



# DELAWARE TECHNICAL & COMMUNITY COLLEGE ENVIRONMENTALLY COMPLEX PARKING

DELAWARE TECHNICAL & COMMUNITY COLLEGE  
21179 COLLEGE DRIVE  
GEORGETOWN, DE 19947



MARCH, 2014

GMB FILE NO. 140012

**GMB**

GEORGE, MILES & BUHR, LLC

**ARCHITECTS/ENGINEERS**

206 WEST MAIN STREET  
SALISBURY, MD 21801  
410.742.3115

SALISBURY/BALTIMORE/SEAFORD



# DELAWARE TECHNICAL & COMMUNITY COLLEGE ENVIRONMENTALLY COMPLEX PARKING

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## **DIVISION 00 - BIDDING AND CONTRACT REQUIREMENTS**

### **SECTION 00100**

#### **ADVERTISEMENT FOR BIDS**

Sealed bids for construction of the Delaware Technical & Community College (herein called the "OWNER") Environmental Complex Parking will be received by Owner at DTCC Owens Business Office, Attn: Robert Hearn, 21179 College Drive, Georgetown DE 19947 until 2:00 p.m., (EST) on **May 7, 2014**. Said bids will then be publicly opened and read aloud.

The Environmental Complex Parking generally consists of, but is not limited to, construction of new pavement areas, overlay of existing pavement, installation of porous concrete or porous asphalt with under drain piping, demolition of existing grass islands and curb, and installation of depressed landscape island and filter strips.

The work also includes all requirements to provide fully finished and operable facilities including miscellaneous items and operations as shall be indicated, shown, specified or required to complete the work in strict conformity with the Contract Documents. The Contractor shall provide all labor, equipment, tools, appliances, materials and incidentals and shall perform all operations required to completely finish all of the work in the manner approved by the Engineer.

The Contract Documents may be examined at the following locations: Delaware's Procurement Portal ([mymarketplace.delaware.gov](http://mymarketplace.delaware.gov)) or at George, Miles, and Buhr, LLC, 206 West Main Street, Salisbury MD 21801.

Copies of the Contract Documents may be purchased at: George, Miles, and Buhr, LLC, 206 West Main Street, Salisbury MD 21801 upon payment of \$100.00 for each set, non-refundable. Checks made payable to George, Miles & Buhr, LLC.

Each Bid must be accompanied by a BID BOND payable to the OWNER for ten (10) percent of the total amount of the BID and all additive alternates. No bidder may withdraw his bid within ninety (90) days after the actual date of the opening thereof.

A mandatory pre-bid meeting will be held at 2:00 PM, (EST), **April 21, 2014**, to allow Contractors an opportunity to obtain information on the project from the Engineer and the Owner. A site visit will be held immediately following the meeting. Written questions (fax @ 410-548-5790 or email: [mkobin@gmbnet.com](mailto:mkobin@gmbnet.com)) will be accepted and answered via Addenda if submitted to the Engineer by 5:00 p.m. local time on May 2, 2014. Questions shall include the project name (Re: DTCC Environmental Complex Parking) in subject heading.

Delaware State Wage Rates and Regulations apply to this project.

Minority Business Enterprises (MBE), Disadvantaged Business Enterprises (DBE) and Women-Owned Business Enterprises (WBE) will be afforded full opportunity to submit bids on this contract and will not be subject to discrimination on the basis of race, color, national origin or sex in consideration of this award.

The successful bidder must post a performance bond and payment bond in a sum equal to 100 percent of the contract price upon execution of the contract.

The right is reserved, as the interest of the Owner may appear, to reject any and all bids, to waive any informalities in bids received, and to accept or reject any items of any bid. The Owner may extend the time and place for the opening of the bids from that described in the advertisement, with not less than two calendar days' notice by certified delivery, facsimile machine or other electronic means to those bidders receiving plans.

Delaware Technical & Community College

DR. ILEANA SMITH  
VICE PRESIDENT & CAMPUS DIRECTOR, OWENS CAMPUS

**\* END OF SECTION \***

## **DIVISION 00 – BIDDING AND CONTRACT DOCUMENTS**

### **SECTION 00200**

#### **INSTRUCTIONS TO BIDDERS**

BIDS will be received by the Delaware Technical & Community College (herein called the "OWNER") at DTCC Owens Business Office, Attn: Robert Hearn, 21179 College Drive, Georgetown DE 19947, until 2:00 P.M. local time, on **May 7, 2014**, and then publically opened and read aloud at Administrative Building, Room 1303, 21179 College Drive, Georgetown DE 19947.

BIDDERS are advised that the work is to be accomplished on the unit price basis, and all work shown on the Contract Drawings and specified herein shall be included in the price BID unless otherwise specifically defined.

Each BID must be submitted in a sealed envelope, addressed to DTCC Owens Business Office, Attn: Robert Hearn, 21179 College Drive, Georgetown DE 19947. Each sealed envelope containing a bid must be plainly marked on the outside as BID for DELAWARE TECHNICAL AND COMMUNITY COLEGE - ENVIRONMENTALLY COMPLEX PARKING and the envelope should bear on the outside the name of the BIDDER, his address, and his Contractor's license number. If forwarded by mail, the sealed envelope containing the BID must be enclosed in another envelope addressed to the OWNER. Any BID received after the time and date specified shall not be considered.

All BIDS must be made on the required BID form. All blank spaces for BID prices must be filled in, in ink or typewritten, and the BID form must be fully completed and executed when submitted. One (1) copy of the BID form is required.

The OWNER may waive any informalities or minor defects or reject any and all BIDS. Any BID may be withdrawn prior to the above scheduled time for the opening of BIDS or authorized postponement thereof. No BIDDER may withdraw a BID within ninety (90) days after the actual date of the opening thereof. Should there be reasons why the contract cannot be awarded within the specified period, the time may be extended by mutual agreement between the OWNER and the BIDDER.

BIDDERS must satisfy themselves of the accuracy of the estimated quantities in the BID Schedule by examination of the site and a review of the Drawings and Specifications including ADDENDA. After BIDS have been submitted, the BIDDER shall not assert that there was a misunderstanding concerning the quantities of WORK or of the nature of the WORK to be done.

The OWNER shall provide to BIDDERS prior to BIDDING, all information which is pertinent to, and delineates and describes, the land owned, rights-of-way, and easements

acquired or to be acquired.

The CONTRACT DOCUMENTS contain the provisions required for the construction of the PROJECT. Information obtained from an officer, agent, or employee of the OWNER or any other person shall not affect the risks or obligations assumed by the CONTRACTOR or relieve him from fulfilling any of the conditions of the contract.

Each BID must be accompanied by a BID BOND payable to the OWNER for ten (10) percent of the total amount of the BID and all additive alternates. When the Agreement is executed the bonds of the unsuccessful BIDDERS will be returned, upon request. The BID BOND of the successful BIDDER will be retained until the payment BOND and performance BOND have been executed and approved, after which it will be returned, upon request. A certified check may be used in lieu of a BID BOND.

A performance BOND and a payment BOND, each in the amount of one hundred (100) percent of the CONTRACT PRICE, with a corporate surety approved by the OWNER, will be required for the faithful performance of the Contract.

Attorneys-in-fact who sign BID BONDS or payment BONDS and performance BONDS must file with each BOND a certified and effective dated copy of their power of attorney.

The party to whom the Contract is awarded will be required to execute the Agreement and obtain the performance BOND and payment BOND within ten (10) calendar days from the date when the NOTICE OF AWARD is delivered to the BIDDER. The NOTICE OF AWARD shall be accompanied by the necessary Agreement and BOND forms. In case of failure of the BIDDER to execute the Agreement, the OWNER may at his option consider the BIDDER in default, in which case the BID BOND accompanying the proposal shall become the property of the OWNER.

The OWNER shall sign the Agreement and return to such party an executed duplicate of the Agreement within ten (10) days of receipt of acceptable performance BOND, payment BOND and Agreement signed by the party to whom the Agreement was awarded. Should the OWNER not execute the Agreement within such period, the BIDDER may by WRITTEN NOTICE withdraw his signed Agreement. Such notice of withdrawal shall be effective upon receipt of the notice by the OWNER.

The NOTICE TO PROCEED shall be issued within ten (10) days of the execution of the Agreement by the OWNER. Should there be reasons why the NOTICE TO PROCEED cannot be issued within such period, the time may be extended by mutual agreement between the OWNER and CONTRACTOR. If the NOTICE TO PROCEED has not been issued within the ten (10) day period or within the period mutually agreed upon, the CONTRACTOR may terminate the Agreement without further liability on the part of either party.

The OWNER may make such investigations as he deems necessary to determine the ability of the BIDDER to perform the WORK, and the BIDDER shall furnish to the OWNER

all such information and data for this purpose as the OWNER may request. The OWNER reserves the right to reject any BID if the evidence submitted by, or investigation of, such BIDDER fails to satisfy the OWNER that such BIDDER is properly qualified to carry out the obligations of the Agreement and to complete the WORK contemplated therein. A conditional or qualified BID will not be accepted.

All applicable laws, ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the PROJECT shall apply to the contract throughout.

Each BIDDER is responsible for inspecting the site and for reading and being thoroughly familiar with the CONTRACT DOCUMENTS. The failure or omission of any BIDDER to do any of the foregoing shall in no way relieve any BIDDER from any obligation in respect to his BID.

The low BIDDER shall supply the names and addresses of major material SUPPLIERS and SUBCONTRACTORS when requested to do so by the OWNER.

The OWNER reserves the right to choose a combination of items, item quantities, from the base bid, and/or alternate bids, from any, or all parts of the bid proposal form.

The ENGINEER is George, Miles & Buhr, LLC, 206 West Main Street, Salisbury, Maryland 21801, phone 410.742.3115.

**\* END OF SECTION \***



**DIVISION 00 – BIDDING AND CONTRACT DOCUMENTS**

**SECTION 00300**

**BID**

**DELAWARE TECHNICAL AND COMMUNITY COLLEGE-  
ENVIRONMENTAL COMPLEX PARKING**

TO: DTCC- OWENS BUSINESS OFFICE  
ATTN: ROBERT HEARN  
21179 COLLEGE DRIVE  
GEORGETOWN, DELAWARE 19947

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

To All:

BID of \_\_\_\_\_ (hereinafter called "BIDDER"), organized and existing under the laws of the State of \_\_\_\_\_ doing business as \_\_\_\_\_ (Insert "a corporation", "a partnership", or "an individual" as applicable) to **Delaware Technical and Community College** (hereinafter called "**OWNER**"), a political subdivision of the State of Delaware.

In compliance with your Advertisement for Bids, BIDDER hereby proposes to perform all WORK for ENVIRONMENTAL COMPLEX PARKING, in strict accordance with the CONTRACT DOCUMENTS, within the time set forth therein, and at the prices stated below.

By submission of this BID, each BIDDER certifies, and in the case of joint BID each party thereto certifies as to his own organization, that this BID has been arrived at independently, without consultation, communication, or agreement as to any matter relating to his BID with any other BIDDER or with any competitor.

BIDDER hereby agrees to commence WORK under this contract on or before a date to be specified in the NOTICE TO PROCEED and to fully complete the PROJECT within 90 calendar days thereafter.

BIDDER acknowledges receipt of the following ADDENDUM:

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This BID includes sales tax and all other applicable taxes and fees.

**SCHEDULE A – ENVIRONMENTAL COMPLEX PARKING- PHASE 2:**

Item No.	Description	Size	Unit	Estimated Quantity	Unit Dols.	Price Cts.	Total Dols.	Price Cts.
<b>SCHEDULE OF BID ITEMS</b>								
A1	Mobilization/General Conditions	--	L.S.	1				
A2	Removal and/or Demolition	--	L.S.	1				
A3	Erosion and Sediment Control Measures	--	L.S.	1				
A4	Furnish and Install Stormwater Measures and Depressed Landscape Islands	--	LS	1				
A5	Furnish and Install Graded Aggregate Base Course	6"	CY	270				
A6	Furnish and Install Hot Mix Asphalt Base Course	2 ¼ "	SY	1590				
A7	Furnish and Install Hot Mix Asphalt Surface Course	1 ½ "	SY	1590				
A8	Overlay Hot Mix Asphalt Surface	1 ½ "	SY	1030				
A9	Furnish and Install Pervious Concrete-Graded Aggregate Base Course	14"	CY	710				
A10	Furnish and Install Pervious Concrete-Pervious Concrete Surface Course	6"	SY	1820				

A11	Furnish and Install 4" Underdrain Pipes, Fittings and Cleanouts	--	LS	1
A12	Final Grading and Landscape Plan	--	LS	1

#### **SUBTOTAL SCHEDULE A - A1 THRU A12**

#### **SCHEDULE B - CONTINGENT ITEMS**

Item No.	Description	Size	Unit	Estimated Quantity	Unit Dols.	Price Cts.	Total Dols.	Price Cts.
<b>SCHEDULE OF BID ITEMS</b>								
B1	Excavation Subgrade	Below	--	CY	40			
B2	Furnish and Place Gravel Bedding	--	CY	40				
B3	Furnish and Place Special Backfill	--	CY	40				
B4	Miscellaneous Excavation and Backfill	--	CY	40				
B5	Secure Modified Proctor Tests on Backfill		EA	2				
B6	Secure Field Density Tests on Backfill	--	EA	10				

#### **SUBTOTAL SCHEDULE B- B1THRU B6**

#### **TOTAL BASE BID – SUM OF SCHEDULE A AND B**

\_\_\_\_\_ Dollars \$\_\_\_\_\_.

**ALTERNATE LUMP SUM BID ITEMS:**

The following alternate lump sum bid items may or may not be part of the contract. The Owner will decide based on an evaluation of the bids received. Lump sum prices bid by Contractor are deemed to be full compensation for all required, labor, products, tools, equipment, plant, transportation, testing, inspection, services, incidentals, administrative procedures, applicable taxes, permit fees, overhead, profit, and other miscellaneous expenses, specified or referenced in the Contract Documents. The bid alternates will be individually selected and added or deducted based from the total base bid. The low bidder selected will be determined based on the total base bid plus the selected bid alternates.

**SCHEDULE C – BID ALTERNATE: ENVIRONMENTAL COMPLEX PARKING-PHASE 1:**

Item No.	Description	Size	Unit	Estimated Quantity	Unit Dols.	Price Cts.	Total Dols.	Price Cts.
<b>SCHEDULE OF BID ITEMS</b>								
C1	Mobilization/General Conditions	--	L.S.	1				
C2	Removal and/or Demolition	--	L.S.	1				
C3	Erosion and Sediment Control Measures	--	L.S.	1				
C4	Furnish and Install Stormwater Measures and Depressed Landscape Islands	--	L.S.	1				
C5	Furnish and Install Graded Aggregate Base Course	6"	CY	40				
C6	Furnish and Install Hot Mix Asphalt Base Course	2 ¼ "	SY	210				
C7	Furnish and Install Hot Mix Asphalt Surface Course	1 ½ "	SY	210				
C8	Overlay Hot Mix Asphalt Surface	1 ½ "	SY	4680				

C9	Furnish and Install Pervious Concrete- Graded Aggregate Base Course	14"	CY	65
C10	Furnish and Install Pervious Concrete- Pervious Concrete Surface Course	6"	SY	160
C11	Final Grading and Landscape Plan	--	LS	1

**SUBTOTAL SCHEDULE C - C1 THRU C11**

**TOTAL ALTERNATE BASE BID – SUM OF SCHEDULE C:**

\_\_\_\_\_ Dollars \$ \_\_\_\_\_.

**SCHEDULE D – BID ALTERNATE: ENVIRONMENTAL COMPLEX PARKING- PHASE 3:**

Item No.	Description	Size	Unit	Estimated Quantity	Unit Dols.	Price Cts.	Total Dols.	Price Cts.
<b>SCHEDULE OF BID ITEMS</b>								
D1	Mobilization/General Conditions	--	L.S.	1				
D2	Removal and/or Demolition	--	L.S.	1				
D3	Erosion and Sediment Control Measures	--	L.S.	1				
D4	Furnish and Install Stormwater Measures, Filter Strips, Level Spreader and Depressed Landscape Islands	--	L.S.	1				
D5	Furnish and Install Graded Aggregate Base Course	6"	CY	90				

D6	Furnish and Install Hot Mix Asphalt Base Course	2 ¼ "	SY	510
D7	Furnish and Install Hot Mix Asphalt Surface Course	1 ½ "	SY	510
D8	Overlay Hot Mix Asphalt Surface	1 ½ "	SY	5170
D9	Furnish and Install Pervious Concrete-Graded Aggregate Base Course	14"	CY	130
D10	Furnish and Install Pervious Concrete-Pervious Concrete Surface Course	6"	SY	330
D11	Final Grading and Landscape Plan	--	LS	1

**SUBTOTAL SCHEDULE D - D1 THRU D11**

**TOTAL ALTERNATE BASE BID – SUM OF SCHEDULE D:**

\_\_\_\_\_ Dollars \$\_\_\_\_\_.

**SCHEDULE E- BID ALTERNATE: ENVIRONMENTAL COMPLEX PARKING- PHASE 4:**

Item No.	Description	Size	Unit	Estimated Quantity	Unit Dols.	Price Cts.	Total Dols.	Price Cts.
<b>SCHEDULE OF BID ITEMS</b>								
E1	Mobilization/General Conditions	--	L.S.	1				
E2	Removal and/or Demolition	--	L.S.	1				

E3	Erosion and Sediment Control Measures	--	L.S.	1
E4	Furnish and Install Stormwater Measures, Filter Strips, Level Spreader and Depressed Landscape Islands	--	L.S.	1
E5	Furnish and Install Graded Aggregate Base Course	6"	CY	110
E6	Furnish and Install Hot Mix Asphalt Base Course	2 ¼ "	SY	620
E7	Furnish and Install Hot Mix Asphalt Surface Course	1 ½ "	SY	620
E8	Overlay Hot Mix Asphalt Surface	1 ½ "	SY	4500
E9	Furnish and Install Pervious Concrete-Graded Aggregate Base Course	14"	CY	130
E10	Furnish and Install Pervious Concrete-Pervious Concrete Surface Course	6"	SY	330
E11	Final Grading and Landscape Plan	--	LS	1

**SUBTOTAL SCHEDULE E - E1 THRU E11**

**TOTAL ALTERNATE BASE BID – SUM OF SCHEDULE E:**

\_\_\_\_\_ Dollars \$\_\_\_\_\_.

**ADD/ DEDUCT BID ITEM- FURNISH AND INSTALL POROUS ASPHALT IN PLACE OF PERVIOUS CONCRETE:**

The following Add/ Deduct bid item may or may not be substituted as part of the total bid of the contract. The Owner will decide based on an evaluation of the bids received.

**SCHEDULE F – POROUS ASPHALT**

Item No.	Description	Size	Unit	Estimated Quantity	Unit Dols.	Price Cts.	Total Dols.	Price Cts.
<b>SCHEDULE OF BID ITEMS</b>								
F1.1	<b>Phase 2 Base Bid:</b> Furnish and Install Porous Asphalt – Graded Aggregate Base Course	16"	CY	810				
F1.2	<b>Phase 2 Base Bid:</b> Furnish and Install Porous Asphalt – Porous Asphalt Surface Course	4"	SY	1820				
<b>SUBTOTAL F1.1 THRU F1.2</b>								
F2.1	<b>Phase 1 Base Bid:</b> Furnish and Install Porous Asphalt – Graded Aggregate Base Course	16"	CY	70				
F2.2	<b>Phase 1 Base Bid:</b> Furnish and Install Porous Asphalt – Porous Asphalt Surface Course	4"	SY	160				
<b>SUBTOTAL F2.1 THRU F2.2</b>								
F3.1	<b>Phase 3 Base Bid:</b> Furnish and Install Porous Asphalt – Graded Aggregate Base Course	16"	CY	150				
F3.2	<b>Phase 3 Base Bid:</b> Furnish and Install Porous Asphalt – Porous Asphalt Surface Course	4"	SY	330				
<b>SUBTOTAL F3.1 THRU F3.2</b>								
F4.1	<b>Phase 4 Base Bid:</b> Furnish and Install Porous Asphalt – Graded Aggregate Base Course	16"	CY	150				
F4.2	<b>Phase 4 Base Bid:</b> Furnish and Install Porous Asphalt – Porous Asphalt Surface Course	4"	SY	330				



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**SUBTOTAL F4.1 THRU F4.2**

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**SCHEDULE G: LIST OF SUBCONTRACTORS**

Each BIDDER shall complete this "LISTING OF SUBCONTRACTORS" in its entirety. Failure to do so shall render the BID non-responsive and be grounds for its rejection by the OWNER. If the BIDDER is performing the Subcontract Trade listed, the BIDDER shall enter the words "PERFORMED BY BIDDER".

Subcontract Trade	Subcontractor's Name and Mailing Address	Delaware Contractor's License Number
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Pavement

Pervious Concrete  
or Asphalt Pavement

The BIDDER shall complete the above Schedule G in its entirety. No blanks shall be left vacant. If the BIDDER is performing the Subcontract Trade listed, the BIDDER shall enter the words "PERFORMED BY BIDDER" in the first column.

Enclosed herewith is a Certified Check or Bid Bond in the amount of Ten Percent (10%) of the Base Bid.

The following \_\_\_\_\_ Chartered in the State of \_\_\_\_\_  
Business Type

Witness

Signature

Title

CORPORATE SEAL

Firm Name

Date

**\* END OF SECTION \***

STATE OF DELAWARE  
OFFICE OF MANAGEMENT AND BUDGET

**BID BOND**

TO ACCOMPANY PROPOSAL  
(Not necessary if security is used)

KNOW ALL MEN BY THESE PRESENTS That: \_\_\_\_\_  
\_\_\_\_\_ of \_\_\_\_\_ in the County of \_\_\_\_\_ and State of \_\_\_\_\_  
\_\_\_\_\_ as **Principal**, and \_\_\_\_\_ of \_\_\_\_\_  
\_\_\_\_\_ in the County of \_\_\_\_\_ and State of \_\_\_\_\_ as **Surety**, legally authorized to  
do business in the State of Delaware ("**State**"), are held and firmly unto the **State** in the sum of \_\_\_\_\_  
\_\_\_\_\_ Dollars (\$ \_\_\_\_\_), or \_\_\_\_\_ percent not to exceed \_\_\_\_\_  
\_\_\_\_\_ Dollars (\$ \_\_\_\_\_) of amount of  
bid on Contract No. \_\_\_\_\_, to be paid to the **State** for the use and benefit of \_\_\_\_\_  
\_\_\_\_\_ (*insert State agency name*) for which payment well and truly to be made, we do bind ourselves,  
our and each of our heirs, executors, administrators, and successors, jointly and severally for and in the whole firmly by  
these presents.

NOW THE CONDITION OF THIS OBLIGATION IS SUCH That if the above bonded **Principal** who has  
submitted to the \_\_\_\_\_ (*insert State agency name*) a certain proposal to enter  
into this contract for the furnishing of certain material and/or services within the **State**, shall be awarded this Contract, and  
if said **Principal** shall well and truly enter into and execute this Contract as may be required by the terms of this Contract  
and approved by the \_\_\_\_\_ (*insert State agency name*) this Contract to be  
entered into within twenty days after the date of official notice of the award thereof in accordance with the terms of said  
proposal, then this obligation shall be void or else to be and remain in full force and virtue.

Sealed with \_\_\_\_\_ seal and dated this \_\_\_\_\_ day of \_\_\_\_\_ in the year of our Lord two thousand  
and \_\_\_\_\_ (20\_\_\_\_).

SEALED, AND DELIVERED IN THE  
Presence of

\_\_\_\_\_  
Name of Bidder (Organization)

Corporate

By:

Seal

\_\_\_\_\_  
Authorized Signature

Attest \_\_\_\_\_

\_\_\_\_\_  
Title

\_\_\_\_\_  
Name of Surety

Witness: \_\_\_\_\_

By:

\_\_\_\_\_  
Title

STATE OF DELAWARE  
DEPARTMENT OF LABOR  
DIVISION OF INDUSTRIAL AFFAIRS  
OFFICE OF LABOR LAW ENFORCEMENT  
PHONE: (302) 451-3423

Mailing Address:  
225 CORPORATE BOULEVARD  
SUITE 104  
NEWARK, DE 19702

Located at:  
225 CORPORATE BOULEVARD  
SUITE 104  
NEWARK, DE 19702

PREVAILING WAGES FOR HIGHWAY CONSTRUCTION EFFECTIVE MARCH 14, 2014

CLASSIFICATION	NEW CASTLE	KENT	SUSSEX
BRICKLAYERS	48.08	48.08	14.51
CARPENTERS	43.15	50.91	40.47
CEMENT FINISHERS	30.88	26.13	26.33
ELECTRICAL LINE WORKERS	22.50	22.50	21.25
ELECTRICIANS	62.10	62.10	62.10
IRON WORKERS	42.20	23.87	25.35
LABORERS	33.01	38.68	37.97
MILLWRIGHTS	16.11	15.63	13.49
PAINTERS	60.64	60.64	60.64
PILEDRIVERS	66.42	23.75	26.95
POWER EQUIPMENT OPERATORS	41.18	27.61	28.47
SHEET METAL WORKERS	22.75	20.31	18.40
TRUCK DRIVERS	33.90	21.03	22.19

CERTIFIED: 3/19/14

BY: 

ADMINISTRATOR, OFFICE OF LABOR LAW ENFORCEMENT

NOTE: THESE RATES ARE PROMULGATED AND ENFORCED PURSUANT TO THE PREVAILING WAGE REGULATIONS ADOPTED BY THE DEPARTMENT OF LABOR ON APRIL 3, 1992.

CLASSIFICATIONS OF WORKERS ARE DETERMINED BY THE DEPARTMENT OF LABOR. FOR ASSISTANCE IN CLASSIFYING WORKERS, OR FOR A COPY OF THE REGULATIONS OR CLASSIFICATIONS, PHONE (302) 451-3423.

NON-REGISTERED APPRENTICES MUST BE PAID THE MECHANIC'S RATE.

PROJECT: GMB No. 140012 Delaware Technical Community College-Environmental Parking Lot, Sussex County

140012

00400 - 1

# DRAFT AIA® Document A101™ – 2007

## Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum

AGREEMENT made as of the « » day of « » in the year « »  
(In words, indicate day, month and year.)

BETWEEN the Owner:  
(Name, legal status, address and other information)

« »  
« »  
« »  
« »

and the Contractor:  
(Name, legal status, address and other information)

« »  
« »  
« »  
« »

for the following Project:  
(Name, location and detailed description)

«Sample»  
« »  
« »

The Architect:  
(Name, legal status, address and other information)

« »  
« »  
« »  
« »

The Owner and Contractor agree as follows.

### ADDITIONS AND DELETIONS:

The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

AIA Document A201™-2007, General Conditions of the Contract for Construction, is adopted in this document by reference. Do not use with other general conditions unless this document is modified.

**ELECTRONIC COPYING** of any portion of this AIA® Document to another electronic file is prohibited and constitutes a violation of copyright laws as set forth in the footer of this document.

## TABLE OF ARTICLES

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### ARTICLE 1 THE CONTRACT DOCUMENTS

The Contract Documents consist of this Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of this Agreement, other documents listed in this Agreement and Modifications issued after execution of this Agreement, all of which form the Contract, and are as fully a part of the Contract as if attached to this Agreement or repeated herein. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. An enumeration of the Contract Documents, other than a Modification, appears in Article 9.

### ARTICLE 2 THE WORK OF THIS CONTRACT

The Contractor shall fully execute the Work described in the Contract Documents, except as specifically indicated in the Contract Documents to be the responsibility of others.

### ARTICLE 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

§ 3.1 The date of commencement of the Work shall be the date of this Agreement unless a different date is stated below or provision is made for the date to be fixed in a notice to proceed issued by the Owner.

*(Insert the date of commencement if it differs from the date of this Agreement or, if applicable, state that the date will be fixed in a notice to proceed.)*

<< >>

If, prior to the commencement of the Work, the Owner requires time to file mortgages and other security interests, the Owner's time requirement shall be as follows:

<< >>

§ 3.2 The Contract Time shall be measured from the date of commencement.

§ 3.3 The Contractor shall achieve Substantial Completion of the entire Work not later than << >> ( << >> ) days from the date of commencement, or as follows:

*(Insert number of calendar days. Alternatively, a calendar date may be used when coordinated with the date of commencement. If appropriate, insert requirements for earlier Substantial Completion of certain portions of the Work.)*

<< >>

Portion of Work

Substantial Completion Date

, subject to adjustments of this Contract Time as provided in the Contract Documents.

*(Insert provisions, if any, for liquidated damages relating to failure to achieve Substantial Completion on time or for bonus payments for early completion of the Work.)*

« »

#### ARTICLE 4 CONTRACT SUM

§ 4.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor's performance of the Contract. The Contract Sum shall be « » (\$ « »), subject to additions and deductions as provided in the Contract Documents.

§ 4.2 The Contract Sum is based upon the following alternates, if any, which are described in the Contract Documents and are hereby accepted by the Owner:

*(State the numbers or other identification of accepted alternates. If the bidding or proposal documents permit the Owner to accept other alternates subsequent to the execution of this Agreement, attach a schedule of such other alternates showing the amount for each and the date when that amount expires.)*

« »

§ 4.3 Unit prices, if any:

*(Identify and state the unit price; state quantity limitations, if any, to which the unit price will be applicable.)*

Item	Units and Limitations	Price Per Unit (\$0.00)
------	-----------------------	-------------------------

§ 4.4 Allowances included in the Contract Sum, if any:

*(Identify allowance and state exclusions, if any, from the allowance price.)*

Item	Price
------	-------

#### ARTICLE 5 PAYMENTS

##### § 5.1 PROGRESS PAYMENTS

§ 5.1.1 Based upon Applications for Payment submitted to the Architect by the Contractor and Certificates for Payment issued by the Architect, the Owner shall make progress payments on account of the Contract Sum to the Contractor as provided below and elsewhere in the Contract Documents.

§ 5.1.2 The period covered by each Application for Payment shall be one calendar month ending on the last day of the month, or as follows:

« »

§ 5.1.3 Provided that an Application for Payment is received by the Architect not later than the « » day of a month, the Owner shall make payment of the certified amount to the Contractor not later than the « » day of the « » month. If an Application for Payment is received by the Architect after the application date fixed above, payment shall be made by the Owner not later than « » ( « » ) days after the Architect receives the Application for Payment. *(Federal, state or local laws may require payment within a certain period of time.)*

§ 5.1.4 Each Application for Payment shall be based on the most recent schedule of values submitted by the Contractor in accordance with the Contract Documents. The schedule of values shall allocate the entire Contract Sum among the various portions of the Work. The schedule of values shall be prepared in such form and supported by such data to substantiate its accuracy as the Architect may require. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 5.1.5 Applications for Payment shall show the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment.

§ 5.1.6 Subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

- .1 Take that portion of the Contract Sum properly allocable to completed Work as determined by multiplying the percentage completion of each portion of the Work by the share of the Contract Sum allocated to that portion of the Work in the schedule of values, less retainage of « » percent ( « » %). Pending final determination of cost to the Owner of changes in the Work, amounts not in dispute shall be included as provided in Section 7.3.9 of AIA Document A201™–2007, General Conditions of the Contract for Construction;
- .2 Add that portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction (or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing), less retainage of « » percent ( « » %);
- .3 Subtract the aggregate of previous payments made by the Owner; and
- .4 Subtract amounts, if any, for which the Architect has withheld or nullified a Certificate for Payment as provided in Section 9.5 of AIA Document A201–2007.

§ 5.1.7 The progress payment amount determined in accordance with Section 5.1.6 shall be further modified under the following circumstances:

- .1 Add, upon Substantial Completion of the Work, a sum sufficient to increase the total payments to the full amount of the Contract Sum, less such amounts as the Architect shall determine for incomplete Work, retainage applicable to such work and unsettled claims; and  
(Section 9.8.5 of AIA Document A201–2007 requires release of applicable retainage upon Substantial Completion of Work with consent of surety, if any.)
- .2 Add, if final completion of the Work is thereafter materially delayed through no fault of the Contractor, any additional amounts payable in accordance with Section 9.10.3 of AIA Document A201–2007.

§ 5.1.8 Reduction or limitation of retainage, if any, shall be as follows:

*(If it is intended, prior to Substantial Completion of the entire Work, to reduce or limit the retainage resulting from the percentages inserted in Sections 5.1.6.1 and 5.1.6.2 above, and this is not explained elsewhere in the Contract Documents, insert here provisions for such reduction or limitation.)*

« »

§ 5.1.9 Except with the Owner's prior approval, the Contractor shall not make advance payments to suppliers for materials or equipment which have not been delivered and stored at the site.

## § 5.2 FINAL PAYMENT

§ 5.2.1 Final payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Contractor when

- .1 the Contractor has fully performed the Contract except for the Contractor's responsibility to correct Work as provided in Section 12.2.2 of AIA Document A201–2007, and to satisfy other requirements, if any, which extend beyond final payment; and
- .2 a final Certificate for Payment has been issued by the Architect.

§ 5.2.2 The Owner's final payment to the Contractor shall be made no later than 30 days after the issuance of the Architect's final Certificate for Payment, or as follows:

« »

## ARTICLE 6 DISPUTE RESOLUTION

### § 6.1 INITIAL DECISION MAKER

The Architect will serve as Initial Decision Maker pursuant to Section 15.2 of AIA Document A201–2007, unless the parties appoint below another individual, not a party to this Agreement, to serve as Initial Decision Maker.  
*(If the parties mutually agree, insert the name, address and other contact information of the Initial Decision Maker, if other than the Architect.)*

<< >>  
<< >>  
<< >>  
<< >>

### § 6.2 BINDING DISPUTE RESOLUTION

For any Claim subject to, but not resolved by, mediation pursuant to Section 15.3 of AIA Document A201–2007, the method of binding dispute resolution shall be as follows:

*(Check the appropriate box. If the Owner and Contractor do not select a method of binding dispute resolution below, or do not subsequently agree in writing to a binding dispute resolution method other than litigation, Claims will be resolved by litigation in a court of competent jurisdiction.)*

☐ Arbitration pursuant to Section 15.4 of AIA Document A201–2007

☐ Litigation in a court of competent jurisdiction

☐ Other *(Specify)*

<< >>

## ARTICLE 7 TERMINATION OR SUSPENSION

§ 7.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A201–2007.

§ 7.2 The Work may be suspended by the Owner as provided in Article 14 of AIA Document A201–2007.

## ARTICLE 8 MISCELLANEOUS PROVISIONS

§ 8.1 Where reference is made in this Agreement to a provision of AIA Document A201–2007 or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

§ 8.2 Payments due and unpaid under the Contract shall bear interest from the date payment is due at the rate stated below, or in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

*(Insert rate of interest agreed upon, if any.)*

<< >> % << >>

§ 8.3 The Owner's representative:

*(Name, address and other information)*

<< >>  
<< >>  
<< >>  
<< >>  
<< >>  
<< >>

§ 8.4 The Contractor's representative:

*(Name, address and other information)*



<< >>  
<< >>  
<< >>  
<< >>  
<< >>  
<< >>

§ 8.5 Neither the Owner's nor the Contractor's representative shall be changed without ten days written notice to the other party.

§ 8.6 Other provisions:

<< >>

## ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

§ 9.1 The Contract Documents, except for Modifications issued after execution of this Agreement, are enumerated in the sections below.

§ 9.1.1 The Agreement is this executed AIA Document A101–2007, Standard Form of Agreement Between Owner and Contractor.

§ 9.1.2 The General Conditions are AIA Document A201–2007, General Conditions of the Contract for Construction.

§ 9.1.3 The Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages

§ 9.1.4 The Specifications:

*(Either list the Specifications here or refer to an exhibit attached to this Agreement.)*

<< >>

Section	Title	Date	Pages

§ 9.1.5 The Drawings:

*(Either list the Drawings here or refer to an exhibit attached to this Agreement.)*

<< >>

Number	Title	Date

§ 9.1.6 The Addenda, if any:

Number	Date	Pages

Portions of Addenda relating to bidding requirements are not part of the Contract Documents unless the bidding requirements are also enumerated in this Article 9.

§ 9.1.7 Additional documents, if any, forming part of the Contract Documents:

- 1 AIA Document E201™–2007, Digital Data Protocol Exhibit, if completed by the parties, or the following:

<< >>

- 2 Other documents, if any, listed below:

*(List here any additional documents that are intended to form part of the Contract Documents. AIA Document A201–2007 provides that bidding requirements such as advertisement or invitation to bid, Instructions to Bidders, sample forms and the Contractor’s bid are not part of the Contract Documents unless enumerated in this Agreement. They should be listed here only if intended to be part of the Contract Documents.)*

<< >>

#### ARTICLE 10 INSURANCE AND BONDS

The Contractor shall purchase and maintain insurance and provide bonds as set forth in Article 11 of AIA Document A201–2007.

*(State bonding requirements, if any, and limits of liability for insurance required in Article 11 of AIA Document A201–2007.)*

Type of insurance or bond	Limit of liability or bond amount (\$0.00)

This Agreement entered into as of the day and year first written above.

\_\_\_\_\_  
OWNER (Signature)

<< >> <>

\_\_\_\_\_  
(Printed name and title)

\_\_\_\_\_  
CONTRACTOR (Signature)

<< >> <>

\_\_\_\_\_  
(Printed name and title)

STATE OF DELAWARE  
OFFICE OF MANAGEMENT AND BUDGET

**PERFORMANCE BOND**

Bond Number: \_\_\_\_\_

KNOW ALL PERSONS BY THESE PRESENTS, that we, \_\_\_\_\_,  
as principal (**"Principal"**), and \_\_\_\_\_, a  
\_\_\_\_\_ corporation, legally authorized to do business in the State  
of Delaware, as surety (**"Surety"**), are held and firmly bound unto the  
\_\_\_\_\_ (**"Owner"**) (*insert State agency  
name*), in the amount of \_\_\_\_\_ (\$\_\_\_\_\_), to be paid to **Owner**,  
for which payment well and truly to be made, we do bind ourselves, our and each and  
every of our heirs, executors, administrations, successors and assigns, jointly and  
severally, for and in the whole, firmly by these presents.

Sealed with our seals and dated this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

NOW THE CONDITION OF THIS OBLIGATION IS SUCH, that if **Principal**, who has  
been awarded by **Owner** that certain contract known as Contract No. \_\_\_\_\_  
dated the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_ (the "Contract"), which Contract is  
incorporated herein by reference, shall well and truly provide and furnish all materials,  
appliances and tools and perform all the work required under and pursuant to the terms  
and conditions of the Contract and the Contract Documents (as defined in the Contract)  
or any changes or modifications thereto made as therein provided, shall make good and  
reimburse **Owner** sufficient funds to pay the costs of completing the Contract that  
**Owner** may sustain by reason of any failure or default on the part of **Principal**, and  
shall also indemnify and save harmless **Owner** from all costs, damages and expenses  
arising out of or by reason of the performance of the Contract and for as long as  
provided by the Contract; then this obligation shall be void, otherwise to be and remain  
in full force and effect.

**Surety**, for value received, hereby stipulates and agrees, if requested to do so by  
**Owner**, to fully perform and complete the work to be performed under the Contract  
pursuant to the terms, conditions and covenants thereof, if for any cause **Principal** fails  
or neglects to so fully perform and complete such work.

**Surety**, for value received, for itself and its successors and assigns, hereby stipulates  
and agrees that the obligation of **Surety** and its bond shall be in no way impaired or  
affected by any extension of time, modification, omission, addition or change in or to the  
Contract or the work to be performed thereunder, or by any payment thereunder before  
the time required therein, or by any waiver of any provisions thereof, or by any  
assignment, subletting or other transfer thereof or of any work to be performed or any  
monies due or to become due thereunder; and **Surety** hereby waives notice of any and

all such extensions, modifications, omissions, additions, changes, payments, waivers, assignments, subcontracts and transfers and hereby expressly stipulates and agrees that any and all things done and omitted to be done by and in relation to assignees, subcontractors, and other transferees shall have the same effect as to **Surety** as though done or omitted to be done by or in relation to **Principal**.

**Surety** hereby stipulates and agrees that no modifications, omissions or additions in or to the terms of the Contract shall in any way whatsoever affect the obligation of **Surety** and its bond.

Any proceeding, legal or equitable, under this Bond may be brought in any court of competent jurisdiction in the State of Delaware. Notices to **Surety** or Contractor may be mailed or delivered to them at their respective addresses shown below.

IN WITNESS WHEREOF, **Principal** and **Surety** have hereunto set their hand and seals, and such of them as are corporations have caused their corporate seal to be hereto affixed and these presents to be signed by their duly authorized officers, the day and year first above written.

PRINCIPAL

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

Witness or Attest: Address: \_\_\_\_\_

\_\_\_\_\_  
Name: \_\_\_\_\_ By: \_\_\_\_\_ (SEAL)  
\_\_\_\_\_  
Name: \_\_\_\_\_  
(Corporate Seal) Title: \_\_\_\_\_

SURETY

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

Witness or Attest: Address: \_\_\_\_\_

\_\_\_\_\_  
Name: \_\_\_\_\_ By: \_\_\_\_\_ (SEAL)  
\_\_\_\_\_  
Name: \_\_\_\_\_  
(Corporate Seal) Title: \_\_\_\_\_

STATE OF DELAWARE  
OFFICE OF MANAGEMENT AND BUDGET

**PAYMENT BOND**

Bond Number: \_\_\_\_\_

KNOW ALL PERSONS BY THESE PRESENTS, that we, \_\_\_\_\_, as principal ("**Principal**"), and \_\_\_\_\_, a \_\_\_\_\_ corporation, legally authorized to do business in the State of Delaware, as surety ("**Surety**"), are held and firmly bound unto the \_\_\_\_\_ ("**Owner**") (*insert State agency name*), in the amount of \_\_\_\_\_ (\$ \_\_\_\_\_), to be paid to **Owner**, for which payment well and truly to be made, we do bind ourselves, our and each and every of our heirs, executors, administrations, successors and assigns, jointly and severally, for and in the whole firmly by these presents.

Sealed with our seals and dated this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

NOW THE CONDITION OF THIS OBLIGATION IS SUCH, that if **Principal**, who has been awarded by **Owner** that certain contract known as Contract No. \_\_\_\_\_ dated the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_ (the "Contract"), which Contract is incorporated herein by reference, shall well and truly pay all and every person furnishing materials or performing labor or service in and about the performance of the work under the Contract, all and every sums of money due him, her, them or any of them, for all such materials, labor and service for which **Principal** is liable, shall make good and reimburse **Owner** sufficient funds to pay such costs in the completion of the Contract as **Owner** may sustain by reason of any failure or default on the part of **Principal**, and shall also indemnify and save harmless **Owner** from all costs, damages and expenses arising out of or by reason of the performance of the Contract and for as long as provided by the Contract; then this obligation shall be void, otherwise to be and remain in full force and effect.

**Surety**, for value received, for itself and its successors and assigns, hereby stipulates and agrees that the obligation of **Surety** and its bond shall be in no way impaired or affected by any extension of time, modification, omission, addition or change in or to the Contract or the work to be performed thereunder, or by any payment thereunder before the time required therein, or by any waiver of any provisions thereof, or by any assignment, subletting or other transfer thereof or of any work to be performed or any monies due or to become due thereunder; and **Surety** hereby waives notice of any and all such extensions, modifications, omissions, additions, changes, payments, waivers, assignments, subcontracts and transfers and hereby expressly stipulates and agrees that any and all things done and omitted to be done by and in relation to assignees,

subcontractors, and other transferees shall have the same effect as to **Surety** as though done or omitted to be done by or in relation to **Principal**.

**Surety** hereby stipulates and agrees that no modifications, omission or additions in or to the terms of the Contract shall in any way whatsoever affect the obligation of **Surety** and its bond.

Any proceeding, legal or equitable, under this Bond may be brought in any court of competent jurisdiction in the State of Delaware. Notices to **Surety** or Contractor may be mailed or delivered to them at their respective addresses shown below.

IN WITNESS WHEREOF, **Principal** and **Surety** have hereunto set their hand and seals, and such of them as are corporations have caused their corporate seal to be hereto affixed and these presents to be signed by their duly authorized officers, the day and year first above written.

PRINCIPAL

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

Witness or Attest: Address: \_\_\_\_\_

Name: \_\_\_\_\_ By: \_\_\_\_\_ (SEAL)  
Name: \_\_\_\_\_  
(Corporate Seal) Title: \_\_\_\_\_

SURETY

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

Witness or Attest: Address: \_\_\_\_\_

Name: \_\_\_\_\_ By: \_\_\_\_\_ (SEAL)  
Name: \_\_\_\_\_  
(Corporate Seal) Title: \_\_\_\_\_

**DIVISION 00 – DOCUMENTS**

**SECTION 00600**

**NOTICE OF AWARD**

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

PROJECT Description: DELAWARE TECHNICAL & COMMUNITY COLLEGE - ENVIRONMENTAL COMPLEX PARKING

The OWNER has considered the BID submitted by you for the above described WORK in response to its Advertisement for Bids dated \_\_\_\_\_, and Information for Bidders.

You are hereby notified that your BID has been accepted for items in the amount of

\_\_\_\_\_ (\$ \_\_\_\_\_).

You are required by the Information for Bidders to execute the Agreement and furnish the required CONTRACTOR'S PERFORMANCE BOND, PAYMENT BOND and certificate of insurance within ten (10) calendar days from the date of this NOTICE OF AWARD.

If you fail to execute said Agreement and to furnish said BONDS within ten (10) 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\_\_.

\_\_\_\_\_  
Owner

By \_\_\_\_\_

Title \_\_\_\_\_

### ACCEPTANCE OF NOTICE

Receipt of the above NOTICE OF AWARD is hereby acknowledged by \_\_\_\_\_

\_\_\_\_\_

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

By \_\_\_\_\_

Title \_\_\_\_\_

**\* END OF SECTION \***

UNOFFICIAL WEBSITE COPY



**DIVISION 00 – DOCUMENTS**

**SECTION 00610**

**NOTICE TO PROCEED**

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

Re: DELAWARE TECHNICAL & COMMUNITY COLLEGE- ENVIRONMENTAL COMPLEX  
PARKING

Dear \_\_\_\_\_:

You are hereby notified to commence WORK on \_\_\_\_\_, 20\_\_\_\_ in  
accordance with the Agreement dated \_\_\_\_\_, 20\_\_\_\_, and you are to complete the  
WORK within ninety (90) consecutive calendar days thereafter. The date of the completion of  
all work is \_\_\_\_\_, 20\_\_\_\_.

Please acknowledge and return a copy of this Notice to Proceed within ten (10) days  
from the date of this letter.

Delaware Technical & Community College

\_\_\_\_\_  
Dr. Ileana Smith  
Vice President and Campus Director- Owens Campus

**ACCEPTANCE OF NOTICE**

Receipt of the above NOTICE TO  
PROCEED is hereby acknowledged by

\_\_\_\_\_

this the \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_.

By \_\_\_\_\_

Title \_\_\_\_\_

**\* END OF SECTION \***

Application and Certificate for Payment

TO OWNER:

PROJECT: Sample

APPLICATION NO: 003

Distribution to:

FROM CONTRACTOR:

VIA ARCHITECT:

PERIOD TO:  
CONTRACT FOR:  
CONTRACT DATE:  
PROJECT NOS:

OWNER:  
ARCHITECT:  
CONTRACTOR:  
FIELD:

General Construction

/ /

:

CONTRACTOR'S APPLICATION FOR PAYMENT

Application is made for payment, as shown below, in connection with the Contract. Continuation Sheet, AIA Document G703, is attached.

1. ORIGINAL CONTRACT SUM.....\$0.00
2. NET CHANGE BY CHANGE ORDERS.....\$0.00
3. CONTRACT SUM TO DATE (Line 1 ± 2) .....\$0.00
4. TOTAL COMPLETED & STORED TO DATE (Column G on G703).....\$0.00
5. RETAINAGE:

- a. 0 % of Completed Work  
(Column D + E on G703): \$0.00 )= \$0.00
- b. 0 % of Stored Material  
(Column F on G703): \$0.00 )= \$0.00

Total Retainage (Lines 5a + 5b or Total in Column I of G703).....\$0.00

6. TOTAL EARNED LESS RETAINAGE.....\$0.00  
(Line 4 Less Line 5 Total)
7. LESS PREVIOUS CERTIFICATES FOR PAYMENT.....\$0.00  
(Line 6 from prior Certificate)
8. CURRENT PAYMENT DUE.....\$0.00
9. BALANCE TO FINISH, INCLUDING RETAINAGE  
(Line 3 less Line 6) \$0.00

CHANGE ORDER SUMMARY	ADDITIONS	DEDUCTIONS
Total changes approved in previous months by Owner	\$0.00	\$0.00
Total approved this Month	\$0.00	\$0.00
TOTALS	\$0.00	\$0.00
NET CHANGES by Change Order		\$0.00

The undersigned Contractor certifies that to the best of the Contractor's knowledge, information and belief the Work covered by this Application for Payment has been completed in accordance with the Contract Documents, that all amounts have been paid by the Contractor for Work for which previous Certificates for Payment were issued and payments received from the Owner, and that current payment shown herein is now due.

CONTRACTOR:

By:

Date:

State of:

County of:

Subscribed and sworn to before  
me this day of

Notary Public:

My Commission expires:

ARCHITECT'S CERTIFICATE FOR PAYMENT

In accordance with the Contract Documents, based on on-site observations and the data comprising this application, the Architect certifies to the Owner that to the best of the Architect's knowledge, information and belief the Work has progressed as indicated, the quality of the Work is in accordance with the Contract Documents, and the Contractor is entitled to payment of the AMOUNT CERTIFIED.

AMOUNT CERTIFIED.....\$0.00  
(Attach explanation if amount certified differs from the amount applied. Initial all figures on this Application and on the Continuation Sheet that are changed to conform with the amount certified.)

ARCHITECT:

By:

Date:

This Certificate is not negotiable. The AMOUNT CERTIFIED is payable only to the Contractor named herein. Issuance, payment and acceptance of payment are without prejudice to any rights of the Owner or Contractor under this Contract.

# DRAFT AIA<sup>®</sup> Document G704<sup>™</sup> - 2000

## Certificate of Substantial Completion

PROJECT:  
(Name and address)  
Sample

PROJECT NUMBER: /  
CONTRACT FOR: General Construction  
CONTRACT DATE:

TO OWNER:  
(Name and address)

TO CONTRACTOR:  
(Name and address)

OWNER: ☐

ARCHITECT: ☐

CONTRACTOR: ☐

FIELD: ☐

OTHER: ☐

PROJECT OR PORTION OF THE PROJECT DESIGNATED FOR PARTIAL OCCUPANCY OR USE SHALL INCLUDE:

The Work performed under this Contract has been reviewed and found, to the Architect's best knowledge, information and belief, to be substantially complete. Substantial Completion is the stage in the progress of the Work when the Work or designated portion is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use. The date of Substantial Completion of the Project or portion designated above is the date of issuance established by this Certificate, which is also the date of commencement of applicable warranties required by the Contract Documents, except as stated below:

Warranty

Date of Commencement

\_\_\_\_\_  
ARCHITECT

\_\_\_\_\_  
BY

\_\_\_\_\_  
DATE OF ISSUANCE

A list of items to be completed or corrected is attached hereto. The failure to include any items on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents. Unless otherwise agreed to in writing, the date of commencement of warranties for items on the attached list will be the date of issuance of the final Certificate of Payment or the date of final payment.

Cost estimate of Work that is incomplete or defective: \$0.00

The Contractor will complete or correct the Work on the list of items attached hereto within Zero (0) days from the above date of Substantial Completion.

\_\_\_\_\_  
CONTRACTOR

\_\_\_\_\_  
BY

\_\_\_\_\_  
DATE

The Owner accepts the Work or designated portion as substantially complete and will assume full possession at \_\_\_\_\_ (time) on \_\_\_\_\_ (date).

\_\_\_\_\_  
OWNER

\_\_\_\_\_  
BY

\_\_\_\_\_  
DATE

The responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance shall be as follows:

(Note: Owner's and Contractor's legal and insurance counsel should determine and review insurance requirements and coverage.)

# DRAFT AIA<sup>®</sup> Document G701<sup>™</sup> - 2001

## Change Order

PROJECT (Name and address): Sample	CHANGE ORDER NUMBER: 002 DATE:	OWNER: <input type="checkbox"/> ARCHITECT: <input type="checkbox"/> CONTRACTOR: <input type="checkbox"/> FIELD: <input type="checkbox"/> OTHER: <input type="checkbox"/>
TO CONTRACTOR (Name and address):	ARCHITECT'S PROJECT NUMBER: CONTRACT DATE: CONTRACT FOR: General Construction	

### THE CONTRACT IS CHANGED AS FOLLOWS:

(Include, where applicable, any undisputed amount attributable to previously executed Construction Change Directives)

The original Contract Sum was	\$	0.00
The net change by previously authorized Change Orders	\$	0.00
The Contract Sum prior to this Change Order was	\$	0.00
The Contract Sum will be increased by this Change Order in the amount of	\$	0.00
The new Contract Sum including this Change Order will be	\$	0.00

The Contract Time will be increased by Zero (0) days.

The date of Substantial Completion as of the date of this Change Order therefore is

NOTE: This Change Order does not include changes in the Contract Sum, Contract Time or Guaranteed Maximum Price which have been authorized by Construction Change Directive until the cost and time have been agreed upon by both the Owner and Contractor, in which case a Change Order is executed to supersede the Construction Change Directive.

NOT VALID UNTIL SIGNED BY THE ARCHITECT, CONTRACTOR AND OWNER.

ARCHITECT (Firm name)	CONTRACTOR (Firm name)	OWNER (Firm name)
ADDRESS	ADDRESS	ADDRESS
BY (Signature)	BY (Signature)	BY (Signature)
(Typed name)	(Typed name)	(Typed name)
DATE	DATE	DATE

## GENERAL CONDITIONS

1. Definitions
2. Additional Instructions and Detail Drawings
3. Schedules, Reports and Records
4. Drawings and Specifications
5. Shop Drawings
6. Materials, Services and Facilities
7. Inspection and Testing
8. Substitutions
9. Patents
10. Surveys, Permits, Regulations
11. Protection of Work, Property, Persons
12. Supervision by Contractor
13. Changes in the Work
14. Changes in Contract Price
15. Time for Completion and Liquidated Damages
16. Correction of Work
17. Subsurface Conditions
18. Suspension of Work, Termination and Delay
19. Payments to Contractor
20. Acceptance of Final Payment as Release
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24. Indemnification
25. Separate Contracts
26. Subcontracting
27. Engineer's Authority
28. Land and Rights-of-Way
29. Guaranty
30. Arbitration
31. Taxes

### 1. DEFINITIONS

1.1 Wherever used in the CONTRACT DOCUMENTS, the following terms shall have the meanings indicated which shall be applicable to both the singular and plural thereof:

1.2 ADDENDA—Written or graphic instruments issued prior to the execution of the Agreement which modify or interpret the CONTRACT DOCUMENTS, DRAWINGS and SPECIFICATIONS, by additions, deletions, clarifications or corrections.

1.3 BID—The offer or proposal of the BIDDER submitted on the prescribed form setting forth the prices for the WORK to be performed.

1.4 BIDDER—Any person, firm or corporation submitting a BID for the WORK.

1.5 BONDS—Bid, Performance, and Payment Bonds and other instruments of security, furnished by the CONTRACTOR and his surety in accordance with the CONTRACT DOCUMENTS.

1.6 CHANGE ORDER—A written order to the CONTRACTOR authorizing an addition, deletion or revision in the WORK within the general scope of the CONTRACT DOCUMENTS, or authorizing an adjustment in the CONTRACT PRICE or CONTRACT TIME.

1.7 CONTRACT DOCUMENTS—The contract, including Advertisement For Bids, Information For Bidders, BID, Bid Bond, Agreement, Payment Bond, Performance Bond, NOTICE OF AWARD, NOTICE TO PROCEED, CHANGE ORDER, DRAWINGS, SPECIFICATIONS, and ADDENDA.

1.8 CONTRACT PRICE—The total monies payable to the CONTRACTOR under the terms and conditions of the CONTRACT DOCUMENTS.

1.9 CONTRACT TIME—The number of calendar days stated in the CONTRACT DOCUMENTS for the completion of the WORK.

1.10 CONTRACTOR—The person, firm or corporation with whom the OWNER has executed the Agreement.

1.11 DRAWINGS—The part of the CONTRACT DOCUMENTS which show the characteristics and scope of the WORK to be performed and which have been prepared or approved by the ENGINEER.

1.12 ENGINEER—The person, firm or corporation named as such in the CONTRACT DOCUMENTS.

1.13 FIELD ORDER—A written order effecting a change in the WORK not involving an adjustment in the CONTRACT PRICE or an extension of the CONTRACT TIME, issued by the ENGINEER to the CONTRACTOR during construction.

1.14 NOTICE OF AWARD—The written notice of the acceptance of the BID from the OWNER to the successful BIDDER.

1.15 NOTICE TO PROCEED—Written communication issued by the OWNER to the CONTRACTOR authorizing him to proceed with the WORK and establishing the date of commencement of the WORK.

1.16 OWNER—A public or quasi-public body or authority, corporation, association, partnership, or individual for whom the WORK is to be performed.

1.17 PROJECT—The undertaking to be performed as provided in the CONTRACT DOCUMENTS.

1.18 RESIDENT PROJECT REPRESENTATIVE—The authorized representative of the OWNER who is assigned to the PROJECT site or any part thereof.

1.19 SHOP DRAWINGS—All drawings, diagrams, illustrations, brochures, schedules and other data which are prepared by the CONTRACTOR, a SUBCONTRACTOR, manufacturer, SUPPLIER or distributor, which illustrate how specific portions of the WORK shall be fabricated or installed.

1.20 SPECIFICATIONS—A part of the CONTRACT DOCUMENTS consisting of written descriptions of a technical nature of materials, equipment, construction systems, standards and workmanship.

1.21 SUBCONTRACTOR—An individual, firm or corporation having a direct contract with the CONTRACTOR or with any other SUBCONTRACTOR for the performance of a part of the WORK at the site.

1.22 SUBSTANTIAL COMPLETION—That date as certified by the ENGINEER when the construction of the PROJECT or a specified part thereof is sufficiently completed, in accordance with the CONTRACT DOCUMENTS, so that the PROJECT or specified part can be utilized for the purposes for which it is intended.

1.23 SUPPLEMENTAL GENERAL CONDITIONS—

Modifications to General Conditions required by a Federal agency for participation in the PROJECT and approved by the agency in writing prior to inclusion in the CONTRACT DOCUMENTS, or such requirements that may be imposed by applicable state laws.

1.24 SUPPLIER—Any person or organization who supplies materials or equipment for the WORK, including that fabricated to a special design, but who does not perform labor at the site.

1.25 WORK—All labor necessary to produce the construction required by the CONTRACT DOCUMENTS, and all materials and equipment incorporated or to be incorporated in the PROJECT.

1.26 WRITTEN NOTICE—Any notice to any party of the Agreement relative to any part of this Agreement in writing and considered delivered and the service thereof completed, when posted by certified or registered mail to the said party at his last given address, or delivered in person to said party or his authorized representative on the WORK.

## 2. ADDITIONAL INSTRUCTIONS AND DETAIL DRAWINGS

2.1 The CONTRACTOR may be furnished additional instructions and detail drawings, by the ENGINEER, as necessary to carry out the WORK required by the CONTRACT DOCUMENTS.

2.2 The additional drawings and instruction thus supplied will become a part of the CONTRACT DOCUMENTS. The CONTRACTOR shall carry out the WORK in accordance with the additional detail drawings and instructions.

## 3. SCHEDULES, REPORTS AND RECORDS

3.1 The CONTRACTOR shall submit to the OWNER such schedule of quantities and costs, progress schedules, payrolls, reports, estimates, records and other data where applicable as are required by the CONTRACT DOCUMENTS for the WORK to be performed.

3.2 Prior to the first partial payment estimate the CONTRACTOR shall submit construction progress schedules showing the order in which he proposes to carry on the WORK, including dates at which he will start the various parts of the WORK, estimated date of completion of each part and, as applicable:

3.2.1. The dates at which special detail drawings will be required; and

3.2.2 Respective dates for submission of SHOP DRAWINGS, the beginning of manufacture, the testing and the installation of materials, supplies and equipment.

3.3 The CONTRACTOR shall also submit a schedule of payments that he anticipates he will earn during the course of the WORK.

## 4. DRAWINGS AND SPECIFICATIONS

4.1 The intent of the DRAWINGS and SPECIFICATIONS is that the CONTRACTOR shall furnish all labor, materials, tools, equipment, and transportation necessary for the proper execution of the WORK in accordance with the CONTRACT DOCUMENTS and all incidental work necessary to complete the PROJECT in an acceptable manner, ready for use, occupancy or operation by the OWNER.

4.2 In case of conflict between the DRAWINGS and SPECIFICATIONS, the SPECIFICATIONS shall govern. Figure dimensions on DRAWINGS shall govern over scale dimensions, and detailed DRAWINGS shall govern over general DRAWINGS.

4.3 Any discrepancies found between the DRAWINGS and SPECIFICATIONS and site conditions or any inconsistencies or ambiguities in the DRAWINGS or SPECIFICATIONS shall be immediately reported to the ENGINEER, in writing, who shall promptly correct such inconsistencies or ambiguities in writing. WORK done by the CONTRACTOR after his discovery of such discrepancies, inconsistencies or ambiguities shall be done at the CONTRACTOR'S risk.

## 5. SHOP DRAWINGS

5.1 The CONTRACTOR shall provide SHOP DRAWINGS as may be necessary for the prosecution of the WORK as required by the CONTRACT DOCUMENTS. The ENGINEER shall promptly review all SHOP DRAWINGS. The ENGINEER'S approval of any SHOP DRAWING shall not release the CONTRACTOR from responsibility for deviations from the CONTRACT DOCUMENTS. The approval of any SHOP DRAWING which substantially deviates from the requirement of the CONTRACT DOCUMENTS shall be evidenced by a CHANGE ORDER.

5.2 When submitted for the ENGINEER'S review, SHOP DRAWINGS shall bear the CONTRACTOR'S certification that he has reviewed, checked and approved the SHOP DRAWINGS and that they are in conformance with the requirements of the CONTRACT DOCUMENTS.

5.3 Portions of the WORK requiring a SHOP DRAWING or sample submission shall not begin until the SHOP DRAWING or submission has been approved by the ENGINEER. A copy of each approved SHOP DRAWING and each approved sample shall be kept in good order by the CONTRACTOR at the site and shall be available to the ENGINEER.

## 6. MATERIALS, SERVICES AND FACILITIES

6.1 It is understood that, except as otherwise specifically stated in the CONTRACT DOCUMENTS, the CONTRACTOR shall provide and pay for all materials, labor, tools, equipment, water, light, power, transportation, supervision, temporary construction of any nature, and all other services and facilities of any nature whatsoever necessary to execute, complete, and deliver the WORK within the specified time.

6.2 Materials and equipment shall be so stored as to insure the preservation of their quality and fitness for the WORK. Stored materials and equipment to be incorporated in the WORK shall be located so as to facilitate prompt inspection.

6.3 Manufactured articles, materials and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned as directed by the manufacturer.

6.4 Materials, supplies and equipment shall be in accordance with samples submitted by the CONTRACTOR and approved by the ENGINEER.

6.5 Materials, supplies or equipment to be incorporated into the WORK shall not be purchased by the

CONTRACTOR or the SUBCONTRACTOR subject to a chattel mortgage or under a conditional sale contract or other agreement by which an interest is retained by the seller.

## 7. INSPECTION AND TESTING

7.1 All materials and equipment used in the construction of the PROJECT shall be subject to adequate inspection and testing in accordance with generally accepted standards, as required and defined in the CONTRACT DOCUMENTS.

7.2 The OWNER shall provide all inspection and testing services not required by the CONTRACT DOCUMENTS.

7.3 The CONTRACTOR shall provide at his expense the testing and inspection services required by the CONTRACT DOCUMENTS.

7.4 If the CONTRACT DOCUMENTS, laws, ordinances, rules, regulations or orders of any public authority having jurisdiction require any WORK to specifically be inspected, tested, or approved by someone other than the CONTRACTOR, the CONTRACTOR will give the ENGINEER timely notice of readiness. The CONTRACTOR will then furnish the ENGINEER the required certificates of inspection, testing or approval.

7.5 Inspections, tests or approvals by the engineer or others shall not relieve the CONTRACTOR from his obligations to perform the WORK in accordance with the requirements of the CONTRACT DOCUMENTS.

7.6 The ENGINEER and his representatives will at all times have access to the WORK. In addition, authorized representatives and agents of any participating Federal or state agency shall be permitted to inspect all work, materials, payrolls, records of personnel, invoices of materials, and other relevant data and records. The CONTRACTOR will provide proper facilities for such access and observation of the WORK and also for any inspection, or testing thereof.

7.7 If any WORK is covered contrary to the written instructions of the ENGINEER it must, if requested by the ENGINEER, be uncovered for his observation and replaced at the CONTRACTOR'S expense.

7.8 If the ENGINEER considers it necessary or advisable that covered WORK be inspected or tested by others, the CONTRACTOR, at the ENGINEER'S request, will uncover, expose or otherwise make available for observation, inspection or testing as the ENGINEER may require, that portion of the WORK in question, furnishing all necessary labor, materials, tools, and equipment. If it is found that such WORK is defective, the CONTRACTOR will bear all the expenses of such uncovering, exposure, observation, inspection and testing and of satisfactory reconstruction. If, however, such WORK is not found to be defective, the CONTRACTOR will be allowed an increase in the CONTRACT PRICE or an extension of the CONTRACT TIME, or both, directly attributable to such uncovering, exposure, observation, inspection, testing and reconstruction and an appropriate CHANGE ORDER shall be issued.

## 8. SUBSTITUTIONS

8.1 Whenever a material, article or piece of equip-

ment is identified on the DRAWINGS or SPECIFICATIONS by reference to brand name or catalogue number, it shall be understood that this is referenced for the purpose of defining the performance or other salient requirements and that other products of equal capacities, quality and function shall be considered. The CONTRACTOR may recommend the substitution of a material, article, or piece of equipment of equal substance and function for those referred to in the CONTRACT DOCUMENTS by reference to brand name or catalogue number, and if, in the opinion of the ENGINEER, such material, article, or piece of equipment is of equal substance and function to that specified, the ENGINEER may approve its substitution and use by the CONTRACTOR. Any cost differential shall be deductible from the CONTRACT PRICE and the CONTRACT DOCUMENTS shall be appropriately modified by CHANGE ORDER. The CONTRACTOR warrants that if substitutes are approved, no major changes in the function or general design of the PROJECT will result. Incidental changes or extra component parts required to accommodate the substitute will be made by the CONTRACTOR without a change in the CONTRACT PRICE or CONTRACT TIME.

## 9. PATENTS

9.1 The CONTRACTOR shall pay all applicable royalties and license fees. He shall defend all suits or claims for infringement of any patent rights and save the OWNER harmless from loss on account thereof, except that the OWNER shall be responsible for any such loss when a particular process, design, or the product of a particular manufacturer or manufacturers is specified, however if the CONTRACTOR has reason to believe that the design, process or product specified is an infringement of a patent, he shall be responsible for such loss unless he promptly gives such information to the ENGINEER.

## 10. SURVEYS, PERMITS, REGULATIONS

10.1 The OWNER shall furnish all boundary surveys and establish all base lines for locating the principal component parts of the WORK together with a suitable number of bench marks adjacent to the WORK as shown in the CONTRACT DOCUMENTS. From the information provided by the OWNER, unless otherwise specified in the CONTRACT DOCUMENTS, the CONTRACTOR shall develop and make all detail surveys needed for construction such as slope stakes, batter boards, stakes for pile locations and other working points, lines, elevations and cut sheets.

10.2 The CONTRACTOR shall carefully preserve bench marks, reference points and stakes and, in case of willful or careless destruction, he shall be charged with the resulting expense and shall be responsible for any mistakes that may be caused by their unnecessary loss or disturbance.

10.3 Permits and licenses of a temporary nature necessary for the prosecution of the WORK shall be secured and paid for by the CONTRACTOR unless otherwise stated in the SUPPLEMENTAL GENERAL CONDITIONS. Permits, licenses and easements for permanent structures or permanent changes in existing facilities shall be secured and paid for by the OWNER, unless otherwise specified. The CONTRACTOR shall give all notices and comply with all laws, ordinances, rules and regulations bearing on the conduct of the WORK as drawn and specified. If the CONTRACTOR



observes that the CONTRACT DOCUMENTS are at variance therewith, he shall promptly notify the ENGINEER in writing, and any necessary changes shall be adjusted as provided in Section 13, CHANGES IN THE WORK.

#### 11. PROTECTION OF WORK, PROPERTY AND PERSONS

11.1 The CONTRACTOR will be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the WORK. He will take all necessary precautions for the safety of, and will provide the necessary protection to prevent damage, injury or loss to all employees on the WORK and other persons who may be affected thereby, all the WORK and all materials or equipment to be incorporated therein, whether in storage on or off the site, and other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

11.2 The CONTRACTOR will comply with all applicable laws, ordinances, rules, regulations and orders of any public body having jurisdiction. He will erect and maintain, as required by the conditions and progress of the WORK, all necessary safeguards for safety and protection. He will notify owners of adjacent utilities when prosecution of the WORK may affect them. The CONTRACTOR will remedy all damage, injury or loss to any property caused, directly or indirectly, in whole or in part, by the CONTRACTOR, any SUBCONTRACTOR or anyone directly or indirectly employed by any of them or anyone for whose acts any of them be liable, except damage or loss attributable to the fault of the CONTRACT DOCUMENTS or to the acts or omissions of the OWNER or the ENGINEER or anyone employed by either of them or anyone for whose acts either of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of the CONTRACTOR.

11.3 In emergencies affecting the safety of persons or the WORK or property at the site or adjacent thereto, the CONTRACTOR, without special instruction or authorization from the ENGINEER or OWNER, shall act to prevent threatened damage, injury or loss. He will give the ENGINEER prompt WRITTEN NOTICE of any significant changes in the WORK or deviations from the CONTRACT DOCUMENTS caused thereby, and a CHANGE ORDER shall thereupon be issued covering the changes and deviations involved.

#### 12. SUPERVISION BY CONTRACTOR

12.1 The CONTRACTOR will supervise and direct the WORK. He will be solely responsible for the means, methods, techniques, sequences and procedures of construction. The CONTRACTOR will employ and maintain on the WORK a qualified supervisor or superintendent who shall have been designated in writing by the CONTRACTOR as the CONTRACTOR'S representative at the site. The supervisor shall have full authority to act on behalf of the CONTRACTOR and all communications given to the supervisor shall be as binding as if given to the CONTRACTOR. The supervisor shall be present on the site at all times as required to perform adequate supervision and coordination of the WORK.

#### 13. CHANGES IN THE WORK

13.1 The OWNER may at any time, as the need arises,

order changes within the scope of the WORK without invalidating the Agreement. If such changes increase or decrease the amount due under the CONTRACT DOCUMENTS, or in the time required for performance of the WORK, an equitable adjustment shall be authorized by CHANGE ORDER.

13.2 The ENGINEER, also, may at any time, by issuing a FIELD ORDER, make changes in the details of the WORK. The CONTRACTOR shall proceed with the performance of any changes in the WORK so ordered by the ENGINEER unless the CONTRACTOR believes that such FIELD ORDER entitles him to a change in CONTRACT PRICE or TIME, or both, in which event he shall give the ENGINEER WRITTEN NOTICE thereof within seven (7) days after the receipt of the ordered change. Thereafter the CONTRACTOR shall document the basis for the change in CONTRACT PRICE or TIME within thirty (30) days. The CONTRACTOR shall not execute such changes pending the receipt of an executed CHANGE ORDER or further instruction from the OWNER.

#### 14. CHANGES IN CONTRACT PRICE

14.1 The CONTRACT PRICE may be changed only by a CHANGE ORDER. The value of any WORK covered by a CHANGE ORDER or of any claim for increase or decrease in the CONTRACT PRICE shall be determined by one or more of the following methods in the order of precedence listed below:

(a) Unit prices previously approved.

(b) An agreed lump sum.

(c) The actual cost for labor, direct overhead, materials, supplies, equipment, and other services necessary to complete the work. In addition there shall be added an amount to be agreed upon but not to exceed fifteen (15) percent of the actual cost of the WORK to cover the cost of general overhead and profit.

#### 15. TIME FOR COMPLETION AND LIQUIDATED DAMAGES

15.1 The date of beginning and the time for completion of the WORK are essential conditions of the CONTRACT DOCUMENTS and the WORK embraced shall be commenced on a date specified in the NOTICE TO PROCEED.

15.2 The CONTRACTOR will proceed with the WORK at such rate of progress to insure full completion within the CONTRACT TIME. It is expressly understood and agreed, by and between the CONTRACTOR and the OWNER, that the CONTRACT TIME for the completion of the WORK described herein is a reasonable time, taking into consideration the average climatic and economic conditions and other factors prevailing in the locality of the WORK.

15.3 If the CONTRACTOR shall fail to complete the WORK within the CONTRACT TIME, or extension of time granted by the OWNER, then the CONTRACTOR will pay to the OWNER the amount for liquidated damages as specified in the BID for each calendar day that the CONTRACTOR shall be in default after the time stipulated in the CONTRACT DOCUMENTS.

15.4 The CONTRACTOR shall not be charged with liquidated damages or any excess cost when the delay in completion of the WORK is due to the following, and the CONTRACTOR has promptly given WRITTEN NOTICE of such delay to the OWNER or ENGINEER.

15.4.1 To any preference, priority or allocation



order duly issued by the OWNER.

15.4.2 To unforeseeable causes 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, acts of another CONTRACTOR in the performance of a contract with the OWNER, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and abnormal and unforeseeable weather; and

15.4.3 To any delays of SUBCONTRACTORS occasioned by any of the causes specified in paragraphs 15.4.1 and 15.4.2 of this article.

## 16. CORRECTION OF WORK

16.1 The CONTRACTOR shall promptly remove from the premises all WORK rejected by the ENGINEER for failure to comply with the CONTRACT DOCUMENTS, whether incorporated in the construction or not, and the CONTRACTOR shall promptly replace and re-execute the WORK in accordance with the CONTRACT DOCUMENTS and without expense to the OWNER and shall bear the expense of making good all WORK of other CONTRACTORS destroyed or damaged by such removal or replacement.

16.2 All removal and replacement WORK shall be done at the CONTRACTOR'S expense. If the CONTRACTOR does not take action to remove such rejected WORK within ten (10) days after receipt of WRITTEN NOTICE, the OWNER may remove such WORK and store the materials at the expense of the CONTRACTOR.

## 17. SUBSURFACE CONDITIONS

17.1 The CONTRACTOR shall promptly, and before such conditions are disturbed, except in the event of an emergency, notify the OWNER by WRITTEN NOTICE of:

17.1.1 Subsurface or latent physical conditions at the site differing materially from those indicated in the CONTRACT DOCUMENTS; or

17.1.2 Unknown physical conditions at the site, of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in WORK of the character provided for in the CONTRACT DOCUMENTS.

17.2 The OWNER shall promptly investigate the conditions, and if he finds that such conditions do so materially differ and cause an increase or decrease in the cost of, or in the time required for, performance of the WORK, an equitable adjustment shall be made and the CONTRACT DOCUMENTS shall be modified by a CHANGE ORDER. Any claim of the CONTRACTOR for adjustment hereunder shall not be allowed unless he has given the required WRITTEN NOTICE; provided that the OWNER may, if he determines the facts so justify, consider and adjust any such claims asserted before the date of final payment.

## 18. SUSPENSION OF WORK, TERMINATION AND DELAY

18.1 The OWNER may suspend the WORK or any portion thereof for a period of not more than ninety days or such further time as agreed upon by the CONTRACTOR, by WRITTEN NOTICE to the CONTRACTOR and the ENGINEER which notice shall fix the date on which WORK shall be resumed. The CONTRACTOR

will resume that WORK on the date so fixed. The CONTRACTOR will be allowed an increase in the CONTRACT PRICE or an extension of the CONTRACT TIME, or both, directly attributable to any suspension.

18.2 If the CONTRACTOR is adjudged a bankrupt or insolvent, or if he makes a general assignment for the benefit of his creditors, or if a trustee or receiver is appointed for the CONTRACTOR or for any of his property, or if he files a petition to take advantage of any debtor's act, or to reorganize under the bankruptcy or applicable laws, or if he repeatedly fails to supply sufficient skilled workmen or suitable materials or equipment, or if he repeatedly fails to make prompt payments to SUBCONTRACTORS or for labor, materials or equipment or if he disregards laws, ordinances, rules, regulations or orders of any public body having jurisdiction of the WORK or if he disregards the authority of the ENGINEER, or if he otherwise violates any provision of the CONTRACT DOCUMENTS, then the OWNER may, without prejudice to any other right or remedy and after giving the CONTRACTOR and his surety a minimum of ten (10) days from delivery of a WRITTEN NOTICE, terminate the services of the CONTRACTOR and take possession of the PROJECT and of all materials, equipment, tools, construction equipment and machinery thereon owned by the CONTRACTOR, and finish the WORK by whatever method he may deem expedient. In such case the CONTRACTOR shall not be entitled to receive any further payment until the WORK is finished. If the unpaid balance of the CONTRACT PRICE exceeds the direct and indirect costs of completing the PROJECT, including compensation for additional professional services, such excess SHALL BE PAID TO THE CONTRACTOR. If such costs exceed such unpaid balance, the CONTRACTOR will pay the difference to the OWNER. Such costs incurred by the OWNER will be determined by the ENGINEER and incorporated in a CHANGE ORDER.

18.3 Where the CONTRACTOR'S services have been so terminated by the OWNER, said termination shall not affect any right of the OWNER against the CONTRACTOR then existing or which may thereafter accrue. Any retention or payment of monies by the OWNER due the CONTRACTOR will not release the CONTRACTOR from compliance with the CONTRACT DOCUMENTS.

18.4 After ten (10) days from delivery of a WRITTEN NOTICE to the CONTRACTOR and the ENGINEER, the OWNER may, without cause and without prejudice to any other right or remedy, elect to abandon the PROJECT and terminate the Contract. In such case, the CONTRACTOR shall be paid for all WORK executed and any expense sustained plus reasonable profit.

18.5 If, through no act or fault of the CONTRACTOR, the WORK is suspended for a period of more than ninety (90) days by the OWNER or under an order of court or other public authority, or the ENGINEER fails to act on any request for payment within thirty (30) days after it is submitted, or the OWNER fails to pay the CONTRACTOR substantially the sum approved by the ENGINEER or awarded by arbitrators within thirty (30) days of its approval and presentation, then the CONTRACTOR may, after ten (10) days from delivery of a WRITTEN NOTICE to the OWNER and the ENGINEER, terminate the CONTRACT and recover from the OWNER payment for all WORK exe-

cuted and all expenses sustained. In addition and in lieu of terminating the CONTRACT, if the ENGINEER has failed to act on a request for payment or if the OWNER has failed to make any payment as aforesaid, the CONTRACTOR may upon ten (10) days written notice to the OWNER and the ENGINEER stop the WORK until he has been paid all amounts then due, in which event and upon resumption of the WORK, CHANGE ORDERS shall be issued for adjusting the CONTRACT PRICE or extending the CONTRACT TIME or both to compensate for the costs and delays attributable to the stoppage of the WORK.

18.6 If the performance of all or any portion of the WORK is suspended, delayed, or interrupted as a result of a failure of the OWNER or ENGINEER to act within the time specified in the CONTRACT DOCUMENTS, or if no time is specified, within a reasonable time, an adjustment in the CONTRACT PRICE or an extension of the CONTRACT TIME, or both, shall be made by CHANGE ORDER to compensate the CONTRACTOR for the costs and delays necessarily caused by the failure of the OWNER or ENGINEER.

#### 19. PAYMENTS TO CONTRACTOR

19.1 At least ten (10) days before each progress payment falls due (but not more often than once a month), the CONTRACTOR will submit to the ENGINEER a partial payment estimate filled out and signed by the CONTRACTOR covering the WORK performed during the period covered by the partial payment estimate and supported by such data as the ENGINEER may reasonably require. If payment is requested on the basis of materials and equipment not incorporated in the WORK but delivered and suitably stored at or near the site, the partial payment estimate shall also be accompanied by such supporting data, satisfactory to the OWNER, as will establish the OWNER's title to the material and equipment and protect his interest therein, including applicable insurance. The ENGINEER will, within ten (10) days after receipt of each partial payment estimate, either indicate in writing his approval of payment and present the partial payment estimate to the OWNER, or return the partial payment estimate to the CONTRACTOR indicating in writing his reasons for refusing to approve payment. In the latter case, the CONTRACTOR may make the necessary corrections and resubmit the partial payment estimate. The OWNER will, within ten (10) days of presentation to him of an approved partial payment estimate, pay the CONTRACTOR a progress payment on the basis of the approved partial payment estimate. The OWNER shall retain ten (10) percent of the amount of each payment until final completion and acceptance of all work covered by the CONTRACT DOCUMENTS. The OWNER at any time, however, after fifty (50) percent of the WORK has been completed, if he finds that satisfactory progress is being made, shall reduce retainage to five (5%) percent on the current and remaining estimates. When the WORK is substantially complete (operational or beneficial occupancy), the retained amount may be further reduced below five (5) percent to only that amount necessary to assure completion. On completion and acceptance of a part of the WORK on which the price is stated separately in the CONTRACT DOCUMENTS, payment may be made in full, including retained percentages, less authorized deductions.

19.2 The request for payment may also include an allowance for the cost of such major materials and

equipment which are suitably stored either at or near the site.

19.3 Prior to SUBSTANTIAL COMPLETION, the OWNER, with the approval of the ENGINEER and with the concurrence of the CONTRACTOR, may use any completed or substantially completed portions of the WORK. Such use shall not constitute an acceptance of such portions of the WORK.

19.4 The OWNER shall have the right to enter the premises for the purpose of doing work not covered by the CONTRACT DOCUMENTS. This provision shall not be construed as relieving the CONTRACTOR of the sole responsibility for the care and protection of the WORK, or the restoration of any damaged WORK except such as may be caused by agents or employees of the OWNER.

19.5 Upon completion and acceptance of the WORK, the ENGINEER shall issue a certificate attached to the final payment request that the WORK has been accepted by him under the conditions of the CONTRACT DOCUMENTS. The entire balance found to be due the CONTRACTOR, including the retained percentages, but except such sums as may be lawfully retained by the OWNER, shall be paid to the CONTRACTOR within thirty (30) days of completion and acceptance of the WORK.

19.6 The CONTRACTOR will indemnify and save the OWNER or the OWNER'S agents harmless from all claims growing out of the lawful demands of SUB-CONTRACTORS, laborers, workmen, mechanics, materialmen, and furnishers of machinery and parts thereof, equipment, tools, and all supplies, incurred in the furtherance of the performance of the WORK. The CONTRACTOR shall, at the OWNER'S request, furnish satisfactory evidence that all obligations of the nature designated above have been paid, discharged, or waived. If the CONTRACTOR fails to do so the OWNER may, after having notified the CONTRACTOR, either pay unpaid bills or withhold from the CONTRACTOR'S unpaid compensation a sum of money deemed reasonably sufficient to pay any and all such lawful claims until satisfactory evidence is furnished that all liabilities have been fully discharged whereupon payment to the CONTRACTOR shall be resumed, in accordance with the terms of the CONTRACT DOCUMENTS, but in no event shall the provisions of this sentence be construed to impose any obligations upon the OWNER to either the CONTRACTOR, his Surety, or any third party. In paying any unpaid bills of the CONTRACTOR, any payment so made by the OWNER shall be considered as a payment made under the CONTRACT DOCUMENTS by the OWNER to the CONTRACTOR and the OWNER shall not be liable to the CONTRACTOR for any such payments made in good faith.

19.7 If the OWNER fails to make payment thirty (30) days after approval by the ENGINEER, in addition to other remedies available to the CONTRACTOR, there shall be added to each such payment interest at the maximum legal rate commencing on the first day after said payment is due and continuing until the payment is received by the CONTRACTOR.

## 20. ACCEPTANCE OF FINAL PAYMENT AS RELEASE

20.1 The acceptance by the CONTRACTOR of final payment shall be and shall operate as a release to the OWNER of all claims and all liability to the CONTRACTOR other than claims in stated amounts as may be specifically excepted by the CONTRACTOR for all things done or furnished in connection with this WORK and for every act and neglect of the OWNER and others relating to or arising out of this WORK. Any payment, however, final or otherwise, shall not release the CONTRACTOR or his sureties from any obligations under the CONTRACT DOCUMENTS or the Performance BOND and Payment BONDS.

## 21. INSURANCE

21.1 The CONTRACTOR shall purchase and maintain such insurance as will protect him from claims set forth below which may arise out of or result from the CONTRACTOR'S execution of the WORK, whether such execution be by himself or by any SUBCONTRACTOR or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

21.1.1 Claims under workmen's compensation, disability benefit and other similar employee benefit acts;

21.1.2 Claims for damages because of bodily injury, occupational sickness or disease, or death of his employees;

21.1.3 Claims for damages because of bodily injury, sickness or disease, or death of any person other than his employees;

21.1.4 Claims for damages insured by usual personal injury liability coverage which are sustained (1) by any person as a result of an offense directly or indirectly related to the employment of such person by the CONTRACTOR, or (2) by any other person; and

21.1.5 Claims for damages because of injury to or destruction of tangible property, including loss of use resulting therefrom.

21.2 Certificates of Insurance acceptable to the OWNER shall be filed with the OWNER prior to commencement of the WORK. These Certificates shall contain a provision that coverages afforded under the policies will not be cancelled unless at least fifteen (15) days prior WRITTEN NOTICE has been given to the OWNER.

21.3 The CONTRACTOR shall procure and maintain, at his own expense, during the CONTRACT TIME, liability insurance as hereinafter specified:

21.3.1 CONTRACTOR'S General Public Liability and Property Damage Insurance including vehicle coverage issued to the CONTRACTOR and protecting him from all claims for personal injury, including death, and all claims for destruction of or damage to property, arising out of or in connection with any

operations under the CONTRACT DOCUMENTS, whether such operations be by himself or by any SUBCONTRACTOR under him, or anyone directly or indirectly employed by the CONTRACTOR or by a SUBCONTRACTOR under him. Insurance shall be written with a limit of liability of not less than \$500,000 for all damages arising out of bodily injury, including death, at any time resulting therefrom, sustained by any one person in any one accident; and a limit of liability of not less than \$500,000 aggregate for any such damages sustained by two or more persons in any one accident. Insurance shall be written with a limit of liability of not less than \$200,000 for all property damage sustained by any one person in any one accident; and a limit of liability of not less than \$200,000 aggregate for any such damage sustained by two or more persons in any one accident.

21.3.2 The CONTRACTOR shall acquire and maintain, if applicable, Fire and Extended Coverage insurance upon the PROJECT to the full insurable value thereof for the benefit of the OWNER, the CONTRACTOR, and SUBCONTRACTORS as their interest may appear. This provision shall in no way release the CONTRACTOR or CONTRACTOR'S surety from obligations under the CONTRACT DOCUMENTS to fully complete the PROJECT.

21.4 The CONTRACTOR shall procure and maintain, at his own expense, during the CONTRACT TIME, in accordance with the provisions of the laws of the state in which the work is performed, Workmen's Compensation Insurance, including occupational disease provisions, for all of his employees at the site of the PROJECT and in case any work is sublet, the CONTRACTOR shall require such SUBCONTRACTOR similarly to provide Workmen's Compensation Insurance, including occupational disease provisions for all of the latter's employees unless such employees are covered by the protection afforded by the CONTRACTOR. In case any class of employees engaged in hazardous work under this contract at the site of the PROJECT is not protected under Workmen's Compensation statute, the CONTRACTOR shall provide, and shall cause each SUBCONTRACTOR to provide, adequate and suitable insurance for the protection of his employees not otherwise protected.

21.5 The CONTRACTOR shall secure, if applicable, "All Risk" type Builder's Risk Insurance for WORK to be performed. Unless specifically authorized by the OWNER, the amount of such insurance shall not be less than the CONTRACT PRICE totaled in the BID. The policy shall cover not less than the losses due to fire, explosion, hail, lightning, vandalism, malicious mischief, wind, collapse, riot, aircraft, and smoke during the CONTRACT TIME, and until the WORK is accepted by the OWNER. The policy shall name as the insured the CONTRACTOR, the ENGINEER, and the OWNER.

## 22. CONTRACT SECURITY

22.1 The CONTRACTOR shall within ten (10) days after the receipt of the NOTICE OF AWARD furnish the OWNER with a Performance Bond and a Payment Bond in penal sums equal to the amount of the CONTRACT PRICE, conditioned upon the performance by

the CONTRACTOR of all undertakings, covenants, terms, conditions and agreements of the CONTRACT DOCUMENTS, and upon the prompt payment by the CONTRACTOR to all persons supplying labor and materials in the prosecution of the WORK provided by the CONTRACT DOCUMENTS. Such BONDS shall be executed by the CONTRACTOR and a corporate bonding company licensed to transact such business in the state in which the WORK is to be performed and named on the current list of "Surety Companies Acceptable on Federal Bonds" as published in the Treasury Department Circular Number 570. The expense of these BONDS shall be borne by the CONTRACTOR. If at any time a surety on any such BOND is declared a bankrupt or loses its right to do business in the state in which the WORK is to be performed or is removed from the list of Surety Companies accepted on Federal BONDS, CONTRACTOR shall within ten (10) days after notice from the OWNER to do so, substitute an acceptable BOND (or BONDS) in such form and sum and signed by such other surety or sureties as may be satisfactory to the OWNER. The premiums on such BOND shall be paid by the CONTRACTOR. No further payments shall be deemed due nor shall be made until the new surety or sureties shall have furnished an acceptable BOND to the OWNER.

### 23. ASSIGNMENTS

23.1 Neither the CONTRACTOR nor the OWNER shall sell, transfer, assign or otherwise dispose of the Contract or any portion thereof, or of his right, title or interest therein, or his obligations thereunder, without written consent of the other party.

### 24. INDEMNIFICATION

24.1 The CONTRACTOR will indemnify and hold harmless the OWNER and the ENGINEER and their agents and employees from and against all claims, damages, losses and expenses including attorney's fees arising out of or resulting from the performance of the WORK, provided that any such claims, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property including the loss of use resulting therefrom; and is caused in whole or in part by any negligent or willful act or omission of the CONTRACTOR, and SUBCONTRACTOR, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable.

24.2 In any and all claims against the OWNER or the ENGINEER, or any of their agents or employees, by any employee of the CONTRACTOR, any SUBCONTRACTOR, anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable, the indemnification obligation shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the CONTRACTOR or any SUBCONTRACTOR under workmen's compensation acts, disability benefit acts or other employee benefits acts.

24.3 The obligation of the CONTRACTOR under this paragraph shall not extend to the liability of the ENGINEER, his agents or employees arising out of the preparation or approval of maps, DRAWINGS, opinions, reports, surveys, CHANGE ORDERS, designs or SPECIFICATIONS.

### 25. SEPARATE CONTRACTS

25.1 The OWNER reserves the right to let other con-

tracts in connection with this PROJECT. The CONTRACTOR shall afford other CONTRACTORS reasonable opportunity for the introduction and storage of their materials and the execution of their WORK, and shall properly connect and coordinate his WORK with theirs. If the proper execution or results of any part of the CONTRACTOR'S WORK depends upon the WORK of any other CONTRACTOR, the CONTRACTOR shall inspect and promptly report to the ENGINEER any defects in such WORK that render it unsuitable for such proper execution and results.

25.2 The OWNER may perform additional WORK related to the PROJECT by himself, or he may let other contracts containing provisions similar to these. The CONTRACTOR will afford the other CONTRACTORS who are parties to such Contracts (or the OWNER, if he is performing the additional WORK himself), reasonable opportunity for the introduction and storage of materials and equipment and the execution of WORK, and shall properly connect and coordinate his WORK with theirs.

25.3 If the performance of additional WORK by other CONTRACTORS or the OWNER is not noted in the CONTRACT DOCUMENTS prior to the execution of the CONTRACT, written notice thereof shall be given to the CONTRACTOR prior to starting any such additional WORK. If the CONTRACTOR believes that the performance of such additional WORK by the OWNER or others involves him in additional expense or entitles him to an extension of the CONTRACT TIME, he may make a claim therefor as provided in Sections 14 and 15.

### 26. SUBCONTRACTING

26.1 The CONTRACTOR may utilize the services of specialty SUBCONTRACTORS on those parts of the WORK which, under normal contracting practices, are performed by specialty SUBCONTRACTORS.

26.2 The CONTRACTOR shall not award WORK to SUBCONTRACTOR(s), in excess of fifty (50%) percent of the CONTRACT PRICE, without prior written approval of the OWNER.

26.3 The CONTRACTOR shall be fully responsible to the OWNER for the acts and omissions of his SUBCONTRACTORS, and of persons either directly or indirectly employed by them, as he is for the acts and omissions of persons directly employed by him.

26.4 The CONTRACTOR shall cause appropriate provisions to be inserted in all subcontracts relative to the WORK to bind SUBCONTRACTORS to the CONTRACTOR by the terms of the CONTRACT DOCUMENTS insofar as applicable to the WORK of SUBCONTRACTORS and to give the CONTRACTOR the same power as regards terminating any subcontract that the OWNER may exercise over the CONTRACTOR under any provision of the CONTRACT DOCUMENTS.

26.5 Nothing contained in this CONTRACT shall create any contractual relation between any SUBCONTRACTOR and the OWNER.

### 27. ENGINEER'S AUTHORITY

27.1 The ENGINEER shall act as the OWNER'S representative during the construction period. He shall decide questions which may arise as to quality and acceptability of materials furnished and WORK performed. He shall interpret the intent of the CONTRACT DOCUMENTS in a fair and unbiased manner. The

ENGINEER will make visits to the site and determine if the WORK is proceeding in accordance with the CONTRACT DOCUMENTS.

27.2 The CONTRACTOR will be held strictly to the intent of the CONTRACT DOCUMENTS in regard to the quality of materials, workmanship and execution of the WORK. Inspections may be made at the factory or fabrication plant of the source of material supply.

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

27.4 The ENGINEER shall promptly make decisions relative to interpretation of the CONTRACT DOCUMENTS.

## 28. LAND AND RIGHTS-OF-WAY

28.1 Prior to issuance of NOTICE TO PROCEED, the OWNER shall obtain all land and rights-of-way necessary for carrying out and for the completion of the WORK to be performed pursuant to the CONTRACT DOCUMENTS, unless otherwise mutually agreed.

28.2 The OWNER shall provide to the CONTRACTOR information which delineates and describes the lands owned and rights-of-way acquired.

28.3 The CONTRACTOR shall provide at his own expense and without liability to the OWNER any additional land and access thereto that the CONTRACTOR may desire for temporary construction facilities, or for storage of materials.

## 29. GUARANTY

29.1 The CONTRACTOR shall guarantee all materials and equipment furnished and WORK performed for a period of one (1) year from the date of SUBSTANTIAL COMPLETION. The CONTRACTOR warrants and guarantees for a period of one (1) year from the date of SUBSTANTIAL COMPLETION of the system that the completed system is free from all defects due to faulty materials or workmanship and the CONTRACTOR shall promptly make such corrections as may be

necessary by reason of such defects including the repairs of any damage to other parts of the system resulting from such defects. The OWNER will give notice of observed defects with reasonable promptness. In the event that the CONTRACTOR should fail to make such repairs, adjustments, or other WORK that may be made necessary by such defects, the OWNER may do so and charge the CONTRACTOR the cost thereby incurred. The Performance BOND shall remain in full force and effect through the guarantee period.

## 30. ARBITRATION

30.1 All claims, disputes and other matters in question arising out of, or relating to, the CONTRACT DOCUMENTS or the breach thereof, except for claims which have been waived by the making and acceptance of final payment as provided by Section 20, shall be decided by arbitration in accordance with the Construction Industry Arbitration Rules of the American Arbitration Association. This agreement to arbitrate shall be specifically enforceable under the prevailing arbitration law. The award rendered by the arbitrators shall be final, and judgment may be entered upon it in any court having jurisdiction thereof.

30.2 Notice of the demand for arbitration shall be filed in writing with the other party to the CONTRACT DOCUMENTS and with the American Arbitration Association, and a copy shall be filed with the ENGINEER. Demand for arbitration shall in no event be made on any claim, dispute or other matter in question which would be barred by the applicable statute of limitations.

30.3 The CONTRACTOR will carry on the WORK and maintain the progress schedule during any arbitration proceedings, unless otherwise mutually agreed in writing.

## 31. TAXES

31.1 The CONTRACTOR will pay all sales, consumer, use and other similar taxes required by the law of the place where the WORK is performed.

## **SUPPLEMENTAL GENERAL CONDITIONS**

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|--|---|
| 1. Definitions                                 | 17. Subsurface Conditions                     |
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| 3. Schedules, Reports and Records              | 19. Payments to Contractor                    |
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| 5. Shop Drawings                               | 21. Insurance                                 |
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| 11. Protection of Work, Property, Persons      | 26. Subcontracting                            |
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| 15. Time for Completion and Liquidated Damages | 30. Arbitration                               |
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These Supplemental General Conditions supplement, modify and take precedence over the General Conditions.

### **1. DEFINITIONS**

1.1 **ENGINEER** - The firm of George, Miles & Buhr, acting for the Owner as his duly authorized agent, said agent acting severally within the scope of duties contracted for with the Owner.

1.2 **RESIDENT PROJECT REPRESENTATIVE** (also referred to as "Inspector") - The authorized representative of the Owner who is assigned to make inspections of materials furnished and work performed by the Contractor.

1.3 **SUPPLEMENTAL GENERAL CONDITIONS** - Modifications to General Conditions and taking precedence over General Conditions.

1.4 **SPECIAL PROVISIONS** - Special requirements relative to the project taking precedence over General Conditions and Supplemental General Conditions.

### **2. ADDITIONAL INSTRUCTIONS AND DETAIL DRAWINGS**

No Modifications to General Conditions.

### **3. SCHEDULES, REPORTS AND RECORDS**

3.1 All items of work shall be measured concurrently, upon installation and before covering or backfilling, by the Owner's Inspector and the Contractor's representative. All items so measured will be recorded by both parties in a format which can be kept current until completion of work.

3.2 Such measurement records shall be utilized to formulate and check partial and final requests for payment. Upon completion of the work, both sets of records shall be delivered

to the Engineer for his use in the preparation of record drawings.

3.3 All measurements, to the maximum extent possible, shall be referenced to base dimensions and stationing shown on the drawings.

#### 4. DRAWINGS AND SPECIFICATIONS

4.1 Wherever the words "directed", "required", "ordered", "approved", "acceptable", or others of like import appear in the specifications, they shall mean as directed, required, ordered, approved or acceptable by or to the Owner and by or to the Engineer acting as the Owner's agent.

4.2 All reference to Federal or other standards appearing on the drawings or in the specifications shall mean the current edition thereof.

4.3 Unless otherwise noted in Special Provisions, five sets of drawings and specifications will be furnished the Contractor without charge. Additional sets will be furnished at cost.

4.4 The Contractor shall maintain, at the job site, one complete set of drawings and specifications. The Contractor shall record on this set all changes and field adjustments. The set shall be kept available for inspection by representatives of the Owner and Engineer. These drawings shall be delivered to the Engineer upon completion of the project and shall serve as the basis for preparation of Record Drawings.

4.5 Locations of overhead and underground utilities shown on the drawings were derived from existing records and from field observations, in order to provide the Contractor with as much information as could reasonably be ascertained without actually excavating and exposing subsurface utilities. The Owner and the Engineer do not warrant or guarantee the complete accuracy of the information shown. Some utilities may not be shown, and the location of those shown may not be entirely accurate.

4.6 All incidental items of labor and materials not specifically delineated by the Contract Documents, but which are necessary to provide a fully operable facility, and which may reasonably be interpreted as being a part of the work, shall be accomplished by the Contractor without extra charge.

#### 5. SHOP DRAWINGS

5.1 The Contractor shall submit to the Engineer, six copies, plus the number required by the Contractor, layout drawings for installation and erection of the work and shop drawings for all fabricated or manufactured articles to be used in the work.

5.2 All shop drawings shall be submitted to the Engineer through the Contractor. Direct submittals by Subcontractors will not be accepted.

5.3 The Engineer's review of layout and shop drawings will be only to verify general compliance with contract documents. Figures, dimensions and other detail will not be checked. Any notation made on shop drawings by the Engineer shall be for the Contractor's guidance, but shall not relieve the Contractor from his responsibility to re-check, verify and resolve items so noted. The Engineer's review of shop drawings shall not relieve the Contractor from responsibility for errors or omissions thereon, whether or not called to the attention of the Contractor by the Engineer.

5.4 Detailed shop drawings, data, and literature for fabricated materials or equipment to be incorporated in the work shall be submitted to the Engineer for review for general compliance with the contract documents before fabrication. The Contractor shall obtain and check manufacturer's shop drawings, certified prints, and other pertinent data for conformance with all requirements of the Plans and Specifications and in ample time to permit satisfactory progress of the work. After completion of such checking and verification by the Contractor, the Contractor shall sign or stamp such drawings, which stamp shall state as follows:

Checked by \_\_\_\_\_  
(Contractor's Name)

Signed by \_\_\_\_\_  
(Checker's Name)

All data, drawings, and correspondence from subcontractors, manufacturers, or suppliers shall be routed through the Contractor. The Engineer shall review only such data and details as are transmitted to him by the Contractor. All correspondence from the Contractor to the Engineer shall refer to the appropriate section of these specifications containing the subject matter of the inquiry.

5.5 At the time of each submission, the Contractor shall call to the Engineer's attention, in writing, any deviations that the shop drawings may have from the requirements of the Plans and Specifications. Such submissions shall also include reasons for the deviations, and request a modification to the Contract Documents.

5.6 The shop drawings are intended to be utilized by the Contractor for additional fabrication, assembly, and erection data. The shop drawings do not change or supersede the Plans and Specifications except in specific cases when the Contractor requests in writing and receives approval in writing for a deviation from the Plans and Specifications. The Contractor's request for a change shall give, in detail, the specific change requested and shall state the reason for the change. Changes requested by the Contractor and approved by the Engineer shall not be construed to include approval of any change except the changed details specifically requested and approved.

5.7 The Contractor will also submit to the Engineer for review with such promptness as to cause no delay in work, all samples required by the Contract Documents. All samples shall have been checked by and stamped with the approval of the Contractor, identified clearly as to material, manufacturer, any pertinent catalog numbers and the use for which intended.

5.8 The Contractor's attention is specifically directed to the fact that no work shall be fabricated, nor equipment or materials ordered, nor any construction performed, prior to approval by the Engineer of shop drawings applicable thereto. Construction performed in violation of this requirement will be neither approved nor certified for payment until applicable shop drawings have been submitted and approved. If any equipment or materials are ordered by the Contractor prior to submission and approval of shop drawings, he does so at his own risk.

## 6. MATERIALS, SERVICES AND FACILITIES

6.1 The Contractor shall maintain a field office, with telephone, on the site of the work over the full duration of the project. Space shall be provided therein for use by



representatives of the Owner and the Engineer.

6.2 The Contractor shall furnish and erect, at locations on or near the site of the work, not less than one project sign of 4 foot by 8 foot dimensions. The Owner or the Engineer will provide the format of the sign or signs.

6.3 Each month during the course of the project the Contractor shall have taken, by a professional photographer, four 8 inch by 10 inch color photographs representing four different views of significant items of work then in progress. Two prints of each photograph, clearly labeled as to project title and date taken, shall be delivered to the Engineer.

6.4 The Contractor shall furnish to the Engineer four copies of a certification from each materials or equipment supplier that materials are as specified and that equipment has been furnished and installed as specified and has been field checked to verify readiness for service.

6.5 The Contractor shall submit, for the Engineer's review, complete catalog data for each item of equipment and all components to be used in the work.

6.6 The Contractor shall provide and maintain such sanitary facilities on the site of the work as may be needed and as will comply with regulations of state and local health agencies.

## 7. INSPECTION AND TESTING

7.1 Upon completion of the work, and prior to final acceptance thereof by the Owner, the Contractor shall place all systems in service and shall operate and maintain all mechanical and electrical equipment for a period of five days. At the end of this time, components deemed satisfactory shall thereafter be operated and maintained by the Owner.

7.2 The Contractor's obligation for operating tests shall include the initial filling with water of hydraulic units, such as tanks and pumping stations, to the extent necessary to operate all equipment. Provision thereafter of water necessary to operate all units on a flow-through basis for five days shall be the responsibility of the Owner.

## 8. SUBSTITUTIONS

8.1 When, in the bid proposal, the Bidder is required to designate the suppliers of one or more equipment items from among those named in the specification, he will be obligated to furnish the items so designated, and no substitutions will be authorized.

8.2 If any substituted equipment necessitates changing architectural or structural items, or electrical, water, gas, air or other utility services from the sizes, capacities and configurations shown on the Drawings, it shall be the Contractor's responsibility to bear the cost of engineering fees to analyze, design, specify and formulate the construction changes necessitated by the proposed deviations from the specified equipment and/or the Contract Drawings. All redesigns shall bear the seal and be the responsibility of a Professional Engineer licensed in the State within which the project is located.

## 9. PATENTS

No modifications to General Conditions.

## **10. SURVEYS, PERMITS, REGULATIONS**

10.1 Work done by the Contractor without his having first established proper lines and grade, or work done by him to incorrect line and grade, may be ordered removed and replaced at no increase in contract price.

10.2 The Contractor shall furnish the Engineer, at least five days prior to the start of construction, two record copies of line and grade stake-out data. The furnishing of such record data, despite any action or lack thereof on the part of the Engineer relative to the data furnished, shall in no way release the Contractor from his responsibility for the completeness and accuracy of stake-out work necessary for construction.

10.3 All survey and stake-out work shall be done by persons licensed by the State within which the project is located to perform such work.

10.4 Any bench marks destroyed through or as a direct result of the Contractor's construction operations shall be replaced and/or restored at his expense with no additional cost to the Owner.

10.5 Local, State and Federal permits secured by the Owner will be included in Special Provisions or will be provided to prospective bidders by Addenda. The Contractor shall comply with the provisions of all such permits, and the cost of all work dictated by such permits shall be included in the prices bid.

## **11. PROTECTION OF WORK, PROPERTY AND PERSONS**

11.1 The Contractor shall make final and exact determination of the location and extent of all overhead and underground utilities in proximity to his work, and will pay for any damage done to them due to his operations.

11.2 The Contractor shall at his own expense sustain in their places and protect from direct or indirect injury all pipes, wires, conduits, poles, tracks, walls, buildings, and other structures or property in the vicinity of his work whether above or below the ground, or that may appear in the trench. He shall at all times have a sufficient quantity of timber and plank, chains, ropes, etc. on the site and shall use them as necessary for sheeting his excavations and for sustaining or supporting any structures that are uncovered, undermined, endangered, threatened, or weakened. The Contractor shall take all risks attending the presence or proximity of pipes, wires, conduits, poles, tracks, walls, buildings, and other structures and property of every kind and description in or over his trenches or in the vicinity of his work whether above or below the surface ground; and he shall be responsible for all damage and assume all expense for direct or indirect injury caused by his work to any of them or to any person or property by reason of injury to them whether such structures are or are not shown on the drawings.

11.3 If the Contractor damages any utility, he shall immediately take such measures as are required to prevent further damage and to protect life and property. He shall also immediately notify the affected utility company and make such arrangements as are acceptable to them for permanent repair of the damage.

11.4 The Contractor shall so conduct his work as to insure the least possible obstruction to traffic and inconvenience to the general public and residents in the vicinity of the work, and to insure the safety of persons and property. No road or street shall be closed without the

Owner's permission. Fire hydrants on or adjacent to the work shall be kept accessible to fire fighting equipment at all times. Provisions shall be made by the Contractor to insure the use of sidewalks and the proper functioning of all gutters, storm drains and ditches.

11.5 The Contractor shall be solely responsible for initiating, formulating, supervising, reviewing and overseeing any and all SAFETY precautions, practices, procedures, and programs which are or should be provided in connection with the Work. Contractor will take all necessary or proper precautions for the SAFETY of and will provide the necessary protection to prevent damage, injury or loss to the work, property and/or persons.

## **12. SUPERVISION BY CONTRACTOR**

12.1 Within reasonable limits, the Contractor's Superintendent shall be continuously on the project site when work is actively in progress.

12.2 The Contractor shall use the same Superintendent throughout the entire course of the work, unless a change is agreed to or requested by the Owner.

## **13. CHANGES IN THE WORK**

No modifications to General Conditions.

## **14. CHANGES IN CONTRACT PRICE**

14.1 When the contract price is based upon a bid proposal containing estimated quantities of work, and a unit or lump sum price for each item of work, the unit or lump sum prices shall apply to increases or decreases in the quantity of any one or more items of work. A change order will not be required to effect such changes in quantities of work, unless any one or more such quantities, as determined by final measurement, varies by more than twenty-five percent from the quantity estimated in the proposal.

14.2 It is the Contractor's responsibility to notify his Surety of any changes affecting the general scope of the Work or change in the Contract Price, and the amount of the applicable Bonds shall be adjusted accordingly. Contractor shall furnish proof of such adjustment to Owner.

## **15. TIME FOR COMPLETION AND LIQUIDATED DAMAGES**

15.1 The Contractor will be allowed to work 40 hours per week, Monday through Friday, 52 weeks per year. The Contractor shall not work on Saturday, Sunday, holidays recognized by the Owner, or beyond 40 hours per week, unless prior approval is secured from the Owner.

15.2 "Acts of God", as referenced in General Conditions, shall be interpreted to mean a cataclysmic phenomenon of nature. Climatic and subsurface conditions which may be abnormal for the area over all or part of the time span of the work, but which do not preclude prosecution of the work with the proper use of specified methods and equipment, shall not be considered as Acts of God.

15.3 Owner and Contractor recognize the delays, expense and difficulties involved in proving in a legal or arbitration proceeding the actual losses or damages (including special, indirect, consequential, incidental and any other losses or damages) suffered by Owner if Contractor shall fail to complete the Work within the Contract Time. Accordingly, and instead of

requiring proof of such losses or damages, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty) Contractor shall pay Owner the sum specified in the Bid for each day that expires beyond the Contract Time.

#### **16. CORRECTION OF WORK**

No modifications to General Conditions.

#### **17. SUBSURFACE CONDITIONS**

17.1 The Owner and the Engineer in no way warrant or guarantee the accuracy of information shown on the drawings relative to subsurface conditions, types of subsurface materials or depths below ground surface of groundwater table or wet materials. Prior to submitting his bid proposal, the Bidder shall make his own on-site investigations of these conditions and materials, and shall base his bid upon his own findings.

17.2 The Owner will not approve any request for change order based upon the contention that subsurface conditions or materials vary from those indicated on the drawings, on the premise that the Contractor's bid was based upon his own investigation of these materials and conditions.

17.3 Where test borings are shown, they have been so shown for the information of all parties concerned. It is understood and agreed that such subsurface information, whether included in the plans, specifications, or otherwise made available to the bidder, was obtained and is intended for the Owner's design and estimating purposes only, and neither the Owner nor the Engineer guarantees the accuracy of the information furnished or that the information is representative of the work area as a whole. Such information has been made available for the convenience of all bidders. It is further understood and agreed that the submission of a proposal shall be prima facie evidence that the bidder accepts sole responsibility for all assumptions, deductions, or conclusions which he may make or obtain from his examination of the boring logs and other records of subsurface investigations and tests that are furnished by the Engineer or Owner.

17.4 Whether or not rock or other subsurface conditions are shown on the plans, the Contractor is not relieved of the responsibility of making his own investigations to determine the type of subsurface materials.

#### **18. SUSPENSION OF WORK, TERMINATION AND DELAY**

No modifications to General Conditions.

#### **19. PAYMENTS TO CONTRACTOR**

19.1 Payment for major materials and equipment stored on site will be limited to those items actually on the site of this work and under lock and key in Owner's or Contractor's building and for which proper insurance certificates have been submitted. It is the Engineer's decision as to whether a material or equipment item is considered major.

19.2 Each request for payment shall contain all certifications required by State or Federal agencies relative to wage rates, etc.

19.3 Each request for payment shall contain Contractor's certification that he has paid all Subcontractors and Materialsmen in the same proportion for all work and materials supplied by them as his own receipts.

19.4 Prior to final payment, the Contractor shall furnish a complete release of liens form, appropriate to the project, executed by all Subcontractors and materialsmen.

19.5 The Owner and the Engineer shall not be precluded or estopped by any measurement, estimate or certificate made or given by them, either before or after the completion and acceptance of the work and payment therefor, from showing the true and correct amount and character of the work performed and materials furnished by the Contractor. The Owner and the Engineer may show at any time that such measurement, estimate or certification was incorrectly made, or that some or all work or materials do not in fact conform to the contract requirements. The Owner shall not be precluded or estopped, notwithstanding any such measurement, estimate, certification or payment, from recovering from the Contractor and his surety such damages as he may sustain by reason of the Contractor's failure to comply with the terms of the contract documents.

## **20. ACCEPTANCE OF FINAL PAYMENT AS RELEASE**

No modifications to General Conditions.

## **21. INSURANCE**

21.1 Contractor shall secure Fire and Extended Coverage Insurance, in accord with General Conditions Item 21.3.2.

21.2 Contractor shall secure "All Risk" type Builder's Risk Insurance for work to be performed, in accord with General Conditions Item 21.5.

## **22. CONTRACT SECURITY**

22.1 Bid Bond shall be as stipulated in Information for Bidders.

22.2 Performance Bond and Payment Bond shall each be in a sum equal to the amount of the contract price.

## **23. ASSIGNMENTS**

No modifications to General Conditions.

## **24. INDEMNIFICATION**

No modifications to General Conditions.

## **25. SEPARATE CONTRACTS**

No modifications to General Conditions.

## **26. SUBCONTRACTING**

26.1 The Contractor shall submit to the Engineer a list of the names of proposed subcontractors and such other persons and organizations who are to furnish principal items of materials or equipment for the project. The Engineer may notify the Contractor in writing if either the Owner or the Engineer, after due investigation, has reasonable objection to any subcontractor, person, or organization on such list. The failure of the Owner or the Engineer to make objection to any subcontractor, person, or organization on the list shall not constitute an acceptance of such subcontractor, person, or organization. Acceptance of any such subcontractor, person, or organization shall not constitute a waiver of any right of the Owner or the Engineer to reject defective work, material, or equipment or work, material, or equipment not in conformance with the requirements of the Contract Documents.

26.2 If the Owner or the Engineer refuses to accept any subcontractor, person, or organization or such list, the Contractor will submit an acceptable substitute, and the Contract price shall remain unchanged or shall be increased or decreased by the difference in cost occasioned by such substitution, and an appropriate change order, if necessary, shall be issued.

## **27. ENGINEERS AUTHORITY**

No modifications to General Conditions.

## **28. LAND AND RIGHTS-OF-WAY**

28.1 All permanent construction will be within lands of the Owner, public rights-of-way or rights-of-way through private property acquired by the Owner and the Contractor shall confine his operations strictly within the limits of the rights-of-way and construction areas, unless he has written permission of the Owner of the adjacent property to occupy additional ground. A copy of the written permission shall be placed on file with the Owner.

## **29. GUARANTY**

29.1 The Contractor hereby guarantees all of the work performed under this contract for a period of one year, unless otherwise noted, after substantial completion has been certified by the Owner and the Engineer. The guarantee shall be as follows:

29.2 Against all faulty or imperfect materials and against all imperfect, careless and/or unskilled workmanship, as evidenced by excessive pipe settlement, cracked pavements, failure of structures, and/or equipment, etc.

29.3 That the entire equipment and each and every part thereof, shall operate with proper care and attention in a satisfactory manner, and in accordance with the requirements of these Contract Documents.

29.4 That the entire structure in the vicinity of work done shall be watertight and leakproof, at every point and in every particular.

29.5 The Contractor agrees to replace with proper workmanship and materials, and to re-execute, correct or repair, without cost to the Owner, any work which may be found to be improper or imperfect.

29.6 The guarantee obligations assumed by the Contractor under these Contract Documents shall not be held or taken to be in any way impaired because of the specifications, indication or approval by or on behalf of the Owner of any articles, materials, means, combinations or things used or to be used in the construction, performance and completion of the work, or any part thereof.

29.7 No use or acceptance by the Owner of the work or any part thereof, nor any failure to use the same, nor any repairs, adjustments, replacements or corrections made by the Owner due to the Contractor's failure to comply with any of his obligations under the Contract Documents, shall impair in any way the guarantee obligations assumed by the Contractor under these Contract Documents.

### 30. ARBITRATION

Delete this section in its entirety.

### 31. TAXES

No modifications to General Conditions.

## **DIVISION 00 – BIDDING AND CONTRACT DOCUMENTS**

### **SECTION 00820**

#### **SPECIAL PROVISIONS**

##### **PART 1 – GENERAL**

###### **1.01 GENERAL**

A. The following Special Provisions shall take precedence over the plans and other Sections of these specifications.

###### **1.02 TIME FOR COMPLETION AND LIQUIDATED DAMAGES**

A. The proposal states the number of consecutive calendar days allowed from date of "Notice to Proceed" to date of completion of the work under this contract. The time shall start on the day of the "Notice to Proceed".

B. For additional information, see Paragraph 15, Page 00700-4.

###### **1.03 CONSTRUCTION SCHEDULE**

A. The Contractor shall prepare a construction schedule in bar chart form. The schedule shall be submitted by the Contractor at the pre-construction conference.

###### **1.04 PROJECT SIGN**

A. Two (2) signs shall be erected at a location directed by the Owner. Project sign shall be not less than 4 foot by 8 foot. The Engineer will provide the format of the sign.

###### **1.05 PAYMENTS TO CONTRACTOR**

A. Fourteen (14) calendar days prior to the monthly progress meeting, the Contractor shall provide a draft copy of the monthly payment request to the Owner and Engineer for initial review.

B. Seven (7) calendar days prior to the monthly progress meeting, Contractor shall submit to the Owner and Engineer five (5) executed copies of the monthly payment request for final review and approval.

C. The Engineer at the progress meeting will submit five (5) executed copies of the monthly payment request.



## **1.06 TEMPORARY FACILITIES**

- A. A field office will not be required for this project.

## **1.07 UTILITIES**

- A. The Contractor shall contact "Miss Utility" at 800-441-8355 and the Owner (302-249-2388) at least forty-eight (48) hours prior to digging in the vicinity of existing underground utilities to have them located and marked.

## **1.08 SAFETY**

- A. The Contractor shall comply, within the prices bid and without extra cost to the Owner, with all safety regulations or determinations issued by an agency of the Federal Government, including OSHA and the State of Delaware.

## **1.09 ACCESS**

- A. The Contractor shall so schedule his work as to minimize the time period during which vehicular access to each building is prevented.
- B. The Contract shall provide vehicular access at all time to commercial establishments.
- C. The Contractor shall provide, at all times, safe pedestrian access to all dwellings, whether residential, commercial or other.

## **1.10 REPAIR OF DAMAGED AREAS**

- A. Repair of areas disturbed during construction to their pre-construction condition shall be the responsibility of the Contractor.

## **1.11 INSEPECTOR OR OWNER/ ENGINEER REPRESENTATIVE**

- A. Contractor, if granted permission to work overtime, shall reimburse the Owner for any overtime salary incurred by the Inspector. See Special Provisions 1.16.

## **1.12 COORDINATION WITH PERSONNEL**

- A. The Contractor shall fully cooperate and coordinate his activities with the Delaware Technical and Community College personnel at all times.

### **1.13 DISPOSAL OF EXCESS MATERIALS**

A. The Contractor shall be responsible for obtaining an acceptable site for all excess materials and debris not suitable for incorporation in the finished work.

### **1.14 NO TRENCH LEFT OPEN AT NIGHT**

A. All excavations shall be backfilled or suitably covered and fenced secure at the end of each working day.

### **1.15 CONTRACTOR'S RESPONSIBILITIES**

A. Sufficient time for construction has been indicated and it is intended that all work specified under Contract Documents be performed within the normal daily working hours of 8:00 to 5:00 p.m., Monday through Friday. An alternate continuous daily work period may be satisfactory, however, subject to approval of the Engineer.

B. Should the Contractor extend his work beyond these specified hours, any and all cost of weekend, holiday and/or overtime inspection, including but not limited to direct salaries, fringe benefits, overhead profit, administration and supervision, incurred by the Engineer, and/or, the Owner, will be the sole obligation of the Contractor. The overtime rates for the Engineer are:

\$130 per hour for Construction Representative

There shall be no recourse by the Contractor to the Owner for reimbursement of these costs.

C. The Contractor will be allowed to work 40 hours per week, Monday through Friday, 52 weeks per year. The Contractor shall not work on Saturday, Sunday, holidays recognized by the Owner, or beyond 40 hours per week, unless prior approval is secured from the Owner.

### **1.16 EQUAL EMPLOYMENT OPPORTUNITY**

A. The contractor will not discriminate against any employee or applicant for employment because of race, creed, color, sex or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, creed, color, sex or national origin. Such action shall include, but not be limited to, the following: Employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places available to employees and applicants for employment notices to be provided by the contracting agency setting forth this nondiscrimination clause.

B. The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, creed, color, sex or national origin.

#### **1.17 PRE-CONSTRUCTION AND PROGRESS MEETINGS**

A. A pre-construction conference will be scheduled by the Engineer. Attendance by Contractor and all subcontractors is mandatory. Progress meetings shall be held during construction monthly, unless directed otherwise by the Owner or Engineer. Progress meetings shall include, Owner, Engineer, Contractor and subcontractors.

#### **1.18 WAGE RATES**

A. Delaware state wage rates apply to this project. The highest rate per the individual classification of the worker shall apply.

#### **1.19 WORK STOPPAGE AND BID PRICES**

A. Paving for this project may occur over the winter months and there is a chance that paving operations may not be able to be performed. If the project is delayed or stopped due to the weather or the availability of hot-mix, the Contractor prices shall remain unchanged. Only a time extension will be considered.

#### **1.20 LIQUID ASPHALT**

A. There will be no adjustments made to the increase/decrease of the liquid asphalt index.

#### **1.21 PERMITS**

A. The Contractor will be responsible for obtaining any necessary permits not yet obtained by the Owner, including but not limited to a building permit. Contractor shall obtain and pay for all necessary 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 Work which are applicable at the time of opening of Bids.

**\* END OF SECTION \***

## **DIVISION 01 - GENERAL REQUIREMENTS**

### **SECTION 01025**

#### **MEASUREMENT AND PAYMENT**

##### **PART 1 – GENERAL**

##### **1.01 GENERAL**

A. Payment for the work completed under this Contract will be made at the lump sum and unit prices bid, which lump sum and unit prices shall include the furnishing of all labor, tools, equipment and materials and performance of all work required to complete the project as indicated and specified in accordance with all requirements of the Contract Documents and to the entire satisfaction of the Engineer.

B. All incidental minor and miscellaneous items, work and materials for which no specific lump sum or unit price bid item is shown and which are necessary to complete the work and to maintain and/or repair that work, shall be done and furnished by the Contractor without extra charge.

C. All items in the Bid which are designated as “Contingent Items” are for work which is not included in any of the other lump sum or unit price items of the Proposal and work which may only be ordered by the Engineer or Owner to be used in the project depending on the Engineer's evaluation of actual field conditions encountered. Such work shall be performed only as, and when, ordered in writing by the Engineer or Owner and the Contractor shall be aware that payment will be made under these items only for the quantities actually ordered by the Engineer to be used.

D. All excavation under this Contract is unclassified; that is, the unit prices bid shall be taken to include and cover all materials required to be excavated and backfilled, whether wet or dry, and regardless of the character of the materials. The excavations, removal and replacement of road surfacing materials, as required, shall be included in the unit prices bid with any exceptions as noted herein or as designated on the plans.

E. The cost of dewatering and associated work will not be separately paid for, but shall be considered as incidental to other bid items and included in the prices bid for them.

##### **1.02 BID ITEMS FOR MOBILIZATION**

A. The prices bid shall include the bonding costs, project signs, staging areas, and mobilization of equipment on site.

B. Payment for mobilization will be at the lump sum price bid. The lump sum price bid shall be limited to five (5) percent of the subtotal.

C. The maximum amount of the lump sum price bid that is requisitioned on Construction Estimate No. 1 shall not exceed fifty (50) percent of the lump sum price bid and each succeeding requisition shall be limited to a maximum percentage equally divided among the estimated number of remaining Construction Estimates until the entire lump sum price less retainage has been requisitioned.

### **1.03 BID ITEM FOR REMOVAL AND/OR DEMOLITION**

A. Removal and demolition work will not be measured. Payment will be made at the lump sum prices stipulated in the proposal for "Removal and/or Demolition". These lump sum prices shall cover all removal, salvaging, disposal and relocation.

B. This item includes removal, clearing, grubbing, relocation and/or demolition of paving, concrete curb, gutter, and sidewalk, light poles, pipes, hydrants, water meters, signs, and etc. The contractor shall coordinate any relocation of a light pole at no extra cost to the owner.

### **1.04 BID ITEM FOR EROSION AND SEDIMENT CONTROL MEASURES**

A. The prices bid shall include all materials, equipment and labor necessary to prepare, furnish, install, and implement the Sediment and Erosion control plan. This includes but is not limited to silt fence, construction entrance, filter cloth, dirt bags, inlet protection, stone and related items.

B. Payment for all work under this item will be made at the lump sum price bid.

### **1.05 BID ITEM FOR STORMWATER MEASURES**

A. The price bid shall cover and include all excavation, disposal of excess materials, embankment, hauling and depositing, compaction, grading and all other incidental work related to preparation of drainage, side swales, topsoil, etc. Bid item shall include all stormwater measures such as depressed landscape islands, filter strips, level spreader, and etc.

B. Payment for this item will be made at the lump sum price bid.

### **1.06 BID ITEM FOR FURNISHING AND INSTALLING GRADED AGGREGATE BASE COURSE**

A. The price bid shall include and cover all materials, labor, tools and equipment necessary to furnish and install the graded aggregate base course to the lines and grades indicated, including all necessary grading, compaction, subbase preparation, complete and in place.

B. Payment for all work under this item shall be made at the unit price bid for each cubic yard of graded aggregate base installed to the lines and grades indicated.

C. Excess graded aggregate placed to a greater depth, or beyond indicated limits, shall be at the expense of the Contractor, and no payment shall be due from the Owner.

**1.07 BID ITEMS FOR FURNISHING AND INSTALLING HOT MIX ASPHALT BASE AND SURFACE COURSES AND OVERLAY**

A. The prices bid shall cover and include all materials, labor, tools and appliances for furnishing and placing bituminous concrete base and surface courses complete in place in roadway and for driveway restoration, including tack coat where required. The price bid shall cover and include, but not be limited to furnishing and installing all striping and traffic marking as indicated on the Contract Drawings including striping and signage associated with Fire Marshall requirements.

B. Adjustment of existing valve boxes, inlets or other structures will not be measured but the cost will be incidental to the Contract price per square yard for Asphalt pavement unless otherwise specified in the Contract Documents.

C. Payment for all work under these items will be made at the appropriate unit price bid for the area actually furnished and placed.

**1.08 BID ITEMS FOR FURNISHING AND INSTALLING GRADED AGGREGATE BASE COURSE OF PERVIOUS CONCRETE PAVEMENT**

A. The price bid shall include and cover all materials, labor, tools and equipment necessary to furnish and install the graded aggregate base course to the lines and grades indicated, including all necessary grading, compaction, subbase preparation, complete and in place, filter geotextile fabric, etc.

B. Thickness of graded aggregate base course is 14-inches to provide necessary reservoir area.

C. Payment for all work under this item shall be made at the unit price bid for each cubic yard of graded aggregate base installed to the lines and grades indicated.

D. Excess graded aggregate placed to a greater depth, or beyond indicated limits, shall be at the expense of the Contractor, and no payment shall be due from the Owner.

**1.09 BID ITEMS FOR FURNISHING AND INSTALLING CONCRETE COURSE OF PERVIOUS CONCRETE PAVEMENT**

A. The prices bid shall cover and include all materials, labor, tools and appliances for furnishing and placing pervious concrete pavement complete in place in roadway, all proofrolling; compaction; grading; and all other incidental work. The price bid shall cover and include, but not be limited to furnishing and installing all striping and traffic marking as indicated on the Contract Drawings including striping and signage associated with Fire Marshall requirements.

B. Thickness of pervious concrete surface course is 6-inches.

C. Payment for all work under these items will be made at the appropriate unit price bid for the area actually furnished and placed.

D. Adjustment of existing valve boxes, inlets or other structures will not be measured but the cost will be incidental to the Contract price per square yard for pervious concrete pavement unless otherwise specified in the Contract Documents.

**1.10 BID ITEMS FOR FURNISHING AND INSTALLING GRADED AGGREGATE BASE COURSE OF POROUS ASPHALT PAVEMENT (ADD/ DEDUCT BID ITEM)**

A. The price bid shall include and cover all materials, labor, tools and equipment necessary to furnish and install the graded aggregate base course to the lines and grades indicated, including all necessary grading, compaction, subbase preparation, complete and in place, filter geotextile fabric, etc.

B. Thickness of graded aggregate base course is 16-inches to provide necessary reservoir area.

C. Payment for all work under this item shall be made at the unit price bid for each cubic yard of graded aggregate base installed to the lines and grades indicated.

D. Excess graded aggregate placed to a greater depth, or beyond indicated limits, shall be at the expense of the Contractor, and no payment shall be due from the Owner.

**1.11 BID ITEMS FOR FURNISHING AND INSTALLING CONCRETE COURSE OF PERVIOUS CONCRETE PAVEMENT (ADD/DEDUCT BID ITEM)**

A. The prices bid shall cover and include all materials, labor, tools and appliances for furnishing and placing pervious concrete pavement complete in place in roadway, all proofrolling; compaction; grading; and all other incidental work. The price bid shall cover and include, but not be limited to furnishing and installing all striping and traffic marking as indicated on the Contract Drawings

B. Thickness of porous asphalt surface course is 4-inches.

C. Payment for all work under these items will be made at the appropriate unit price bid for the area actually furnished and placed.

D. Adjustment of existing valve boxes, inlets or other structures will not be measured but the cost will be incidental to the Contract price per square yard for porous asphalt pavement unless otherwise specified in the Contract Documents.

#### **1.12 BID ITEMS FOR FURNISHING AND INSTALLING UNDERDRAIN PIPING AND APPURTENANCES**

A. The prices bid shall include and cover all costs of furnishing, delivering and installing pipe, fittings, cleanouts, etc. complete including, but not limited to excavation of all materials encountered in trench excavation, hauling wet excavated material for drying or excess excavated material to use as trench refill materials, backfilling of trenches with material from the excavation, compaction and grading of backfilled material, furnishing and placing of pipe, fittings, concrete buttresses, anchors, adaptors, sleeves, temporary road restorations, etc. Dewatering and disposal of water; locating, supporting, protecting all utilities or structures or their restoration in case of injury or damage and adjustment of valve boxes, etc.; Pipe testing; Disposal of excavated material not suitable for refill or in excess of the quantities required for refill; Cutting and removal of paving, sidewalks and curb and gutters; All else necessary and incidental to the complete and acceptable installation.

B. Measurement of pipe will be made at the lump sum price bid.

#### **1.13 BID ITEM FOR FINAL GRADING AND LANDSCAPING**

A. The price bid shall include and cover all materials, labor, tools and equipment necessary to restore and the protection of the surface of all disturbed areas and shall include but not be limited to re-grading, topsoiling, fertilizing and seeding disturbed grass areas; placement of mulch, gravel, mailboxes, property corners, landscaping, and gardens; and restoring unpaved surfaces to original condition.

B. Payment for all work under this item will be made at the lump sum price bid.

#### **1.14 BID ITEM FOR EXCAVATION BELOW SUBGRADE**

A. The bid price for excavation below subgrade shall include and cover excavation below subgrade and disposal of material so excavated. Also included is additional placement and removal of sheeting, dewatering, and all other incidental work necessitated by excavation below subgrade.

B. Measurement for quantities of excavation below subgrade will be based upon the authorized depth of excavation below the underside of the barrel of the pipe and the trench width or roadway subgrade.



C. Payment for all work in connection with excavation below subgrade will be made at the appropriate unit price bid for the volume actually removed within the limits defined hereinbefore and as authorized.

#### **1.15 FURNISHING AND PLACING GRAVEL BEDDING:**

A. The price bid for furnishing and placing gravel bedding shall include and cover furnishing, placing and compacting and shaping gravel in excavations and all other incidental work.

B. Measurement for quantities of gravel bedding will be made based upon the authorized depth and width of placement.

C. Payment for all work in connection with gravel bedding will be made at the appropriate unit price bid for the volume actually furnished and placed within the limits defined hereinbefore and as authorized.

#### **1.16 BID ITEMS FOR FURNISHING AND PLACING SPECIAL BACKFILL**

A. Measurement will be made on the actual number of cubic yards of special backfill hauled to the job site and placed where ordered by the Engineer. Measurement for special backfill will be based upon the authorized depth and width of placement in area. Any special backfill required to be furnished under these Contract Documents shall be furnished under the Unit Price Bid and will not be paid for as a part of this item. Only additional special backfill as ordered by the Engineer or OWNER will be paid for under this item.

B. Payment for this item will be made at the per cubic yard price bid for Furnishing and Placing Special Backfill which price shall be full compensation for all labor, materials, tools, equipment and incidentals required to haul special backfill to the site and to place it where directed by the Engineer or Owner.

#### **1.17 BID ITEMS FOR MISCELLANEOUS EXCAVATION AND BACKFILL**

A. Measurement for this item will be made on the actual number of cubic yards of material removed. Where the Engineer or Contractor directs the Contractor to relocate a trench or to test pit a utility, the Contractor will be paid for the excavation and backfill under this bid item.

B. Payment for this item will be made at the per cubic yard price bid for Miscellaneous Excavation and Backfill which price shall be full compensation for all labor materials, tools, equipment and incidentals required to excavate and backfill in accordance with the specifications.

### **1.18 MODIFIED PROCTOR TESTING**

- A. The price bid shall include excavation and backfill to secure the tests in locations as directed by the Engineer or Owner, paying a testing laboratory for all tests performed, and furnishing a copy of test results to the Engineer.
- B. Payment will be made for each test at the unit price bid.

### **1.19 FIELD DENSITY TESTING**

- A. The price bid shall include excavation and backfill to secure the tests in locations as directed by the Engineer or Owner, paying a testing laboratory for all tests performed and furnishing a copy of test results to the Engineer.
- B. Payment will be made, at the unit price bid, for only those tests which confirm compliance with specification requirements for compaction.

**\* END OF SECTION \***

## **DIVISION 01 - GENERAL REQUIREMENTS**

### **SECTION 01040**

#### **COORDINATION**

##### **PART 1 - GENERAL**

###### **1.01 SEQUENCE OF CONSTRUCTION**

A. The Contractor is responsible for all construction sequencing. The Contractor shall, in accordance with Section 01300 - SUBMITTALS, submit and obtain approval of his detailed sequence of construction. Acceptance of this plan by the Engineer or the Owner denotes only lack of objection at the time and in no way implies that the Engineer or the Owner guarantees that particular sequence of construction as proposed by the Contractor will in fact work. Also any approval given is done so with the stipulation that all work done shall comply with the plans and specifications.

B. As construction proceeds, should the Contractor's Sequence of Operation cause operational problems that were unforeseen at the time of approval, the Owner reserves the right to withdraw the previous approval and require the Contractor to submit and obtain approval of an amended Sequence of Construction.

###### **1.02 MAINTENANCE OF TRAFFIC**

A. It shall be the responsibility of the Contractor not to interfere with or create any hazards to traffic. No equipment or material will be stored or permitted to stand where traffic must be maintained. It shall be the responsibility of the Contractor to control dust on all roads, drives and walkways on which traffic is being maintained.

##### **PART 2 - PRODUCTS**

Not Required

##### **PART 3 - EXECUTION**

Not Required

**\* END OF SECTION \***

## **DIVISION 01 - GENERAL REQUIREMENTS**

### **SECTION 01050**

#### **FIELD SERVICES**

##### **PART 1 - GENERAL**

##### **1.01 DESCRIPTION**

- A. The Contractor shall provide and pay for field services for Project.
1. Survey work required in execution of Project.
  2. The method of field staking for the construction of the work shall be at the option of the Contractor.
  3. The accuracy of any method of staking shall be the responsibility of the Contractor. All engineering for vertical and horizontal control shall be the responsibility of the Contractor.
  4. The Contractor shall be held responsible for the preservation of all stakes and marks. If any stakes or marks are carelessly or willfully disturbed by the Contractor, the Contractor shall not proceed with any work until he has established such points, marks, lines and elevations as may be necessary for the prosecution of the work.
  5. Civil, structural or other professional engineering services specified or required to execute Contractor's construction methods.
- B. The Contractor shall retain the services of a registered land surveyor licensed in the State of Delaware to identify existing control points and maintain a survey during construction.

##### **1.02 QUALIFICATIONS OF SURVEYOR OR ENGINEER**

- A. Qualified engineer or registered land surveyor registered in the State of Delaware, acceptable to the Owner and the Engineer.
- B. Registered professional engineer of the discipline required for the specific service on the Project, currently licensed in the State of Delaware.

##### **1.03 SURVEY REFERENCE POINTS**

- A. Locate and protect control points prior to starting site work, and preserve all permanent reference points during construction.
- B. Make no changes or relocations without prior written notice to the Engineer.

C. Report to the Engineer when any reference point is lost or destroyed, or requires relocation because of necessary changes in grades or locations.

D. Require surveyor to replace Project control points which may be lost or destroyed at no additional cost to the Owner.

#### **1.04 PROJECT SURVEY REQUIREMENTS**

A. Establish a minimum of two permanent bench marks on site, referenced to data established by survey control points.

B. Record locations, with horizontal and vertical data, on Project Record Documents.

C. Establish lines and levels, locate and lay out, by instrumentation and similar appropriate means:

1. Site improvements:
  - a. Stakes for grading, fill and topsoil replacement.
  - b. Utility slopes and invert elevations.
2. Batter boards for structure.
3. Building foundation, column locations and floor levels.
4. Controlling lines and levels required for mechanical and electrical trades.
5. Controlling lines and grades for all utility installations.

D. From time to time, verify layouts by same methods.

#### **1.05 RECORDS**

A. Maintain a complete, accurate log of all control and survey work as it progresses.

B. Surveys for Record Drawings. A copy of all survey information shall be submitted in an electronic format AutoCAD 2010™ (.DWG).

#### **1.06 SUBMITTALS**

A. Submit name and address of Surveyor and professional engineer to the Engineer.

B. On request of the Engineer, submit documentation to verify accuracy of field engineering work.

C. Submit certificate signed by registered engineer or surveyor, licensed in the State of Delaware, certifying that elevations and locations of improvements are in conformance, or non-conformance, with Contract Documents.

D. Submit drawings showing locations of all structures constructed. This drawing shall be included with the project record documents.

#### **1.07 RECORD DOCUMENTS**

A. CONTRACTOR shall be responsible for recording, keeping and monitoring Record Drawings of work constructed in the field. Record Drawings will be kept on hand by the CONTRACTOR for inspection by the ENGINEER. Two sets of initial draft Record Drawings shall be issued to the ENGINEER no later than 14-days from the date of substantial completion.

**PART 2 - PRODUCTS** (Not Used)

**PART 3 - EXECUTION** (Not Used)

**\* END OF SECTION \***

## **DIVISION 01 - GENERAL REQUIREMENTS**

### **SECTION 01071**

#### **DEFINITIONS AND SPECIFICATION REFERENCE**

##### **PART 1 - GENERAL**

##### **1.01 DEFINITIONS**

A. Where "as shown", "as indicated", "as detailed", or words of similar import are used, it is understood that reference to the drawings accompanying this specification is made unless stated otherwise.

B. Where "as directed", "as required", "as selected", "permitted", "acceptance", or words of similar import are used, it is understood that direction, requirement, selection, permission or acceptance by the Engineer and compliance with codes and regulations are intended unless stated otherwise.

C. Where used, "provide" is understood to mean "provide complete in place"; that is, "furnished and installed".

D. Where "items of material, equipment, work, etc.," and "methods of installation, finish, and accomplishment, etc." are referred to in this specification, it is understood to refer to all such "items, materials, equipment, work, finish, etc."

E. Where "includes" is used, it is understood to mean "includes, but is not limited to".

F. Where "equal to", "or equal", or "approved equal", are used, the Contractor may substitute a product or material, which in the judgment of the Engineer, expressed in writing, is equal to that specified.

G. The term "Beneficial Occupancy" is interchangeable with the term "Substantial Completion". A state of beneficial occupancy will be reached when all work is complete, accessible, operable and usable by the Owner; all parts, systems and site work is 100% complete and cleaned for the Owner's full use. Only incidental corrective work under "Punch Lists" and final cleaning (if required) may remain for Final Completion.

##### **1.02 SPECIFICATION REFERENCE**

A. Materials or operations specified by reference to specification of a manufacturer or society or institute or other standard must comply with requirements of current

specification or standard listed.

B. In case of conflict between referenced specification or standard, the one having the more stringent requirement governs.

## **PART 2 - PRODUCTS**

Not Required

## **PART 3 - EXECUTION**

Not Required

**\* END OF SECTION \***



## **DIVISION 01 – GENERAL REQUIREMENTS**

### **SECTION 01100**

#### **SUMMARY OF WORK**

##### **PART 1 – GENERAL**

###### **1.01 DESCRIPTION OF WORK**

A. The site of which the work shall take place is at Delaware Technical and Community College- Jack F. Owens Campus, 21179 College Dr., Georgetown DE. Please refer to the contract drawings for specific locations.

B. The work under this Contract generally consists of resurfacing and modifying the existing Environmental Complex parking lot. Work includes but is not limited to new pavement areas, overlay of existing pavement, installation of porous concrete or porous asphalt with under drain piping, demolition of existing grass islands and curb, and installation of depressed landscape island and filter strips. All work shall be in conformance with this Project Manual.

C. All unit prices shall include travel time, mileage, labor, equipment, materials, overhead, and all other appurtenant costs associated with the job. There will be no additional reimbursable expenses.

###### **1.02 TIME OF COMPLETION OF CONTRACT**

A. The Bid Form states the number of consecutive calendar days allowed from date of "Notice to Proceed" to date of substantial completion and final payment of work under this contract.

###### **1.03 CONTRACT DOCUMENTS**

A. All work shall be completed in accordance with the Contract Documents.

B. The Contract Drawings and Specifications are complementary. However, should a dispute arise as to which shall govern, the Contract Specifications will apply.

C. Any discrepancy between the "General Conditions" and the "Technical Specifications", the Technical Specifications shall govern.

###### **1.04 WORK PERIOD**

A. The Contractor will be allowed to work 40 hours per week Monday through

Friday, 52 weeks per year.

B. The Contractor shall not work on Saturday, Sunday, or any Holidays unless prior approval is secured from the Owner. If the Contractor desires to work longer than eight (8) hours per day or if he desires to work on weekends, he must first obtain the written permission of the Owner.

C. Contractor shall pay the Owner for cost of full-time inspection beyond 40 hours per week.

### **1.05 WAGE RATES**

A. The Contractor shall comply, within the prices bid and without extra cost to the Owner, with Delaware State Wage Rates which are applicable to this project.

B. Wage rate determinations are appended hereinbefore or will be issued by addendum at least five (5) days prior to bid date.

## **PART 2 – PRODUCTS**

Not Used

## **PART 3 – EXECUTION**

### **3.01 GENERAL REQUIREMENTS**

A. Contractor shall be solely responsible for the means, manpower, methods, techniques, sequences and procedures of construction.

B. Construction work under this contract shall be performed in a manner that minimizes impact to traffic and the residences.

**\* END OF SECTION \***

## **DIVISION 01 - GENERAL REQUIREMENTS**

### **SECTION 01200**

#### **PROJECT MEETINGS**

##### **PART 1 - GENERAL**

##### **1.01 DESCRIPTION**

A. Engineer will schedule and administer preconstruction meetings, and monthly progress meetings throughout progress of the work and will:

1. Prepare agenda for meetings.
2. Set meeting date.
3. Make arrangements for meeting room.
4. Preside at meetings.
5. Record minutes; include significant proceedings and decisions.
6. Reproduce and distribute copies of minutes within five days after each meeting.
  - a. To participants in meeting.
  - b. To parties affected by decisions made at meeting.

B. Representatives of contractors and subcontractors attending meeting shall be qualified and authorized to act on behalf of entity each represents.

##### **1.02 PRE-CONSTRUCTION MEETING**

A. Schedule within ten (10) days after the Notice of Award, but before any work at the site is started.

B. Location: As announced.

C. Attendance:

1. Owner's Representative.
2. Engineer and his professional consultants.
3. Contractor's Superintendent.
4. Major Subcontractors.
5. Others as appropriate.

##### **1.03 PROGRESS MEETINGS**

A. Schedule monthly. If it becomes necessary to meet more frequently due to

unforeseen conditions and problems, the meetings will be established to the satisfaction of all parties involved.

B. Location of meetings: As Announced.

C. Attendance:

1. Same personnel as at preconstruction meeting.
2. Others as appropriate.

## **PART 2 - PRODUCTS**

Not Required

## **PART 3 - EXECUTION**

Not Required

**\* END OF SECTION \***

## **DIVISION 01 – GENERAL REQUIREMENTS**

### **SECTION 01300**

#### **SUBMITTALS**

##### **1.01 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES**

A. Shop drawings are generally defined as all fabrication and erection drawings, diagrams, brochures, schedules, bills or material and other data prepared by the Contractor, his subcontractors, suppliers or manufacturers which illustrate the manufacturer, fabrication, construction and installation of the work, or a portion thereof.

B. All costs necessary for compliance with the requirements of this Section of the Specifications shall be included under the lump sum and unit prices bid.

C. Detailed shop drawings, data, literature for fabricated materials or equipment to be incorporated in the work shall be submitted to the Engineer for review for general compliance with the Project Manual before fabrication. The Contractor shall obtain and check manufacturer's shop drawings, certified prints and other pertinent data for conformance with all requirements of the Plans and Specification and in ample time to permit satisfactory progress of the work. After the completion of such checking and verification by the Contractor, the Contractor shall sign or stamp such drawing, which stamp shall state as follows:

Specification Section \_\_\_\_\_

Checked by \_\_\_\_\_  
(Contractor's Name)

Signed by \_\_\_\_\_  
(Checker's Name)

D. All data, drawings and correspondence from subcontractors, manufacturers or suppliers shall be routed through the Contractor. The Engineer shall review only such data and details as are transmitted to him by the Contractor. All correspondence from the Contractor to the Engineer shall refer to the appropriate section of these specifications containing the subject matter of the inquiry.

E. All shop drawings shall be in conformity with all requirements of the plans and specifications. All shop drawings, except diagrams, brochures, schedules and illustrations, shall be to an appropriate scale, no smaller than 1/8 inch = 1 foot 0 inches, and shall give all dimensions necessary for installation and incorporation in the work. All shop drawings shall be accurate and complete, showing outline and section views,

details, materials, accessories, appurtenances and related items. Shop drawings showing piping and conduit systems shall incorporate sufficient views to show all fittings and specialties including locations and spacing of hangers and supports. Piping and/or conduit systems 3-inches in diameter and smaller may be shown as single line. Equipment and specialties installed within and/or connected to piping and conduit systems shall be cross-referenced to equipment and specialty shop drawings by shop drawing identification number, manufacturer name, catalog or model number, and equipment numbers shown on the plans. Electrical shop drawings shall include, but are not necessarily limited to, complete terminal identification diagrams and schedule, complete point-to-point interconnection diagram, complete single line and elementary wiring diagrams for all power, signal, control and lighting systems, together with panel layout drawings. Terminal point and wire identification on all working drawings shall be identical to related terminal point and wire identifications on equipment and panels, and absolutely no deviation from this requirement will be permitted.

F. The Contractor shall submit to the Engineer a minimum of seven (7) copies of shop drawings and approval data plus any additional number required for the Contractor's use. The Engineer will retain three (3) copies of each submittal and return four (4) copies to the Contractor. The Engineer's notation of the action taken will be noted on all of the returned copies. At the time of each submission, the Contractor shall call to the Engineer's attention, **in writing**, any deviations that the shop drawings may have from the requirements of the Plans and Specifications.

G. Upon review by the Engineer of the above drawings, lists, samples and other data the same shall become a part of the Contract, and the fabrications furnished shall be in conformity with the same, provided that the review of the above drawings, lists, specifications sample or other data shall in no way release the Contractor from his responsibility for the proper fulfillment, by any fabrication, or the requirements of this Contract.

H. Corrections or comments made on the shop drawings during the Engineer's review do not relieve the Contractor from compliance with the requirements of the drawings and specifications. This check is only for review of general conformance with the design concept of the project and general compliance with the information given in the Project Manual. The Contractor is responsible for confirming and correlating all quantities and dimensions, selecting fabrication processes and techniques of construction, and in performing his work in a safe manner. If the shop drawings deviate from the Project Manual, the Contractor shall advise the Engineer of the deviations, in writing accompanying the shop drawing, including the reasons for the deviations, and shall request deviation from the Project Manual.

I. The Contractor's attention is specifically directed to the fact that no work shall be fabricated, nor equipment or materials ordered, nor any construction performed, prior to approval by the Engineer of shop drawings applicable thereto. Construction performed in violation of this requirement will be neither approved nor certified for payment until applicable shop drawings have been submitted and approved. If the Engineer so

directs, the Contractor shall disassemble and remove any such construction performed prior to approval by the Engineer of shop drawings applicable thereto, and the Contractor will be allowed no additional compensation nor extension of contract time. If any equipment or materials are ordered by the Contractor prior to submission and approval of shop drawings he does so at his own risk.

J. It shall be the responsibility of the Contractor to make all the necessary changes in other items, which result from deviations or changes requested by the Contractor and approved by the Engineer, so that all items perform the requirements and intent of the Project Manual.

K. The shop drawings are intended to be utilized by the Contractor for additional fabrication, assembly and erection data. The shop drawings do not change or supersede the Plans and Specifications except in specific cases when the Contractor requests in writing and receives approval in writing for a deviation from the Plans and Specifications. The Contractor's request for a change shall give, in detail, the specific change requested and shall state the reason for the change. Changes requested by the Contractor and approved by the Engineer shall not be construed to include approval of any change except the changed details specifically requested and approved.

L. The Contractor will also submit to the Engineer for review, with such promptness as to cause no delay in work, all samples required by the Project Manual. All samples shall have been checked by and stamped with the approval of the Contractor, identified clearly as to material, manufacturer, any pertinent catalog numbers, and the use for which intended.

M. After review by the Engineer, shop drawings shall be returned to the Contractor marked as follows: APPROVED, APPROVED AS NOTED, REVISE AND RESUBMIT, or REJECTED. Unapproved shop drawings (i.e., REVISE AND RESUBMIT or REJECTED) shall be returned to the Contractor for necessary modifications; only two (2) copies of unapproved shop drawings will be returned. Subsequently, the Contractor shall submit a minimum of ten (10) copies of complete, revised shop drawings to the Engineer for approval.

N. The turnaround time by the Engineer on shop drawings will be: 14 days from date of receipt for shop drawings pertaining to Divisions 1 through 14 and 21 days from date of receipt for Divisions 15 and 16.

O. Within fourteen (14) days of the Preconstruction Conference, the Contractor shall submit a list of all shop drawings to be submitted. This list can then be used as a check to ensure that all items are submitted.

## **1.02 OPERATION AND MAINTENANCE MANUALS – not required**

## **1.03 CONSTRUCTION SCHEDULE**

A. The Contractor shall submit, for approval, a construction schedule plotting work increments against time, indicating anticipated date of beginning and completion of each work increment and indicating completion of all increments by the scheduled date. The Contractor shall assign such work forces as are necessary to accomplish all increments of the work within the time allotted on the construction schedule.

B. The Construction Schedule shall be submitted within fourteen (14) days after the Notice to Proceed.

C. The schedule shall be updated monthly to reflect actual progress versus original schedule. This schedule shall be used to document any additional time requested for changes in the scope of work. Time extension requests will only be reviewed if justification is given by the Contractor and shown to affect the critical path.

## **1.04 PROGRESS PHOTOGRAPHS**

A. The Contractor shall furnish the Owner with photographs; the cost such shall be included in the prices bid. Photographs shall be taken before the site has been disturbed and on an average of once a month during construction, and at the completion of the work. They shall be clearly marked to orient the photograph as to the portion of the work and state the date the photograph was taken. A minimum of twelve (12) photographs shall be taken each month and the proofs provided to the Owner, along with a CD-Rom containing the images. The Owner shall then select six (6) photographs each month of which the Contractor shall make three (3) sets of 8" x 10" prints. Contractor shall furnish prints in three photo albums sized to hold all progress photographs, as well as a CD-Rom containing all images. .

## **1.05 LIST OF SUBCONTRACTORS**

A. The Contractor shall submit a list of subcontractors for approval with his bid.

**\* END OF SECTION \***



## **DIVISION 01 - GENERAL REQUIREMENTS**

### **SECTION 01400**

#### **QUALITY CONTROL**

##### **PART 1 - GENERAL**

##### **1.01 CODES, RULES, PERMITS AND FEES**

###### **A. General:**

1. The Contractor shall comply with the requirements of all permits obtained by the Owner or the Contractor.
2. The Contractor shall give all necessary notices, obtain all permits (except as otherwise noted herein) and pay all governmental taxes, fees, and other costs in connection with the work, file all necessary plans, prepare all documents and obtain all necessary approvals of all government departments having jurisdiction, obtain all required Certificates of Inspection and Approval for the work and deliver same to the Engineer, except as otherwise noted herein.

###### **B. Included Items:**

1. The Contractor shall include in his work, all labor, materials, services, apparatus, and drawings required to comply with all applicable laws, ordinances, rules and regulations, whether or not shown on the Drawings or specified.

###### **C. Compliance:**

1. All materials furnished and all work installed shall comply with the rules and regulations of the National Fire Protection Association, with all requirements of local utility companies, with the recommendations of the fire insurance rating organization having jurisdiction, and with the requirements of all governmental departments having jurisdiction.

###### **D. Permits to be Obtained by Contractor:**

1. Contractor shall determine all required permits for the completion of the work described under this contract and obtain same prior to the start of construction.

## 1.02 MATERIALS AND WORKMANSHIP

- A. All materials and equipment required for the work shall be new, unless otherwise specified, and of the best quality and especially adapted to the services required.
- B. The Contractor shall furnish a superintendent who shall be constantly in charge of the installation of the work, together with all skilled workmen and labor required to unload, transfer, erect, connect up, adjust, start, operate, and test each system.
- C. The Contractor shall locate and install all equipment which must be serviced, operated, or maintained in fully accessible positions. Minor deviations from the Drawings may be made to allow for better accessibility, but changes of significant magnitude or changes involving extra cost shall not be made without approval of the Engineer.
- D. In as much as the Drawings are generally diagrammatic, the Drawings do not indicate all supports, hangers, fittings or offsets for piping, or other specialties which the Contractor shall provide.

## 1.03 STANDARDS

- A. Any reference to standards in the Contract Documents shall always imply the latest issue in effect including all amendments and errata at the time bids are taken, of said standards unless otherwise stated.
- B. Abbreviations for various organizations which may be used in these Specifications are as follows:

<u>Abbreviation</u>	<u>Organization</u>
AA	- Aluminum Association
AASHTO	- American Association of State Highway and Transportation Officials
ACI	- American Concrete Institute
ACS	- American Chemical Society
AFBMA	- Anti-Friction Bearing Manufacturers Association
AGA	- American Gas Association
AGMA	- American Gear Manufacturers Association
DGA	- American Hot Dip Galvanizers Association
AICHE	- American Institute of Chemical Engineers
AISC	- American Institute of Steel Construction
AASHO	- The American Association of State Highway Officials
ABPA	- Acoustical and Board Products Association
AI	- The Asphalt Institute
AIEE	- American Institute of Electrical Engineers (Now IEEE)
AIMA	- Acoustical and Insulating Materials Association
AISI	- American Iron and Steel Institute
AMCA	- Air Moving and Conditioning Association

ANSI	-	American National Standards Institute
API	-	American Petroleum Institute
APWA	-	American Public Works Association
AREA	-	American Railway Engineering Association
ASA	-	American Standards Association (Now ANSI)
ASCE	-	American Society of Civil Engineering
ASHRAE	-	American Society of Heating, Refrigerating, and Air Conditioning Engineers
ASME	-	American Society of Mechanical Engineers
ASSCBC	-	American Standard Safety Code for Building Construction
ASTM	-	American Society of Testing and Materials
AWPA	-	American Wood Preservers Association
AWPB	-	American Wood Preservers Bureau
AWS	-	American Welding Society
AWWA	-	American Water Works Association
BIA	-	Brick Institute of America
CBRA	-	Copper and Brass Research Association
CRSI	-	Concrete Reinforcing Steel Institute
CS	-	Commercial Standard (U.S. Department of Commerce)
DIPRA	-	Ductile Iron Pipe Research Association
E/A	-	Engineer and/or Architect
EEI	-	Edison Electric Institute
EPA	-	U.S. Environmental Protection Agency
FM	-	Factory Mutual
FTI	-	Facing Tile Institute
FS	-	Federal Specifications
GPM	-	Gallons Per Minute
HP	-	Horsepower
IEEE	-	Institute of Electrical and Electronic Engineers
ID	-	Inside Diameter
IPCEA	-	Insulated Power Cable Engineers Association
MBE	-	Minority Business Enterprise
MBMA	-	Metal Building Manufacturers Association
MSS	-	Manufacturers Standardization Society of the Valve and Fittings Industry
NAAMM	-	National Association of Architectural Metal Manufacturers
NBFU	-	National Bureau of Fire Underwriters
NBS	-	National Bureau of Standards
NCPI	-	National Clay Pipe Institute
NCMA	-	National Concrete Masonry Association
NEC	-	National Electrical Code
NECA	-	National Electrical Contractors Association
NEMA	-	National Electrical Manufacturers Association
NFPA	-	National Fire Protection Association
NPT	-	National Pipe Threads
NSF	-	National Science Foundation

OD	-	Outside Diameter
OFCCP	-	Office of Federal Contracts Compliance Programs
OSHA	-	U. S. Department of Labor, Occupational Safety and Health Administration
PCA	-	Portland Cement Association
PCI	-	Prestressed Concrete Institute
PS	-	United States Products Standards
PSIG	-	Pounds Per Square Inch Gauge
RPM	-	Revolutions Per Minutes
SAE	-	Society of Automotive Engineers
SCPI	-	Structural Clay Products Institute
SDI	-	Steel Decks Institute
SJI	-	Steel Joists Institute
SPIB	-	Southern Pine Inspection Board
SMACNA	-	Sheet Metal and Air Conditioning National Association
SMSA	-	Standard Metropolitan Statistical Area
SSPC	-	Steel Structures Painting Council
STA	-	Station (100 feet)
TDH	-	Total Dynamic Head
TEMA	-	Tubular Exchanger Manufacturers Association
UL	-	Underwriter's Laboratories
USASI or	-	United States of America Standards Institute
USAS	-	(Now ANSI)
USGS	-	United States Geological Survey
USC&GS	-	United States Coast and Geodetic Survey

#### **1.04 VERIFICATION OF DIMENSIONS**

A. The Contractor shall be responsible for field verification of all dimensions of existing facilities and other items which are shown on the Contract Drawings.

#### **1.05 TESTS OF MATERIALS AND EQUIPMENT**

A. All material before being incorporated in the work shall be subject to inspection, testing and approval of the Engineer and any work in which such materials are used without prior test and approval shall be considered defective and unauthorized and will not be paid for. The Contractor shall perform such tests as required by the specifications in a timely fashion taking into account when the items will be incorporated in the work.

#### **PART 2 - PRODUCTS (Not Used)**

#### **PART 3 - EXECUTION (Not Used)**

**\* END OF SECTION \***

## **DIVISION 01 – GENERAL REQUIREMENTS**

### **SECTION 01410**

#### **TESTING LABORATORY SERVICES**

##### **PART 1 – GENERAL**

###### **1.01 LABORATORY**

A. Contractor shall select, employ and pay for services of an Independent Testing Laboratory to perform specified inspection, sampling and testing where specified in the various sections of the specifications.

1. Contractor shall cooperate with laboratory to facilitate execution of its required services.
2. Employment of laboratory shall in no way relieve Contractor's obligations to perform the Work of the Contract.

###### **1.02 LABORATORY DUTIES**

A. Cooperate with Engineer and Contractor; provide qualified personnel after due notice.

B. Perform specified inspections, sampling and testing of materials and methods of construction:

1. Comply with specified standards.
2. Ascertain compliance of materials with requirements of Project Manual.

C. Promptly notify Engineer of observed irregularities or deficiencies of work or products.

D. Promptly submit five (5) copies of written report of each test and inspection to Engineer. Each report shall include:

1. Date issued.
2. Project title and number.
3. Testing laboratory name, address and telephone number.
4. Name and signature of laboratory inspector.
5. Date and time of sampling or inspection.
6. Record of temperature and weather conditions.
7. Date of test.
8. Identification of product and specification section.

9. Location of sample or test in the Project.
10. Type of inspection or test.
11. Results of tests and compliance with Project Manual.
12. Interpretation of test results, when requested by Engineer.

E. Perform additional tests as required by Engineer or the Owner.

### **1.03 LIMITATIONS OF AUTHORITY OF TESTING LABORATORY**

A. Laboratory is not authorized to:

1. Release, revoke, alter or enlarge on requirements of Project Manual.
2. Approve or accept any portion of the Work.

### **1.04 CONTRACTOR'S RESPONSIBILITIES**

A. Cooperate with laboratory personnel, provide access to Work.

B. Furnish incidental labor and facilities:

1. To provide access to Work to be tested and to maintain traffic in order to provide laboratory personnel a safe work site.
2. To obtain and handle samples at Project site or at source of product to be tested.
3. To facilitate inspections and tests.
4. For storage and curing of test samples.

C. Inspection and testing exclusively for the Contractor's convenience shall be the sole responsibility of the Contractor, at no additional cost to the Owner.

## **PART 2 – PRODUCTS**

Not Required.

## **PART 3 – EXECUTION**

Not Required.

**\* END OF SECTION \***

## **DIVISION 01 - GENERAL REQUIREMENTS**

### **SECTION 01500**

#### **TEMPORARY CONSTRUCTION FACILITIES**

##### **PART 1 – GENERAL**

###### **1.01 ELECTRIC POWER**

A. It shall be the obligation and responsibility of the Contractor to provide and maintain temporary facilities for furnishing light and power necessary for operations under the Contract, and to make all necessary arrangements therefore, including all required connections, ordering the meter, and paying all fees and inspection charges.

B. The Contractor shall make the temporary light and power facilities available to any and all approved Subcontractors, for their use in connection with their Contracts, and may charge each Subcontractor for such service an amount not to exceed a fraction of the cost of the project. Removal of temporary facilities shall be by the Contractor. The installation and meters shall remain until need for same by each Subcontractor has ceased or until completion of the Contract.

###### **1.02 TEMPORARY HEAT AND VENTILATION**

A. It shall be the obligation and responsibility of the Contractor to provide and maintain temporary heat by means of portable electric, oil or gas-fired units. The Contractor shall provide and pay for all fuel and electricity used in the temporary facilities and shall provide proper smoke pipes or other means to prevent smoke or smudge from marking up walls, ceilings or other parts of equipment.

B. Should the temporary heating facilities require electric service, the Contractor shall provide the necessary wiring and power.

###### **1.03 WATER SUPPLY**

A. Contractor shall be responsible for providing all water during the construction at no charge to the Owner. The Contractor will also be responsible for any temporary piping and connections required to obtain this water.

###### **1.04 SANITARY FACILITIES**

A. The Contractor shall provide and maintain approved sanitary facilities for the full term of the Contract.

## **1.05 CONSTRUCTION SIGN**

A. The Contractor shall furnish and erect a sign at locations on or near the site of the work. The Contractor shall consult with the Engineer regarding the placement of the sign on job site. The Engineer or Owner will provide the format of the sign.

## **1.06 FIELD CONDITIONS AND MEASUREMENTS**

A. The Contractor shall base all measurements, both horizontal and vertical from established benchmarks and monuments. The Contractor shall be responsible for field verification of all dimensions and conditions at the job site.

B. Should the Contractor discover any discrepancy between actual conditions and those indicated, which prevent following good practice or the intent of the Contract Drawings and Specifications, he shall notify the Engineer and shall not proceed with his work until he has received instructions from the Engineer.

C. No claims shall be made for extra payment or extensions of Contract completion time if the Contractor fails to notify the Engineer of any discrepancy before proceeding with the aspect of the work.

## **1.07 PROTECTION OF PERSONS AND PROPERTY**

A. The Contractor shall be responsible for initiating, maintaining and providing supervision of safety precautions and programs in connection with the work including, but not limited to, all legally required precautions and programs.

B. The Contractor shall take all reasonably necessary precautions for safety of, and shall provide all reasonably necessary protection to prevent damage, injury or loss to: (1) employees on the work and other persons who may be affected thereby; (2) the work, materials and equipment to be incorporated therein; and (3) other property at or adjacent to the site.

C. The Contractor shall give all notice and comply with all applicable laws, ordinances, rules, regulations, and orders of public authorities bearing on the safety of persons and property and their protection from damage, injury or loss arising from Contractor's operations hereunder.

D. The Contractor shall be liable for damage or loss (other than damage or loss to property insured under the property insurance provided or required by the Contract Documents to be provided by the Owner) to property at the site to the extent caused in whole or in part by the Contractor, a Subcontractor of the Contractor or anyone directly or indirectly employed by either of them, or by anyone for whose acts they may be liable, except damage or loss attributable to the acts or omissions of the Owner, the Owner's separate contractors or anyone directly or indirectly employed by them or by anyone for whose acts they may be liable and not attributable to the fault or negligence



of the Contractor.

E. Precaution shall be exercised at all times for the protection of persons (including employees) and property. The safety provisions of applicable laws, building and construction codes shall be observed. Machinery and equipment shall be guarded and all hazards shall be eliminated in accordance with the safety provisions of the Manual of Accident Prevention in Construction published by the Associated General Contractors of America, to the extent that such provisions are not in contravention of applicable law.

F. The Contractor shall comply with the U.S. Department of Labor, Safety and Health Regulations for Construction promulgated under the Occupational Safety and Health Act of 1970 (Public Law 91-596) and under Section 107 of the Contract Work Hours and Safety Standards (Public Law 91-54).

G. Nothing in the Occupational Safety and Health Act of 1970 shall be construed to supersede or in any manner affect any workmen's compensation law or to enlarge or diminish or affect in any manner the common law or statutory rights, duties, or liabilities of employers and employees under any law with respect to injuries, diseases, or death of employees arising out of or in the course of employment.

H. The Contractor shall comply with all regulations and requirements of the Occupational Safety and Health Administration (OSHA).

#### **1.08 CONTRACTOR STORAGE AND WORK AREAS**

A. Work areas will be for use by the Contractor for parking of workmen's vehicles, storage of his materials, tools, equipment and other items necessary for construction. The exact limits of the areas will be designated in the field by the Owner. The Contractor shall be fully responsible for the security of these areas, including fencing, watchmen, and other means of security. Under no circumstances will the Owner be responsible for the security of any property belonging to the Contractor, his subcontractors, or any of his work forces.

#### **1.09 DRAINAGE**

A. The Contractor shall keep all existing surface and subsurface drainage and water courses unobstructed, or provide equal courses effectively placed, and prevent accumulations of surface water.

#### **1.10 SOIL EROSION AND SEDIMENT CONTROL**

A. Adequate control of soil erosion and sedimentation of both a temporary and permanent nature on areas disturbed by this work shall be provided at no extra cost to the Owner, subject to the approval of the Sussex County Soil Conservation District.

B. It shall be the Contractor's responsibility to adhere to the Standards and

Specifications for Soil Erosion and Sediment Control.

**PART 2 - PRODUCTS**

Not Required

**PART 3 - EXECUTION**

Not Required

**\* END OF SECTION \***

## **DIVISION 01 - GENERAL REQUIREMENTS**

### **SECTION 01600**

#### **MATERIALS AND EQUIPMENT**

##### **PART 1 – GENERAL**

##### **1.01 EQUIPMENT AND PRODUCTS SPECIFIED**

A. Where any item of equipment or product or system is specified, it is to be understood that equal quality equipment or products or systems, of either a named manufacturer or of an unnamed manufacturer, which meet the detailed requirements of the specifications, are intended. In each case, the equipment, product or system is subject to the approval of the Engineer as to the equality thereof. It is distinctly understood that: (1) the Engineer is to use his own judgment in determining whether or not any item of equipment or product proposed is equal in quality to that specified; (2) the decision of the Engineer on all such questions of equality shall be final; and (3) in the event of any adverse decision by the Engineer, no claim of any sort shall be made or allowed against the Engineer or the Owner.

B. Substituted items or items other than those named shall be equal or better in quality and performance and must be suitable for the available space, required arrangement and application. The Contractor shall submit any and all data necessary to determine the suitability of substituted items.

C. If any submitted equipment necessitates changing architectural or structural items, or electrical, water, gas, air or other utility services from the sizes, capacities and configurations shown on the Drawings, it shall be the Contractor's responsibility to bear the cost of engineering fees to analyze, design, specify and formulate the construction changes necessitated by the proposed deviations from the specified equipment and/or the Contract Drawings. All re-designs shall bear the seal and be the responsibility of a professional Engineer registered in the State of Delaware.

D. Substituted items are warranted by the Contractor to perform equal or better than those specified. Substituted items failing to do so will be replaced by the Contractor at no cost to the Owner. No excuses such as improper design, construction, operation, or maintenance shall be accepted.

##### **1.02 "OR EQUAL" SPECIFICATIONS**

A. The specifications have been subjected to prior review with the intent of removing proprietary, exclusionary or discriminating requirements other than those based upon performance, unless the requirements are necessary to test or

demonstrate a specific thing or to provide interchangeability of parts and equipment.

B. In a few sections of the specifications, an item of material or equipment is specified by the name of a manufacturer without addition of the "or equal" expression, it is to be understood that these items are so specified for reasons of standardization and to provide interchangeability of parts and equipment.

C. Minor items including such articles as electrical fittings, plumbing fittings, hardware and other similar articles will be identified by one brand name to generally indicate design. For these items, a substitution of equal items are generally acceptable by the Engineer.

### **1.03 SINGULAR NUMBER**

A. Where material, a device or part of the equipment is referred to in the singular number, it is intended that such reference shall apply to as many items of material, devices or parts of the equipment as are required to complete the installation.

### **1.04 EQUIPMENT UNIFORMITY**

A. All pumps, blowers, valves and other multiple-unit equipment shall be, to the greatest extent possible within its category, the product of a single manufacturer.

### **1.05 STORAGE AND PROTECTION OF MATERIALS AND EQUIPMENT**

A. All equipment and materials provided and work performed under this Contract shall be protected from damage before and after installation. The Contractor shall be responsible for work, equipment, and materials until inspected, tested and finally accepted.

B. During construction, the open ends of work shall be effectively closed with temporary covers or plugs to prevent the entry of foreign material.

C. Where permanent equipment called for under this Contract is installed before the erection of adequate protective structures, the Contractor without additional compensation therefore, shall provide approved effective and durable covers for fully protecting such equipment against damage from the elements or from any other cause.

D. Electrical equipment shall be carefully and effectively covered with waterproof material and otherwise protected at all times from the elements.

E. All structures, machinery, equipment, piping, electric conduit, wiring and accessories and appurtenances shall be adequately supported and safeguarded against all damage or injury during performance of work under this Contract. The

Contractor shall be responsible for all damage or injury resulting from his operations and shall repair such damage immediately and to the satisfaction of the Engineer.

F. Store and protect products in accordance with the manufacturer's recommendations.

**\* END OF SECTION \***

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## **DIVISION 01 - GENERAL REQUIREMENTS**

### **SECTION 01700**

#### **CONTRACT CLOSEOUT**

##### **PART 1 - GENERAL**

###### **1.01 CLEANUP**

A. Upon completion of the work and before Final Acceptance will be made, the work site, storage areas, and other areas occupied by the Contractor during construction shall be cleaned, and all surplus and discarded materials, false work and rubbish placed thereon by the Contractor shall be removed by the Contractor. The Contractor's storage area shall be topsoiled, seeded and mulched in accordance with the appropriate Section of Division 2. No separate payment will be made for the work as all such costs shall be included in the lump sum price bid.

###### **1.02 TOOLS, ACCESSORIES AND SPARE PARTS**

A. The Contractor shall, unless otherwise stated, furnish with each type, kind and size of equipment, one complete set of any special tools and appliances which may be needed to adjust, operate, maintain or repair the equipment.

B. Each piece of equipment shall be provided with a substantial name plate, which is securely fastened in place and clearly inscribed with the manufacturer's name, year of manufacture and principal rating data.

C. Where the Specifications require spare parts to be furnished by the Contractor, said spare parts for each item of equipment shall be kept separate and tagged to identify the specific item of equipment to which they belong, shall be packaged so as to preclude damage from handling and storage, and shall be bagged or packaged together where items are small in dimension.

###### **1.03 WARRANTY AND GUARANTEE**

A. After the project is substantially complete and the start-up period begins, all guarantees and warranties shall commence.

B. The Contractor warrants and guarantees to the Owner for a period of one year the following:

1. That all materials and equipment provided under this Contract are new, unless otherwise specified.

2. That all work is of good quality and free from faults and defects and in accordance with the requirements of the Contract Documents.
3. That all equipment and systems and each and every part thereof, shall operate (with proper care and attention) in a satisfactory and efficient manner, and in accordance with the Contract Documents.
4. That the Contractor shall, upon receipt of written notice from the Owner, promptly replace with workmanship and materials which comply with these Specifications, and re-execute, correct or repair, without cost to the Owner, all work which may be found to be not in accordance with the Contract Documents.
5. That the guarantee obligations assumed by the Contractor under these Contract Documents shall not be held or taken to be in any way impaired because of the Specifications, indication or approval by or on behalf of the Owner of any articles, materials, means, combinations of things used or to be used in the construction, performance and completion of the work, or any part thereof.
6. That no use or acceptance by the Owner of the work or any part thereof, nor any failure to use the same, nor any repairs, adjustments or corrections made by the Owner due to the Contractor's failure to comply with any of his obligations under the Contract Documents, shall impair in any way the guarantee obligations of the Contractor under these Contract Documents.

C. If the Contractor fails to make repairs during the guarantee period, the Owner may cause such damaged or defective work to be repaired and made good at the cost and expense of the Contractor, including, but not limited to, compensation if required for additional professional services. The Contractor shall also bear the expenses of making good all work destroyed or damaged by the correction, removal or replacement of his defective work.

#### **1.04 SUBSTANTIAL COMPLETION**

A. Upon completion of all work under this Contract including the Preliminary and Final testing of equipment, the Contractor shall request, in writing, Substantial Completion by the Engineer.

B. Prior to this request, all specified operation and maintenance instructions and training shall have been provided for the City personnel and all certificates, spare parts, test equipment, record drawings, and other items required to be delivered shall have been provided.

C. Inspection Procedures: Upon receipt of Contractor's request, Engineer will either proceed with inspection or advise Contractor of prerequisites not fulfilled. Following initial inspection, Engineer will either prepare certificate of substantial completion, or advise Contractor of work which must be performed prior to issuance of certificate; and repeat inspection when requested and assure that work has been

substantially completed. Results of complete inspection will form punch-list for final acceptance.

### **1.05 COMPLETION OF PUNCHLIST ITEMS**

A. At the time of Substantial Completion, the Engineer and Owner shall prepare a punch list of items remaining to be completed or corrected prior to final acceptance. The punch list shall fix the time within which, and a retainage amount equal to one and one-half times the estimated cost for which, such items shall be completed or corrected, said time to be within the Contract Time.

B. Contractor shall complete all items of work on the punch list, plus any new items that may be added to it, as soon as possible after the date of Substantial Completion but within the Contract Time.

C. No partial payments or monthly progress payments shall be allowed between the Substantial Completion Payment and the Final Payment.

### **1.06 FINAL ACCEPTANCE**

A. General: Prior to requesting Engineer's final inspection for certification of final acceptance and final payment, as required by General Conditions, the Contractor shall complete the following and list known exceptions:

1. Submit final payment request with final releases and supporting documentation not previously submitted and accepted. Include certifications where required.
2. Submit updated final statement, accounting for additional (final) changes to Contract Sum.
3. Submit copy of Engineer's final punch-list of itemized work to be completed or corrected, stating that each item has been completed or otherwise resolved for acceptance.
4. Submit Consent of Surety.

B. Reinspection Procedure: Upon receipt of Contractor's notice that work has been completed, including punch-list items resulting from earlier inspections, and excepting incomplete items delayed because of acceptable circumstances, Engineer will reinspect work. Upon completion of reinspection, Engineer will either prepare certificate of final acceptance or advise Contractor of work not completed or obligations not fulfilled as required for final acceptance. If necessary, procedure will be repeated.



## **PART 2 - PRODUCTS**

Not Required

## **PART 3 - EXECUTION**

Not Required

**\* END OF SECTION \***

## **DIVISION 02 - SITE WORK**

### **SECTION 02050**

#### **REMOVAL AND DISPOSAL**

##### **PART 1 - GENERAL**

###### **1.01 DESCRIPTION**

- A. Includes the removal of excess excavated materials, bituminous pavement, concrete sidewalks, curb and gutter miscellaneous concrete, and miscellaneous items designated for removal. The Contractor shall remove and dispose of all items as necessary for accomplishment of the project.
- B. The Contractor shall be responsible for any loss of or damage to pavement, sidewalk, curb and gutter which are designated to remain.
- C. Submit proposed demolition and removal procedures to the Engineer for approval before work is started.
- D. Comply with applicable codes and accident and fire prevention regulations.

###### **1.02 JOB CONDITIONS**

- A. Dust Control: Comply with all dust regulations imposed by local air pollution agencies.
- B. Protection: Exercise care during demolition work to confine demolition operations. The physical means and methods used for protection are at the Contractor's option. However, the Contractor will be completely responsible for replacement and restitution work of whatever nature at no expense to the Owner.
- C. Explosives: Use of explosives will not be permitted.

##### **PART 2 - PRODUCTS**

###### **2.01 MATERIALS**

- A. Materials needed or required for temporary protection in the form of barricades, fences, enclosures, etc., may be "used" construction materials of sound condition and reasonably clean. However, the condition of same materials shall meet or exceed the requirements of governing agencies or approving bodies as may be involved with the

work.

B. Equipment, machinery and apparatus (motorized or otherwise) used to perform demolition work may be "used" as chosen at the Contractor's discretion, but which will perform the work within the limits of the Contract requirements.

## **PART 3 - EXECUTION**

### **3.01 INSPECTION**

A. Prior to performance of the actual work, carefully inspect the site and locate those objects and structures designated to be demolished and/or partially removed.

B. Locate existing exposed and buried active utilities and determine the requirement for their protection, or their disposition with respect to the demolition work.

### **3.02 PERFORMANCE**

A. General: The means and methods of performing demolition operations is the sole responsibility of the Contractor.

B. Debris Removal: All demolition debris shall become the property of the Contractor and shall be disposed of off site in accordance with local and State regulations.

C. Abandoned Pipes and Conduits: Remove pipes, conduits, underdrains and such other existing lines being abandoned to the extent required not to interfere with the new work. Permanently cap such existing abandoned lines.

D. Debris and Rubbish: Remove and transport debris and rubbish in a manner that will prevent spillage on streets or adjacent areas. Clean up spillage from streets and adjacent area.

E. Salvage: The Owner shall have the right to claim as salvage, any of the materials removed under the work of this Contract and when the Contractor has removed such items, should such right of salvage be exercised by the Owner, the Contractor shall move and neatly store removed items on the site in a location agreeable to the Owner, in a manner approved by the Engineer.

F. Bituminous Pavement: The Contractor shall remove existing pavement surface and base as necessary for construction of new work.

G. Concrete: The Contractor shall remove existing concrete curb and gutter where designated on the plans to the full depth thereof. Full depth saw cuts shall be made at all limits of concrete removal. Concrete shall be removed by breaking or chipping with

pneumatic tools or similar approved equipment. Broken concrete pieces shall not exceed 18 inches in dimension. Extreme care shall be taken by the Contractor in the removal operation to insure that no damage occurs to the facade of existing buildings, or to any underground or surface utility. Concrete removal work shall be scheduled so as to allow retention of existing sidewalk for pedestrian access to dwellings for as long as possible. When sidewalk is removed, it shall be replaced with new sidewalk without prolonged or unnecessary delay. When necessary, temporary sidewalk consisting of stone screenings or other suitable material shall be provided.

**\* END OF SECTION \***

## **DIVISION 02 - SITEWORK**

### **SECTION 02100**

#### **SITE PREPARATION AND ROUGH GRADING**

##### **PART 1 - GENERAL**

###### **1.01 DESCRIPTION**

A. Includes the furnishing and use of equipment and labor required for the clearing, topsoil stripping, and rough grading.

###### **1.02 QUALITY ASSURANCE**

A. Tests and Inspections:

1. Tests and inspections shall be performed by an independent testing agency employed by the Contractor. Work of the testing agency includes but is not limited to:
  - a. Verification of subgrade suitability prior to fill placement.
  - b. Monitor fill placement and compaction operations.
  - c. Prior approval of material used as fill and backfill.
  - d. Verification of compaction by in-place density tests.
2. Contractor shall provide access for and shall assist testing agency in acquisition of samples and performance of tests involving equipment outside the normal equipment used by the testing agency. Such assistance provided by the Contractor shall be accomplished at no cost to the Owner.
3. Whenever test results indicate compaction densities less than specified, the Contractor shall, at his own expense, secure the specified compaction using methods acceptable to the Engineer. Subsequent retesting occasioned by the initial non-compliance shall be performed by the same testing agency and all costs thereof shall be borne by the Contractor.

B. Codes and Standards: Perform excavation work in compliance with applicable requirements of governing authorities having jurisdiction.

C. Reference Standards:

1. American Association of State Highways and Transportation Officials (AASHTO):
  - a. T 180: Method A: Moisture-Density Relationship; Modified Proctor Test.

- b. T 191: Density By Sand Cone.
- c. T 224: Coarse Particle Correction.
- d. T 238: Density By Nuclear Methods.
- e. T 239: Moisture Content by Nuclear Methods.
- f. T 272: Method C: Moisture-Density Family of Curves.

### **1.03 JOB CONDITIONS**

#### **A. Environmental Requirements:**

1. Do not perform grading when soil or weather conditions are unsuitable. Unsuitable conditions include moisture saturated or frozen in place soil and precipitation of any kind present on the soil or occurring during the work.
2. Exercise the necessary means and methods to control dust on the site as well as in the off-site work areas where excavation and grading are required.
3. Do not leave the site in a dusting condition following the work of this Section. If necessary, employ a watering schedule to control the dust.
4. Do not use frozen material in performing the work or place materials on frozen surfaces.
5. When it is necessary to haul soft or wet soil material over roadways, use suitably tight vehicles to prevent spillage. Clear away spillage of materials on roadways caused by hauling at no expense to the Owner.
6. Plan work so as to provide adequate protection during storms with provisions available at all times for preventing flood damage.

#### **B. Protection:**

1. Assume all risks attending the presence or proximity of overhead or underground utilities, pipes and conduits.
2. Complete responsibility for replacement and restitution work of whatever nature to the above, as damaged or destroyed by work of this Contract, rests solely with the Contractor and at no expense to the Owner.

**C. Excess Materials:** No right of property in materials is granted the Contractor of excess on-site materials prior to completion of site work. This provision does not relieve the Contractor of his responsibility to remove and dispose of surplus excavated materials. Unsuitable material such as sod, stumps and spongy soil as well as excess hard, consolidated materials shall also become the property of the Contractor and shall be disposed of legally off-site. The Contractor has the option of disposing of the material off-site or at a suitable location on the site. The Owner will permit the disposal of excess material on the site provided that the Contractor develops a disposal plan for approval by the Owner and regulatory agencies.

## **PART 2 - PRODUCTS**

### **2.01 MATERIALS**

#### **A. Fill Material:**

1. On-site excavated soil or soil-rock mixed materials free of topsoil, plant life, lumber, metal, refuse and rock or similar hard objects larger than one inch in any dimension. Rock to soil ratio shall not exceed one part rock to three parts soil.
2. Borrow hauled to the job site shall be approved by the Engineer prior to hauling to the site and shall meet the requirements set forth for on-site fill material.

## **PART 3 - EXECUTION**

### **3.01 PREPARATION**

A. Clearing: Grub (remove all stumps, roots and stubs, brush, organic materials and debris from the ground to a depth of not less than 1 foot below the subgrade or slope surfaces) and clear surface and remove surface materials of whatever nature over pipe trenches, structure sites and areas to be graded, paved or repaved. Remove trees and tree stumps as indicated on the Contract Drawings.

B. Salvaged Topsoil: Within the areas indicated for grading, strip turf and topsoil to the depth of suitable topsoil material and stockpile for subsequent topsoil operations.

C. Stockpiling: Place topsoil storage piles within the limits of the project, and at locations not interfering with the procession of work.

D. Proof rolling: After grubbing and stripping is accomplished throughout, exposed subgrade in areas to receive fill or where structures or pavement will be located at grade shall be proof rolled with vibratory roller to provide surficial densification and to locate any near surface pockets of soft or loose soils. Unsuitable materials so exposed shall be suitably densified or otherwise removed and refilled as directed by the Engineer.

### **3.02 PERFORMANCE**

A. Rough Grading: Cut and fill to within 0.2 (two tenths) foot of the correct subgrade elevations. Set elevation of top of subgrade under paved areas to bottom of the pavement base. Set elevation of the top of subgrade under areas to receive topsoil, 4 inches below finished grades.

B. Fill

1. Fill material shall be placed and spread in uniform, near horizontal layers, not exceeding 8 inches in thickness, prior to compaction. Each layer shall be thoroughly tamped or rolled by means of approved compaction equipment.
2. The Contractor shall add sufficient water during tamping and rolling to assure complete consolidation of fill material. If material is too wet for satisfactory compaction, it shall be allowed to dry as required, prior to compaction. In general, moisture content should be maintained within 2 percent of optimum value depending on soil type and required compaction.
3. If sufficient fill material is not available from excavation, additional fill shall be imported. Such imported fill shall be of consistent type and quality, as approved by Engineer.

C. Compaction:

1. Fill materials, structural, and pavement areas shall be compacted to a minimum dry density of 95 percent of the maximum dry weight density in accordance with the testing procedures of Modified Proctor Test AASHTO T-180, Method "A". Structural and pavement subgrade in cut areas shall be densified to the same degree of compaction. Fill material in landscape or other non-structural areas shall be compacted to a minimum dry density of 90 percent of optimum.
2. Compaction equipment shall make sufficient passes to ensure that the required density has been uniformly obtained.
3. Each layer of fill shall be inspected, tested and approved by testing agency prior to placement and compaction of next lift.

D. Excavation of swales shall include shaping and finishing of earth bottom and slopes to the line and grade indicated. Care shall be taken not to over-excavate. Excessive swale excavation shall be backfilled with suitable material at no cost to the Owner. In no case shall excavated material be placed within 3 feet of top of bank. Excavation shall be maintained free from detrimental quantities of leaves, brush, sticks, trash and other debris until final acceptance.

**\* END OF SECTION \***



## **DIVISION 02 – SITE WORK**

### **SECTION 02220**

#### **EXCAVATION AND BACKFILL FOR UTILITY CONSTRUCTION**

##### **PART 1 - GENERAL**

##### **1.01 DESCRIPTION**

A. This work shall consist of all excavation necessary to open the pipe or conduit trench, lay the pipe or conduit, and backfill and compact to the existing or proposed grade as required by the Contract Drawings.

B. Definitions:

1. Excavation: Removal of materials of any kind in the excavation.
2. Excavation Below Subgrade: Same as excavation except such excavation is performed below elevations given as subgrade.
3. Subgrade: Trench bottom prepared as specified to receive gravel bedding, concrete cradle or concrete encasement or the bottom of excavations prepared to receive pipe line structures.

##### **1.02 QUALITY ASSURANCE**

A. Tests and Inspections:

1. The Engineer may, at his discretion, direct that Proctor and field density testing be done to determine the degree of compaction.
2. Tests and inspections will be performed by an independent testing agency selected and paid by the Contractor. Work of the testing agency includes but is not limited to:
  - a. Prior approval of material used as fill and backfill.
  - b. Verification of compaction by in-place density tests.
3. Contractor shall provide access for and shall assist testing agency in acquisition of samples and performance of tests.
4. Whenever test results indicate compaction densities less than specified, the Contractor shall correct the installation and retest until satisfactory results are achieved. All costs thereof shall be borne by the Contractor.

B. Reference Standards:

1. American Association of State Highway and Transportation Officials (AASHTO):

- a. T 180, Method A: Moisture-Density Relationship; Modified Proctor Test.
- b. T 191: Density By Sand Cone.
- c. T 224: Coarse Particle Correction.
- d. T 238: Density By Nuclear Methods.
- e. T 239: Moisture Content By Nuclear Methods.
- f. T 272: Method C: Moisture-Density Family of Curves.

### 1.03 JOB CONDITIONS

#### A. Environmental Requirements:

- 1. Do not perform trenching, backfilling or compacting when weather conditions or the condition of materials are such, in the opinion of the Engineer, that work cannot be performed satisfactorily.
- 2. Do not use frozen materials as backfill nor wet materials containing moisture in excess of the amount necessary for satisfactory compaction.
- 3. Prior to use, moisten dry backfill material not having sufficient moisture to obtain satisfactory placement or compaction.
- 4. Prior to use, dry wet backfill material to a sufficient moisture to obtain satisfactory placement or compaction.
- 5. Plan work so as to provide adequate protection during storms with provisions available at all time for preventing flood damage. Protect installed piping and other work at all times against damage from uplift due to high ground water levels.
- 6. Accommodation of Drainage: Keep gutters, sewers, drains and ditches open at all times for surface drainage. No damming or ponding or water in gutters or other waterways will be permitted. Do not direct water flows across or over pavements except through approved pipes or properly constructed troughs. When so required, provide pipes or troughs of such sizes and lengths as may be required, and place the same as required at no expense to the Owner. Perform grading in the vicinity of trenches so that the ground surface is properly pitched to prevent water running into the trenches.

#### B. Protection:

- 1. Responsibility for Condition of Excavation
  - a. The Contractor shall be responsible for the condition of all excavations made by him. All slides and caves shall be removed.
- 2. Protection of Property and Structures
  - a. The Contractor shall sustain in their places and protect from direct or indirect injury all pipes, wires, conduits, poles, tracks, walls, signs, wells, septic tanks, buildings, and other structures or property in the vicinity of his work whether above or below ground, or that may appear in the excavation. He shall at all times have a

sufficient quantity of timber and plank, chains, ropes, and other material and equipment, on the site and shall use them as necessary for sheeting his excavations and for sustaining or supporting any structures that are uncovered, undermined, endangered, threatened, or weakened.

- b. The Contractor shall take all risks attending the presence or proximity of pipes, wires, conduits, poles, tracks, walls, buildings, and other structures and property of every kind and description in or over his trenches or in the vicinity of his work whether above or below the ground surface, and he shall be responsible for all damage and assume all expense for direct or indirect injury caused by his work to any of them or to any person or property by reason of injury to them.
- c. Any wells or structures removed or damaged, as a result of the Contractor's work, shall be replaced to meet the latest applicable standards.
- d. The Contractor shall not enter upon private property for any purpose without obtaining the property owner's written permission, and he shall be responsible for the preservation of all public and private property, trees, monuments, and any and all natural or manmade objects, along and adjacent to the work and shall use every precaution necessary to prevent damage or injury to any and all property or persons. He shall use necessary precautions to prevent damage to pipe, conduits, and all other structures, and shall protect markers until a registered land surveyor in the State of Delaware paid for and retained by the Contractor has witnessed or otherwise referenced the location, and shall not remove them until directed. All such land monuments and property markers, whether damaged and/or removed shall be properly replaced prior to the completion of the work by a registered land surveyor licensed in the state. The Contractor shall not willfully or maliciously injure or destroy trees or shrubs and shall not remove or cut them without proper written authority of the property owner. The Contractor shall be strictly responsible for any and all damage or injury of every kind and description which directly or indirectly may be done to any property or sustained by any persons during the procession of the work resulting from any wrongdoing, misconduct, want of care or skill, or any negligence of himself or his agents and/or employees in his manner or method of executing said Work or due to his non-execution of said Work, even though such manner or method of said Work be concurred in, permitted, or allowed by the Engineer or the Town, its agents, and/or employees, or at any time due to defective Work or materials. When or where any direct or indirect damage or injury is done to public or private property by or on account of any act, omission, neglect, or misconduct in the execution of the Work, or in consequence of the non-execution

thereof on the part of the Contractor, he shall restore, at his own expense, such property to a condition similar or equal to that existing before such damage or injury was done by repairing, rebuilding, or otherwise restoring as may be directed, or he shall make good such damage or injury in an acceptable manner.

3. Utilities

- a. The Contractor shall contact "Miss Utility" at (800) 282-8555 at least 48 hours prior to digging in the vicinity of existing underground utilities to have them located and marked.
- b. Where the outside limits of an underground utility service have been located and staked on the ground the Contractor shall be required to use excavation methods acceptable to the Engineer within 3 feet of such outside limits at such points as may be required to insure protection from damage due to the Contractor's operations.
- c. Should the Contractor damage or interrupt the operation of a utility service or facility by accident or otherwise, he shall immediately notify the proper authority and the Engineer, and shall take all reasonable measures to prevent further damage or interruption of service. The Contractor, in such events, shall cooperate with the utility service or facility owner and the Engineer continuously until such damage has been repaired and service restored to the satisfaction of the utility or facility owner.
- d. The Contractor shall bear all costs of damage and restoration of service to any utility service or facility due to his operation whether or not due to negligence or accident.
- e. The Contractor shall pay all charges levied by utility companies from work performed by their forces to locate, inspect, protect, relocate, replace or repair overhead or underground utilities shown on the drawings as necessary for the construction of this project.

4. Pipe Supports

- a. Adequately support underground pipes or conduits exposed as a result of excavations. Provide adequate support along their entire exposed length by salt treated timber or planking. Install such supports in such manner that backfilling may be performed without dislodging such pipes or conduits. Place and carefully compact material from excavation or Special Backfill, as required, around the supports, and leave such supports in place as a guard against breakage due to backfill settlement.

E. Excavation Condition:

1. Condition and results of excavation are solely the responsibility of the Contractor. Remove slides and cave-ins at whatever time and under whatever circumstance they occur.

G. Perform soil erosion and sediment control work in accordance with applicable requirements of the Soil Conservation District.

H. If stability of adjoining structures or walls is endangered by excavations, shoring and bracing or underpinning shall be provided as necessary to insure their stability.

I. If it is necessary to place or operate power shovels, trucks or other heavy objects on a level above and near an excavation, the sides of the excavation shall be sheet-piled, shored and braced as necessary to resist the extra pressure due to such superimposed loads.

## **PART 2 - PRODUCTS**

### **2.01 MATERIALS**

A. Trench Backfill:

1. On site excavated soil or soil-rock mixed materials free of topsoil, plant life, lumber, metal, refuse and rock or similar hard objects larger than two inches in any dimension. For bedding under and backfill around the pipe, the Contractor shall use material from excavation meeting AASHTO Classification A-1, A-2-4, A-2-5, or A-3.
2. Backfill material shall contain sufficient moisture for proper compaction and shall be compacted to not less than 95% of the maximum density for any specific soil classification, as determined by the Modified Proctor Test AASHTO T-180, Method "A".

## **PART 3 - EXECUTION**

### **3.01 PERFORMANCE**

A. General:

1. Excavations shall be on open cut except where and to such extent as the Engineer or permit requirements may authorize or direct that the same be done by other methods. Trenches may in general be excavated and backfilled either by machinery or by hand as the Contractor may elect provided; however, the Engineer shall be empowered, wherever he shall decide that such necessity exists, to direct that hand excavation shall be employed, and provided further that backfilling by hand shall be done to the extent hereinafter specified. Hand excavation may be required where necessary to protect existing structures or buried utilities.
2. Excess excavated material that cannot be used at the project site shall be removed and disposed of off the site in a legal manner.

B. Removal and Storage of Surface and Subgrade Materials:

1. The Contractor shall grub and clear the surface and remove all surface and subgrade materials of whatever nature over the line of the trench and the site of other structures and areas to be graded; and he shall properly store, guard, and preserve such of said materials as may be required for use in backfilling, resurfacing, repaving, or for any other purposes.
2. Stockpiled materials shall in no case be placed in such a manner as to endanger the trench, existing structures, private property, or the environmental quality of the area. Measures shall be taken to insure no blockage of existing surface drainage and to minimize the possibility of erosion and siltation of these materials.

C. Excavating:

1. Perform excavation and backfilling using machinery, except as follows:
  - a. Hand excavation and backfilling may be required where necessary to protect existing structures or utilities.
  - b. Backfilling shall be done by hand to the extent hereinafter specified.
2. Excavate trenches to necessary width and depth as required elsewhere herein.
3. Begin excavation in trenches at the control point having the lower invert and proceed upgrade.

D. Bedding Placement: Bedding shall be placed uniformly on the prepared base, in a satisfactory manner, to the lines and grades indicated on the Drawings. Placing of bedding by dumping from top of slope or by other methods that will tend to segregate particle sizes within the bedding will not be permitted. Any damage to the surface of the bedding base during placing of the bedding shall be repaired before proceeding with the work.

E. Trench Width and Depth:

1. Trench width shall provide suitable room for proper laying and joining of pipes, considering any sheeting or dewatering requirements.
2. From subgrade elevation to an elevation at least twelve inches above the top of the outside barrel of the pipe, excavate trench banks to vertical lines.
3. From a point twelve inches above the top of the outside barrel of the pipe, keep trench banks as nearly vertical as possible with due regard for safety.

F. Length of Open Trench:

1. No greater length of trench in any location shall be left open in advance of the completed structure placed therein than shall be authorized or directed. The Engineer shall be empowered at any time to require the backfilling of

open trenches over completed pipeline if in his judgment such action is necessary.

2. If work is stopped on any trench for any reason and the excavation is left open for an unreasonable length of time in advance of construction, the Contractor shall if so directed backfill such trench and shall not again open said trench until he is ready to complete the structure therein.

G. Backfilling:

1. Backfill excavations as rapidly as practical after completion of construction work therein or after excavations have served their purpose. Accomplish backfilling as specified herein and as indicated on drawings.
2. Use material from excavation for backfill unless, in the opinion of the Engineer, such material is not suitable for use as backfill.
3. Backfill materials shall be carefully placed and compacted along the haunch of the pipe. Unless otherwise indicated or directed, hand place backfill materials in six (6) inch layers to a point at least two (2) feet above pipe crown. Thoroughly compact each layer for the full trench width and under, around and over pipe, using mechanical tampers exerting a pressure of not less than 250 foot pounds per square foot of tamping face. For bedding under and backfill around the pipe, the Contractor shall use material from excavation meeting AASHTO Classification A-1, A-2-4, A-2-5, or A-3. It is the Contractor's responsibility to use material from excavation meeting the above requirements where it is available.
4. Remainder of trench, more than two feet above pipe crown, may be backfilled by machinery in eight (8) inch layers. Thoroughly compact each layer for the full trench width using mechanical tampers. Heavy duty equipment shall not be run over the trench unless the pipe cover exceeds four (4) feet, unless otherwise approved by pipe manufacturer and Owner
5. Upon completion of backfilling, the Engineer may require tests to determine the degree of compaction of the backfill material. If the results of tests indicate densities less than specified, the Contractor shall remedy the condition as directed, in such portions of the trenches as may be required.
6. Flooding of trenches will not be permitted.
7. Do not use frozen backfill materials or place backfill materials on frozen subgrade or trench surfaces.

H. Cleanup: After trenches and other excavations are refilled and the work completed, remove surplus excavated materials, stone or such other materials from the work in such manner as the Contractor may elect or provide, but subject to the Engineer's approval. Dispose of such materials off the site in a legal manner at no additional expense to the Owner.

I. Maintenance of Backfilled Excavations:

1. The Contractor shall maintain all back-filled, repaved, topsoiled or

otherwise restored areas, including temporary pavement, in proper condition until the end of the guarantee period for the project. All defects shall be promptly corrected.

2. The Contractor shall be responsible for any injury or damage that may result from improper maintenance of trenches or pavement at any time prior to the end of the aforementioned guarantee period.

**\* END OF SECTION \***



## **DIVISION 02 - SITEWORK**

### **SECTION 02240**

#### **PREPARATION OF BASE**

##### **PART 1 - GENERAL**

###### **1.01 DESCRIPTION**

A. The Contractor shall do all excavation, embankment, grading and compaction necessary to prepare for and construct paving, seeded areas and miscellaneous work items.

###### **1.02 QUALITY ASSURANCE**

A. Base shall be thoroughly compacted to a minimum of 95 percent of maximum dry density as determined by AASHTO T-180, Method A. In place density tests shall be conducted in accordance with AASHTO T-191 Method A to verify degree of compaction. Number and locations of Proctor and density tests shall be as determined by the Engineer.

B. All testing shall be arranged by the Contractor and performed by an independent testing agency approved by the Engineer. The testing agency, so employed by the Contractor, shall submit a copy of all testing reports directly to the Engineer. Each report shall contain the project identification name and number, name of Contractor, name of testing agency, and location of sample tested, as a minimum.

C. For those tests which indicate compaction densities less than specified, the Contractor shall secure, at his own expense, the specified compaction using methods approved by the Engineer.

##### **PART 2 - PRODUCTS**

###### **2.01 MATERIALS**

A. Graded Aggregate: Graded aggregate shall meet the gradation requirement of DeIDOT.

## **PART 3 - EXECUTION**

### **3.01 EXCAVATION**

- A. Excavate where necessary and stockpile material at a nearby site.
- B. All organic matter, roots, etc. removed from within limits of construction shall be removed and disposed of. Stockpile topsoil for reuse in final grading, as applicable.
- C. Material unsuitable for reuse, or not needed, shall be disposed of by the Contractor at an approved off-site location or as directed by the Owner.
- D. The Contractor shall separate suitable from unsuitable material prior to stockpiling or removal.

### **3.02 EXCAVATION AND REFILL BELOW SUBGRADE**

- A. Where unsuitable material is encountered below top of subgrade elevation, same shall be removed to the extent directed and the excavation classified as "Excavation Below Subgrade".
- B. As directed, the Contractor shall use suitable material from excavation, special backfill, gravel or a combination thereof in refilling excavations below subgrade. If material from excavation is used, no additional payment will be made therefore. If special backfill or gravel have been authorized for use by the Engineer, it shall be paid for as "Special Backfill" or "Gravel Bedding" for the quantities actually installed within the length, width and depth of placement authorized.
- C. Gravel bedding shall conform to the requirements of DelDOT standards for No. 57 aggregate.
- D. No. 2 Stone shall be clean and washed, and shall conform to the requirements of Delaware DOT Standard Specifications No. gradation requirements.
- E. Special backfill shall conform to the requirements of DelDOT standards for select borrow.
- F. Heavy vehicular and foot traffic should be kept out of permeable pavement areas during construction once the excavations is within 12" of subgrade, All equipment that will be used in the permeable pavement area once the excavation is within 12" of subgrade elevation shall be low ground pressure equipment with a load bearing pressure of no more than 4 PSI until a minimum of 8" stone is placed over the subgrade.

G. For permeable pavement areas subgrade shall scarified or tilled to a depth of 4" before laying the filter fabric.

### **3.03 EMBANKMENT**

A. Construct where necessary, from suitable excavated or borrow material, embankment to reach top of subgrade elevations necessary for construction of new work.

B. All material to be placed in embankment shall meet the requirements of DeIDOT.

### **3.04 PAVING BASE**

A. Graded Aggregate:

1. The base material shall be uniformly spread without segregating the coarse and fine particles, in layers of approximately equal thickness, to provide the specified planned depth.

B. Structural Soil-Bearing Fabric

1. No loose material is allowed on sub-grade prior to placement of structural fabric. Loose material is to be removed prior to placement.
2. Fabric to be laid on smooth, sub-grade surface.
3. The Engineer prior to placement of structural-bearing fabric requires approval of sub-grade conditions.
4. Structural fabric must be flat on stabilized sub-grade for full width.
5. When the length of fabric is not continuous, the lateral seam shall have a minimum overlap of 24".
6. Immediately upon laying, the fabric is to be covered with base aggregate. No loaded trucks are to be permitted to move over fabric-covered surfaces until a minimum of 4" of aggregate has been placed, except if specifically approved by the Engineer.

**\* END OF SECTION \***

## **DIVISION 02 – SITE WORK**

### **SECTION 02250**

#### **NORMAL ASPHALT PAVEMENT**

##### **PART 1 - GENERAL**

###### **1.01 DESCRIPTION**

A. The Contractor shall provide all labor, materials, equipment and services necessary to perform all paving and surfacing to the finished grades as shown on the Contract Documents. The type of material, thickness, and typical sections shall be as detailed on contract drawings.

###### **1.02 GENERAL**

A. Pavement shall not be constructed until all underground utilities have been installed, tested and approved by the Town.

B. The Contractor shall run compaction tests on the subbase prior to paving.

C. The Contractor shall raise sewer and drainage manholes and water valves, etc to grade prior to paving.

D. When matching existing pavement, a neat work line shall be saw cut.

E. All saw cut edges of existing pavement shall be clean and coated with tack coat prior to placing new pavement adjacent to existing pavement.

F. Trenches shall be cut back one (1) foot.

G. The Contractor shall be responsible for maintaining the trench and any temporary pavement prior to final pavement. If the Contractor fails to make repairs within 48 hours after receipt of a written notice, the Town may refill said depressions at the cost of the Contractor.

###### **1.03 SUBMITTALS**

A. Mix designs for bituminous concrete shall be submitted in writing by the Contractor sufficiently in advance of paving operations to allow three weeks for review and approval. The design information shall include the following:

1. The use of which the material is proposed.

2. The designation, source and anticipation gradation if each of the component aggregates.
3. The estimated percentage of each aggregate required to yield the desired blend.
4. The resulting percentage passing each sieve size stipulated by the appropriate band.
5. The source of the asphalt material to be used.

#### **1.04 QUALITY ASSURANCE**

- A. Specifications: Delaware Department of Highways and Transportation Standard Specifications (DOH) 1985 Edition as currently amended.
- B. Source Quality Control: Maintain quality in products by using those of a qualified bituminous concrete producer have qualified plant operating personnel.
- C. Experience: The bituminous concrete producer shall be a bulk producer regularly engaged in production of hot-mixed, hot-laid bituminous concrete conforming to the standards referenced herein.
- D. Workmen Qualifications: Provide at least one person thoroughly trained and experienced in the skills required who readily understands the design and is completely familiar with the application of stone base and bituminous concrete paving work. Said person shall be present at all times during progress of the stone base and bituminous concrete paving work and shall direct the performance of said work. For actual finishing of bituminous concrete surfaces and operation of the equipment, use only personnel thoroughly trained and experienced in the skills required.

#### **1.04 JOB CONDITIONS**

- A. Weather Limitations: Apply tack coats only when ambient temperature is above 50°F, and when temperature has not been below 35°F for 12 hours immediately prior to application. Do not apply when base is wet or contains an excess of moisture.
- B. Construct bituminous concrete surface course only when atmospheric temperature is above 40°F, and when base is dry. Binder course may be placed when air temperature is above 32°F and rising.
- C. Grade Control: Establish and maintain required lines and elevations.

### **PART 2 - PRODUCTS**

#### **2.01 MATERIALS**

- A. General: Use locally available materials and gradations which exhibit a

satisfactory record of previous installations.

B. Dense Graded Aggregate Base Course shall consist of DeIDOT Graded Aggregate Subbase Type "B" (Crusher Run) compacted to a density of at least 95% of maximum dry density as determined by AASHTO T180.

C. Bituminous Concrete Base Course shall consist of Superpave Type "B" in accordance with Section 401 of the STANDARD SPECIFICATIONS and as shown on the Contract Drawings.

D. Bituminous Concrete Surface Course shall consist of Superpave Type "C" in accordance with Section 404 of the STANDARD SPECIFICATIONS and as shown on the Contract Drawings.

E. Graded Aggregate, Base Course Aggregate and Surface Course Aggregate: Crushed stone, crushed slag or crushed gravel and siliceous sand as specified in Sections 302, 401, 805, 813 and 821 of the STANDARD SPECIFICATIONS.

F. Asphalt Cement: Comply with Section 810 of the STANDARD SPECIFICATIONS, AASHTO M226, Grade: AC-20.

G. Tack Coat: Comply with Section 401.07 of the STANDARD SPECIFICATIONS, Type RS-1 per AASHTO M140.

## **2.02 PAVEMENT MIXES**

A. Composition of Mixtures: Wearing course mixture composition shall conform to the requirements of the above referenced specifications and the following:

1. Establish a job-mix formula prior to beginning work which shall not be changed during the progress of work without the Engineer's approval. Job-mixing tolerances shall not be presumed to permit acceptance of materials whose graduations fall outside the master ranges set forth in the above referenced specifications.
2. The approved job-mix formula shall lie within the specification limits and be suitable for the layer thickness and other conditions prevailing. It shall not be changed after work has started without the approval of the Engineer.

## **2.03 PERMANENT PAVEMENT STRIPING**

A. All road and parking lot striping shall be installed upon completion of pavement replacement. Permanent pavement striping shall be in accordance with DeIDOT STANDARD SPECIFICATIONS for epoxy resin paint striping.

## **PART 3 - EXECUTION**

### **3.01 GENERAL**

A. The Contractor shall not install final permanent bituminous concrete pavement surface until the pipelines or structures within the roadway are substantially complete and have passed performance tests, and authorization is issued by the Owner. The Contractor shall maintain the existing roadway surface in good condition during the construction of the project. The Contractor shall endeavor to complete all final paving as quickly as feasible, and must complete final paving as a condition of Substantial Completion. When authorized to install pavement, the Contractor shall make all repairs to the existing pavement, or prepared subbase, as required by the Engineer to allow proper placement of bituminous concrete.

### **3.02 INSPECTION**

A. Examine areas and conditions under which asphalt concrete paving is to be installed. Do not proceed with work until unsatisfactory conditions have been corrected.

### **3.03 PAVEMENT BASE**

A. Grade Control: During construction, follow lines and grades of the existing surface, including cross-slope. Vary only to avoid "bird baths" or areas of poor drainage.

B. Placing: Place base course material on prepared subgrade in layers of uniform thickness, conforming to indicated cross-section and thickness. Maintain optimum moisture content for compacting subbase material during placement operations.

1. When a compacted base course is shown to be 6" thick or less, place material in a single layer. When shown to be more than 6" thick, place material in equal layers, except no single layer shall be more than 6" or less than 3" in thickness when compacted.

C. Base shall be thoroughly compacted to a minimum of 95 percent of maximum dry density as determined by AASHTO T-180 Method A. In-place density tests shall be conducted in accordance with AASHTO T-191 Method A to verify degree of compaction. Number and locations of Proctor and density tests shall be as determined by the Engineer.

D. All testing shall be arranged by the Contractor and performed by an independent testing agency approved by the Engineer. The testing agency, so employed by the Contractor, shall submit a copy of all testing reports directly to the Engineer. Each report shall contain the project identification name and number, name of Contractor, name of testing agency, and location of sample tested, as a minimum.

### **3.04 SURFACE PREPARATION**

- A. For paving installed over existing pavements, the full width of surface to be paved shall be swept with a power broom or cleaned by blowing of compressed air, or both, to remove all loose dirt and other objectionable material.
- B. For paving installed over existing pavements, all potholes and areas with broken pavement shall be filled to grade with hot mix patching and/or graded aggregate base, compacted in place to provide a stable base. All loose debris or impediments shall be removed prior to this action.
- C. For paving installed over an aggregate base course, proof roll or tamp prepare base to check for unstable areas and areas requiring additional compaction per Paragraph 3.03.
- D. Apply tack coat in accordance with Section 401.34 DOH Specifications.

### **3.05 PLACING MIX**

- A. General: Place bituminous concrete mixes as specified in Section 401 DOH Specifications.
- B. Compaction: Use 6 to 8 ton Steel Wheel Rollers or smooth tread pneumatic tired rollers. Conform with procedures outlined in Section 401.36 DOH Specifications.

### **3.06 FIELD QUALITY CONTROL**

- A. General: Test in-place bituminous concrete courses for compliance with requirements for thickness and surface smoothness. Repair or remove and replace unacceptable paving as directed.
- B. Thickness: In-place compacted thickness will not be acceptable if exceeding following allowable variation from required thickness:
  - 1. Base Course: 1/2", plus or minus.
  - 2. Surface Course: 1/4", plus or minus.
- C. Surface Smoothness: Test finished surface of each asphaltic concrete surface for smoothness, using 10 foot straightedge applied parallel with, and at right angles to centerline of paved area. Surfaces will not be acceptable in exceeding following tolerances for smoothness:
  - 1. Base Course Surfaces: 1/4".
  - 2. Wearing Course Surface: 3/16".



### **3.07 PROTECTION**

- A. Protect from damage and vehicular traffic until paving has cooled and attained its maximum degree of hardness.
- B. Apply paving striping, if required, in accordance with manufacturer's specifications, but do not damage paving with application equipment.

**\* END OF SECTION \***

## **DIVISION 02 - SITEWORK**

### **SECTION 02260**

#### **PERVIOUS CONCRETE**

##### **PART 1 – GENERAL**

###### **1.01 DESCRIPTION**

A. The pervious concrete is a porous material and high void aggregate base that allows for rapid infiltration of rain falling on the surface. The pervious concrete shall be placed at the width and thickness as shown on drawings.

B. The work shall consist of removing existing pavement and base, preparation of base and placement of pervious concrete.

###### **1.02 APPLICABLE PUBLICATIONS**

A. American Society for Testing and Materials (ASTM) Publications for Pervious Concrete:

C 29	Test for Unit Weight and Voids in Aggregate
C 33	Specification for Concrete Aggregates
C 42	Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete
C 117	Test Method for Material Finer than 75 $\mu\text{m}$ (No.200) Sieve in Mineral Aggregates by Washing
C 138	Test Method for Unit Weight, Yield and Air Content (Gravimetric) of Concrete
C 150	Specifications for Portland Cement” (Types I or II only)
C 1157	Performance Specification for Hydraulic Cement
C 172	Practice for Sampling Fresh Concrete
C 260	Specification for Air-Entraining Admixtures for Concrete
C 494	Specification for Chemical Admixtures for Concrete
C 595	Specifications for Blended Hydraulic Cements (Type IP or IS only)
C 618	Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Portland Cement Concrete
C 989	Specification for Ground Granulated Blast-Furnace Slag for Use in Concrete and Mortars
C 1077	Practice for Laboratories Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Laboratory Evaluation

D 448	Specification for Standard Sizes of Coarse Aggregate for Highway Construction
D 1557	Tests for Moisture-Density Relations of Soils and Soil Aggregate Mixtures Using 10 Pound Rammer and 18-inch Drop
E 329	Standard Recommended Practice for Inspection and Testing Agencies for Concrete, Steel and Bituminous Materials as Used in Construction

## **1.02 SUBMITTALS**

A. Pervious Concrete Contractor and Producer Qualifications: If pervious concrete is used, prior to award of the contract, the placing contractor shall submit to the Owner and Engineer a statement attesting to qualifications and experience and the following:

1. A minimum of 2 completed Pervious Concrete projects with addresses.
2. If the placing contractor and/or concrete producer have insufficient experience with Portland cement pervious concrete pavement as outlined above, the placing contractor shall retain an experienced consultant who meets the requirements to monitor production, handling, and placement operations at the contractor's expense.
3. Base course permeable aggregate sieve analysis.
4. Provide permeability/infiltration test results for base course permeable aggregate.
5. Equipment and procedures to be utilized for the permeable aggregate installation.
6. Pervious concrete aggregate sieve analysis.
7. Pervious concrete composition.
8. Provide permeability/infiltration test results for pervious concrete.

B. Pervious Concrete Mix Design: Contractor shall furnish a proposed mix design with proportions of materials to the Engineer prior to commencement of work. The data shall include unit weights determined in accordance with ASTM C 29 paragraph 11, jiggling procedure.

## **PART 2 – PRODUCTS**

### **2.01 PERVIOUS CONCRETE**

A. Cement: Portland Cement Type I or II conforming to ASTM C 150 or Portland Cement Type IP or IS conforming to ASTM C 595, or ASTM C 1157.

B. Fly ash and Ground Iron Blast-Furnace Slag: Fly ash conforming to ASTM C 618 may be used in amounts not to exceed 30 percent of total cementitious material. Ground Iron Blast-Furnace Slag conforming to ASTM C 989 may be used in amounts

not to exceed 50 percent by weight of total cementitious material. Note: When Class "F" Fly ash is used as part of the minimum cementitious content specified, bond strength development may be delayed and additional curing time is required.

C. Aggregate: Use coarse aggregate No. 57. If other gradation of aggregate is to be used, submit data on proposed material to owner for approval.

D. Air Entraining Agent: Shall comply with ASTM C 260.

E. Admixtures:

1. Type A Water Reducing Admixtures – ASTM C 494.
2. Type B Retarding – ASTM C 494.
3. Type D Water Reducing/Retarding – ASTM C 494.
4. Also, a hydration stabilizer can be utilized and is recommended in the design and production of pervious concrete. This stabilizer suspends cement hydration by forming a protective barrier around the cementitious particles, which delays the particles from achieving initial set. The admixture's primary function should be as a hydration stabilizer, however it must also meet the requirements of ASTM C 494 Type B Retarding or Type D Water Reducing/Retarding admixtures.

F. Water: Comply with ASTM C 94

G. Cement Content: For pavements subjected to vehicular traffic loading, the total cementitious material content shall not be less than 600 lbs. per cu. yd.

H. Subgrade Material: The top 7 inches shall be composed of #57 stone as open graded aggregate base. Non-woven filter fabric shall be placed on the bottom of the excavation as shown on the contract drawings and as needed per subgrade evaluation.

I. Subgrade Permeability: Prior to placement of Portland Cement Pervious Pavement, the subgrade shall be tested for rate of permeability by double ring infiltrometer, or other suitable test of subgrade soil permeability. The tested permeability must reasonably compare to the design permeability.

J. Subgrade Support: The subgrade shall be compacted by a mechanical vibratory compactor to a minimum density of 92% of a maximum dry density as established by ASTM D 1557 or AASHTO T 180. Subgrade stabilization shall not be permitted. If fill material (embankment) is required to bring the subgrade to final elevation, it shall be clean and free of deleterious materials. It shall be placed in 7 inch maximum layers, and compacted by a mechanical vibratory compactor to a minimum density of 92% of a maximum dry density as established by ASTM D 1557 or AASHTO T 180.

## **PART 3 - EXECUTION**

### **3.01 CURING AND PROTECTION FOR PERVIOUS CONCRETE**

A. Curing: Curing procedures shall begin within 20 minutes after the final placement operations. The pavement surface shall be covered with a minimum 6 mil thick polyethylene sheet or other approved covering material. Prior to covering, a fog or light mist shall be sprayed above the surface when required due to ambient conditions (temperature, wind and humidity). The cover shall overlap all exposed edges and shall be secured (without using dirt or stone) to prevent dislocation due to winds or adjacent traffic conditions.

B. Cure Time:

1. Portland Cement Type I, II or IS – 7 days minimum.
2. Portland Cement Type I or II with Class F Fly ash (as part of the 600 lbs/cy minimum cementitious) or Type IP – 10 days minimum.
3. No truck traffic shall be allowed for 10 days (no passenger car/light trucks for 7 days).

### **3.02 TESTING**

A. The Owner and Engineer reserve the right to require any testing on material delivered to the job site or to assure work complies with contract documents.

B. All testing shall be arranged by the Contractor and performed by an independent testing agency approved by the Engineer. The testing agency, so employed by the Contractor, shall submit a copy of all testing reports directly to the Engineer. Each report shall contain the project identification name and number, name of Contractor, name of testing agency, and location of sample tested, as a minimum.

C. Infiltration Test of the porous asphalt paving system shall be made with a modified ASTM Method C1710 (ASTM2009). Any section of porous asphalt that does not meet the required infiltration rate shall be removed and replaced at no additional cost to the Owner.

### **3.03 WARRANTY**

A. The Contractor shall provide a three (3) year pavement warranty.

B. The Contractor shall furnish a warranty performance bond equal to 100% of the contract amount of the porous asphalt. The bond shall be issued at the date of Final Acceptance and shall remain in effect through the warranty period of 36 months.

C. The Owner is responsible for notifying the Contractor in writing of any required warranty work.

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D. The Contractor is responsible for supplying the materials and labor to complete warranty work requirements of repair, replacement, traffic control, and incidentals, at no additional cost to the Owner. At a minimum, temporary repairs shall be performed within 30 days of the notification from the Owner. Temporary repairs shall be replaced with permanent repairs as soon as weather allows.

E. The Contractor is not responsible for cleaning or vacuuming the porous asphalt road surface after substantial completion of the road surface has been issued by the Owner.

**END OF SECTION**

## **DIVISION 02 - SITEWORK**

### **SECTION 02270**

#### **POROUS ASPHALT**

##### **PART 1 - GENERAL**

###### **1.01 DESCRIPTION**

A. The porous asphalt pavement (PAP) shall be placed at porous concrete pavement locations as shown on drawings if approved as a bid equal by the Owner or Engineer.

B. Porous asphalt refers to a porous asphaltic material and a high void aggregate base that allows for rapid infiltration of rain falling on paved surfaces.

C. The work shall consist of removing existing pavement and base, preparation of base and placement of PAP.

###### **1.02 SUBMITTALS**

A. Submit to the Engineer for approval:

1. A minimum of 2 completed PAP projects with addresses.
2. If the placing contractor and/or concrete producer have insufficient experience with porous asphalt pavement as outlined above, the placing contractor shall retain an experienced consultant who meets the requirements to monitor production, handling, and placement operations at the contractor's expense.
3. Base course permeable aggregate sieve analysis.
4. Provide permeability/infiltration test results for base course permeable aggregate. Minimum permeability shall be 12 in/hr.
5. Equipment and procedures to be utilized for the permeable aggregate installation.
6. Porous asphalt aggregate sieve analysis.
7. Porous asphalt composition.
8. Provide permeability/infiltration test results for porous asphalt. Minimum permeability shall be 12 in/hr.

## PART 2- PRODUCTS

### 2.01 MATERIALS

- A. Non-woven filter fabric shall be placed on the bottom of the excavation as shown on the contract drawings and as needed per subgrade evaluation.
- B. The aggregate base courses shall be No. 57 clean and washed.
- C. The aggregates selected for PAP construction shall meet requirements of the standard specification for "Crushed Stone, Crushed Slag, and Crushed Gravel for Dry or Water-Bound Macadam Base and Surfaces Courses of Pavements", ASTM D 693-77, with two exceptions. First the gradation test must be of the open graded type described herein. Second, a soundness test is required, as specified in ASTM D 692-79, "Coarse Aggregate for Bituminous Paving Mixtures", to determine if the aggregate is susceptible to disintegration by water. Limestone or Serpentine aggregate will not be approved. The use of washed concrete sand in this mix will not be permitted.
- D. The gradation required to obtain PAP shall be of the "open" graded type as contrasted to the "dense" graded type which is capable of close packing. The gradation shall meet the following specifications:

<u>Sieve</u>	<u>Master Range (% Passing)</u>	<u>Tolerance from Job Mix</u>
3/4"	100	
1/2"	85-100	+/-3%
3/8"	55-75	+/-3%
#4	10-25	+/-3%
#8	5-10	+/-3%
#200	2-4	+/-1.5%

- E. The asphalt cement content in job mix shall range between 5.75 to 6.0% of the total mixture weight (to be determined by Laboratory Tests). The asphalt binder grade shall be PG 76-22. The temperature of the asphalt cement shall not be greater than 310 degrees Fahrenheit (154 degrees Centigrade) when introduced into the mixer.
- F. An approved heat stable anti-stripping additive shall be added to the asphalt cement. The amount used shall be 0.25 to 1.0% by weight of the asphalt cement as recommended by the additive manufacturer and approved by Delaware Department of Transportation. The additions shall be thoroughly and uniformly blended with the asphalt cement at the hot mix plant in accordance with DelDOT Standard Specifications.
- G. At least two weeks prior to production, the Contractor shall submit in writing a job mix formula to the Engineer for approval. At this time, the Contractor shall list all



sources of materials and provide adequate samples of all aggregates and asphalts in order to verify suitability of the proposed job mix.

## **PART 3- EXECUTION**

### **3.01 PREPARATION**

- A. Alter and refine the grades as necessary to bring subgrade to required grades and sections as shown in the drawings and as specified in Preparation of Base.
- B. Place aggregate base course on prepared subgrade as detailed on drawings and as specified in Preparation of Base.
- C. The surface course shall be laid directly over the aggregate base course and shall be laid in one lift as shown in the drawings.
- D. The Contractor shall keep the porous asphalt free of contamination from the site soil. The Contractor shall take precautions as necessary such as washing truck tires, etc.
- E. The laying temperature shall be between 230° and 260°, with minimum air temperature of 50° F, to make sure that the surface does not cool prior to compaction.
- F. Vertical joints between successive days' work shall be given a light tack coat of emulsified asphalt SS-1, diluted with one part water to one part emulsified asphalt.
- G. Compaction of surface course shall be done while the surface is cool enough to resist a 10-ton roller. One or two passes by the roller is all that is required for proper compaction. Roller must be in static mode. More rolling could cause a reduction in the surface course porosity. If at any point the roller is switched to vibratory mode and/or more than two passes are made by the roller that section of the pavement shall removed and replaced at no additional cost to the Owner.
- H. After final rolling, no vehicular traffic of any kind shall be permitted on the pavement until cooling and hardening has taken place, and in no case less than 6 hours (preferably a day or two).
- I. Work shall be done expertly throughout and without staining or damage to other permanent work. Make transition between existing and new paving work neat and flush. Finished paving shall be even, without pockets, and graded to elevations shown. Iron smoothly to grade, all minor surface projections and edges adjoining other materials.

J. Just prior to the Substantial Completion Inspection, the Contractor shall conduct a final cleaning of the porous asphalt road surface to enhance the potential for infiltration of storm water and remove sediment accumulated from construction operations. Final cleaning shall include all labor, materials and equipment necessary to conduct a final cleaning of the asphalt surface, including but not limited to vacuuming to remove sediment from pavement voids. The Contractor shall submit his method of final Cleaning to the Engineer for review and approval. The work to conduct Final Cleaning of the porous asphalt paving surface will not be measured and paid separately and is considered incidental to other related items.

### **3.02 TESTING**

A. The Owner and Engineer reserve the right to require any testing on material of the porous paving system to assure work complies with contract documents.

B. All testing shall be arranged by the Contractor and performed by an independent testing agency approved by the Engineer. The testing agency, so employed by the Contractor, shall submit a copy of all testing reports directly to the Engineer. Each report shall contain the project identification name and number, name of Contractor, name of testing agency, and location of sample tested, as a minimum.

C. Infiltration Test of the porous asphalt paving system shall be made with a modified ASTM Method C1710(ASTM2009). Any section of porous asphalt that does not meet the required infiltration rate shall be removed and replaced at no additional cost to the Owner.

### **3.03 WARRANTY**

A. The Contractor shall provide a three (3) year pavement warranty.

B. The Contractor shall furnish a warranty performance bond equal to 100% of the contract amount of the porous asphalt. The bond shall be issued at the date of Final Acceptance and shall remain in effect through the warranty period of 36 months.

C. The Owner is responsible for notifying the Contractor in writing of any required warranty work.

D. The Contractor is responsible for supplying the materials and labor to complete warranty work requirements of repair, replacement, traffic control, and incidentals, at no additional cost to the Owner. At a minimum, temporary repairs shall be performed within 30 days of the notification from the Owner. Temporary repairs shall be replaced with permanent repairs as soon as weather allows.

E. The Contractor is not responsible for cleaning or vacuuming the porous asphalt road surface after substantial completion of the road surface has been issued by the Owner.

**\* END OF SECTION \***

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## **DIVISION 02 - SITE WORK**

### **SECTION 02370**

#### **EROSION AND SEDIMENT CONTROL**

##### **PART 1 - GENERAL**

###### **1.01 DESCRIPTION**

A. Includes requirements for temporary soil erosion and sediment control at project site.

###### **1.02 GENERAL**

A. Provide necessary equipment, labor and supplies for erosion and sediment control throughout project. The work consists of grading of the site, providing straw bale dikes, silt fences, perimeter dikes, swales, sediment traps and settling trenches and other necessary measures required for effective control as shown on the drawings and in accordance with this specification, the Sussex County Sediment Control and Stormwater Management Program Handbook and the Delaware Erosion and Sediment Control Handbook. Excavation work, mechanical compaction of fills, pipe outlets, seeding and mulching, and other work shall be as indicated and required by the laws of the State of Delaware. The receipt of a proposal by a bona-fide bidder shall be interpreted to mean the Contractor has familiarized himself with these regulations and rules of procedure and is fully cognizant of exactly what is required.

###### **1.03 EROSION AND SEDIMENT CONTROL PLAN**

A. At the Preconstruction Conference or prior to the start of actual construction, submit for acceptance, schedules for accomplishment of temporary and permanent erosion control work. No work shall be started until the erosion control schedules and methods of operation have been accepted by the Engineer.

B. No changes or revision to the approved Sediment Control Plan shall be made unless approved by the Soil Conservation District.

###### **1.04 PERMITS**

A. Owner will obtain the initial approvals from the County Soil Conservation District for work on-site. Any and all other approvals required after the date bid proposals are received shall be the responsibility of the Contractor at his own expense.

**\* END OF SECTION \***

## **DIVISION 02 - SITE WORK**

### **SECTION 02720**

#### **UNDERDRAINS & APPURTENANCES**

##### **PART 1 - GENERAL**

- A. The Contractor shall furnish all material for and shall construct the pipe lines and all required appurtenances at the locations, and to the lines, slopes and elevations in accordance with these specifications and as indicated on the drawings.
- B. The type, size and class of pipe shall be in accordance with the requirements specified herein.
- C. The Contractor shall submit certifications to the Owner that all pipe, fittings, joints, and appurtenances are as specified herein.
- D. Pipe and appurtenances shall be installed per manufacturer's recommendations, and these specifications.

##### **PART 2 – PRODUCTS**

###### **2.01 POLYVINYL CHLORIDE PIPE AND FITTINGS**

- A. Polyvinyl chloride (PVC) pipe, used for pipe depths less than 20 feet, shall equal or exceed the requirements of ASTM D 3034. The PVC pipe shall have a minimum standard dimension ratio (SDR) of 35 and the minimum pipe stiffness, as tested in accordance with ASTM D 2412, shall be 45 psi when measured under 5 percent deflection at 73 degrees Fahrenheit. Pipe shall be manufactured with integral wall bell and spigot joints in standard lengths not exceeding 20.0 feet.
- B. All polyvinyl chloride (PVC) pipe and fittings shall utilize an elastomeric O-ring gasketed joint assembled in accordance with the manufacturer's recommendations. All seals shall be securely locked in place to prevent displacement. Gaskets shall have a minimum cross sectional area of 0.20 square inches and conform to ASTM F-477 specification. Provide all necessary adapters.
- C. Polyvinyl chloride wye branches, tee wyes, pipe stoppers and other fittings shall be manufactured in accordance with the same specifications. All PVC fittings shall be SDR26 Heavy Duty fittings unless otherwise noted on the plans. All fittings shall conform to ASTM D-3034. Saddle fittings shall not be acceptable. PVC material shall

have a cell classification of 12454-B or C as defined in ASTM D-1784. Fittings shall be Harco, Plastic Trends or equal.

D. Polyvinyl chloride pipe shall be delivered and stockpiled in unit pallets. Stacking of pallets above 5 feet in height will not be allowed. If pipe is stockpiled for more than 30 days prior to installation in the trench, it must be suitably covered with reflective material to protect the pipe from ultra-violet rays emanating from sunlight. Do not use plastic sheets. Allow for air circulation under covering.

E. Bowed sections of pipe will be unacceptable and installation of pipe which has bowed, whether or not the bow has been corrected, will not be allowed on this project.

F. All PVC pipe shall be CertainTeed PVC, J-M, or equal.

## **2.02 CLEAN OUTS**

A. Lateral Cleanout Frames and Covers - Cleanout frames and covers shall be cast iron. Lateral cleanout frames and covers manufactured by East Jordan Iron Works, Neenah Foundry, or equal.

## **PART 3 – EXECUTION**

### **3.01 PIPE INSTALLATION**

A. Install pipe in accordance with ASTM D2321 and these specifications.

B. Pipe and fittings shall be carefully handled and lowered into the trench. Special care shall be taken to ensure that each length shall abut against the next in such manner that there shall be no shoulder or unevenness of any kind along the inside of the pipe.

C. Bell holes shall be dug sufficiently large to insure the making of proper joints and so that after placement, only the barrel of the pipe receives bearing pressure from the trench bottom. No pipe shall be brought into position until the preceding length has been thoroughly bedded and secured in place. Any defects due to settlement shall be made good by the Contractor without additional compensation therefore.

D. Proper and suitable tools and appliances for the safe and convenient handling and laying of pipe shall be used.

E. Whenever a pipe requires cutting to fit into the line, or to bring it to the required location, the work shall be done in a satisfactory manner so as to leave a smooth end.

F. The sealing surface of the pipe, the bell to be joined, and the elastomeric gaskets shall be thoroughly cleaned before they are laid and shall be kept clean until

the acceptance of the completed work. The open ends of all pipelines shall be provided with a stopper carefully fitted so as to keep dirt and other substances from entering. This stopper shall be kept in the end of the pipeline at all times when laying is not in actual progress.

G. The push-on joint is assembled by positioning the elastomeric gasket(s) in the annular groove(s) of the bell or coupler and inserting the spigot end of the pipe into the bell compressing the gasket radially to form a positive seal. The gasket and annular groove are designed, sized and shaped so that the gasket will resist displacement. Care shall be taken so that only the correct elastomeric gasket compatible with the annular groove(s) of the bell or coupler is used. Insertion of the elastomeric gasket in the annular groove must be in accordance with the manufacturer's recommendations.

H. All excavations in which the pipe is being laid shall be kept free from water and no joint shall be made under water. Water shall not be allowed to rise in the excavation until the joint material has received its set. The greatest care shall be used to secure water tightness and to prevent damage to or disturbance of the joints during the backfill process, or at any time.

I. After pipes have been laid and the joints have been made, there shall be no walking on or working over them except such as may be necessary in tamping, until there is a covering of at least two (2) feet in depth over the pipe crown.

J. Backfill for the trench shall be imported on site from an approved borrow site. Material excavated from the trench may be used only if approved as suitable for backfill. Backfill materials shall be hand placed and mechanically tamped in six-inch layers, placed uniformly on both sides of the pipe, to a point at least one foot above the pipe crown. Each layer shall be thoroughly compacted for the full trench width and under, around and over the pipe. Mechanical tampers shall exert a pressure of not less than 250 foot pounds per square foot of area of tamping face.

K. A minimum vertical separation of 18 inches between water mains and storm sewer lines shall be maintained throughout the project. If minimum vertical separation cannot be achieved in the field, the water main shall be encased in concrete as shown on the Contract Drawings for a length as directed by the Engineer.

L. Where water mains and storm sewer lines cross, storm sewer pipe joints shall be equidistant from the intersection and as far from water main joints as possible.

### **3.02 LAYING PIPE IN FREEZING WEATHER**

A. No pipe shall be laid upon a foundation into which frost has penetrated, nor at any time when the Owner shall deem that there is danger of the formation of ice or the penetration of frost at the bottom of the excavation unless all required precautions as to the minimum length of open trench and promptness of backfilling are observed.

### **3.03 ARTIFICIAL FOUNDATION**

A. Not required.

### **3.04 MIRROR TEST**

A. Upon completion of pipe laying and backfilling to a point at least two (2) feet above the crown of the pipe, the Contractor, in the presence of the Owner's Inspector, shall conduct a mirror test to check for defects or leakage, and for horizontal or vertical misalignment. Mirror testing shall consist of reflecting sunlight or artificial light via mirrors through the completed section of pipeline, which, in order to be accepted, shall be true and straight in horizontal and vertical alignment to allow for the full passage of the reflected light. Maximum acceptable deflection shall be in accordance with manufacturer's recommendations.

B. The Contractor shall furnish all labor, tools, materials, water, and equipment, including mirrors, flashlights, or other artificial lighting, subject to the approval of the Engineer for testing and/or replacement of pipe, in accordance with these specifications. The Contractor shall perform all testing in the presence of the Engineer.

### **3.05 DEFECTS TO BE MADE GOOD**

A. If, at any time before the expiration of the guarantee period under this contract, any broken pipe, or any other defects are found in any of the lines or in any of the appurtenances the Contractor shall cause the same to be removed and replaced by proper material and workmanship, without extra compensation for the labor and material required, even though such injury or damage may not have been due to any act, default, or negligence on the part of the Contractor. All materials shall be carefully examined by the Contractor for defects prior to installation, and any found defective shall be rejected for use.

**\* END OF SECTION \***



## **DIVISION 02 - SITE WORK**

### **SECTION 02900**

#### **FINISH GRADING AND LANDSCAPING**

##### **PART 1 - GENERAL**

###### **1.01 DESCRIPTION**

A. Scope: Includes spreading of topsoil, fertilizing, sodding, seeding, shrubs, ground cover, planting and maintenance.

###### **1.02 QUALITY ASSURANCE**

A. Source Quality Control: Packaged Products shall indicate the manufacturer's guaranteed analysis on each package and arrive on-site as originally packaged and unopened.

B. Referenced Standards:

1. American Society for Testing and Materials, ASTM C 602, Agricultural Liming Materials.
2. American Association of State Highways and Transportation Officials, AASHTO Emulsified Asphalt.
3. American Standard for Nursery Stock: ANSI Z60.1.

###### **1.03 SUBMITTALS**

A. Test Reports: Submit laboratory test reports of the soil analysis and supplement recommendations to the Engineer for approval prior to adding any soil supplements to the topsoil.

1. Laboratory reports shall recommend both grade and application rates of fertilizer and such other soil supplements as required.
2. Take sufficient quantity of topsoil samples to give a representative analysis of on-site topsoil and topsoil from outside sources, if any.

B. Soil Supplement Product Certification: Submit certificates certifying such products to have a guaranteed analysis in conformity with the Engineer approved laboratory soil supplement recommendations report.

C. Seed Certification: Submit certificates or certifying tags indicating lawn seed mixture, seed purity percentage, seed germination percentage and weed seed content

percentage to certify conformity with the Specifications.

#### **1.04 PRODUCT DELIVERY, STORAGE AND HANDLING**

- A. Deliver packaged products to the site in unopened containers with labels intact and legible.
- B. Store packaged products in such a manner to prevent moisture damage and other forms of contamination.

#### **1.05 JOB CONDITIONS**

- A. Environmental Requirements: Do not perform work of this section when soil or weather conditions are unsuitable. Unsuitable conditions include moisture saturated or frozen in place soil and precipitation of any kind present or occurring during the work.
- B. Seeding Dates: The following dates shall govern except when environmental conditions warrant, the Engineer may extend the seeding dates.
  - 1. Spring: 3/1 to 5/15.
  - 2. Fall: 8/15 to 11/15.
- C. Existing Conditions: Following performance of related construction and prior to Finish Grading do such debris removal and site leveling as necessary in preparation for Finish Grading. Dispose of such debris legally off-site.
- D. Dust Control: Exercise the necessary means and methods to control dust on the site as well as in the off-site work areas where Topsoiling and Finish Grading are required.

### **PART 2 - PRODUCTS**

#### **2.01 MATERIALS**

- A. Topsoil: Use salvaged material from rough grading as specified previously in Section 02100 – Site Preparation and Rough Grading.
- B. Borrow Topsoil: Use productive topsoils from Contractors source and of a quality meeting the requirements specified above for topsoil.
- C. Water: Water for use may be obtained from Owner, without charge.
- D. Stakes and Guys: Hardwood, pointed.

## **2.02 SOIL SUPPLEMENT MATERIALS**

A. Agricultural Liming Materials: Products containing calcium and magnesium compounds capable of neutralizing soil acidity and containing not less than 80% of total carbonates. Use liming materials meeting requirements of ASTM Designation C602 and conforming to applicable state liming material regulations.

B. Manure: Well rotted cow manure not less than six (6) months old, not more than two (2) years old, free from sawdust, shavings, or refuse of any kind, containing roughly twenty-five (25) percent of straw or other bedding material. Approved dehydrated manure (Farmanure, Bovung, or equal) may be used instead of raw manure at the Contractor's option. If so used, proportion 250 pounds of dehydrated material for each cubic yard of raw manure.

C. Peat Moss: Reasonably free from wood substances.

D. Commercial Fertilizer: Mixed, containing by weight 10 percent nitrogen, 6 percent phosphoric acid and 4 percent potash. Free flowing and delivered in unopened containers.

E. Planting Soil: Mixture of 2 parts peat moss, 1 part manure and 10 parts of topsoil.

## **2.03 LAWN AND SEED MATERIALS**

A. Grass Seed: 100 percent Kentucky #31 Fescue. Deliver seed in standard containers showing weight, analysis and vendor's name. Provide seed mixed and supplied by an established seed house, certified as to proper purity and germination, and at least 96 percent weed free.

B. Lawn Mulch: Straw Stalks of any threshed grain or tall hay grass stalks free from seed bearing stalks or roots harmful to lawn growth. Mulch material containing noxious weeds, decomposed material or brittle weed material is not acceptable.

C. Mulch Binder: Emulsified asphalt conforming to the requirements of AASHTO Grade RS-1 and which does not contain solvents or other diluting agents toxic to plant life.

## **2.04 PLANTING MATERIALS**

A. Plants: Sound, healthy, vigorous, free from plant diseases, insect pests or their eggs and with healthy normal tops and root systems. They shall be nursery growth stock, freshly dug and grown in the same climatic condition, or from colder zone, than the project location for at least two (2) years prior to date of contract award. Plants cut back from larger grades do not meet requirements of this specification and will not be acceptable.

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- B. Mulch: Pine bark nuggets.
- C. Stakes and Guys: Hardwood, pointed.
- D. Hose: New and Used, 1/2 inch in diameter.
- E. Guying Wire: Pliable galvanized steel wire with galvanized turnbuckle.
- F. Wrapping: Tree wrap tape 4 inches wide designed to prevent bore damage and winter freezing.

## **PART 3 - EXECUTION**

### **3.01 PREPARATION**

- A. Prepare subsoil surface for finish grading by dressing and shaping to provide for the uniform placement of topsoil.
- B. Prepare subsoil surface for topsoiling by loosening to a depth of 3 inches and dressing and shaping to provide for the uniform placement of topsoil.
- C. Remove surface rock or other foreign objects exceeding 3 inches in greatest dimension. Dispose of such rock and debris in a lawful manner off site.

### **3.02 PERFORMANCE**

- A. Placement: Place topsoil over disturbed areas. However, before topsoil placement, construction work in topsoiled areas shall have been completed. Observe precautions as follows:
  - 1. Do not place topsoil over areas indicated to receive paving or walkways.
  - 2. Do not work topsoil while frozen or wet. Do not work topsoil in a dusting condition but moisten same to prevent a dust nuisance.
  - 3. Scarify subsoil to a depth of 2 inches for bonding topsoil with subsoil.
  - 4. On sloped areas, work topsoil into subsoil to blend so as to eliminate any semblance of slip-planing between the two soils; but leave a sufficient cover of topsoil to insure seed germination. Perform such blending of soils by ridging or serrating the subsoil on the slopes.
  - 5. Place topsoil as needed for dressing-up minor depressions due to settling and erosion and to eliminate any other minor irregularities.
- B. Finished Elevations and Lines: Grade topsoiled areas of the site to within a tolerance of plus one-tenth of a foot of existing elevations.

1. Grade a uniform longitudinal fall in swales and other surface drainage areas to provide a drainage flow line that can easily be maintained and traversed with normal lawn maintenance equipment.
2. Establish finish grade of topsoil 1/2 to 3/4 inch below top of abutting walks or paving to provide positive drainage of same.
3. Leave finish grade surfaces free of objectionable material, such as lumber, metal, refuse, stone, concrete, paving material, etc. Dispose of such objectionable material in a legal disposal area off site.

C. Compaction: Compact finish grades as the final operation using a light roller weighing not over 120 pounds per foot-width of roller.

D. Tillage: Till finish graded soil over areas indicated for lawn regardless of type of lawn work performed. Use equipment and methods common to such work, and till soil to a two inch depth minimum.

E. Soil Supplement Addition: The soil supplements for lawn areas, as required according to the Engineer approved laboratory test reports may be incorporated into the soil during tillage operations. Assume a minimum of 25 pounds of fertilizer per 1,000 square feet.

F. Seeding: Sow seed mixtures when air current is low and not more than five days after soil supplements have been applied. Sow seeds in two applications using either mechanical power seeders or mechanical hand seeders. Sow one-half of the seed mixture in one direction over designated areas and the remainder at right angles to the first sowing.

G. Seed Cover: Imbed seed mixtures into topsoil 1/4 inch to 1/2 inch using a light drag or rake and moving in directions parallel to the contour lines. Immediately after dragging or raking, compact seeded areas using a cultipacker or similar design lawn roller, weighing 60 to 90 pounds per linear foot of roller, and roll at right angles to existing slopes.

H. Lawn Mulching: Evenly apply mulch over seeded areas not more than 48 hours after seeding. Start mulching at windward side of relatively flat areas, or at the upper part of slopes. Spread mulch in a total coverage at a depth not less than 1-1/2 inches nor more than 3 inches. Mulch shall be applied at a rate of 70 to 90 pounds per 1,000 square feet.

I. Mulch Binding: Immediately following mulch spreading, apply mulch binder to anchor mulch to the soil. The number of passes over the mulch as needed to secure it firmly shall not exceed three passes with maximum applied binder not exceeding 10.0 gallons per 1,000 square feet.

### **3.03 PLANTING PROCEDURES**

- A. Plant evergreen material any time ground is suitable between October 15 and April 15, deciduous material between October 15 and April 1.
- B. Plant locations to be approved before excavation is started.
- C. Following approval of location, completely excavate pits and beds in accord with following:
  - 1. Dig shrub pits circular, with vertical sides, at least 16 inches larger than maximum spread of roots and at least 4 inches below roots of plants as placed.
  - 2. Pits for plants delivered in cans. A minimum of twenty-four (24) inches in diameter and eighteen (18) inches deep, with vertical sides. Remove can before planting.
- D. Set plants plumb, in locations shown on drawings and at such level that after settlement, normal or natural relationship of crown on plant with adjacent ground surface is established.

### **3.04 MAINTENANCE AND GUARANTEE**

- A. Seeded Areas: Keep seed moist continually for proper germination and water thereafter as necessary to prevent drying out or burning. Reseed areas not showing a prompt catch of grass, correct depressions and irregularities and reseed; repeat until a complete coverage is obtained. Contractor shall take all necessary steps to eliminate weed growth in seeded areas.
- B. Maintenance period extends from start of planting operations and runs continuously through growing season following initial acceptance of planting. Upon satisfactory completion of final plant replacement, maintenance period shall terminate.
- C. During maintenance period, or approximately the 1st and 15th of every month, the Contractor shall provide sufficient supervision of equipment, materials and manpower to:
  - 1. Keep plants in a healthy growing condition by watering when necessary, removing dead or drying branches, removing sprouts, tightening, repairing or replacing guys and wrapping, and maintaining a two (2) inch depth of mulch during maintenance period.
  - 2. Remove dead or damaged plant materials, weed plant beds and plant pits.
- D. Remove and replace plants in an impaired, dead, or dying condition following end of first growing season. Replacement materials and methods shall be identical to

original. Growing season is defined as beginning March 1st and ending November 15<sup>th</sup>.

**\* END OF SECTION \***

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# SUPPLEMENTAL INFORMATION



DTCC Environmental Parking Lot- Phase Plan  
March 2014

