform to AASHTO M 252 and AASHTO M 294 for the specified diameters. The pipe shall have bell and spigot joints suitable for the use of a rubber gasket to be provided as part of this item.
4. Structural plate for pipe, pipe arches, arches and their accessories shall conform to the requirements of AASHTO M 167.
5. Each pipe shall be clearly marked to show its class or gauge, date of manufacture, name of manufacturer, and mark of approval by an approved commercial testing laboratory prior to delivery. All costs of inspection are to be included in the cost of furnishing and installing the pipe.

6. All pipe and special fittings shall be new materials which have not been previously used and free of any defects or damage.
7. Pipe sizes, class, or gauge, and type of bituminous coating will be shown on the Plans. Size of the pipe is nominal inside diameter.

b. Joint Material

1. Pipe joint mortar shall consist of one part Portland Cement and 1-½ parts sand with water necessary to obtain the required consistency. The materials used shall meet the requirements for these items as specified in the Standard Specifications for Concrete Structures.
2. Rubber Gaskets for concrete pipe shall be O-ring rubber gasket joints conforming to the requirements of AASHTO M 198 or an approved equal.
3. Joints for corrugated metal pipe, pipe arches, and fittings shall be coupling bands that have galvanized steel angles riveted near the ends and bolts through the angles to draw the bands tight.
4. Rubber gaskets for HDPE pipe shall be o-ring rubber gasket joints conforming to the requirements of ASTM F 477 or an approved equal.

c. Bedding Material

Bedding Material shall consist of well-graded crushed stone or crushed gravel meeting the requirements of TDOTSS, 1995, Section 903, Grading Size No. 57 or No. 67.

d. Backfill Material

Backfill Material for pipe in the roadway shall be graded stone to a depth ¾ the diameter of the pipe, followed by flowable fill as outlined in Section 14. In addition, all backfill material for pipe outside the roadway shall be a graded stone to a depth ¾ the diameter of the pipe, followed by fine compactible soil free of sod, brush, roots, and other perishable material.

3. Equipment

- a. The Contractor shall provide all equipment necessary and required for the construction of storm sewers and culverts, and have all equipment on the project in proper working condition before construction will be permitted to begin.
- b. The Contractor shall provide hoisting equipment to handle the pipe in unloading and placing in its final position, without damage to the pipe.
- c. The Contractor shall provide mechanical tampers of a design or designs approved by the Engineer.

#### 4. Construction Requirements

##### a. Excavation (unclassified)

1. Excavation (unclassified) shall consist of the removal of all materials necessary for the construction of storm sewers, culvert pipes, other pipe lines and all drainage structures such as manholes, catch basins, junction boxes, head walls, wing walls and concrete collars.
2. Excavation shall be made in open cuts unless shown otherwise on the Plans. Excavation shall be made to the lines and grades shown on the Plans or established by the Engineer. The width of trenches shall be sufficient to permit satisfactory jointing of the pipe, but shall not exceed the width where specified for Class "A" Bedding and permit thorough tamping around the pipe. The bottom of the trenches shall be carefully cut to the required grade of the pipe except where bedding material or cradles are shown; in which case the excavation shall extend to the bottom of the bedding or cradles as shown on the plans. Excavation around manholes, catch basins, junction boxes, and end walls shall be such as to allow proper compaction around the structure.
3. Any unsatisfactory material shall be excavated below the grades shown on the Plans as directed by the Engineer and backfilled with bedding material or other approved material and compacted.
4. Any excavation below the elevations shown on the Plans other than unsuitable material as designated by the Engineer shall be filled at the Contractor's expense with properly compacted bedding material or concrete.
5. Pipe trenches shall not be excavated more than one structure in advance of pipe laying and backfill, and all work shall be performed to cause the least possible inconvenience to the public. Adequate temporary bridges or crossings shall be constructed and maintained where required to permit uninterrupted vehicular and pedestrian traffic.
6. In all cases where materials are deposited along open trenches, they shall be placed so that no damage will result to the work and/or adjacent property in case of rain or other surface wash.
7. Rocks and/or boulders not classified as rock excavation shall be removed to the limits of excavation and grades shown on the plans. The spaces created outside the excavation limits by such removal shall be backfilled with suitable material and compacted to the proper lines and grades.
8. Excess material excavated shall be exported from the site to a suitable location. Cost of exporting materials off-site shall be included in the cost for other items.

b. Rock Excavation

Rock excavation when specifically provided for in the Contract Documents and Plans shall be performed and paid for as set forth in Section 4 of the Standard Specifications for Sewer and Pipe Excavation.

c. Laying and Bedding Pipe

1. Pipe shall be laid true to line and grade on a bed which is uniformly firm throughout its entire length. If material in the bottom of the excavation is of such character as to cause unequal settlement along the length of the storm sewer or culvert, the material shall be removed below the grade given, to such depth as ordered and shall be backfilled with bedding material and thoroughly tamped or otherwise compacted to insure an unyielding foundation.
2. Pipes shall be laid only on a foundation which is practically free of water.
3. Pipes shall be laid beginning at the downstream end of the pipe line. The lower segment of the pipe shall be in contact with the shaped bedding throughout its full length.
4. Concrete pipe shall be laid with the hubs or receiving ends upgrade. The spigot or tongue end shall be inserted into the receiving end as far as the pipe will permit. Circumferential laps of corrugated metal pipe shall be placed facing upstream and any longitudinal seams at the sides.
5. Concrete pipe joints shall be made with Portland cement mortar, rubber gaskets, or other joints recommended by the pipe manufacturer and approved by the Engineer.

When mortar joints are used the pipe ends shall be thoroughly cleaned and wetted before the joint is made. Stiff mortar shall then be placed so as to completely fill and seal the joint. The inner surface shall be finished smooth and any surplus material removed. The completed joint shall be protected against rapid drying by suitable covering material.

Rubber ring gaskets shall be installed so as to form a flexible watertight seal.

Other type joints that are permitted shall be installed according to manufacturer's specifications.

6. Each section or joint of corrugated metal pipe shall be securely attached to the adjoining section or joint of pipe with connecting bands or other approved type of joint and drawn or connected as to form a rigid joint.

7. Any breaks in the bitumen or treatment of bituminous coated pipe shall be refilled with the type and kind of bitumen used in coating the pipe originally.
8. The ends of pipe shall be rigidly supported to prevent any movement pending and during the construction of end supports.
9. Any pipe which is not in true alignment or which shows any settlement after laying or is damaged shall be taken up and relaid at the Contractor's expense.

d. Bedding and Backfilling (Excluding Flowable Fill)

1. Bedding material shall be Mineral Aggregate Base, Section 5, No. 57 or No. 67 stone and the cost of furnishing and placing the bedding material shall be included in the bid price per linear foot.
2. After the pipe has been laid to line and grade and properly bedded, the backfill material shall be placed and where required compacted by means of a vibrator or mechanical tamper. Tamping by hand will not be permitted. The trench shall be filled in 6-inch lifts and each lift shall be compacted with mechanical tampers. Compaction shall be 100% of the Standard Proctor Density at 2% less than the optimum moisture content as determined by AASHTO T99, Method D.
3. Backfill of pipes, sewers and culverts under streets (or less than 5 feet from the outside edge of the roadway), curbs, gutters and sidewalks shall be accomplished with Mineral Aggregate Base Material meeting the requirements of Section 5 of these Specifications and compacted as herein above specified. The cost of the backfill is not a separate pay item and shall be included in the bid price per linear foot.
4. The bedding for pipe must be laid in a dry trench. Removal of water encountered in ditches, springs, etc. shall be considered a necessary part of construction and shall be handled by pumping, ditching, or any other method satisfactory to the Engineer.

e. Existing Utilities

1. All existing sewers, water lines, gas lines, underground conduits, telephone lines, electric lines, or other utilities or structures in the vicinity of the work shall be carefully protected by the Contractor from damage at all times.
2. Any utility services that are designated to be relocated shall be coordinated with the appropriate utility.

## 5. Method of Measurement

- a. The quantities of concrete pipe, corrugated metal pipe, plastic pipe, corrugated metal pipe arches, and structural plate pipe arches shall be measured by the linear foot for each size and type of pipe and pipe arch shown on the Bid Schedule and shall be the horizontal length of pipe or pipe arch installed complete in place as measured along the centerline of the conduit from end to end with no deduction for fittings or bends.
- b. No separate payment will be made for unclassified or common excavation, bedding, or backfill for conditions outside of the roadway. The cost of these items is to be included in the bid price per linear foot for pipe and pipe arch. For conditions in the roadway, separate payment will be made for flowable fill.
- c. Concrete for collars, cradles, piers, pipe protection and/or encasement shall be measured in cubic yards of concrete furnished and placed in accordance with Plan dimensions and these Specifications and payment for this item of work shall be made at the applicable unit price per cubic yard of the class of concrete placed as set forth under Standard Specifications for Concrete Structures.

## 6. Basis of Payment

The accepted quantities of pipe culverts and storm sewers, measured as provided for above, will be paid for at the Contract unit price per linear foot for each type, class, shape and size constructed, complete in place, which price shall be full compensation for labor and materials used in bedding, making joints and connections to other structures, for strutting, when required for backfilling, and for completing all incidentals necessary to complete the item in accordance with the Plans and Specifications.

## Section 9.0

### TECHNICAL SPECIFICATIONS FOR MANHOLES, CATCH BASINS, INLETS, AND JUNCTION BOXES

#### 1. Description

- a. This work shall consist of constructing the following drainage structures: manholes, catch basins, inlets, and junction boxes. Construction shall be in conformity to the lines, grades, dimensions, and sizes shown on the Plans or as directed by the Engineer.
- b. The height or depth of these drainage structures will vary with location, but unless otherwise shown on the plans, shall be such that the frames will match the grades and lines of the roadway surface and the invert will be at designed elevations.
- c. Cast iron frames, grates, and covers shall be provided as specified on the Plans.
- d. Connections to pipes and other existing structures as may be necessary as a required part of the construction.

#### 2. Materials

- a. Concrete, cement, sand, and water shall conform to the applicable requirements of the Standard Specifications, Section 15.0, Concrete Structures. Concrete shall be Class A.
- b. Brick shall conform to AASHTO Designation M 91 Grade SM.
- c. Frames, covers, and grates shall be the type specified on the drawings. The castings shall conform to AASHTO Designation M 105, Class 30. All castings shall be true to pattern, to form and dimension, free from any faults or cracks, and cleaned of sand in a manner to provide a clean uniform surface. Bearing surfaces between frames and grates shall be machined to provide uniform bearing. Castings shall be treated with two coats of bituminous paint. All castings shall weigh at least 95% of the theoretical weight shown on the drawings.

#### d. Steps

1. Cast iron steps shall conform to the above specifications for frame, grate, and cover castings.
2. Aluminum steps shall be fabricated from aluminum alloy 6061, T6, with a minimum tensile strength of 38,000 psi, a minimum yield strength of 35,000 psi, and an elongation in two inches of not less than 10%.

- e. Precast manhole risers and tops shall conform to ASTM C 478.
- f. Prior to delivery all basic materials specified herein shall be tested and inspected by an approved independent commercial testing laboratory or, if approved by the Engineer, certified copies of test reports prepared by the manufacturer's testing laboratory will be acceptable. All materials which fail to conform to these specifications shall be rejected. After delivery to the site, any materials which have been damaged in transit or are otherwise unsuitable for use in the work shall be rejected and removed from the site.

### 3. Construction Requirements

#### a. General

1. Manholes, inlets, catch basins, and junction boxes shall conform to the Standard Detail Drawings and Specifications. Deviations from these drawings may be approved by submitting a detailed drawing to the Engineer before construction begins. When poured concrete is to be used instead of brick, a minimum wall thickness of 8 inches for unreinforced concrete and 6 inches for reinforced concrete must be used on the detailed drawing submitted.
2. Structural excavation and backfill shall be done in accordance with the Standard Specifications for Grading.
3. After the foundation has been prepared, the bottom shall be constructed to the required lines and grades. After the bottom has been allowed to set for at least 24 hours, the structure shall be constructed with care being exercised to form the incoming and outgoing sewer pipes into the walls of the structure at the required elevations. Pipe shall be placed in the wall and beyond the outside surface of the walls to allow for connections, the end of the pipe being placed flush with the inside face of the wall. Masonry shall be carefully constructed around the pipe so there will be no leakage around the outer surface. Inverts shall be constructed as shown on the drawings, and be smooth and accurately shaped to the same cross section as the invert of the sewer pipes which they connect.
4. Cast iron frames shall be set in cement mortar beds accurately to line, finished elevation, slope, and crown so that subsequent adjustments will not be necessary.
5. After the masonry and frames have time to set, but in no case less than 24 hours, the space around the drainage structure shall be backfilled and compacted to the required grade. The interior shall be cleaned of debris and excess material, the grating or cover placed, and all unused material, equipment, tools, and debris removed from the area.

b. Precast Reinforced Concrete Manholes

1. Precast sections shall consist of reinforced concrete sections manufactured, tested, and marked in accordance with the provisions of AASHTO Designation M 199(ASTM C 478).
2. Each section of the precast manhole shall have not more than two holes for the purpose of handling and laying. These holes shall be tapered and shall be plugged with stoppers or mortar after installation.

4. Method of Measurement

- a. Manholes, catch basins, inlets, and junction boxes will be listed on the Bid Schedule for each type as detailed on the Plans.
- b. The quantity of each type of drainage structure for which payment will be allowed shall be the actual number constructed by the Contractor in accordance with the Plans and Specifications accepted by the Engineer.

5. Basis of Payment

Payment shall be made for the quantities as measured and listed under the applicable pay items in the Bid Schedule.

Payment shall constitute full compensation to the Contractor under this item and shall cover the cost of furnishing all labor, materials, tools, plant equipment, services and other expenses in connection with the construction of manholes, inlets, catch basins and junction boxes complete in place including common excavation, shoring, backfill, masonry, castings, concrete reinforcing steel, inspection and test, all as herein specified and shown on the Plans.

Section 10.0

TECHNICAL SPECIFICATIONS  
FOR  
GRAY IRON CASTINGS

1. Description

All castings shall be of the type specified and shall be within reasonably close conformity with the dimensions shown on the Plans. The castings shall conform to ASTM A 48, with the additional requirements herein, and unless otherwise specified all castings shall be Class 30.

At the option of the Department, castings may be tested for strength by the transverse method in accordance with ASTM A 438. When tested by the transverse strength method, test specimens of 1.2 in.(30 mm) in diameter broken with an 18 in.(450 mm) span between supports shall meet the following breaking loads:

<b>Class</b>	<b>Breaking load at center</b> min. lbs(Newtons)
<b>No. 20</b>	1,800(8,000)
<b>No. 30</b>	2,200(9,800)

When the transverse test method is used and the test bar fails to meet the load requirements prescribed above, the broken end of the bar may be machined by the manufacturer and tested for tensile strength. If this tension specimen conforms to the requirements of the specified class, it shall be considered as having met, irrespective of the transverse breaking load.

Test bars for both transverse and tension testing shall be cast in accordance with ASTM A 48, Table II, Test Bar B.

All castings shall be cleaned of sand and scale by sand blasting or other effective methods so as to present a smooth, clean, and uniform surface.

Gray iron castings shall have the date of manufacture cast into each unit.

Manhole castings shall have the lid and lid seat of the rim machined to form a true bearing.

All castings shall weigh at least 95% of the theoretical weight shown on the Plans.

2. Payment

Payment will be made at the Contract unit price per each frame and grate and shall be full compensation for all work, materials, labor, and incidentals required to complete the work in accordance with the Plans and Specifications.

Section 11.0

TECHNICAL SPECIFICATIONS  
FOR  
HEADWALL

1. Description

See detail on plans.

2. Payment

Payment will be made at the Contract unit price per each headwall and shall be full compensation for all work, materials, labor, and incidentals required to complete the work in accordance with the Plans and Specifications.

## Section 12.0

### TECHNICAL SPECIFICATIONS FOR RIP RAP

#### 1. Description

This work shall consist of furnishing and placing one or more classes of crushed or fractured limestone on a prepared surface in accordance with these Specifications and in reasonably close conformity with the sizes, thicknesses and typical cross-section shown on the Plans or established by the Engineer.

#### 2. Materials

Riprap will be classified according to the following designations:

Rubble-Stone Riprap(Grouted)  
Sacked Sand-Cement Riprap  
Machined Riprap

Machined Riprap(Class A-1) shall vary in size from 2 in. to 1.25 ft.(50 to 375 mm) with no more than 20% by weight being less than 4 in.(100 mm). The thickness of the stone layer shall be 1.5 ft.(450 mm) with a tolerance of 3 in.(75 mm).

Machined Riprap(Class A-2) shall be identical to Class A-1 except that hand placed rubble stone riprap placed 1 ft.(300 mm) thick in accordance with **Section 709** may be substituted for 1.5 ft.(450 mm) of machined riprap.

Machined Riprap(Class A-3) shall vary in size from 2 to 6 in.(50 to 150 mm) with no more than 20% by weight being less than 4 in.(100 mm). The thickness of the 4 in. (100 mm) stone layer shall be as directed on the plans.

Machined Riprap(Class B) shall vary in size 3 in. to 2.25ft.(from 75 to 675 mm) with no more than 20% by weight being less than 6 in.(150 mm). The thickness of the layer shall be 2.5 ft.(750 mm) with a tolerance of 4 in. (100 mm).

Machined Riprap(Class C) shall vary in size from 5 in.(125mm) to 3 ft.(1 m) with no more than 20% by weight being less than 9 in.(225 mm). The thickness of the layer shall be 3.5 ft.(1.1m) with a tolerance of 6 inc.(150 mm).

### 3. Preparation of Foundation

Immediately prior to the construction of rip rap, the sand filter bed, filter fabric surface or natural ground surface shall be trimmed within reasonably close conformity to the lines and grades indicated on the Plans or as directed by the Engineer. The natural ground or sand filter bed shall be thoroughly compacted by the use of hand or mechanical tamps. On slopes, the bottom of the riprap shall be placed at least 2 feet below the natural ground surface, unless otherwise directed.

### 4. Construction

Riprap shall be constructed upon the prepared foundation by hand placing, so that the stones shall be as close together as is practicable, in order to reduce voids to a minimum.

When riprap is constructed in more than one layer, it shall be placed so that it will be thoroughly tied together with the larger stone protruding from one layer into the other.

The standard depth of rip rap shall be 12 inches for Class I, and Class II, 18 inches for Class III and 24" for Class IV, unless otherwise directed; and in no instance shall be less than 10 inches in depth.

The main stones shall be thoroughly "chinked" and filled with the smaller stones by throwing them over the surface in any manner that is practical to fill the voids. Napping the stones will not be required, except stones protruding more than 4 inches above what is considered normal surface of the stones.

### 5. Method of Measurement

Riprap will be measured by the cubic yard, complete in place. The volume shall be obtained from the thickness shown on the Plans and surface measurement. No measurement for payment will be made for excavation or for preparing the foundation for riprap.

### 6. Basis of Payment

Accepted quantities of riprap will be paid for at the Contract unit price per ton, complete in place.

## Section 13.0

### TECHNICAL SPECIFICATIONS FOR TOPSOIL

#### 1. Description

Topsoil shall consist of a soil conforming to the requirements of these Specifications, obtained from locations indicated on the Plans or approved by the Engineer, and placed in conformity with the provisions and at locations specified.

Suitable topsoil which has been stripped off from trench excavation shall be stockpiled as directed by the Engineer and later used before additional topsoil is hauled on to the work site. Unsuitable material shall not be included in these stockpiles and shall be wasted as directed in Section 20.0, Item 4 (a) (8).

#### 2. Materials

- a. Topsoil shall consist of the natural loam, sandy loam, silt loam, or clay loam humus-bearing soils adapted to the sustenance of local plant life, and such topsoil shall be neither excessively acid or alkaline.
- b. Topsoil shall be free from foreign material such as hard pan, stones larger than one-inch diameter, concrete, cinders, brick asphalt, or other undesirable materials. It shall also be reasonably free from weeds and objectionable plant material.

#### 3. Construction Requirements

- a. All areas designated to be covered with topsoil shall be undercut or underfilled to such a degree so that when covered to the required depth with topsoil the finished work will be in accordance with the required lines, grades, slopes, and cross sections.

Such work shall be considered subsidiary to the item of Topsoil and no additional compensation will be made.

- b. All areas from which topsoil is procured shall be cleared, if necessary, by means of mowing weeds or other vegetation to a height of approximately 6 inches and freed from any litter such as brush, rock, or foreign material of objectionable size or quantity.
- c. The available humus-bearing soil shall then be stripped off to such depth as available, or as necessary to produce sufficient volumes to cover the designated areas to the required depths, taking all practicable care to avoid incorporation of any of the underlying sterile soil therewith.

The topsoil thus stripped from these areas may be stockpiled in areas designated so that it can be reclaimed and spread.

- d. After the areas upon which the topsoil is to be placed have been prepared and finished to the required lines, grades, slopes, and cross section, the topsoil shall be placed and spread thereon to a uniform depth as shown on the Plans or required in the Contract, or if none is so shown, to a depth of 4 inches.
- e. All clods and lumps shall be broken down by means of harrows, disks, or other appropriate equipment to provide a uniformly textured soil.

Rocks, twigs, large clods that will not break down, and other foreign material shall be removed and the entire surface shall be dressed to present a uniform appearance. Rolling will not be required.

#### 4. Method of Measurement

- a. Topsoil will be measured for payment by the cubic yard.
- b. The volume of topsoil, in cubic yards, for which payment shall be made, shall be computed by multiplying the area of ground actually covered by the nominal depth of topsoil as indicated on the Plans or as directed by the Engineer. No payment shall be made for any area where the average depth in place measured in the field is significantly less than the nominal depth indicated on the Plans or as directed by the Engineer. Payment shall be made only for that yardage actually used and required in accordance with the requirements and provisions set out in these Specifications or as directed by the Engineer.
- c. Topsoil not required will not be measured for payment.

#### 5. Basis of Payment

This item will be paid for at the Contract unit price per cubic yard for topsoil, complete in place, which price shall be full compensation for all work, materials, labor, maintenance and other incidentals necessary to complete the item, in accordance with the Plans and Specifications.

## Section 14.0

### TECHNICAL SPECIFICATIONS FOR SEEDING

#### 1. Description

Seeding shall consist of placing seed commercial fertilizer, agricultural limestone, and mulch material as specified on prepared ground in accordance with the Plans and these Specifications. All newly graded earthen areas that are not to be paved, stabilized, or sodded shall be seeded unless otherwise indicated on the Plans or as directed by the Engineer.

#### 2. Materials

Materials shall conform to Subsection 801.02 of TDOTSS, 2006.

#### 3. Construction Requirements

- a. General - The Contractor shall notify the Engineer at least 48 hours in advance of the time he intends to begin sowing seed and shall not proceed with such work until permission to do so has been granted by the Engineer. Before starting seeding operations on any area, final dressing and placing of topsoil shall have been completed in accordance with the applicable Specifications.
- b. Preparation for Seeding - The seedbed shall be prepared in the following manner and sequence:
  1. Each area to be seeded shall be scarified, disked, harrowed, raked or otherwise worked until it has been loosened and pulverized to a depth of one inch and brought to the lines and grades indicated on the Plans or directed by the Engineer.
  2. This operation shall be performed only when the soil is in a tillable and workable condition. Fertilizer, at the rate of not less than 20 pounds of grade 10-10-10 or equivalent, per 1,000 square feet, and agricultural limestone at the rate of not less than 100 pounds per 1,000 square feet, shall be uniformly incorporated in the soil for a depth of approximately ½ inch. Fertilizer need not be incorporated in the soil as specified above when mixed with seed in water and applied with power sprayer equipment.
- c. Time for Seeding - The seeding dates for each seed group shall be as shown in Subsection 18.14 TDOTSS, 1995.

TS-14.0-1

- d. Seeding - Seed of the specified group shall be sown as soon as preparation of the seedbed has been completed. It shall be sown uniformly by means of a rotary seeder, hydraulic equipment, or other satisfactory means. Seed shall be sown at the rate of 2.5 pounds per 1,000 square feet for Groups "A," "B," and "C," 0.6 pounds per 1,000 square feet for Group "B1" and at a rate of 1.5 per 1,000 square feet for all other groups. Group "C" seed and seed of legumes when sown alone shall be inoculated before sowing in accordance with the recommendations of the manufacturer of the inoculant and as directed by the Engineer.

No seeding shall be done during windy weather or when the ground surface is frozen, wet or otherwise nontillable.

No seeding shall be performed during December and January unless otherwise permitted.

- e. Mulching - When the mulching material is hay or straw, it shall be spread evenly over the seeded area at an approximate rate of 100 pounds per 1,000 square feet for straw and 150 pounds per 1,000 square feet for hay immediately following the seeding operations. This rate may be varied by the Engineer depending on the texture and condition of the mulch material and the characteristics of the area seeded.

Hay or straw mulch shall be held in place by emulsified asphalt applied at the approximate rate of 6 gallons per 1,000 square feet as required to hold the mulch in place. The Contractor shall cover bridges, guardrails, signs, and appurtenances if the mulch binder is applied in such a way that it would come in contact with or discolor the structures.

- f. Maintenance - All seeded areas shall be cared for properly to the Engineer's satisfaction until acceptance of the work. Areas which have been previously seeded and mulched in accordance with this Section but which have been damaged or failed to successfully establish an acceptable stand of grasses or legumes shall be repaired as directed by the Engineer. All material and labor required to repair seeded areas made necessary by negligence on a part of the Contractor will be furnished by the Contractor at no cost.

After an acceptable stand of grass has been attained, seeded areas shall be uniformly topdressed with not less than 10 pounds of fertilizer of grade 10-10-10, or equivalent, per 1,000 square feet at approximately six month intervals, unless otherwise specified or directed. Any erosion control measures may be removed at this time.

- g. Final Cleaning Up - After the completion of seeding, the area shall be cleaned of all rubbish, excess material, and any other items that will mar the appearance of the projects as in accordance with the General Specifications.

TS-14.0-2

#### 4. Method of Measurement

The area of seeding to be measured for payment shall be the number of square yards seeded in accordance with these Specifications and accepted by the Engineer.

#### 5. Basis of Payment

Seeding will be paid for at the Contract unit price per square yard for Seeding, complete in place, which payment shall be full compensation for preparing the seed bed; for furnishing and placing all materials including fertilizer, agricultural limestone, seed, water, mulch, mulch binder, and inoculants if specified; and for maintenance of the area after the materials have been placed.

## Section 15.0

### TECHNICAL SPECIFICATIONS FOR TEMPORARY WATER POLLUTION CONTROL

#### 1. Description

This work shall consist of temporary control measures as shown on the plans or as ordered by the Engineer during the life of the Contract to control soil erosion and water pollution. Such measures shall include, but are not limited to, the use of silt barriers, fiber mats, netting, mulches, grasses, slope drains, and other control devices. Erosion and siltation control measures as described herein shall be applied to any erodible material exposed by any activity within the project limits.

#### 2. Materials

- a. Seeding - Seed, mulches, fertilizer, agricultural limestone and other materials for seeding shall conform to the Standard Specifications for Seeding.
- b. Sodding - Sod, fertilizer, agricultural limestone and other materials for sodding shall conform to the Standard Specifications for Sodding.
- c. Temporary Slope Drains - Slope drains may be constructed of pipe, fiber mats, rubble, Portland cement concrete, bituminous concrete, sod or other materials acceptable to the Engineer that will adequately deter erosion.
- d. Silt Barriers
  1. Silt barriers may be brush barriers, baled straw barriers, or silt fences.
  2. Brush barriers shall consist of brush, trees and trimmings, shrubs, plants and other approved refuse from the clearing and grubbing operation.
  3. Baled straw barriers shall consist of tightly baled straw, plastic or wire binding preferred to twine, firmly anchored to the ground with steel drift pins or wooden stakes.
  4. Silt fences shall consist of an approved fabric filter, Mirafi 140 or equivalent, suitably supported by a woven wire fence.

### 3. Construction Methods

#### a. General

1. Prior to simultaneously with the clearing and grubbing operations, the Contractor shall install siltation control devices in accordance with the approved erosion control plan. Such work may involve the construction of temporary berms, dikes, dams, silt fences, sediment basins, lined channels, permanent cut-off ditches, slope drains or other control devices as necessary to control erosion and siltation. Water from cofferdams is not to be pumped directly into streams, but is to be pumped into sediment ponds or traps. No grading shall be performed until the siltation control devices are in place to the satisfaction of the Engineer. Areas to be graded shall not be cleared and grubbed more than 20 calendar days prior to beginning grading operations in such areas. Stockpiled topsoil or fill material is to be treated so the sediment runoff will not contaminate surrounding areas or enter nearby streams. In order to reduce sediment in runoff, erosion control structures shall be installed promptly during all construction phases.

The Contractor's operations shall be staged so that graded or otherwise disturbed erodible surfaces are protected as the work progresses. Once the Contractor begins grading for a roadway cut or embankment, he shall maintain a continuous, viable operation to complete the cut or embankment to subgrade elevation, unless otherwise approved in writing by the Engineer. Exposed erodible cut or embankment slopes shall be final dressed, topsoiled and protected with permanent seeding or sodding in vertical increments not exceeding 25 feet as the work progresses; and no portion of these slopes shall remain unprotected for more than 20 calendar days unless the Engineer determines that weather conditions or other special circumstances preclude current placement of permanent control measures. Temporary erosion control measures shall be implemented as directed by the Engineer.

- a. Seeding or sodding operations shall be initiated within 48 hours after any one of the following conditions occurs:

Each 25 foot vertical increment is graded, or

- b. Upon suspension or completion of grading operations in a specific area.

The above requirements for progressive siltation control also apply to graded areas off the rights-of-way such as waste area, borrow areas and haul roads.

The Contractor shall incorporate all permanent erosion and siltation control features into the project at the earliest practicable time. Temporary siltation control features shall be used to control erosive conditions that warrant protection prior to installation of permanent control features or that are needed to temporarily control erosion or siltation that develops during construction but which is not associated with permanent control features on the Project.

2. In the event of conflict between these requirements and siltation control laws, rules, or regulations of other Federal or State or local agencies, the more restrictive laws, rules or regulations shall apply.
3. The temporary erosion control features installed by the Contractor shall be acceptably maintained by the Contractor until the completion of the project, and he shall remove such installation if ordered by the Engineer. Any materials removed shall become the property of the Contractor.
4. In case of repeated failure on the part of the Contractor to control erosion, pollution and siltation, the Engineer reserves the right to employ outside assistance or to use his own forces to provide the necessary corrective measures. Such incurred direct costs plus project engineering costs will be charged to the Contractor and appropriated deductions made from the Contractor's monthly progress estimate.
  - b. Seeding - Temporary seeding shall conform to the Standard Specifications for Seeding except agricultural limestone need not be applied.
  - c. Sodding - Sodding shall conform to the Standard Specifications for Sodding. Care must be taken to properly anchor the sod to prevent any washouts.
  - d. Temporary Slope Drains

Temporary slope drains shall consist of metal pipe, plastic pipe, flexible rubber pipe, or other materials which can be used as temporary measures to carry water accumulating in the cuts and on the fills down the slopes prior to installation of permanent facilities or growth of adequate ground cover on the slopes.

All temporary slope drains shall be adequately anchored to the slope to prevent disruption by the force of the water flowing in the drains. The base for temporary slope drain shall be compacted and concavely formed to channel the water or hold the slope drain in place. The inlet end shall be properly constructed to channel water into the temporary slope drain. Energy dissipaters, sediment basins or other approved devices shall be constructed at the outlet end of the slope drains to reduce erosion downstream. An ideal dissipater would be dumped rock or a small sediment basin which would slow the water as well as pick up some sediment. All temporary slope drains shall be removed when no longer necessary and the site restored to match the surroundings.

- e. Silt Barriers - Silt Barriers shall be constructed by one of the methods listed below. It shall be the Contractor's choice of which barrier to use unless the silt barrier type is specified on the Plans.
1. Brush barriers shall consist of brush, trees and trimmings, shrubs, plants and other approved refuse from the clearing and grubbing operation. The brush barriers shall be constructed approximately parallel to original ground contour, placed at the bottom of fill slopes to trap and retain sediment. The top of the brush barrier shall be at least five (5) feet below finished roadway grade. The brush barrier shall be compressed to an approximate height of three (3) to five (5) feet and an approximate width of five (5) to ten (10) feet. The embankment shall not be supported by the construction of brush barriers.
  2. Baled Hay or Straw Erosion Checks - Hay or straw erosion checks shall be embedded in the ground a minimum of 4 inches to prevent water flowing under them. The bales shall also be anchored securely to the ground by wooden stakes driven through the bales into the ground. Bales can remain in place until they rot, or be removed after they have served their purpose, as determined by the Engineer. The Contractor shall keep the checks in good condition by replacing broken or damaged bales immediately after damage occurs. Normal debris clean-out will be considered routine maintenance.
  3. Silt fences shall consist of an approved fabric filter, Mirafi 140 or equivalent, suitably supported by a woven wire fence, and are located at the bottom of fill slopes to trap and retain sediment. Fence posts may be wood or metal securely anchored to the ground on centers not to exceed twelve (12) feet. The woven wire fence shall be from two (2) to four (4) feet in height as required, and the mesh openings shall be 4" x 4".

The Contractor shall be required to maintain the silt fence and filter barriers in a satisfactory condition for the duration of the Project or until its removal is requested by the Engineer. The silt accumulation at the fence may be left in place and seeded, removed, etc. as directed by the Engineer. Unless otherwise directed by the Engineer, all silt fence or filter barrier shall be removed prior to completion of the Project and shall become the property of the Contractor.

The Contractor shall install and maintain all temporary erosion and siltation control features until no longer needed or permanent control measures are installed. Any materials removed shall become the property of the Contractor. In order to insure erosion and siltation control structures work properly, it is imperative the sediment be removed; therefore, inspection and maintenance of structures is to be performed on a regular basis. During sediment removal, the

Contractor shall take care to insure that structural components of erosion and siltation control structures are not damaged and thus made ineffective. If damage does occur, the Contractor shall repair the structures at his own expense. Upon complete removal of sediment traps, special ditches, etc., the area where they were constructed is to be topsoiled, seeded and mulched.

In the event that temporary erosion and siltation control measures are required due to the Contractor's negligence, carelessness, or failure to install permanent controls as a part of work as scheduled, and are ordered by the Engineer, such work shall be performed by the Contractor at his own expense.

#### f. Sediment Structures

1. Sediment structures can be utilized in many locations to control sediment; at the foot of embankments where slope drains outlet; at the bottom as well as in the ditch lines atop waste sites; in the ditch lines on borrow pits. Sediment structures may be used in most drainage situations to prevent excessive siltation of pipe structures. All sediment structures should be at least twice as long as they are wide.
2. When use of temporary sediment structures is to be discontinued, all sediment accumulation shall be removed, all excavation backfilled and properly compacted and the existing ground restored to its natural or intended conditions.

#### 4. Method of Measurement

- a. In the event that temporary erosion and pollution control measures are required due to the Contractor's negligence, carelessness or failure to install permanent controls as a part of work as scheduled and are ordered by the Engineer, such work shall be performed by the Contractor at his own expense. Temporary erosion and pollution control work required, which is not attributed to the Contractor's negligence, carelessness or failure to install permanent controls, will be measured and paid for as specified for all acceptable work.
- b. Seeding will be measured by the square yard seeded in accordance with the Specifications for Seeding.
- c. Sodding - Sod will be measured by the square yard sodded in accordance with the Specifications for Sodding.
- d. The quantity of temporary slope drains to be paid for shall be determined by the linear foot constructed and measured. All cost of material, installation, and removal involved with temporary slope drains shall be considered the unit price for slope drains.
- e. Silt barriers shall be measured and paid for by the linear foot constructed and accepted.

- f. Excavation for sediment structures shall be measured by the cubic yard on the basis of cross-sectioned measure, or the most feasible method. The unit price for sediment structures shall include excavation, disposal of excavated material, and removal and restoration when no longer required. If not otherwise noted on plans, excavation of the sediment structures shall be paid for under Common Excavation.
- g. All temporary berms shall be considered as a necessary part of the unit price for road and drainage excavation and shall not be paid for separately.

5. Basis of Payment

- a. The accepted quantities of the items listed below will be paid for at the Contract price per unit of measurement for each of the pay items that is listed in the Bid Schedule.
- b. Payment will be made under:
  - 1. Seeding as specified under Specifications for Seeding.
  - 2. Sodding as specified under Specifications for Sodding.
  - 3. Temporary Slope Drains per lineal foot.
  - 4. Silt Barriers per lineal foot.
  - 5. Sediment Removal per cubic yard.
- d. The above unit prices will be full compensation for completing the work as outlined in the Plans and Specifications including all materials, labor, and incidentals.

Section 16.0

TECHNICAL SPECIFICATION  
FOR  
INLET PROTECTION

1. Description

This work shall consist of installation of inlet protection per plan details.

2. Materials

Materials shall consist of Filtrexx 8" Filtersoxx or approved equal.

3. Basis of Payment

Payment will be made per single storm inlet protected.

Section 17.0

TECHNICAL SPECIFICATION  
FOR  
OUTLET PROTECTION

1. Description

This work shall consist of installation of outlet protection per plan details.

2. Materials

Materials shall consist of materials as shown on plan detail.

3. Basis of Payment

Payment will be made per outlet protected.

# CONSTRUCTION PLANS

## FOR

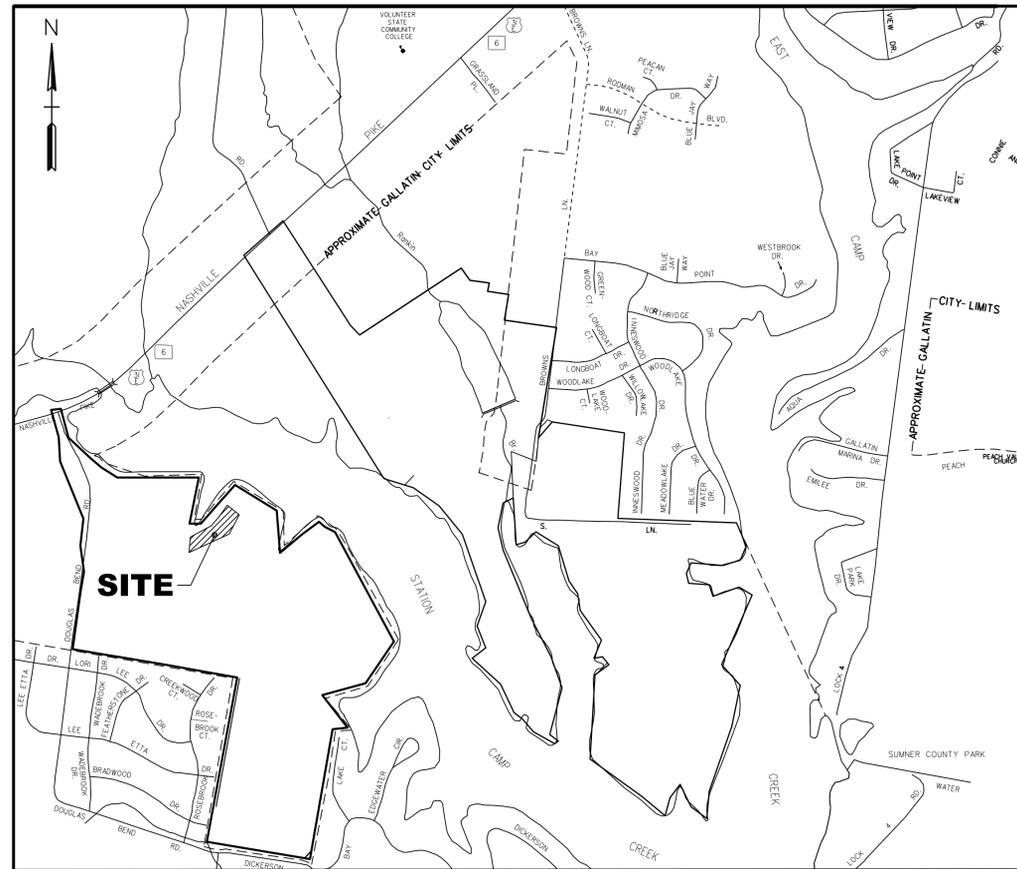
# FOXLAND

### PHASE 3.1B

## GALLATIN, SUMNER COUNTY, TENNESSEE

### INDEX OF DRAWINGS

Sheet No.	Description
	COVER SHEET
C1.01	SITE, GRADING, DRAINAGE AND EROSION CONTROL PLAN
C2.01	ROADWAY PLAN/PROFILE
C3.01	WATERLINE PLAN/PROFILE
C4.01	SANITARY SEWER PLAN/PROFILE
C7.01	CIVIL DETAIL SHEET
C7.02	CIVIL DETAIL SHEET
C7.03	CIVIL DETAIL SHEET
C7.04	CIVIL DETAIL SHEET



**LOCATION MAP**

NOT TO SCALE

**DEVELOPER:**  
**FOXLAND DEVELOPMENT PROPERTIES, LLC**  
1445 FOXLAND BLVD.  
GALLATIN, TN 37066  
CONTACT: JOE GODFREY  
PHONE: (615) 416-2416

**CONSTRUCTION PLANS**  
 FOR  
**FOXLAND**  
 PHASE 3.1B  
 GALLATIN, SUMNER COUNTY, TENNESSEE

OWNER	DATE
THESE CONSTRUCTION PLANS HAVE BEEN REVIEWED BY ME AND ARE APPROVED WITH THE EXCEPTION OF SUCH MODIFICATIONS INDICATED BY ME ON THE PLANS.	
ENGINEERING DEPARTMENT	DATE
CITY ENGINEER	DATE
THESE CONSTRUCTION PLANS ARE APPROVED BY THE GALLATIN MUNICIPAL-REGIONAL PLANNING COMMISSION WITH SUCH EXCEPTIONS OR MODIFICATIONS INDICATED IN THE MINUTES OF THE COMMISSION FOR	
CHAIRMAN	DATE
SECRETARY	DATE

**BWSC** | **BARGE WAGGONER SUMNER & CANNON, INC.**  
 ENGINEERS ARCHITECTS PLANNERS  
 LANDSCAPE ARCHITECTS AND SURVEYORS

211 Commerce Street, Suite 600 Nashville, Tennessee 37201  
 PHONE (615) 254-1500 FAX (615) 255-6572



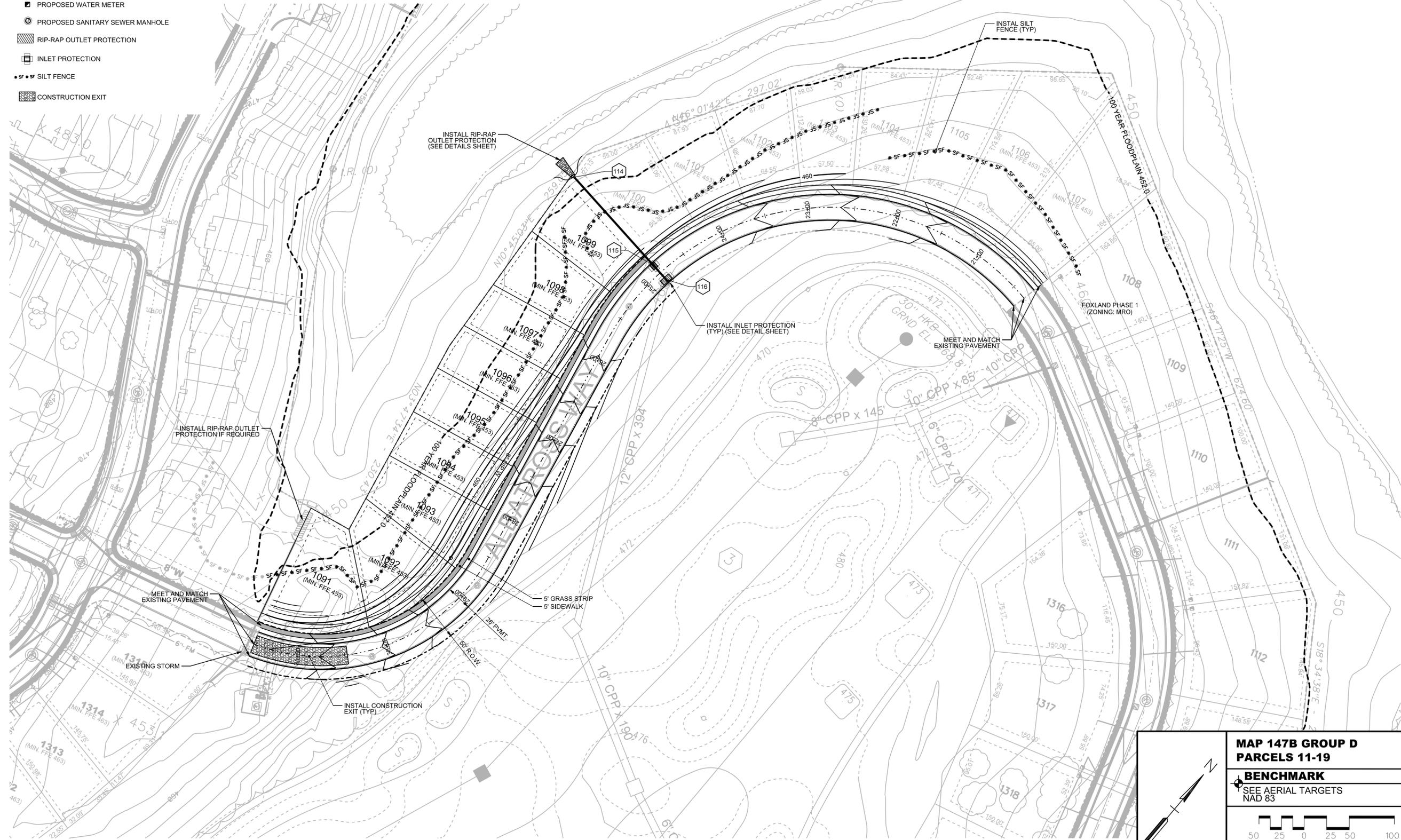
PROPOSED LEGEND

- PROPOSED VALVE
- PROPOSED IRON PIN
- PROPOSED CONCRETE MONUMENT
- ◆ PROPOSED FIRE HYDRANT ASSEMBLY
- ⊕ PROPOSED 3-WAY TEE
- ⊘ PROPOSED 90 DEGREE BEND
- ⌒ PROPOSED 45 DEGREE ELBOW
- ▭ PROPOSED SINGLE CATCH BASIN
- ▩ PROPOSED DOUBLE CATCH BASIN
- PROPOSED WATER METER
- ⊙ PROPOSED SANITARY SEWER MANHOLE
- ▨ RIP-RAP OUTLET PROTECTION
- ▩ INLET PROTECTION
- SF ● SF SILT FENCE
- CONSTRUCTION EXIT

NOTES:

1. SEE SHEET C7.01 FOR GENERAL, EROSION CONTROL, AND UTILITY NOTES.
2. SILT FENCE TO BE LOCATED AT BOTTOM OF ALL FILL SLOPES.
3. WATERLINE MUST MAINTAIN A MINIMUM OF 12" VERTICAL CLEARANCE.
4. INSPECTION AND MAINTENANCE OF EROSION CONTROL DEVICES WILL BE PERFORMED AT LEAST TWICE PER WEEK AT LEAST 72 HOURS APART. A RAIN GAUGE IS TO BE MAINTAINED ON SITE AND CHECKED AT EVERY INSPECTION. THE RAINFALL AND TIME FOR EACH EVENT IS TO BE RECORDED BY THE INSPECTOR AND MADE AVAILABLE WITH SWPPP INSPECTION RECORDS.
5. EROSION CONTROL MUST BE IN PLACE AND INSPECTED BY THE ENGINEERING DIVISION PRIOR TO ISSUANCE OF A LAND DISTURBANCE PERMIT.
6. DRAINAGE TABLE ON THIS SHEET.
7. PERMANENT TURF REINFORCED MAT SHALL BE NORTH AMERICAN GREEN SC250, CONTECH CONSTRUCTION PRODUCTS TRM-35, OR APPROVED SUBSTITUTE.
8. ALL DISTURBED AREA TO BE SEEDED.
9. STATION OFFSET IS TO FACE OF CURB LOCATED AT THE CENTER OF THE STRUCTURE.

STR. #	STR. TYPE	T.C. ELEV.	INVERT IN	INVERT OUT	PIPE LTH.	PIPE TYPE	% SLOPE	STA.	OFFSET
114	HEADWALL			447.00				24+83.03	126.3
114-115						18" HDPE	3.60		
115	SINGLE	460.62	457.66	454.04				24+83.86	13.0
115-116						15" RCP	0.50		
116	DOUBLE	460.62	457.89	457.79				24+83.86	-13.0



**BWSC**  
 BARGE WAGGONER SUMNER & CANNON, INC.  
 211 Commerce Street, Suite 600, Nashville, Tennessee 37201  
 PHONE (615) 254-1500 FAX (615) 255-6572



**SITE GRADING, DRAINAGE AND FINAL EROSION CONTROL PLAN**  
 PHASE 3.1B  
**FOXLAND**  
 ALBATROSS WAY  
 GALLATIN, SUMNER COUNTY, TENNESSEE

DR.	CHK.	DATE	DESCRIPTION
GPG	JDS	03/11/2015	ISSUE FOR CITY REVIEW
GPG	JDS	04/03/2015	ISSUE TO WHUD FOR REVIEW

**MAP 147B GROUP D PARCELS 11-19**  
**BENCHMARK**  
 SEE AERIAL TARGETS NAD 83

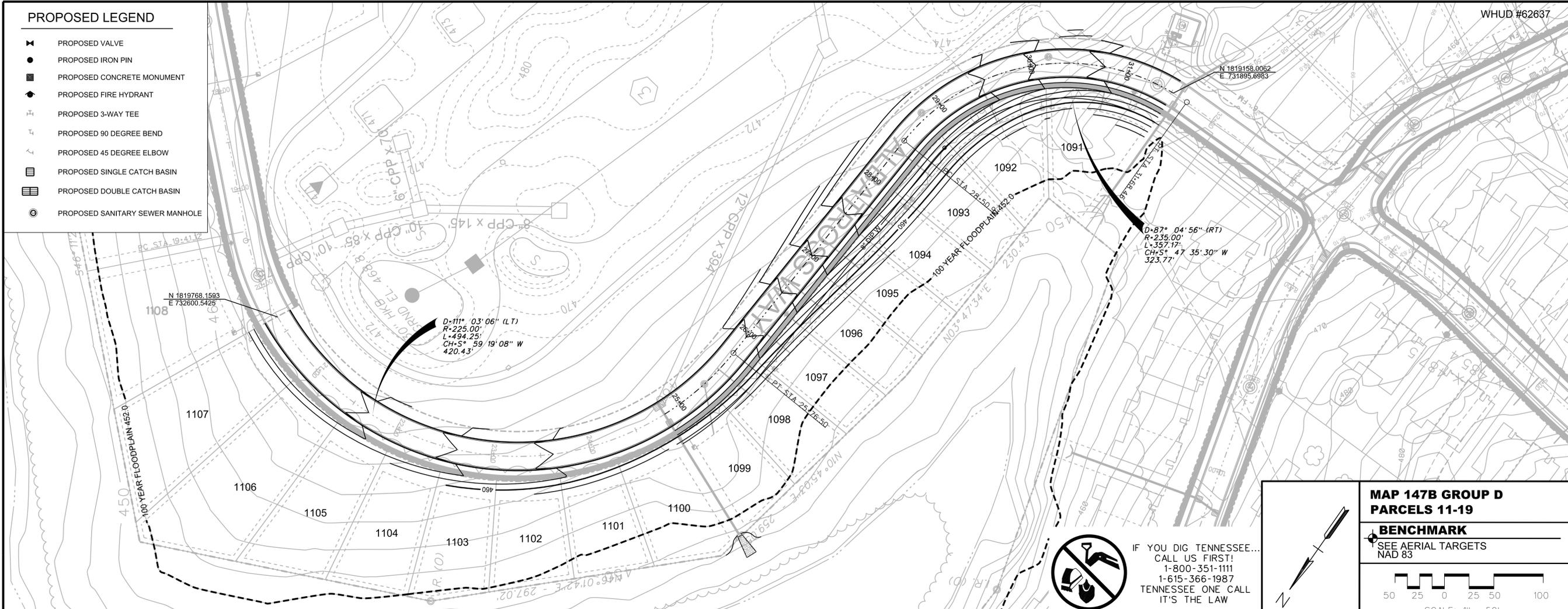
SCALE: 1" = 50'

**C1.01**  
 FILE NO. 32003-27

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 \NDCSVPRNT01\Nash BW Plotter  
 gpglaser  
 Bwscfulpen Workspace: NONE

**PROPOSED LEGEND**

-  PROPOSED VALVE
-  PROPOSED IRON PIN
-  PROPOSED CONCRETE MONUMENT
-  PROPOSED FIRE HYDRANT
-  PROPOSED 3-WAY TEE
-  PROPOSED 90 DEGREE BEND
-  PROPOSED 45 DEGREE ELBOW
-  PROPOSED SINGLE CATCH BASIN
-  PROPOSED DOUBLE CATCH BASIN
-  PROPOSED SANITARY SEWER MANHOLE



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1-615-366-1987  
TENNESSEE ONE CALL  
IT'S THE LAW

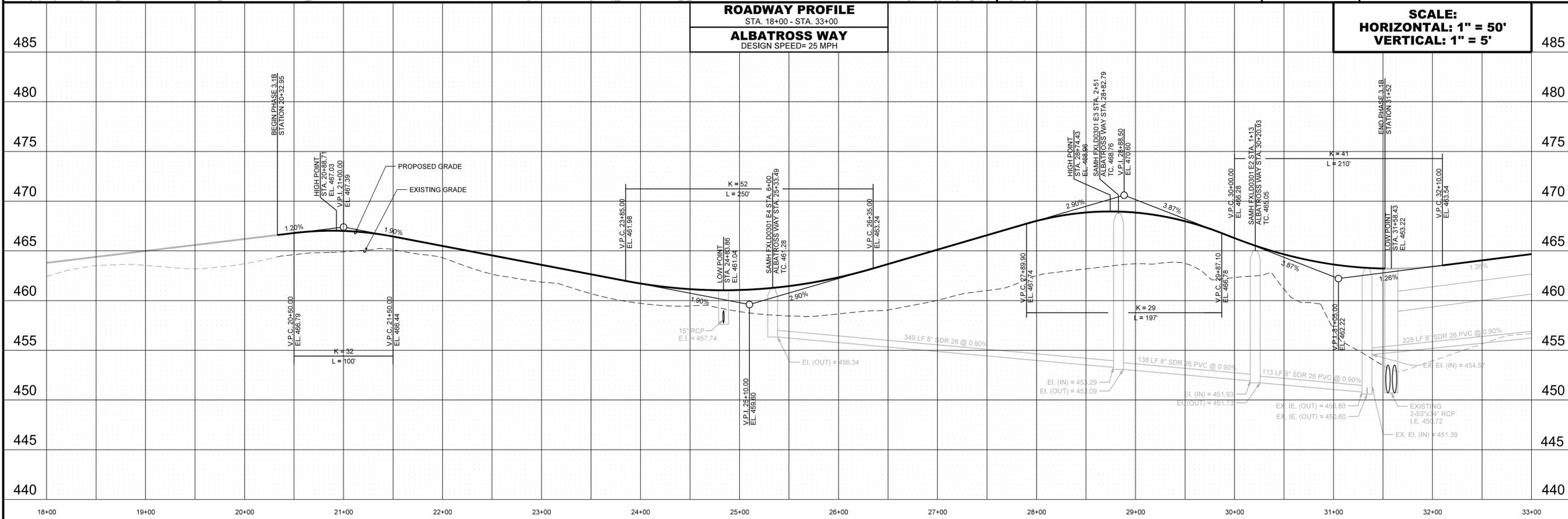
**MAP 147B GROUP D  
PARCELS 11-19**

**BENCHMARK**  
SEE AERIAL TARGETS  
NAD 83

SCALE: 1" = 50'

**ROADWAY PROFILE**  
STA. 18+00 - STA. 33+00  
**ALBATROSS WAY**  
DESIGN SPEED= 25 MPH

**SCALE:**  
HORIZONTAL: 1" = 50'  
VERTICAL: 1" = 5'



ROADWAY PLAN/PROFILE  
PHASE 3.1B  
FOXLAND  
ALBATROSS WAY  
GALLATIN, SUMNER COUNTY, TENNESSEE

DR.	CHK.	DATE	DESCRIPTION
GPJ	JDS	03/11/2015	ISSUE FOR CITY REVIEW
GPJ	JDS	04/03/2015	ISSUE TO WHUD FOR REVIEW

**C2.01**  
FILE NO. 32003-27

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gpglaser  
Bwscf\ulpen Workspace: NONE

**BWSC**  
BARGE  
WAGGONER  
SUMNER &  
CANNON, INC.  
211 Commerce Street, Suite 600, Nashville, Tennessee 37201  
PHONE (615) 254-1500 FAX (615) 255-6572



WHUD #62637

**PROPOSED LEGEND**

- PROPOSED VALVE
- PROPOSED IRON PIN
- PROPOSED CONCRETE MONUMENT
- ◆ PROPOSED FIRE HYDRANT
- ⊕ PROPOSED 3-WAY TEE
- ⌒ PROPOSED 90 DEGREE BEND
- ⌒ PROPOSED 45 DEGREE ELBOW
- ▭ PROPOSED SINGLE CATCH BASIN
- ▭ PROPOSED DOUBLE CATCH BASIN
- ⊙ PROPOSED SANITARY SEWER MANHOLE

**WHUD WATER NOTES:**

1. THE CONTRACTOR SHALL NOT PROCEED WITH ANY PIPE INSTALLATION WORK UNTIL A PRE-CONSTRUCTION MEETING HAS BEEN HELD AND THEY HAVE BEEN NOTIFIED BY THE WHITE HOUSE UTILITY DISTRICT TO PROCEED WITH THE WORK.
2. THE LOCATIONS AND DEPTHS OF EXISTING UTILITIES, INCLUDING SERVICE LATERALS, AND DRAINAGES STRUCTURES SHOWN ON THE PLANS ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION AND DEPTHS OF UNDERGROUND UTILITIES AT LEAST 48 HOURS PRIOR TO CONSTRUCTION WHETHER SHOWN ON PLANS OR NOT, AND TO PROTECT THE SAME DURING CONSTRUCTION.
3. THE CONTRACTOR WILL BE RESPONSIBLE FOR RESTORING TO ITS ORIGINAL OR BETTER CONDITION FROM DAMAGE DONE TO EXISTING FENCES, CURBS, STREETS, DRIVEWAYS, LANDSCAPING AND STRUCTURES.
4. NO METER BOXES TO BE SET IN DRIVEWAYS. ANY METER BOXES SET IN DRIVEWAYS WILL BE RELOCATED AT THE CONTRACTOR'S AND/OR DEVELOPER'S EXPENSE.
5. THE CONTRACTOR SHALL MAINTAIN SERVICE TO EXISTING UTILITIES AT ALL TIMES DURING CONSTRUCTION.
6. ALL WATER MAINS GREATER THAN TWO (2) INCHES IN DIAMETER SHALL BE DUCTILE IRON CLASS 350 PIPE.
7. ALL WATER MAINS SHALL BE INSTALLED AT A MINIMUM DEPTH OF 36 INCHES UNLESS OTHERWISE NOTED ON THE CONSTRUCTION PLANS.
8. WATER MAINS AND SEWER MAINS MUST MAINTAIN A MINIMUM OF TEN (10) FOOT HORIZONTAL CLEARANCE AND/OR EIGHTEEN (18) INCHES VERTICAL CLEARANCE AT ALL TIMES.
9. THE CONTRACTOR WILL KEEP THE AREA ON TOP OF AND AROUND THE WATER METER BOX FREE OF ALL OBJECTS AND DEBRIS.
10. ALL TESTING WILL BE DONE IN ACCORDANCE WITH THE MOST RECENT WHITE HOUSE UTILITY DISTRICT STANDARDS.
11. IN NO CASE ARE VALVES TO BE LOCATED WITHIN PAVED AREAS.
12. ADEQUATE SPACE SHALL BE PROVIDED FOR THE INSTALLATION AND MAINTENANCE OF METER VAULTS, BACKFLOW PREVENTION ASSEMBLIES AND WATER MAINS.
13. CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF ALL WASTE MATERIALS UPON PROJECT COMPLETION. THE CONTRACTOR SHALL NOT PERMANENTLY PLACE ANY WASTE MATERIALS IN THE FLOOD PLAIN WITHOUT FIRST OBTAINING REQUIRED PERMITS.
14. ALL TEMPORARY EROSION AND SEDIMENTATION CONTROLS SHALL BE REMOVED BY THE CONTRACTOR AT FINAL ACCEPTANCE OF THE PROJECT BY THE WHITE HOUSE UTILITY DISTRICT.

**BLASTING**

15. WHEN ALLOWABLE, BLASTING SHALL BE PERFORMED IN ACCORDANCE WITH THE APPROPRIATE CRITERIA ESTABLISHED BY THE NATIONAL FIRE PROTECTION ASSOCIATION OR APPLICABLE LOCAL CODES.
16. WHEN BLASTING IS ALLOWING, BLASTING FOR SEWER LINE EXCAVATION MUST BE DONE IN SUCH A MANNER AS TO MINIMIZE THE FRACTURING OF ROCK BEYOND THE REQUIRED EXCAVATION. THE CONTRACTOR SHALL CONSIDER THE ELEVATION OF THE EXISTING SANITARY SEWER MAIN IN RELATION TO THE BLASTING CHARGE AND THE RELATIVE DIRECTION OF EXISTING AND PROPOSED TRENCHES. BLASTING WITHIN SUCH AREAS SHALL BE ACCOMPLISHED ONLY BY QUALIFIED BLASTING CONTRACTORS WHO HOLD BLASTING LICENSES FROM A QUALIFIED AGENCY. ANY DAMAGE TO EXISTING SANITARY SEWERS RESULTING FROM BLASTING SHALL BE REPAIRED AND RETESED BY THE CONTRACTOR AT HIS OWN EXPENSE.
17. WORK COMPLETED BY THE CONTRACTOR WHICH HAS NOT RECEIVED A NOTICE TO PROCEED BY THE WHITE HOUSE UTILITY DISTRICT WILL BE SUBJECT TO REMOVAL AND REPLACEMENT BY AND AT THE EXPENSE OF THE CONTRACTOR.

WHUD #62637

**WATERLINE PLAN/PROFILE**

PHASE 3.1B  
FOXLAND

ALBATROSS WAY  
GALLATIN, SUMNER COUNTY, TENNESSEE



**BARGE WAGGONER SUMNER & CANNON, INC.**  
211 Commerce Street, Suite 600, Nashville, Tennessee 37201  
PHONE: (615) 252-4331 FAX: (615) 255-6572

DR.	CHK.	DATE	DESCRIPTION
GP	JDS	03/11/2015	ISSUE FOR CITY REVIEW
GP	JDS	04/03/2015	ISSUE TO WHUD FOR REVIEW

**C3.01**

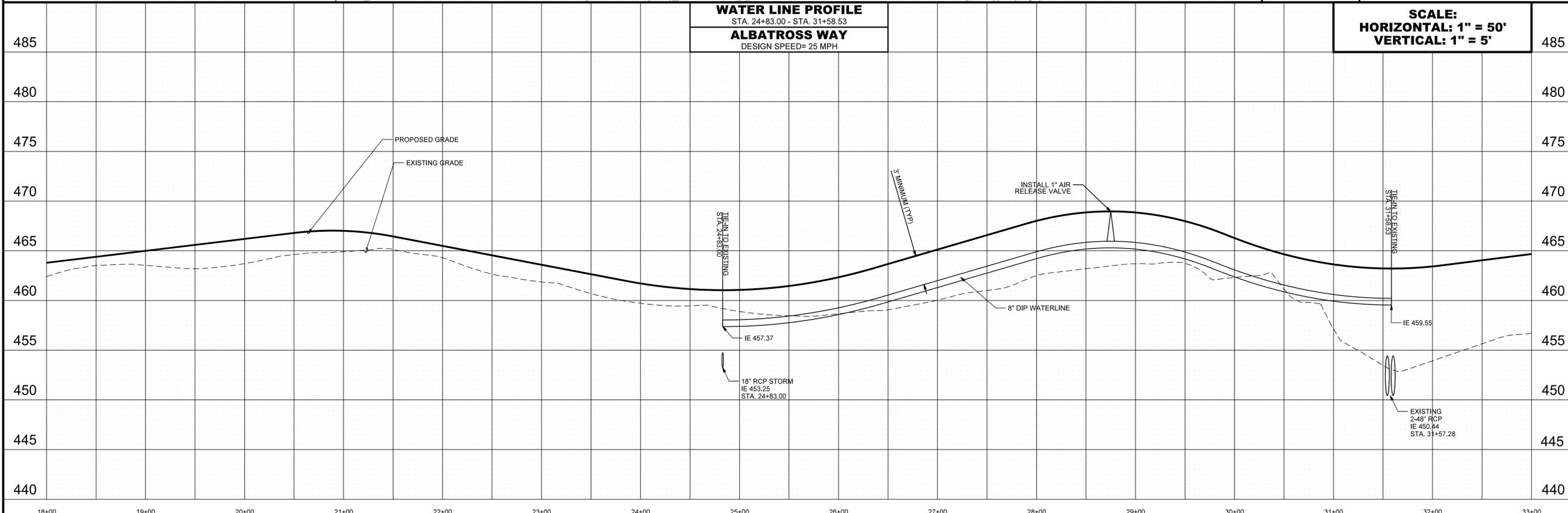
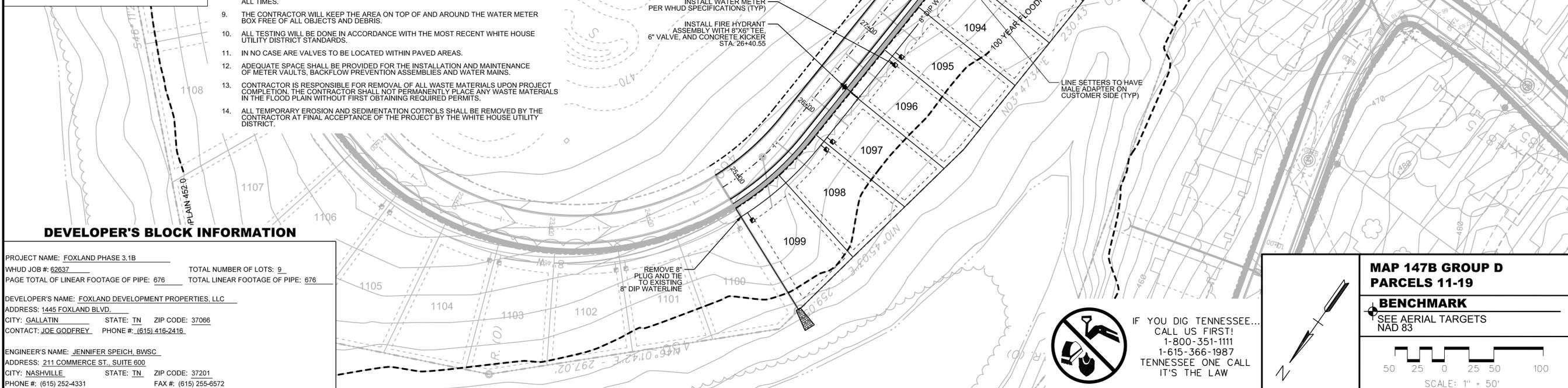
FILE NO. 32003-27

**DEVELOPER'S BLOCK INFORMATION**

PROJECT NAME: FOXLAND PHASE 3.1B  
 WHUD JOB #: 62637 TOTAL NUMBER OF LOTS: 9  
 PAGE TOTAL OF LINEAR FOOTAGE OF PIPE: 676 TOTAL LINEAR FOOTAGE OF PIPE: 676

DEVELOPER'S NAME: FOXLAND DEVELOPMENT PROPERTIES, LLC  
 ADDRESS: 1445 FOXLAND BLVD.  
 CITY: GALLATIN STATE: TN ZIP CODE: 37066  
 CONTACT: JOE GODFREY PHONE #: (615) 416-2416

ENGINEER'S NAME: JENNIFER SPEICH, BWSC  
 ADDRESS: 211 COMMERCE ST., SUITE 600  
 CITY: NASHVILLE STATE: TN ZIP CODE: 37201  
 PHONE #: (615) 252-4331 FAX #: (615) 255-6572



**PROPOSED LEGEND**

- PROPOSED VALVE
- PROPOSED IRON PIN
- PROPOSED CONCRETE MONUMENT
- ◆ PROPOSED FIRE HYDRANT
- ⊥ PROPOSED 3-WAY TEE
- ⊥ PROPOSED 90 DEGREE BEND
- ⊥ PROPOSED 45 DEGREE ELBOW
- ▭ PROPOSED SINGLE CATCH BASIN
- ▭ PROPOSED DOUBLE CATCH BASIN
- ⊙ PROPOSED SANITARY SEWER MANHOLE

**WHUD SEWER NOTES:**

1. THE CONTRACTOR SHALL NOT PROCEED WITH ANY PIPE INSTALLATION WORK UNTIL A PRE-CONSTRUCTION MEETING HAS BEEN HELD AND THEY HAVE BEEN NOTIFIED BY THE WHITE HOUSE UTILITY DISTRICT TO PROCEED WITH THE WORK.
2. THE LOCATIONS AND DEPTHS OF EXISTING UTILITIES, INCLUDING SERVICE LATERALS, AND DRAINAGES STRUCTURES SHOWN ON THE PLANS ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION AND DEPTHS OF UNDERGROUND UTILITIES AT LEAST 48 HOURS PRIOR TO CONSTRUCTION WHETHER SHOWN ON PLANS OR NOT, AND TO PROTECT THE SAME DURING CONSTRUCTION.
3. THE CONTRACTOR WILL BE RESPONSIBLE FOR RESTORING TO ITS ORIGINAL OR BETTER CONDITION FROM DAMAGE DONE TO EXISTING FENCES, CURBS, STREETS, DRIVEWAYS, LANDSCAPING AND STRUCTURES.
4. THE CONTRACTOR SHALL MAINTAIN SERVICE TO EXISTING UTILITIES AT ALL TIMES DURING CONSTRUCTION.
5. ALL RESIDENTIAL GRAVITY FED SEWER SERVICE LATERALS SHALL BE EXTENDED TO THE PROPERTY LINE AND CAPPED AND SEALED.
6. WATER MAINS AND SEWER MAINS MUST MAINTAIN A MINIMUM OF TEN (10) FOOT HORIZONTAL CLEARANCE AND/OR EIGHTEEN (18) INCHES VERTICAL CLEARANCE AT ALL TIMES.
7. ON ALL MANHOLES TO BE ABANDONED, THE RINGS AND COVERS SHALL BE SALVAGED IN ACCORDANCE WITH THE MOST CURRENT WHITE HOUSE UTILITY DISTRICT STANDARDS, THE HOLE SHOULD BE BACKFILLED TO THE SATISFACTION OF THE INSPECTOR.
8. CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF ALL WASTE MATERIALS UPON PROJECT COMPLETION. THE CONTRACTOR SHALL NOT PERMANENTLY PLACE ANY WASTE MATERIALS IN THE FLOOD PLAIN WITHOUT FIRST OBTAINING REQUIRED PERMITS.
9. ALL TEMPORARY EROSION AND SEDIMENTATION CONTROLS SHALL BE REMOVED BY THE CONTRACTOR AT FINAL ACCEPTANCE OF THE PROJECT BY THE WHITE HOUSE UTILITY DISTRICT.
10. AFTER CONSTRUCTION IS COMPLETE, TESTING WILL BE DONE BY TV CAMERA BY THE CONTRACTOR AND OBSERVED BY THE INSPECTOR, AS THE CAMERA IS RUN THROUGH ALL LINES. ANY ABNORMALITIES, SUCH AS A BROKEN PIPE, MISALIGNED JOINTS OR NON-UNIFORM SLOPE, MUST BE REPLACED BY THE CONTRACTOR AT HIS EXPENSE. ALL TESTING WILL BE DONE IN ACCORDANCE WITH THE MOST RECENT WHITE HOUSE UTILITY DISTRICT STANDARDS.

**BLASTING**

11. WHEN ALLOWABLE, BLASTING SHALL BE PERFORMED IN ACCORDANCE WITH THE APPROPRIATE CRITERIA ESTABLISHED BY THE NATIONAL FIRE PROTECTION ASSOCIATION OR APPLICABLE LOCAL CODES.
12. WHEN BLASTING IS ALLOWING, BLASTING FOR SEWER LINE EXCAVATION MUST BE DONE IN SUCH A MANNER AS TO MINIMIZE THE FRACTURING OF ROCK BEYOND THE REQUIRED EXCAVATION. THE CONTRACTOR SHALL CONSIDER THE ELEVATION OF THE EXISTING SANITARY SEWER MAIN IN RELATION TO THE BLASTING CHARGE AND THE RELATIVE DIRECTION OF THE EXISTING SANITARY SEWER MAIN IN RELATION TO THE BLASTING CHARGE AND THE RELATIVE DIRECTION OF EXISTING AND PROPOSED TRENCHES. BLASTING WITHIN SUCH AREAS SHALL BE ACCOMPLISHED ONLY BY QUALIFIED BLASTING CONTRACTORS WHO HOLD BLASTING LICENSES FROM A QUALIFIED AGENCY. ANY DAMAGE TO EXISTING SANITARY SEWERS RESULTING FROM BLASTING SHALL BE REPAIRED AND RETESED BY THE CONTRACTOR AT HIS OWN EXPENSE.

**SUPPLEMENTARY**

13. UNLESS OTHERWISE NOTED ON THE PLANS, ALL SEWER PIPE SHALL CONFORM TO THE FOLLOWING CHART:  
 DEPTH OF MAIN PIPE MATERIAL  
 1' TO 18" SDR 26  
 2' TO 24" C900  
 3'-24" DUCTILE IRON
14. WORK COMPLETED BY THE CONTRACTOR WHICH HAS NOT RECEIVED A NOTICE TO PROCEED BY THE WHITE HOUSE UTILITY DISTRICT WILL BE SUBJECT TO REMOVAL AND REPLACEMENT BY AND AT THE EXPENSE OF THE CONTRACTOR.

**DEVELOPER'S BLOCK INFORMATION**

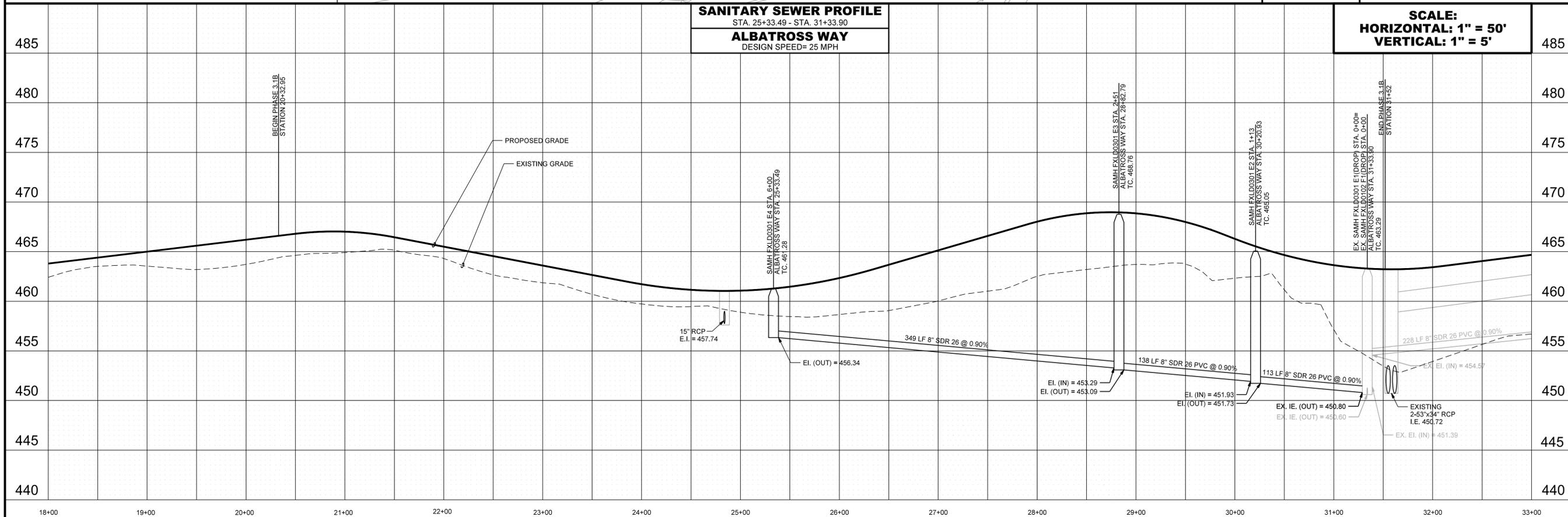
PROJECT NAME: FOXLAND PHASE 3.1B  
 WHUD JOB #: 62637 TOTAL NUMBER OF LOTS: 9  
 PAGE TOTAL OF LINEAR FOOTAGE OF PIPE: 593 TOTAL LINEAR FOOTAGE OF PIPE: 593

DEVELOPER'S NAME: FOXLAND DEVELOPMENT PROPERTIES, LLC  
 ADDRESS: 1445 FOXLAND BLVD.  
 CITY: GALLATIN STATE: TN ZIP CODE: 37066  
 CONTACT: JOE GODFREY PHONE #: (615) 416-2416

ENGINEER'S NAME: JENNIFER SPEICH, BWSC  
 ADDRESS: 211 COMMERCE ST., SUITE 600  
 CITY: NASHVILLE STATE: TN ZIP CODE: 37201  
 PHONE #: (615) 252-4331 FAX #: (615) 255-6572

**SANITARY SEWER PROFILE**  
 STA. 25+33.49 - STA. 31+33.90  
**ALBATROSS WAY**  
 DESIGN SPEED= 25 MPH

**SCALE:**  
 HORIZONTAL: 1" = 50'  
 VERTICAL: 1" = 5'



SANITARY SEWER PLAN/PROFILE

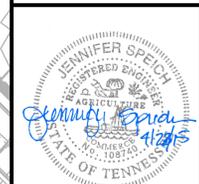
PHASE 3.1B  
FOXLAND

ALBATROSS WAY  
GALLATIN, SUMNER COUNTY, TENNESSEE

DR.	CHK.	DATE	DESCRIPTION
			ISSUE FOR CITY REVIEW
			ISSUE TO WHUD FOR REVIEW

**C4.01**  
FILE NO. 32003-27

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NOTES:  
 ALL LOTS MUST BE FED BY PROPOSED GRAVITY SEWER. LOT GRADING MAY BE REQUIRED. SERVICE LATERALS ARE TO BE INSTALLED AS PER CURRENT W.H.U.D. SPECIFICATIONS.

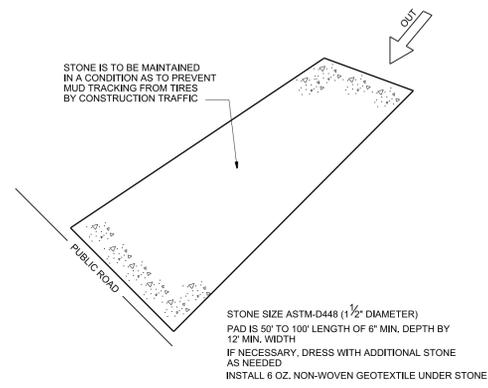
**MAP 147B GROUP D  
 PARCELS 11-19**

**BENCHMARK**  
 SEE AERIAL TARGETS  
 NAD 83

SCALE: 1" = 50'

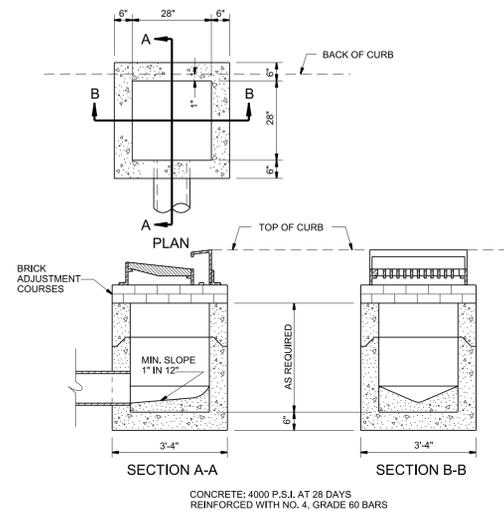
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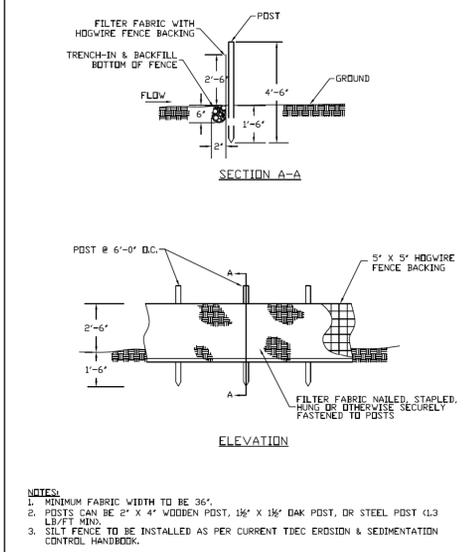


**1 TEMPORARY CONSTRUCTION EXIT**  
C7.02 N.T.S.

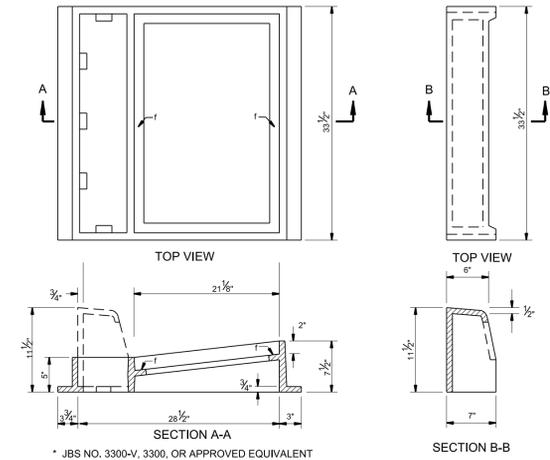
**2 NOT USED**  
C7.02 N.T.S.



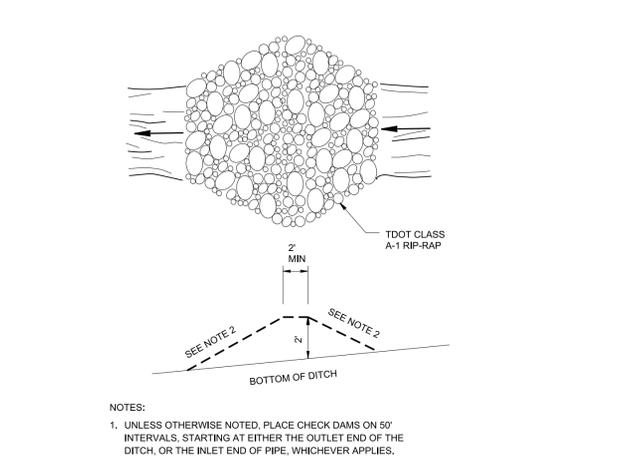
**3 SINGLE INLET (PRECAST)**  
C7.02 N.T.S.



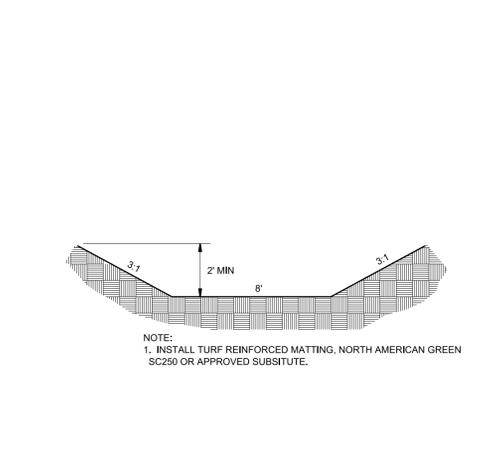
**White House Utility District**  
WHITE HOUSE UTILITY DISTRICT  
EROSION CONTROL SILT FENCE DETAIL  
DATE: AUG 2008  
SCALE: N.T.S.  
STD-G-01



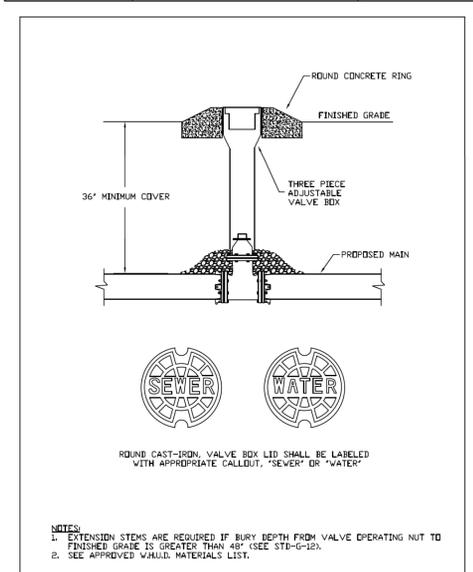
**4 FRAME AND GRATE FOR VERTICAL CURB WITH GUTTER**  
C7.02 N.T.S.



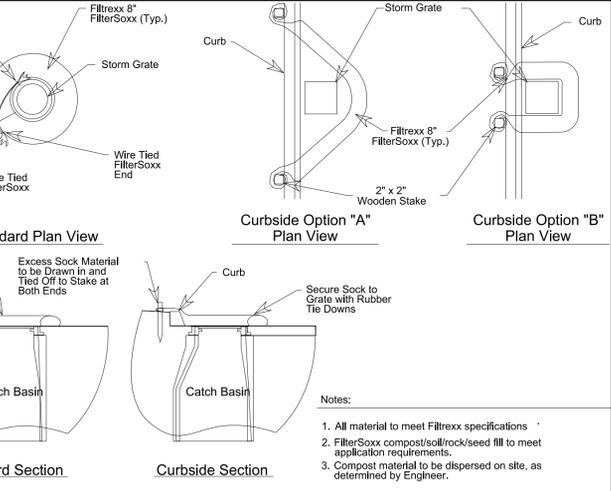
**5 ROCK CHECK DAM**  
C7.02 N.T.S.



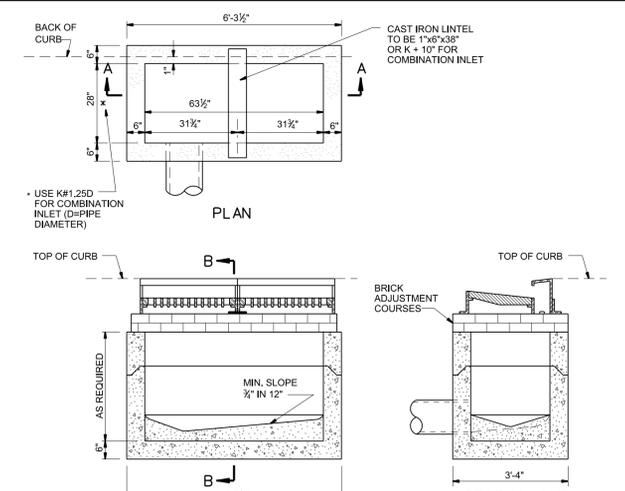
**6 TRAPEZOIDAL SWALE**  
C7.02 N.T.S.



**White House Utility District**  
WHITE HOUSE UTILITY DISTRICT  
VALVE BOX DETAIL  
DATE: AUG 2008  
SCALE: N.T.S.  
STD-G-11



**8 INLET PROTECTION (FILTREXX OR APPROVED EQUAL)**  
C7.02 N.T.S.



**9 DOUBLE INLET (PRECAST)**  
C7.02 N.T.S.

**EROSION CONTROL NOTES:**

NO TREES ARE TO BE REMOVED AND/OR VEGETATION DISTURBED EXCEPT AS NECESSARY FOR GRADING PURPOSES.

TOPSOIL IS TO BE STRIPPED FROM ALL CUT AND FILL AREAS, STOCKPILED AND REDISTRIBUTED OVER GRADED AREAS TO A MINIMUM OF 6\"/>

ALL GRADED AREAS INCLUDING SLOPES ARE TO BE SEEDED AND STRAWED WITHIN 14 DAYS AFTER GRADING IS COMPLETED (OR 7 DAYS FOR SLOPES 3:1 OR GREATER).

CUT AND FILL SLOPES ARE TO BE 3:1 AS DESIGNATED BY THE ENGINEER. (SEE PLANS).

STRAW BERMS ARE BALES OF STRAW STAKED IN PLACE. (SEE DETAIL).

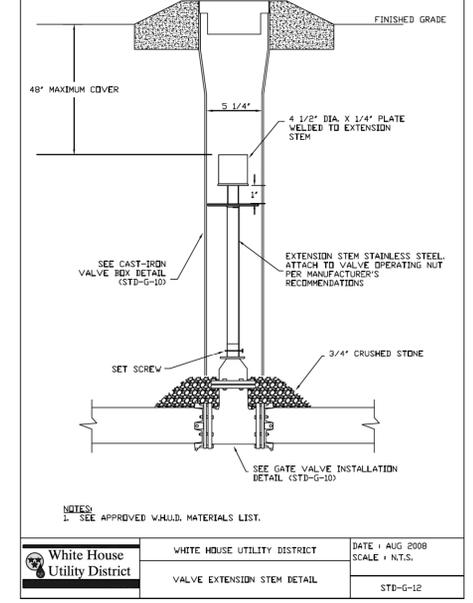
ALL DIMENSIONS AND LOCATIONS OF TEMPORARY SOIL EROSION AND WATER POLLUTION CONTROL DEVICES SHALL BE SUBJECT TO ADJUSTMENT AS DESIGNATED BY THE ENGINEER.

WHEN THE TEMPORARY SOIL EROSION AND WATER POLLUTION CONTROL DEVICES ARE NO LONGER REQUIRED FOR THE INTENDED PURPOSE, IN THE OPINION OF THE ENGINEER, THEY SHALL BE REMOVED.

STRAW BERMS ARE TO BE REPLACED AS EFFECTIVENESS IS SIGNIFICANTLY REDUCED.

CONTRACTOR TO NOTIFY THE CITY OF GALLATIN ENGINEERING DIVISION THREE DAYS PRIOR TO BEGINNING WORK.

FILL SHALL BE ROCK OR SOIL ONLY, PLACED IN LIFTS OF 1\"/>



**White House Utility District**  
WHITE HOUSE UTILITY DISTRICT  
VALVE EXTENSION STEM DETAIL  
DATE: AUG 2008  
SCALE: N.T.S.  
STD-G-12

**BWSC**  
BARGE WAGGONER SUMNER & CANNON, INC.  
211 Commerce Street, Suite 600, Nashville, Tennessee 37201  
PHONE: (615) 254-1500 FAX: (615) 255-6572

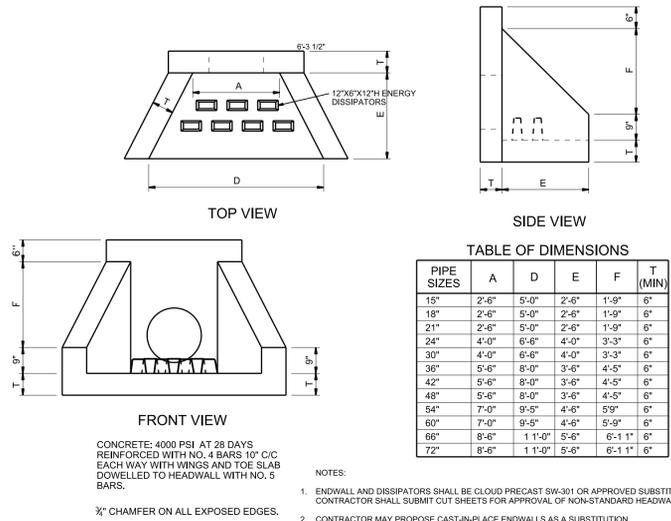
**CIVIL DETAILS**  
PHASE 3.1B  
**FOXLAND**  
ALBARTROSS WAY  
GALLATIN, SUMNER COUNTY, TENNESSEE

DR.	CHK.	DATE	DESCRIPTION
GPJ	JDS	03/11/2015	ISSUE FOR CITY REVIEW
GPJ	JDS	04/02/2015	ISSUE TO WHHD FOR REVIEW

**C7.02**  
FILE NO. 32003-27

4/22/2015  
09:48:54  
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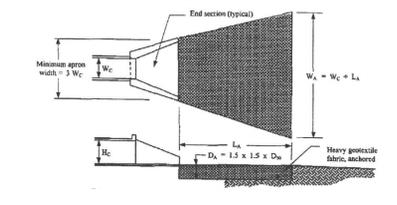


**1 CONCRETE HEADWALL WITH ENERGY DISSIPATORS**  
C7.04 N.T.S.

Culvert Diameter	Lowest value			Intermediate values to interpolate from						Highest value					
	Q	L <sub>a</sub>	D <sub>50</sub>	Q	L <sub>a</sub>	D <sub>50</sub>	Q	L <sub>a</sub>	D <sub>50</sub>	Q	L <sub>a</sub>	D <sub>50</sub>			
12"	4	7	2.5	6	10	3.5	9	131	6	12	16	7	14	17	8.5
15"	6.5	8	3	10	12	5	15	16	7	20	18	10	25	20	12
18"	10	9	3.5	15	14	5.5	20	17	7	30	22	11	40	25	14
21"	15	11	4	25	18	7	35	22	10	45	28	13	60	29	16
24"	21	13	5	35	20	8.5	50	28	12	65	30	16	80	33	19
27"	27	14	5.5	50	24	9.5	70	29	14	90	34	18	110	37	22
30"	36	16	6	60	25	9.5	80	33	15.5	120	38	20	140	41	24
36"	66	20	7	100	32	13	140	40	18	190	45	23	220	53	28
42"	82	22	8.5	120	32	12	160	39	17	200	45	20	260	62	28
48"	120	26	10	170	37	14	220	46	18	270	54	23	320	64	37

Culvert Diameter	Lowest value			Intermediate values to interpolate from						Highest value					
	Q	L <sub>a</sub>	D <sub>50</sub>	Q	L <sub>a</sub>	D <sub>50</sub>	Q	L <sub>a</sub>	D <sub>50</sub>	Q	L <sub>a</sub>	D <sub>50</sub>			
12"	4	8	2	6	18	2.5	9	28	4.5	12	36	7	14	40	8
15"	7	8	2	10	20	2.5	15	34	5	20	42	7.5	25	50	10
18"	10	8	2	15	22	3	20	34	5	30	50	9	40	60	11
21"	15	8	2	25	32	4.5	35	48	7	45	58	11	60	72	14
24"	20	8	2	35	36	5	50	55	8.5	65	68	12	80	80	15
27"	27	10	2	50	41	6	70	58	10	90	70	14	110	82	17
30"	36	11	2	60	42	6	80	64	11	120	80	15	140	90	18
36"	66	13	2.5	100	60	7	140	85	13	180	94	18	220	100	23
42"	82	15	2.5	120	60	6	180	75	10	200	96	14	260	120	19
48"	120	20	2.5	170	68	7	220	85	12	270	105	16	320	120	20



**2 RIPRAP OUTLET PROTECTION**  
C7.04 N.T.S.

**BWSC**  
BARGE WAGGONER SUMNER & CANNON, INC.  
211 Commerce Street, Suite 600, Nashville, Tennessee 37201  
PHONE (615) 254-1500 FAX (615) 255-6572



CIVIL DETAILS  
PHASE 3.1B  
FOXLAND  
ALBATROSS WAY  
GALLATIN, SUMNER COUNTY, TENNESSEE

DR.	CHK.	DATE	DESCRIPTION
GP	JDS	03/11/2015	ISSUE FOR CITY REVIEW
GP	JDS	04/03/2015	ISSUE TO WHUD FOR REVIEW

**C7.04**  
FILE NO. 32003-27