

**ALLEGHENY COUNTY SANITARY AUTHORITY
PITTSBURGH, PENNSYLVANIA
CONTRACT DOCUMENTS**

VOLUME 1 OF 1

Including
LEGAL NOTICE
BIDDING DOCUMENTS
INFORMATION FOR BIDDERS
CONTRACT PROVISIONS
CONTRACT AGREEMENT
BONDS, CERTIFICATES AND STATEMENTS
DIVISION 1 - GENERAL REQUIREMENTS
TECHNICAL SPECIFICATIONS
APPENDICES & DRAWINGS

CONTRACT NO. 1714

**ROOF MODIFICATIONS FOR SCREENINGS GARAGE
AND POWER GENERATION BUILDING**

APRIL - 2020

MEMBERS OF THE BOARD:

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DIRECTOR, ENGINEERING & CONSTRUCTION

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For

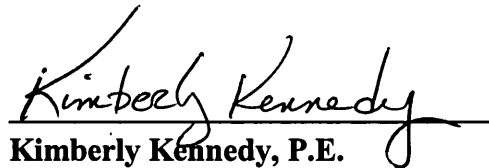
CONTRACT NO. 1714

**ROOF MODIFICATIONS FOR SCREENINGS GARAGE
AND POWER GENERATION BUILDING**


APRIL - 2020

APPROVED FOR ADVERTISEMENT:

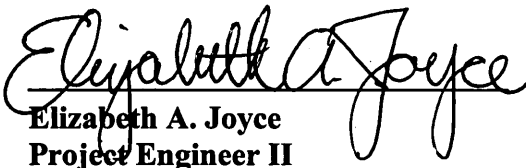
DOCUMENTS PREPARED BY:



**Kimberly Kennedy, P.E.
Director, Engineering and Construction**



**Daniel J. Lockard, P.E.
Manager of Capital Projects**



**Elizabeth A. Joyce
Project Engineer II**

ALCOSAN

ALLEGHENY COUNTY SANITARY AUTHORITY
LEGAL NOTICE
CONTRACT NO. 1714

Sealed Bids for **CONTRACT NO. 1714 – ROOF MODIFICATIONS FOR SCREENINGS GARAGE AND POWER GENERATION BUILDING** shall be received at the of Engineering Department office of the Allegheny County Sanitary Authority, 3300 Preble Avenue, Pittsburgh, PA 15233 until **2:00 P.M., Prevailing Time Wednesday, May 13, 2020** and then publicly opened and read aloud.

ALCOSAN encourages businesses owned and operated by minorities and women to submit bids on Authority Contracts or to participate as subcontractors or suppliers to successful Bidders. Successful Bidders are to use minority or women's businesses to the fullest extent possible.

Contract Documents may be obtained through the office of the Authority for **\$100.00 (nonrefundable and no cash or credit cards will be accepted)**. The Contract Documents will be available for examination at www.alcosan.org. If interested in purchasing a set of Contract Documents, Bidders should mail in the \$100 check and the documents will be distributed by mail. Bid Security shall be furnished by Certified Check or Bid Bond in the amount of 10% of the Bid Price.

A **Pre-Bid Meeting** will be held via a video conference call **on Wednesday, April 22, 2020 at 10:00 A.M., Prevailing Time**. When mailing in the check be sure to include an email address to be invited to the Pre-Bid Meeting. Bidders are encouraged to attend, however they are not required to have a qualified representative attend the Pre-bid meeting to be eligible to bid on this contract.

Any questions regarding the Contract Documents should be directed, in writing, to Ms. Elizabeth Joyce, Project Engineer, by email to elizabeth.joyce@alcosan.org, or by phone to (412) 734-8719.

The Authority reserves the right to reject any or all bids, to waive any informality in any bid and to accept any bid should it be deemed in the interest of the Authority to do so.

ALLEGHENY COUNTY SANITARY AUTHORITY



Kimberly Kennedy, P.E.
Director, Engineering and Construction

April 15, 2020

**ALLEGHENY COUNTY SANITARY AUTHORITY
PITTSBURGH, PENNSYLVANIA**

CONTRACT 1714

**ROOF MODIFICATIONS FOR SCREENINGS GARAGE
AND POWER GENERATION BUILDING**

CONTRACT DOCUMENTS

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CONTRACT 1714
ROOF MODIFICATIONS FOR SCREENINGS GARAGE
AND POWER GENERATION BUILDING

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CONTRACT NO. 1714

**ROOF MODIFICATIONS FOR SCREENINGS GARAGE
AND POWER GENERATION BUILDING**

BIDDING DOCUMENTS

ARTICLE 1

BIDDING DOCUMENTS

ARTICLE 1

CONTRACT NO. 1714:

**ROOF MODIFICATIONS FOR SCREENINGS GARAGE
AND POWER GENERATION BUILDING**

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NOTE TO BIDDER: Use typewriter or BLACK ink for completing this Bid Form.

BID FORM

To: Allegheny County Sanitary Authority

Address: 3300 Preble Avenue, Pittsburgh, PA 15233

Project Identification: Roof Modifications for Screenings Garage and Power Generation Building

Contract No.: 1714

1. BIDDER'S DECLARATION AND UNDERSTANDING.

- 1.1 This Bid is genuine and not made in the interest of or on behalf of any undisclosed person, firm, or corporation and is not submitted in conformity with any agreement or rules of any group, association, organization, or corporation; Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid; Bidder has not solicited or induced any person, firm, or corporation to refrain from bidding; and Bidder has not sought by collusion to obtain for itself any advantage over any other Bidder or over Owner.
- 1.2 In submitting this Bid, Bidder certifies Bidder is qualified to do business in the Commonwealth of Pennsylvania as required by laws, rules, and regulations or, if allowed by statute, covenants to obtain such qualification prior to contract award.

2. CONTRACT EXECUTION AND BONDS.

- 2.1 The undersigned Bidder agrees, if this Bid is accepted, to enter into an Agreement with Owner on the form included in the Bidding Documents to perform and furnish Work as specified or indicated in the Bidding Documents for the Contract Price derived from the Bid and within the Contract Times indicated in the Agreement and in accordance with the other terms and conditions of the Bidding Documents.
- 2.2 Bidder accepts the terms and conditions of the Bidding Documents.

3. INSURANCE.

- 3.1 Bidder further agrees that the Bid amount(s) stated herein includes specific consideration for the specified insurance coverages.

4. CONTRACT TIMES.

4.1 Bidder agrees to accept Contract Times set forth in Article 4, Contract Agreement.

5. LIQUIDATED DAMAGES.

5.1 Bidder accepts the provisions in Article 4, Contract Agreement as to liquidated damages.

6. ADDENDA.

6.1 Bidder hereby acknowledges that it has received Addenda No's. _____, _____, _____, _____, _____ (Bidder shall insert number of each Addendum received) and agrees that Addenda issued are hereby made part of the Bidding Documents, and Bidder further agrees that this Bid includes impacts resulting from said Addenda.

7. SUBCONTRACTORS.

7.1 Bidder agrees to submit within 5 days of Owner's request, a listing of subcontracting firms or businesses that will be awarded subcontracts for portions of Work as described in the Instructions to Bidders.

8. TOTAL BASE BID.

8.1 Lump Sum Work: Bidder further agrees to accept as full payment for the Lump Sum Work proposed within the Bidding Documents based upon the undersigned's own estimate of quantities and costs and including sales, consumer, use, and other taxes, except as provided below, and overhead and profit, for CONTRACT 1714: the following lump sum of:

Item	Description	Quantity	Unit	Extended Total Amount
1.	Screenings Garage - Roof Replacement	1	Lump Sum	\$
2.	Power Generation Building - Roof Replacement	1	Lump Sum	
3.	Dewatering Building - Roof Repair	1	Lump Sum	\$
TOTAL OF EXTENDED ITEM AMOUNTS FOR LUMP SUM PRICE WORK LISTED ABOVE (Total for Items 1 through 3):				\$

8.2 **Unit Price Work:** Bidder further proposes to accept as full payment for the Unit Price Work proposed herein the amounts computed under the provisions of the Bidding Documents and based on the following unit price amounts, it being expressly understood that the unit prices are independent of the exact quantities involved. Bidder agrees that the unit prices represent a true measure of the labor, materials, overhead and profit for each type and unit of Work called for in these Bidding Documents.

Item	Description	Quantity	Unit	Unit Price	Extended Total Amount
1.	Dewatering Building Roof – Replacement of Wet Isocyanurate Insulation	20	SF/IN (Square Feet/Inch)		
2.	Screenings Garage - Replacement of Corroded Metal Ribbed Deck	500	SF (Square Feet)	\$	\$
3.	Power Generation Building - Replacement of Corroded Metal Ribbed Deck, 18 Gauge	100	SF (Square Feet)		
4.	Power Generation Building - Replacement of Corroded Metal Ribbed Deck, 20 Gauge	100	SF (Square Feet)		
5.	Power Generation Building - Replacement of Corroded Metal Ribbed Deck, 22 Gauge	100	SF (Square Feet)		
6.	Power Generation Building – Repair of precast concrete deck	200	SF (Square Feet)	\$	\$
TOTAL OF EXTENDED ITEM AMOUNTS FOR UNIT PRICE WORK LISTED ABOVE (Total for Items 1 - 6):					\$

8.3 BASE BID SUMMARY:

8.3.1. Total Lump Sum Price Work (8.1): \$ _____

8.3.2 Total Unit Price Work (8.2): \$ _____

8.3.3 **TOTAL BASE BID** (SUM OF 8.3.1 and 8.3.2):

_____ Dollars
(Words)

And _____ Cents \$ _____
(Words) (Figures)

9. SURETY.

9.1 If Bidder is awarded a construction contract from this Bid, the surety who provides the Performance and Payment Bond(s) shall be:

_____ whose address is

Street City State Zip

9.2 The bidder further certifies that the surety listed as providing the Performance Bond and the Payment Bond is listed on the Treasury Department's most current list (Circular 570 as amended) and is authorized to transact business in the Commonwealth of Pennsylvania.

10. BIDDER.

An Individual

By _____
(Individual's name and signature)

A Partnership

By _____
(Partnership name)

(Name and signature of general partner)

(Title)

A Corporation

By _____
(Corporation name)

(State of incorporation)

By _____
(Name and signature of person authorized to sign)

(Title)

(Affix Corporate Seal)

A Joint Venture

By _____
(Business name)

(Name and signature of person authorized to sign)

By _____
(Business name)

(Name and signature of person authorized to sign)

(Each joint venturer must sign. The manner of signing each individual, partnership, and corporation that is a party to the joint venture should be in the manner indicated above.)

=====

CONTRACTOR CONTACT INFORMATION

Name, Address, and Phone Number for receipt of official communications and for additional information on this Bid:

(NAME)

(ADDRESS)

(CITY, STATE, ZIP) (PHONE)

SUBMITTED ON _____, 20____.

BID BOND

KNOW ALL MEN BY THESE PRESENTS, that we _____
_____, as Principal, and
_____, a corporation duly organized
under the laws of the State of _____, as Surety, are held and firmly bound unto the
Allegheny County Sanitary Authority, herein called the "Authority", its attorneys, successors or
assigns in the sum of _____
Dollars (\$ _____) lawful money of the United States of America,
for payment of which sum well and truly to be made, we bind ourselves, our heirs, legal
representatives, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has submitted the accompanying Bid for **CONTRACT
NO. 1714 – ROOF MODIFICATIONS FOR SCREENINGS GARAGE AND POWER
GENERATION BUILDING.**

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that (1) if
the Principal shall not withdraw said Bid within the period specified in the Information for
Bidders, and shall within the period therein specified therefore [or, if no time is specified, within
ten (10) calendar days (not including Sundays or Legal Holidays) after the prescribed forms are
presented to it for execution] enter into a written Contract with the Authority in accordance with
the Bid as required, for the faithful performance of such Contract and for the payment of labor
and materials and execute and deliver to the Authority all bonds and other instruments required
to be executed and delivered by the Principal in accordance with the Contract Documents, or (2)
in the event of the unauthorized withdrawal of said Bid, or the failure to enter into such Contract
and give such bonds within the time specified and execute and deliver to the Authority all bonds
and other instruments required to be executed and delivered by the Principal in accordance with
the Contract Documents, if the Principal shall pay the Authority the difference between the
amount specified in said Bid and the amount for which the Authority may procure the required
work or supplies or both, if the latter amount be in excess of former together with all other loss,
damage or expense suffered by the Authority thereby, then, in either such case, the above
obligation shall become void and of no effect; otherwise it shall remain in full force and effect.

Said Surety, for value received, hereby stipulates and agrees that the obligation of said
Surety under this Bond shall in no way be impaired or affected by an extension of the time
within which said Bid may be accepted and said Surety does hereby waive notice of any such
extension.

Said Surety agrees that its liability hereunder shall be absolute regardless of any liability

of the Principal hereunder whether by reason of any irregular or unauthorized execution of or failure to execute this Bond or otherwise.

This Bond is entered into, under and pursuant to the laws of the Commonwealth of Pennsylvania and shall in all respects be construed in accordance with the laws of said Commonwealth.

IN WITNESS WHEREOF, the above parties have executed this instrument under their several seals this _____ day of _____, 20____, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

SURETY COMPLETE THIS PAGE

(Corporate Surety)

(Street Address)

(City, State and Zip Code)

ATTEST:

By: _____ *

(Signature)

(Title)

Date: _____, 20____

(AFFIX CORPORATE SEAL)

* The Surety should attach to the Bid Bond a currently certified Power of Attorney which should be dated, sealed and executed by a live (not facsimile) signature showing that the person signing the Bid Bond for the Surety has the current authority to do so.

CORPORATION COMPLETE THIS PAGE

_____ is a corporation organized and existing under the laws of _____ with principal place of business at _____

(Street Address)

(City, State and Zip Code)

and, if a non-Pennsylvania corporation [has] / [has not] been granted a certificate of authority to do business in Pennsylvania, as required by the Pennsylvania Business Corporation Law of 1988, approved December 21, 1988, P.L. 1444, as amended, 15 Pa. C.S.A. §§ 4101 et seq.

ATTEST:

(Name of Corporation)

(Signature of Certifying Officer)

(Signature of Authorized Officer)

Date: _____, 20__

(Typed name of Authorized Officer)

(AFFIX CORPORATE SEAL)

(The corporation shall make certain that the secretary or assistant secretary certifies the official character and authority of the person or persons executing this Bid Bond for the Principal according to the form attached hereto. In lieu of such certificate, attach to the Bid Bond copies of the records of the corporation that show the official character and authority of the officer signing. The records shall be duly certified to be true copies by the secretary or assistant secretary under corporate seal.)

**CORPORATION COMPLETE THIS PAGE
CERTIFICATE AS TO CORPORATE OFFICER**

I, _____, certify that I am [secretary]/[assistant secretary] of the corporation executing the within Bid Bond; that _____ who signed the said Bid Bond; on behalf of the corporation was then _____ of said corporation; that I know his signature and his signature thereto is genuine; and that said Bid Bond was duly signed, sealed and attested for and in behalf of said corporation by authority of its governing body.

Dated: _____, 20__

(Signature of secretary (or assistant secretary))

(AFFIX CORPORATE SEAL)

PARTNERSHIP COMPLETE THIS PAGE

_____ is a partnership trading under a fictitious or assumed name and [has] / [has not] registered under the Fictitious Names Act of Pennsylvania, namely, the Act of December 16, 1982, P.L. 1309, as amended, 54 Pa. C.S.A. §§ 301 et seq.

(Fictitious or assumed name)

WITNESS:

(Partner trading as above) *(SEAL)

(Partner trading as above) *(SEAL)

Date: _____, 20__

(Street Address)

(City, State and Zip Code)

* If the executing party is a partnership, the document must be signed in the name of the partnership by at least two general partners, and the names and addresses of all the partners must be listed on the attached Certificate. Principal must also attach Certificate of registration under the provisions of the Fictitious Names Act.

**PARTNERSHIP COMPLETE THIS PAGE
CERTIFICATE AS TO PARTNERSHIP**

I, a partner of _____, the partnership named
as Contractor in the within Bid Bond, certify that the following are the names and addresses of
all the partners of said partnership:

(Name)

(Name)

(Address)

(Address)

(City, State and Zip Code)

(City, State and Zip Code)

(Name)

(Name)

(Address)

(Address)

(City, State and Zip Code)

(City, State and Zip Code)

Date: _____, 20__

(Signature of Certifying Partner)

**INDIVIDUAL COMPLETE THIS PAGE
(WHEN THE PRINCIPAL IS AN INDIVIDUAL DOING BUSINESS UNDER
A FIRM NAME)**

_____ is an individual trading under a
fictitious or assumed name and [has] / [has not] registered under the Fictitious Names Act of
Pennsylvania, namely, the Act of December 16, 1982, P.L. 1309, as amended, 54 Pa. C.S.A §§
301 et seq.

(Fictitious or assumed name)

WITNESS:

By: _____ (SEAL)
(Individual doing business as above)

(Street Address)

Date: _____, 20__

(City, State and Zip Code)

**(WHEN THE PARTY IS AN INDIVIDUAL DOING BUSINESS IN HIS/HER
INDIVIDUAL NAME)**

(Individual Name)

WITNESS:

By: _____ (SEAL)
(Individual)

(Street Address)

Date: _____, 20__

(City, State and Zip Code)

**CERTIFICATE OF MINORITY AND WOMEN'S BUSINESS
ENTERPRISE PARTICIPATION**

**CONTRACT NO. 1714
ROOF MODIFICATIONS FOR SCREENINGS GARAGE AND
POWER GENERATION BUILDING**

The undersigned Bidder certifies that they have read and understand the Information for Bidders Section entitled "Minority and Women's Business Enterprise and Labor Surplus Area Policy," and further understand and agree to the minority participation goal applicable to this Contract, and shall strive to expend from ten to twenty-five percent (10-25%) of the total cost of the Contract for minority and women's business enterprise participation.

The Bidder further certifies that they understand that they are required to submit, as part of their Bid, a specific proposal indicating the manner in which it will attempt to comply with this requirement.

Failure of the Bidder to attempt to comply with these conditions or failure to submit with the Bid the proposal described above, or failure to sign and submit this Certificate with the Bid may disqualify the Bid as being nonresponsive.

Name of Bidder _____

Signed _____

Title _____

Date _____

ALLEGHENY COUNTY SANITARY AUTHORITY

Failure to complete this form and submit it with bid will be sufficient cause for rejection of bid.

Note: Each sheet must be returned.

SOLICITATION AND COMMITMENT STATEMENT MINORITY (MBE) AND FEMALE (WBE) OWNED BUSINESS ENTERPRISES								
CONTRACT NO.	NAME OF BIDDER	ADDRESS	PHONE					
1714								
List below all MBE/WBE'S that were solicited - whether or not a commitment was obtained -- Copy this form as necessary								
<input type="checkbox"/> MBE	<input type="checkbox"/> WBE	TYPE OF SUBCONTRACT WORK OR MATERIALS	DATE SOLICITED		COMMITMENT MADE		GIVE REASON(S) IF NO COMMITMENT MADE	
			BY PHONE	BY MAIL	YES (IF YES, GIVE DATE)	NO		
COMPANY NAME								
ADDRESS			QUOTE RECEIVED		AMOUNT COMMITTED			
				YES	NO	DOLLAR AMOUNT		
CONTACT PERSON		PHONE				\$		
						PERCENT OF TOTAL BID		
						%		
<input type="checkbox"/> MBE	<input type="checkbox"/> WBE	TYPE OF SUBCONTRACT WORK OR MATERIALS	DATE SOLICITED		COMMITMENT MADE		GIVE REASON(S) IF NO COMMITMENT MADE	
			BY PHONE	BY MAIL	YES (IF YES, GIVE DATE)	NO		
COMPANY NAME								
ADDRESS			QUOTE RECEIVED		AMOUNT COMMITTED			
				YES	NO	DOLLAR AMOUNT		
CONTACT PERSON		PHONE				\$		
						PERCENT OF TOTAL BID		
						%		
<input type="checkbox"/> MBE	<input type="checkbox"/> WBE	TYPE OF SUBCONTRACT WORK OR MATERIALS	DATE SOLICITED		COMMITMENT MADE		GIVE REASON(S) IF NO COMMITMENT MADE	
			BY PHONE	BY MAIL	YES (IF YES, GIVE DATE)	NO		
COMPANY NAME								
ADDRESS			QUOTE RECEIVED		AMOUNT COMMITTED			
				YES	NO	DOLLAR AMOUNT		
CONTACT PERSON		PHONE				\$		
						PERCENT OF TOTAL BID		
						%		

Prepared by: _____ Title: _____ Phone: _____

NOTE: It is recommended that Certification and letters of intent for each MBE/WBE commitment accompany this Solicitation and Commitment Statement.

MBE/WBE SOLICITATION AND COMMITMENT STATEMENT

BIDDER'S FIRM: _____

ADDRESS: _____

TELEPHONE: _____

CONTACT PERSON: _____

PROPOSAL AND BID FOR: _____

**LIST BELOW ALL CONTRACTS WITH THE ALLEGHENY COUNTY SANITARY AUTHORITY
DURING THE PAST THREE YEARS AND THE MBE AND WBE PARTICIPATION OBTAINED**

CONTRACT TITLE	CONTRACT DATE	AMOUNT	% PARTICIPATION		COMMENTS
			MBE	WBE	

Prepared by: _____ Title: _____

MBE/WBE SOLICITATION AND COMMITMENT STATEMENT

Additional Information

The bidder presents the following as additional and supplemental information to its MBE/WBE Solicitation and Commitment Statement

Prepared by: _____ Title: _____ Phone: _____

Web sites that provide a list of certified MBE/WBE companies:

www.dgs.state.pa.us

www.paucp.com

Ray Meyer
ALCOSAN DBE Coordinator

(412) 734-8737

NON-COLLUSION AFFIDAVIT

State of _____:

S.S.

County of _____:

I state that I am _____ of
(Title)

_____ and that I am
(Name of Firm)

authorized to make this Affidavit on behalf of my firm and its owners, directors and officers. I am the person responsible for the price(s) and the amount of this Bid.

I further state that:

- (1) The price(s) and amount of this Bid have been arrived at independently and without consultation, communication or agreement with any other contractor, bidder or potential bidder.
- (2) Neither the price(s) nor the amount of this Bid, and neither the approximate price(s) nor approximate amount of this Bid, have been disclosed to any other firm or person who is a bidder or potential bidder, and they will not be disclosed before the bid opening.
- (3) No attempt has been made or will be made to induce any firm or person to refrain from bidding on this contract, or to submit a bid higher than this Bid, or to submit any intentionally high or noncompetitive bid or other form of complementary bid.
- (4) The Bid is made in good faith and not pursuant to any agreement or discussion with, or inducement from, any firm or person to submit a complementary or other noncompetitive bid.
- (5) The above-named firm, its affiliates, subsidiaries, officers, directors and employees are not currently under investigation by any governmental agency and have not in the last four years been convicted or found liable

for any act prohibited by State or Federal law in any jurisdiction, involving conspiracy or collusion with respect to bidding on any public contract, except as follows (Either provide an explanation or check box provided if there are no exceptions): No Exceptions

Explanation: _____

I state that the above-named firm understands and acknowledges that the above representations are material and important, and will be relied on by:

THE ALLEGHENY COUNTY SANITARY AUTHORITY

in awarding the Contract(s) for which this Bid is submitted. I understand and my firm understands that any misstatement in this Affidavit is and shall be treated as fraudulent concealment from:

THE ALLEGHENY COUNTY SANITARY AUTHORITY

of the true facts relating to the submission of bids for this contract.

(Name and Company Position)

SWORN TO AND SUBSCRIBED BEFORE ME

THIS _____ DAY OF _____, 20 ____

(Notary Public)

(My Commission Expires)

**CERTIFICATE OF COMPLIANCE WITH THE
PENNSYLVANIA STEEL PRODUCTS PROCUREMENT ACT**

This Certificate is supplied by _____
("Contractor") to the Allegheny County Sanitary Authority ("ALCOSAN") this ____ day of ____
_____, 20__.

WITNESSETH:

WHEREAS, Contractor wishes to contract with ALCOSAN relative to **CONTRACT NO. 1714: ROOF MODIFICATIONS FOR SCREENINGS GARAGE AND POWER GENERATION BUILDING** (the "Contract"); and

WHEREAS, The Pennsylvania Steel Products Procurement Act, 72 P.S. § 1881 et. seq. ("Steel Procurement Act") requires that if a product contains foreign and United States steel, such product shall be determined to be a United States steel product only if at least 75% of the cost of the articles, materials, and supplies have been mined, produced or manufactured, as the case may be, in the United States; and

WHEREAS, Contractor has represented to ALCOSAN that any and all products Contractor will supply to ALCOSAN pursuant to the Contract will be United States steel products as defined in Steel Procurement Act and Contractor does and will in all fashion and manner comply with the Steel Procurement Act and the Contract in performance of the Contract.

NOW, THEREFORE, INTENDING TO BE LEGALLY BOUND HEREBY, Contractor does represent and promise to ALCOSAN as follows:

1. The above recitals are binding between the parties and are legally enforceable as if set forth in their entirety herein.
2. Contractor will, pursuant to the Contract, meet the definition of United States steel products as set forth in the Steel Procurement Act and will in all manner and fashion otherwise comply with the Steel Procurement Act and the Contract.
3. Contractor acknowledges that its representations and promises are a material consideration to ALCOSAN with regard to considering Contractor for and possibly awarding the Contract to Contractor.

4. Contractor does hereby promise to indemnify and save harmless the Authority, its officers, agents, servants, and employees from and against any and all suits, actions, legal proceedings, claims, demands, damages, costs, expenses and attorneys fees resulting from the breach of any representation, covenant or promise contained in this Certificate.

Intending to be legally bound hereby Contractor does hereby supply this Certificate the _____ day of _____, 20__.

ATTEST:

(_____)

_____ By: _____

Title: _____

Date: _____

CONTRACTOR'S QUALIFICATIONS STATEMENT

Submitted by: _____

(A Corporation)
(A Co-partnership)
(An Individual)

Principal Office: _____

The signatory of this Qualifications Statement guarantees the truth and accuracy of all statements and of all answers to interrogatories hereinafter made.

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

2. How many years of experience does your organization have in this type of business?

3. On a separate sheet, attached to this document, list the categories of work, by Construction Specifications Institute Number and Title that your organization will perform on this contract.
4. On a separate sheet, attached to this document, list the categories of work, by CSI Division Number and Title that your organization will sub-contract out on this contract.
5. On a separate sheet, attached to this document, list major construction projects similar in nature to this project that your organization has in progress giving the name of project, owner, architect/engineer, contract amount, percent complete, scheduled completion date, and the percentage of the total cost of the work that your organization is performing.
6. On a separate sheet, attached to this document, list major construction projects similar in nature to this project that your organization has completed in the past five (5) years, giving the name of project, owner, architect/engineer, contract amount, percent complete, scheduled completion date, and the percentage of the total cost of the work that your organization is performing.
7. On a separate sheet, attached to this document, list the construction experience and current commitments of the key individuals of your organization.
8. If the answer is "yes" to any of the following three questions, please attach details.
 - a. Has your organization ever failed to complete any work awarded to it? _____
 - b. Are there any judgments, claims, arbitration proceedings or suits pending or outstanding against your organization or its officers? _____

c. Has your organization filed any law suits or requested arbitration with regard to construction contracts within the last five (5) years? _____

9. Attach a financial statement, preferably audited, including your organization's latest balance sheet and income statement showing the following items:

- Current Assets (e.g. cash, joint venture accounts, accounts receivable, notes receivable, accrued income, deposits, materials inventory and prepaid expenses)
- Net Fixed Assets
- Other Assets
- Current liabilities (e.g. accounts payable, notes payable, accrued expenses, provision for income taxes, advances, accrued salaries, and accrued payroll taxes)
- Other liabilities (e.g. capital, capital stock, authorized and outstanding shares par values, earned surplus, and retained earnings)
- Name and address of firm preparing attached financial statement and date thereof.

10. Is the attached financial statement for the identical organization named on page one? _____. If not, explain the relationship and financial responsibility of the organization whose financial statement is provided (e.g. parent-subsidiary)

Dated: _____

Name of Organization: _____

By: _____

Title: _____

_____ being duly sworn deposes and says that the information herein is true and sufficiently complete so as not to be misleading.

Subscribed and sworn before me this date: _____

Notary Public: _____

My Commission Expires : _____

CERTIFICATION OF SAFETY PROCEDURES COMPLIANCE

I, _____, as _____ of
 (Typed Name) (Title or Office)
_____, a _____,
(Name of Corporation/Partnership) (Type of Entity)

hereby certify that I have read and understand the Safety Procedure as enumerated in the Contract Provisions Section entitled "Compliance with Health, Safety and Environmental Laws" of Contract Number 1714 and that all Work will be conducted in accordance with OSHA standards and other applicable safety precautions.

Date: _____ By: _____

CONTRACT 1714

**ROOF MODIFICATIONS FOR SCREENINGS GARAGE
AND POWER GENERATION BUILDING**

INFORMATION FOR BIDDERS

ARTICLE 2

**INFORMATION FOR BIDDERS
ARTICLE 2**

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2.01 DEFINED TERMS

The terms used in this Information for Bidders have the meanings assigned to them in Article 3, General Contract Conditions ("Contract Provisions").

Certain additional terms used in the Bidding Documents have the meanings indicated below which are applicable to both the singular and plural thereof.

- A. APPARENT LOW BIDDER is the responsible, responsive bidder whose bid as offered in the bid form represents the lowest total as determined by the Base Bid.
- B. BASE BID is the total of the Bid for the Lump Sum Work, plus the amount for any Unit Price Work if applicable. No consideration will be given to additive or deductive alternates or other credits in determining the Base Bid.
- C. BID refers to all materials, items and documents included in the Bidder's response to the Owner submitted pursuant to the Contract Documents.
- D. BIDDER is one who submits a Bid to the Owner as distinct from a sub-bidder, who submits a Bid to a Bidder.
- E. SUCCESSFUL BIDDER is the lowest, responsible and responsive Bidder to whom the Owner (on the basis of the Owner's evaluation as hereinafter provided) makes an award.

2.02 GENERAL

The information contained in this Article 2 of the Contract Documents describes the proper form and method for submitting Bids and the accompanying security to the Allegheny County Sanitary Authority (hereinafter referred to as the "Owner"), and provides certain general information regarding the award of the Contract.

Certain provisions throughout this Article may reference certain consultants retained by the Owner such as the Construction Manager, the Consulting Engineer and the Engineering Program Manager and to certain of their duties and responsibilities. If any or all of the above-mentioned consultants are not retained for this Project, their duties and responsibilities shall, unless otherwise specified, be retained by the Director of Engineering and Construction ("Engineer") or the Engineer's written designee.

It is a condition to the Owner's evaluation of the Bid and possible award of the Contract that the Bidder carefully examine all of the Contract Documents and completely satisfy itself as to the nature and location of the Work and all Job Site

conditions that may affect performance of the Work. Submission of the Bid by the Bidder is a representation by the Bidder that it has satisfied itself with respect to the foregoing.

Unless all Bids are rejected, and except as otherwise provided by law, award will be made to the lowest responsive and responsible Bidder. The Owner reserves the right to award by item or on a total Lump Sum Price basis, whichever is deemed most advantageous to the Owner. In cases of discrepancies in prices, the unit price will be binding. In any discrepancy between words and figures, the words will take precedence. For Lump Sum Bids which include an itemized breakdown, the low Bid will be based on the stated Lump Sum Price and the Owner is not required to consider the total value of the itemized breakdown.

The Contract Documents shall be interpreted, construed and enforced in accordance with all applicable laws and regulations of the Commonwealth of Pennsylvania.

2.03

LOCATION AND DESCRIPTION OF WORK

The Work to be done as specified herein (referred to as the "Work") includes, ROOF MODIFICATIONS FOR SCREENINGS GARAGE AND POWER GENERATION BUILDING, as more fully described in the Contract Documents.

The intent and meaning of the Contract Documents is that the Successful Bidder shall, under each Contract, take any and all actions as are necessary and/or required to provide detailed construction, labor, supervision, materials, supplies, services, equipment, transportation facilities and appurtenances thereto, whether temporary or permanent, and such other items incidental to the execution of the Work.

2.04

SUBMISSION AND OPENING OF BIDS

Bids shall be submitted on the Bid Form which is attached hereto and shall state the proposed price of the Work (typewritten or in ink), both in words and in figures. Bids must be signed in ink. Bids that are not so priced and signed may be rejected.

The Bid must be submitted intact, sealed and delivered in the envelope which accompanied these Contract Documents, addressed to the Allegheny County Sanitary Authority, Director of Engineering and Construction, 3300 Preble Avenue, Pittsburgh, PA 15233. The Bidder's name and address shall be marked in the upper left hand corner and the words "**SEALED BID FOR CONTRACT NO. 1714- ROOF MODIFICATIONS FOR SCREENINGS GARAGE AND POWER GENERATION BUILDING**" shall be clearly marked in the lower left

hand corner of the sealed envelope. ***Bids mailed using overnight couriers shall clearly mark the same level of information on the outside of the mailing envelope or packing.*** Hand delivered Bids shall be delivered to the Contract Clerks at the Owner's Engineering Department. The envelope shall also bear notation to clearly indicate all Addenda received by its identifying numbers and dates received. It is the responsibility of each Bidder to make sure that its Bid is received by the Owner prior to the date and time set for opening of the Bids. Upon Bidder's failure to comply with the foregoing, the Owner may treat the Bid as "nonresponsive" and return it to the Bidder unopened. Bids will be received at the office of the Owner until **2:00 P.M.** prevailing time, on **Wednesday, May 13, 2020,** at which time and place said Bids will be opened publicly and read aloud.

Bids must be firm. **If a Bid is submitted with conditions or exceptions or not in conformance with the terms and conditions of the Contract Documents, it may be rejected.** The Bid may also be rejected if the product or Work offered by the Bidder is determined by the Owner not to be in substantial conformance with the Contract Documents including the Specifications.

Bidder shall not detach and submit Bid pages separately, but shall submit their Bids bound with the complete Article One - Bid Form, including all pages correctly assembled.

The Bid should be properly executed and accompanied by all Bonds, Certificates, Questionnaire Forms and other supporting information and documents, as described in the Bid Form.

2.05

SUPPLEMENTARY INFORMATION PACKAGE

- A. After the Bid opening, upon request of the Owner, the Apparent Low Bidder shall be required to submit, prior to the award of the contract, quadruplicate copies of a Supplementary Information Package as described in this Section. The request shall be made solely for the purposes of the Owner's evaluation and review of all proposed materials, equipment, and items of work and determination of conformance with the Contract Documents.
- B. The Supplementary Information Package shall include all such documentation as may be required elsewhere in the Contract Documents and all data and information deemed appropriate by the Bidder to completely describe its respective offering including but not necessarily limited to the following items:
 1. A list of all products or equipment that will be supplied by or through the Contractor and incorporated into the Work for which

the Owner supplied no specifications and which have a value or combined value in excess of Ten Thousand Dollars (\$10,000) or ten percent (10%) of the Lump Sum Price, whichever is less, shall be included as "Non-Specified Products." This list will include: manufacturer's name; equipment name and model number; and the manufacturer's technical literature, brochures and catalog cuts describing the equipment.

2. Any and all other information that may be requested in the Bid Form or under Article 6.
3. If the Bidder intends to offer an "or equal" product as described below in Section 2.9 or an "Alternate" as described below in Section 2.10, the Bidder must submit two sets of information as specified below for each proposed "or equal" product or Alternate. This information shall be clearly identified by specification section and product or system. Failure to submit the requested information, or any ambiguities found, may be considered appropriate cause for rejection of any proposed or equal" or Alternate.
 - a. All information listed in the specifications specifying the product or system and not listed below.
 - b. Complete description of the equipment, system, process, or function including a list of system components, features, dimensional and weight data on separate components and assemblies, drawings, catalog information and cuts, manufacturer's specifications, including materials.
 - c. All differences between the Specifications relating to the specified product or system and the proposed "or equal" or Alternate shall be clearly stated in writing. The proposed "or equal" or Alternate supplier shall perform a paragraph-by-paragraph comparison between the "or equal" or Alternate and the Specifications. The proposed "or equal" supplier shall perform a detailed review of the Contract Drawings associated with the proposed "or equal" or Alternate offering. Any difference with respect to any of the Contract Documents shall be clearly identified and completely described. These differences shall be appropriately indexed by Specification Section paragraph/subparagraph and/or Drawing number including applicable pan, section, and/or detail designation.
 - d. Performance data and pump curves.

- e. Horsepower of all motors supplied.
 - f. Utility requirements for each component such as water, power, fuel, air, etc.
 - g. Functional description of any internal instrumentation and control supplied.
 - h. List of parameters monitored, controlled, and alarmed.
 - i. Addresses and phone numbers of nearest service centers and a listing of the manufacturer's or manufacturer's representative service available at these locations.
 - j. Addresses and phone numbers for the nearest parts warehouses capable of providing full parts replacement and/or repair services.
 - k. A list of three recent installations where a similar product is currently in service; include contact name, telephone number, mailing address, and the names of the engineer, owner, and installation contractor. If three installations do not exist, the list shall include all that do exist.
 - l. Detailed information on structural, electrical, mechanical and all other changes or modifications necessary to adapt the product or system to the arrangement shown and/or functions described on the Drawings and in the Specifications.
 - m. Any additional space requirements necessary to provide the minimum clear space around the product or system as shown.
 - n. Impact on the construction schedule if the "or equal" or Alternate is accepted.
- C. After receiving all proposed "or equal" submittals, the Owner will review and notify the Apparent Low Bidder as to preliminary approval, or rejection, of any proposed "or equal". Preliminary approval of an "or equal" by the Owner shall not be construed to indicate final approval by the Owner or relieve the Successful Bidder from providing post contract award submittal information.
- D. Upon failure to provide all the supplemental information requested in Article 2.05B, the Owner may (at its discretion) treat the Bid as

nonresponsive and the Bid may be rejected for this reason alone.

2.06 SPARE PARTS AND SPECIAL TOOLS

- A. The Owner may purchase spare parts and special tools for the Work furnished under this Contract, sufficient to ensure Work reliability and to expedite repairs when necessary. Price quotations for Bidder or manufacturer recommended spare parts and special tools items shall be submitted as part of the Supplementary Information Package; however, unless required to be included in the Lump Sum Price on the Bid Form, the costs for spare parts and special tools shall not be included in the Bid's Lump Sum Price.
- B. Price quotations so submitted for each spare part item and all special tools must be guaranteed and fixed for either one year after the Effective Date of the Contract or until the Contract is complete, whichever occurs later.

2.07 AWARD, CONTRACT EXECUTION AND NOTICE TO PROCEED

The Contract(s) will be awarded to the lowest responsive, responsible bidder based on the Lump Sum for Bid Item 8.1 - Lump Sum Work as defined in Article 1, where only a Lump Sum amount is required, or on the sum of Bid Items 8.1 - Lump Sum Work, and 8.2 - Unit Price Work as defined in Article 1 where a Total Base Bid is required by the particular contract.

The Owner may reject all Bids. The Owner may, solely in its own discretion, award the Contract to the lowest responsive and responsible Bidder within sixty (60) calendar days from the date of Bid opening. A time extension may be made by the written mutual consent of the Owner and the Apparent Low Bidder.

All Bids will remain open for acceptance by Owner for sixty (60) calendar days after the Bid opening.

In the event a Bidder fails, refuses, or neglects to provide any requested information or documents within the time stated in the Contract Documents, the Owner will have the right to reject its Bid as nonresponsive.

The Notice to Proceed will be made by registered letter mailed to the Awarded Bidder and shall be effective the date of receipt of the mailing. The Owner will endeavor to issue the Notice to Proceed within ninety (90) calendar days of the Bid opening and thirty (30) calendar days after the Contract is awarded. Any delays caused by the Awarded Bidder's failure to provide any required documents within the specified time may, at the Owner's option, cause an equivalent number of days to be added to these time-frames. The Awarded Bidder will commence

performance immediately upon receipt of the Notice to Proceed. The Awarded Bidder should not order any materials or equipment or make any financial commitments concerning this Contract until receiving the Notice to Proceed. Awarded Bidders that do Work or prepare to do Work prior to receiving the Owner's Notice to Proceed are proceeding at their own risk.

2.08

CONTRACT DOCUMENTS

The Contract Documents address One (1) project under **CONTRACT NO. 1714 – ROOF MODIFICATIONS FOR SCREENINGS GARAGE AND POWER GENERATION BUILDING**. The Contract Documents are organized into one (1) volume of Specifications and (1) volume of Contract Drawings. The Volume 1 of the Specifications include the legal documents and Division 1 - General Requirements, and Divisions 2 through 7 – Technical Specifications for the Project.

The Bids submitted for Contract No. 1714 shall be for all work required for the project. **A description of the work to be performed is presented in Division 1, Specification Section 01010 - Summary of Work.**

Contract Documents may be obtained from the office of the Allegheny County Sanitary Authority, 3300 Preble Avenue, Pittsburgh, PA 15233. A fee of **\$100.00** (delivered by check or money order, no cash will be accepted) shall be required for each set of Contract Documents obtained.

If the Owner is requested to mail the Contract Documents, the above fee must be submitted to the Owner in advance. With this fee, a release must be sent to ALCOSAN requesting the documents be sent by UPS, to the Bidder. Documents can not be shipped via Federal Express. The Bidder's account number must accompany this release so that the documents can be sent to the Bidder at the Bidder's expense.

Submission of a Bid constitutes a representation by the Bidder to the Owner that the Bidder has reviewed the Contract Documents in their entirety and has analyzed all applicable provisions, terms, conditions and sections and related information in preparation of its Bid. This representation is a material inducement for the Owner's consideration of the Bidder for this Contract.

2.09

"OR-EQUAL" ITEMS

Whenever a product is defined in the Contract documents by trade name and catalogue number of a manufacturer or vendor, the term "or-equal," if not inserted therewith, shall be implied. Any reference to a particular manufacturer's product either by trade name or by limited description is solely for the purpose of more

clearly indicating the minimum standard of quality desired, except where a "no substitute" is requested. When a "no substitute" is requested, the Owner will consider Bids for the referenced product only. The term "or-equal" is defined as meaning any other make which, in the sole opinion of the Owner, is of such character, quality and performance equivalence as to meet the standard of quality and performance of the products specified and is such that offering the "or-equal" will not, in the Owner's opinion, constitute a change of the Project.

2.10 ALTERNATE ITEMS

- A. When provided for in the Bid Form, the Owner may request the Bidder to provide a bid on an "Alternate," defined as a "Major Piece of Equipment" or "System" which is different from that specified in the Contract Documents in, for example, composition, qualities, performance, size dimensions, etc. A "Major Piece of Equipment" is one that, when combined with necessary ancillary materials and equipment, has an installed price exceeding \$50,000. A "System" is an assemblage of interdependent, interactive materials and equipment designed as a unit to perform a particular process function, having an installed price exceeding \$50,000. A Bidder who wishes to offer an Alternate shall indicate it on the appropriate Bid Form. In addition, supplemental information from the Bidder must be submitted with a complete description of the Alternate, including trade name, brand and/or model number. The information must identify the product's deviations from the Contract Documents. The Bidder shall also furnish descriptive literature and data with respect to the Alternate it proposes to furnish, including drawings, catalog cost, performance data and any other information necessary for an evaluation. The Bidder must demonstrate the merit of the proposed Alternate to the satisfaction of the Owner.
- B. Alternates are optional and are not in lieu of furnishing a Base Bid for the actual Work specified. During the Bid review procedure, the Alternate will not be considered in determining the low responsive, responsible Bidder. The review of the Bids will be based upon the specified Work. The Owner may, but need not, analyze the Alternate for acceptability until after the award of the Contract. The decision of the Owner with regard to the acceptability of an Alternate will be final and uncontestable.

2.11 QUESTIONS REGARDING CONTRACT DOCUMENTS/ERRORS

In general, no answer will be given to prospective Bidders in reply to an oral question if the question involves an interpretation of the intent or meaning of the Contract Documents, or the equality or use of products other than those designated or described in the Contract Documents. Any information received by

Bidders other than by means of the Contract Documents or by Addenda, as described herein, is given informally, for the information and convenience of the Bidder only and is not guaranteed, is without legal effect and may not be used to bind or otherwise obligate the Owner. The Bidder agrees that such information shall not be used as a basis of, nor will the giving of any such information entitle the Bidder to assert, any claim or demand against the Owner.

To receive consideration, any question, inquiry or request for interpretation or clarification shall be submitted to the Construction Manager in writing, at least ten (10) calendar days prior to the advertised date for receipt of Bids. The Owner will review all such questions or requests and may issue Addenda, which will become a part of the Contract Documents, to provide interpretation, clarification or to answer issues or questions so raised which, in the opinion of the Owner, require formal responses. Copies of all Addenda will be delivered or sent, prior to the advertised date for receipt of Bids, to all prospective Bidders known to have received the Contract Documents. Addenda will be delivered by messenger or sent by certified mail, return receipt requested, to prospective Bidders or their designated agents, at the addresses given by them. At its option, the Owner may transmit Addenda by facsimile.

If the question involves the use of an "or equal" item described above in Section 2.9, it must be accompanied by drawings, specifications, or other data in sufficient detail to enable the Owner to determine the equality or suitability of the product or method. In general, the Owner will neither approve nor disapprove particular products prior to the opening of Bids. Such product will be considered when offered by the Contractor for incorporation into the work.

If any alleged errors are noted in the Contract Documents, Bidder should immediately notify, in writing, the Construction Manager and, if confirmed, Addenda will be sent to all prospective Bidders known to have received the Contract Documents.

2.12

REFERENCE INFORMATION

Reference Information concerning the existing facilities and the Job Site will, upon request, be made available to prospective Bidders, for reference only, at the office of the Allegheny County Sanitary Authority, 3300 Preble Avenue, Pittsburgh, PA 15233. Upon request, the Owner will provide prospective Bidders with one (1) print of selected pertinent Drawings of the existing facilities. A fee may be charged by the Owner for these Drawings.

All information given in the Reference Information or in the Contract Documents relating to existing conditions is from the sources presently available to the Owner. All such information is furnished for the information and convenience of Bidders and is not guaranteed. All prospective Bidders agree that as a condition

for Owner's review of its Bid that said information shall not be used as a basis for asserting any claims or demands against the Owner. It is understood by all prospective Bidders that they shall be responsible for determining the exact conditions prior to bidding and that they shall not be compensated for what they may feel is extra work because of their failure to discover conditions they could have discovered upon investigation.

2.13 BIDDERS TO INVESTIGATE

Bidders are required to submit their Bids upon the following express conditions which will apply to and be deemed a part of every Bid received:

- A. Bidders must satisfy themselves, by personal examination of the Job Site and by such other means as may be necessary or helpful as to the actual and exact conditions existing, the character and requirements of the Work and the difficulties attendant upon its execution and analyze all laws and regulations which may affect the Work. On written advance request, the Construction Manager will provide each Bidder reasonable access to the Job Site to conduct such explorations and tests (at Bidder's own expense) for submission of a Bid. Bidder shall fill all holes and clean up and restore the Job Site to its former condition upon completion of such explorations.
- B. If any discrepancies should be found between existing conditions and the Contract Documents, prospective Bidders shall report these discrepancies to the Construction Manager for clarification prior to submitting a Bid. Failure of the Bidder to recognize Job Site conditions that affect the Work shall not be considered sufficient cause for an increase in the Contract Price.
- C. The submission of a Bid will constitute an incontrovertible representation of Bidder that Bidder has and will comply with every term, condition and requirement of the Contract Documents and that the Contract Documents are sufficient in scope to convey all terms, conditions and requirements for performance and furnishing of the Work.

2.14 APPROXIMATE ESTIMATE OF QUANTITIES

Any estimate of quantities of Work to be done and Materials to be furnished in these Contract Documents is an approximation and is given only as a basis of calculation upon which to determine the lowest Bidder. The Owner does not assume any responsibility for the quantities. The Bidder specifically agrees not to plead misunderstanding or deception because of such estimates, or of the character of Work or location, or other condition pertaining thereto.

2.15 HAZARDOUS AND OTHER CONTAMINATED MATERIALS

- A. Lead or Chromium Based Paint: Based on a survey at the plant site, the Owner has concluded that no lead or chromium based paint will be disturbed during Work on this Contract. Therefore, Bidders should not include any costs for lead or chromium based paint removal in their Bids. Should lead or chromium based paint be discovered elsewhere during the course of the Work, its removal will be undertaken in accordance with the Change Order provisions in the General Conditions.
- B. Asbestos: Based on a survey at the plant site, the Owner has concluded that no asbestos will be disturbed during the Work on this Contract. Therefore, Bidders should not include any costs for asbestos removal in their Bids. Should asbestos be discovered elsewhere during the course of the Work, its removal will be undertaken in accordance with the Change Order provisions in the General Conditions.

2.16 ACKNOWLEDGMENT OF ADDENDA

Bidders shall acknowledge receipt of all Addenda and signify same by attaching signed copies of each Addendum to the Contract Documents submitted along with their Bid, and by noting each Addendum received, by its identifying number and date received, on the face of its sealed Bid envelope.

2.17 RISK OF LOSS/BID PRICES

All prices quoted shall include material delivered or obtained by the Bidder to or for the Owner F.O.B. at the Job Site. All transportation charges shall be prepaid, and the risk of injury, damage or loss in transit shall be borne by the Successful Bidder. Such injury, damage or loss shall not release the Successful Bidder from any contractual obligations imposed in the Contract Documents. For Owner-Furnished Equipment to be installed under this Contract, prices quoted shall include materials, equipment and labor to load, transport and unload such items from the Owner's storage area to the Job Site, including all risks for damage of this equipment from the time these items are turned over to the Successful Awarded Bidder until the completion of the Contract.

2.18 TAX EXEMPTIONS

The Bidders shall take notice of and shall be responsible for any local or State taxes levied and applicable, and the costs for the same shall be included as part of this Bid. Sales to the Owner may be exempt from Pennsylvania Selective Sales and Use Taxes. Certain of the Bidder's tax obligations are described in more

detail in Section 3.21 of the General Conditions entitled, "Sales and Use Tax."

2.19

BID SECURITY/CONTRACT EXECUTION

Bids shall be accompanied by a Certified Check or properly executed Bid Bond on the form included herein, with corporate surety approved to do business in the Commonwealth of Pennsylvania and satisfactory to the Owner and with valid Power of Attorney attached, in the amount of not less than Ten percent (10%) of the total Lump Sum Price quoted under the Bid, payable to the Allegheny County Sanitary Authority, as security that the Bidder, if awarded the Contract, shall enter into a written Contract with the Owner, on the form included herein, and supply to the Owner all required Bonds and all other documents, materials or items required to be executed, delivered or supplied by it.

Upon failure on the part of such Bidder to enter into a written Contract with the Owner (and return all required documents to the Owner, including Performance and Payment Bonds and Insurance Certificates, after proper execution) within ten (10) calendar days (not including Sundays or Legal Holidays) from the date of mailing of such Contract to it at the address given in its Bid, such defaulting Bidder and its Surety shall be liable to the Owner for the damages sustained by the Owner by reason of such default. In such event, the Bidder's liability shall not be limited to the amount of the Bid security which accompanied its Bid. If the Bid security were a certified check, such check shall be cashed by the Owner and deposited forthwith to the Owner's account. If the Owner's actual damages are less than the amount deposited, the excess shall be returned to the defaulting Bidder. No allowance for interest or the like shall be paid or payable by the Owner on any Bid security.

The Bid security of any Bidder that the Owner believes may receive the award may be retained by the Owner until the earlier of the tenth calendar day after the Effective Date of the Contract or the sixty-first calendar day after the Bid opening.

2.20

TESTING REQUIREMENTS

Bidders must review the provisions set forth in the Contract Documents related to specific testing requirements for the equipment furnished and installed under this Contract. In addition, the Bidder is advised that inasmuch as the Work of this Contract is interrelated to the proper functioning of the Project, the Awarded Bidder shall provide labor to assist in these performance tests and to make any required repairs and/or adjustments to its installed Work, as is necessary to permit these tests to be conducted or to correct any Defective Work, and is responsible to make certain that the Work is properly installed, complete and ready for continuous use by the Owner.

2.21

WITHDRAWAL OR MODIFICATION OF BIDS

The attention of Bidders is directed to the fact that, in submitting its Bid, the Bidder agrees that it will not withdraw it within sixty (60) calendar days after the actual date of opening of Bids or for one hundred twenty (120) calendar days if so permitted under applicable law, or for such longer period as may be agreed to by the Bidder. Upon submission of a proper request to the Owner, in writing, and identification of the one making the request, a Bid may be withdrawn, at any time prior to the designated time for the opening of Bids. Certain Bids may be withdrawn after the Bid opening if in compliance with the Act of January 23, 1974, P.L. 9 No. 4 §1 et seq. 73 P.S. §1601 et seq. entitled, "Public Contracts - Withdrawal of Bids" (for purposes of this Section, the "Act") subject to the limitations and conditions contained therein. Included in the provisions of the Act is a requirement that the Bidder present credible evidence to the Owner's Director of Engineering and Construction within two (2) working days after opening the Bids of a clerical mistake, as opposed to a judgment mistake, that was actually due to an unintentional and substantial arithmetical error or an unintentional omission of a substantial quantity of work, labor, material or services made directly in the compilation of the Bid.

Unless a Bid has been formally withdrawn as provided above, it shall be deemed open for acceptance until the Contract Agreement has been executed by both the Bidder and the Owner or until the Owner manifests that it does not intend to accept the Bid. Notice of acceptance of any one Bid shall not constitute rejection of any other Bid or a manifestation that Owner does not intend to accept any other Bid.

Any Bidder may modify its Bid by telegraphic or facsimile communication at any time prior to the scheduled closing time for receipt of Bids, provided that such telegraphic or facsimile communication is received by the Owner prior to such closing time and, further, provided that a written confirmation of the telegraphic or facsimile communication, over the signature of the Bidder, was postmarked prior to such closing time. Telegraphic or facsimile modifications shall not reveal the Bid price but shall provide the amount(s) to be added to, subtracted from, or other modifications necessary to be made to the prices or terms of the Bid, so that the final prices or terms will not be known to the Owner until the sealed Bid is opened. If the required written confirmation is not received by the Owner within two (2) calendar days (excluding Sundays or Legal Holidays) from the closing time, the Owner may, at its option, refuse to consider or give legal effect to such telegraphic or facsimile communication.

2.22 MORE THAN ONE BID

If more than one Bid is offered by any one Bidder in its own name or in the name of his agent, partner, or other person, then all but the lowest of such Bids will be rejected.

2.23 ALTERATION OF BIDS AND DOCUMENTS

No alteration, erasure, addition or omission of required information, or any change of the Contract Documents is permitted, except in accordance with the provisions of Section 2.11 hereof entitled, "Questions Regarding Contract Documents/Errors."

2.24 RIGHT TO REJECT OR ACCEPT BIDS

The Owner reserves the right, which is understood and agreed to by all Bidders, to reject any or all Bids; to waive any informality, nonmaterial change or clarification in any part or provision of the submitted Contract Documents; or to accept any Bid, should the Owner determine that it is in its best interest to do so. The Owner's decision on the qualification of any Bidder or the adequacy, responsiveness, propriety or timeliness of the Bid and/or its decision to reject any or all Bids or to accept any Bid shall be final, binding and uncontestable as to the Bidder.

Any part of the Bid submitted by the Bidder which is unintelligible, or which exhibits any erasure or other mutilation, or is not properly signed or otherwise made up, will, at the discretion of the Owner, be considered nonresponsive and may be rejected for that reason alone.

The Owner may consider the qualifications and experience of subcontractors, suppliers, and other persons and organizations proposed for those portions of the Work as for which the identity of subcontractors, suppliers, and other persons and organizations is requested in the Contract Documents or made by the Bidder.

2.25 QUALIFICATIONS AND EXPERIENCE OF BIDDERS

Each Bidder and its subcontractor must be regularly engaged in, and have at least five (5) years experience in, the installation of the particular type(s) of construction, systems and equipment required for this contract. No award will be made to any Bidder who cannot warrant or demonstrate that it possesses the knowledge, experience, skill, capital, financial capacity, charters, licenses, permits, patents and personnel necessary to satisfactorily enable it to prosecute and satisfactorily complete the Work within the Time

For Completion as set forth in the Contract Provisions.

Completion of the Contractor's Experience Questionnaire in the Bid Documents is a mandatory requirement of all Bidders and failure to complete this Questionnaire accurately and honestly will be grounds for rejection of a Bid.

The Owner's decision or judgment on these matters will be final, conclusive and binding based upon the information provided by the Bidder in the Contractor's Experience Questionnaire and any additional investigations that it may make. The Owner may make such additional investigations as it deems necessary and the Bidder shall furnish to the Owner, under oath if so required, all such additional information and data for this purpose as the Owner may request. Contractor's who cannot demonstrate and prove that they and their subcontractors have successfully performed Work similar to that required for this contract will not be considered responsive and/or responsible and will not be considered for this Work.

2.26

MINORITY AND WOMEN'S BUSINESS ENTERPRISE AND LABOR SURPLUS AREA POLICY

It is the policy of the Owner to award a fair share of contracts to minority and women's businesses. The goal of the Authority is that 10 to 25 percent of all dollars relating to its contracts be awarded to minority or women's business enterprises. The Owner will make every effort to meet that goal in its contracts as well as encourage that goal among its contractors, suppliers and their subcontractors.

The Owner uses affirmative steps to assure that minority and women's businesses are used when possible as sources of supplies, equipment, construction, and services. The Owner encourages its contractors and suppliers to take the same measures when recruiting Subcontractors. Affirmative steps include the following:

- A. Including minority and women's businesses on solicitation lists and contacting them whenever they are potential sources.
- B. Use of area newspapers that serve minority or women's groups for advertising for contracts when work permits. A statement of this policy will be included in the ad text.
- C. Use of minority or women's business associations to contact businesses of this type. A list of these organizations is maintained at the Authority.

- D. Dividing total requirements when economically feasible into small tasks or quantities to permit maximum participation of minority and women's businesses.
- E. Establishing delivery schedules when the requirements of the Work permit that will allow these businesses to participate.
- F. Requiring each party to a sub-agreement to take the affirmative steps listed above.
- G. Procuring goods and services from labor surplus area firms.

Further information concerning this matter may be obtained from the Owner's Manager of Construction.

The Owner will allow lower-tier subcontractor participation to contribute to the Bidder's MBE/WBE goal of 10-percent to 25-percent.

2.27 FICTITIOUS NAME REGISTRATION

Where the Bid is made by an individual or individuals doing business under a fictitious name, there shall be attached to the Bid, Certificates from the Office of the Secretary of the Commonwealth and from the Prothonotary 's Office showing that each individual or individuals are fully registered under the Fictitious Names Act of the Commonwealth of Pennsylvania 1982, Dec. 16, P.L. 1309, No. 295 § 2, 54 Pa. C.S.A. § 301, et. seq. Additional Certificates, in as many copies as may be required shall be furnished to the Owner by the successful Bidder prior to the execution of the Contract.

2.28 NON-PENNSYLVANIA CORPORATIONS

Attention is directed to the fact that if the Bidder is a non-Pennsylvania corporation, it shall obtain a Certificate of Authority to do business in Pennsylvania, as required by the Pennsylvania Business Corporation Law of 1988, approved December 21, 1988, P.L. 1444, No. 177 § 103 amended, 1990, Dec. 19, P.L. 834, No. 198, § 102, 15 Pa. C.S.A. § 4121.

2.29 PRE-BID MEETING

A Pre-Bid Meeting will be held via a video conference call at **10:00 A.M.** prevailing time, on **Wednesday, April 22, 2020**. Prospective Bidders are encouraged to attend.

2.30 PATENTS AND PROPRIETARY RIGHTS

Prior to bidding, the Bidder shall acquire through assignment, purchase, license, or other means, all rights required to fully utilize all technology, know-how, trade secrets, inventions, processes, articles, procedures, equipment, apparatus, devices, or any part thereof, and any and all things or matters that are to be used in pursuance of its performance under the terms and conditions of this Contract. Under no circumstances may the Bidder infringe on any patent or any other proprietary rights of third parties in its performance under the terms and conditions of this Contract.

In the event that the Owner shall have any reason to believe that any Bid or performance of this Contract will in any way infringe on any patent or proprietary rights of third parties, the Owner may, at its sole discretion, reject any such Bid or take such other measures that it deems to be in its best interest (including requiring the Bidder to post security). The Bidder will defend, indemnify and save harmless Owner, and all persons acting for or on behalf of Owner, from all claims and liability of any nature or kind, including costs and expenses, arising from or occasioned by any infringement or alleged infringement of patent or proprietary rights on any technology, know-how, trade secret, invention, process, article, procedure, equipment, apparatus, device, or any part thereof, to be furnished, utilized or installed by said Bidder, or arising from or occasioned by the use or manufacture thereof, including their use by the Owner. Patents and Proprietary Rights are discussed in more detail in the Contract Provisions.

2.31 MATERIALS

Submittal of a Bidder constitutes a representation by the Bidder that all specified materials and equipment will be available in time for the timely completion of this Contract. The Awarded Bidder is responsible for making sure that the progress of the Work is orderly and timely. The Awarded Bidder's duties and responsibilities are discussed in more detail in the General Contract.

2.32 LIST OF MAJOR SUBCONTRACTORS/SUPPLIERS

The Bidder shall submit for approval a list of all subcontractors employed on the Work, whose work to be performed is anticipated to be in excess of One Hundred Thousand Dollars (\$100,000.00), or five percent (5%) of the Lump Sum Price, whichever is greater, with a list of Work they are to perform. Bidders are advised that they must submit a complete list of subcontractors. Failure to provide this information at the time specified will, at the Owner's election, make the Bid nonresponsive or constitute a breach of the awarded Contract. The Bidder is also cautioned that should the Contract be awarded to it, it must use the subcontractor

named in its list of subcontractors for each of the items listed, unless otherwise directed in writing by the Owner.

2.33 NEW OR REMANUFACTURED EQUIPMENT

Unless otherwise specified in the Contract Documents, all products offered by the Bidder must be new. A "new" product is one which will be used first by the Owner after it is manufactured or produced.

2.34 PROJECT LABOR AGREEMENT AND LETTER OF ASSENT

A Project Labor Agreement, which includes a letter of Assent, is included herein.

The Bidder shall, when executing the Contract Agreement, acknowledge that it will abide by the Project Labor Agreement by signing and submitting a Letter of Assent in the format given in Attachment A.

The Contractor shall also require each Subcontractor to execute a copy of the Letter of Assent. The Contractor must be sure that each of its Subcontractors has furnished an executed copy of the Letter of Assent to the CM before the Subcontractor starts work on the Project. The Contractor shall abide by, and ensure that each Subcontractor abides by the terms of the Project Labor Agreement.

* * * * END OF SECTION * * * *

ATTACHMENT - A

LABOR STABILIZATION AGREEMENT

LETTER OF ASSENT

ARTICLE I

INTENT AND DURATION

Section 1. Intent and Duration. This Project Stabilization Agreement (the "Agreement") is entered into between Allegheny County Sanitary Authority ("ALCOSAN"); [] as General Contractor (GC) and Construction Trades Council of Pittsburgh, AFL-CIO ("BCTC"); and the Signatory Unions (the "Unions") and applies exclusively to the construction work within the scope of this Agreement to be performed on the ALCOSAN's **CONTRACT NO. 1714 – ROOF MODIFICATIONS FOR SCREENINGS GARAGE AND POWER GENERATION BUILDING** (the "Project"). The purpose of this Agreement is to promote efficiency in the construction of the Project and to provide for the peaceful settlement of any and all labor disputes and grievances without strikes or lockouts, thereby promoting the public interest in assuring the timely and economical completion of the Project. This Agreement shall expire and be of no further force or effect upon the completion of the Project.

Upon execution of this Agreement by all parties, all construction work covered by this Agreement on the Project shall be contracted exclusively to Contractors who agree to execute and be bound by the terms of this Agreement. The Unions agree that other Contractors may execute the Agreement for purposes of performing such work. The GC shall monitor compliance with this Agreement by all contractors, who through their execution of a Letter of Assent hereto, together with their subcontractors, shall become bound hereto. For purposes of this Agreement, the term "Contractor" shall be deemed to include all construction contractors and subcontractors of whatever tier engaged in on-site construction work on the Project, including the GC when it performs such construction work.

The GC, the Unions and all signatory Contractors agree to abide by the terms and conditions contained in the Agreement. This Agreement represents the complete understanding of all parties, and no Contractor is or will be required to sign any other agreement with a signatory union as a condition of performing work coming within the scope of this Agreement. No practice, understanding or agreement between a Contractor and a Union which is not specifically set forth in this Agreement will be binding on any other party unless endorsed in writing by the GC.

Section 2. Limitation of Agreement to Project. The Unions agree that this Agreement will be made available to, and will fully apply to, any successful bidder for work on the Project, without regard to whether that successful bidder performs work at other sites on either a union or a non-union basis, and without regard to whether employees of such bidder are or are not members of any union. The Unions further agree that this Agreement applies only to this Project, and that by signing the Letter of Assent hereto, a Contractor, not previously in signed agreement with the Unions, does not recognize the Unions as the bargaining representative of any of its employees at any other project, site or location. It is the intent of this Agreement that Contractors who sign it will create a relationship with the Unions governed by the provisions of Section 8(f) of the Labor Management Relations Act, 29 U.S.C. §158(f).

ARTICLE II

PURPOSE

Section 1. Purpose. The parties signatory to this Agreement accordingly pledge their complete good faith and trust to work towards an absolutely on-time completion of the Project. The signatory parties further pledge to demonstrate nationally that Western Pennsylvania enjoys a mature labor relations climate and continues to be the number one location in the United States to live and work.

Section 2. Time is of the Essence. The parties to this Agreement understand and agree that time is of the essence for this Project. The parties understand and agree that the ALCOSAN and the GC have a critical need for timely completion of the Project, as the Project must be completed prior to **130 days from the Notice to Proceed letter**. Timely completion of the Project without interruption or delay is therefore vital. The parties understand and agree that timely construction of the Project will require substantial numbers of employees from construction and supporting crafts possessing skills and qualifications that are essential to its completion; the Unions pledge that they have members who are competent, skilled, and qualified to perform the required construction work. The parties also understand that on-budget completion of the Project is most critical; it is therefore essential that construction work on the Project be done in an efficient, economical manner with optimum productivity and no delays. In recognition of those special needs of the Project, Unions signatory hereto and their members agree not to initiate, authorize, sanction, participate in or condone, or permit their members to engage in, any strike, sympathy strike, jurisdictional strike, recognitional strike, slowdown, sabotage, work to rule, sickout, sit down, picketing of any type (including informational picketing), hand billing, boycott, interruption of work or any disruptive activity that interferes with or interrupts in any way work on the Project. Contractors agree not to engage in any lockouts.

ARTICLE III

BENEFITS OF THE AGREEMENT

Section 1. Benefits of the Agreement. This Agreement is intended to foster the achievement of a timely and on-budget completion of the Project by, among other things:

- (a) avoiding the costly delays of potential strikes, sympathy strikes, jurisdictional strikes, slowdowns, walkouts, picketing, hand billing and any other disruptions or interference with work, and promoting labor harmony and peace for the duration of the Project;
- (b) standardizing terms and conditions governing the employment of labor on the Project;
- (c) permitting a wide flexibility in work scheduling, shift hours, and starting times;
- (d) achieving negotiated adjustments as to work rules and staffing requirements from those which otherwise might obtain;

- (e) providing comprehensive and standardized mechanisms for the settlement of work disputes;
- (f) ensuring a reliable source of skilled and experienced labor; and
- (g) furthering public policy objectives, to the extent lawful, as to improved employment opportunities for the Minority business Enterprises, Women Business Enterprises.

ARTICLE IV

SCOPE OF THE AGREEMENT

Section 1. The Work. This Agreement is specifically defined and limited to onsite construction work required to construct the Project. The site of the construction is agreed to be [insert description of the site of construction].

Section 2. Exclusions from Scope. Items specifically excluded from the scope of this Agreement, even if performed in connection with the Project, include the following:

- (a) Work of non-manual employees, including but not limited to, superintendents, supervisors, staff engineers, inspectors, quality control and quality assurance personnel, timekeepers, mail carriers, clerks, office workers including messengers, guards, safety personnel, emergency medical and first aid technicians, and other professional, engineering, administrative, supervisory and management employees.
- (b) Equipment and machinery owned or controlled and operated by ALCOSAN.
- (c) All off-site manufacture, fabrication or handling of materials, equipment or machinery (except at dedicated lay-down or storage areas), and all deliveries of any type to and from the Project site.
- (d) All employees of ALCOSAN, the GC, the design team or any other consultant when such employees do not perform manual labor coming within the scope of this Agreement.
- (e) Any work performed on or near or leading to or onto the site of work on the Project and undertaken by state, county, city or other governmental bodies, or their contractors; or by public utilities or their contractors.
- (f) Off-site maintenance of leased equipment and on-site supervision of all such maintenance work.
- (g) Work by employees of a manufacturer or vendor necessary to maintain such manufacturer's or vendor's warranty or guarantee, unless such work has historically and customarily been performed by members of a signatory union, or work performed by supervisors or technicians employed by the manufacturer or vendor to oversee the testing of equipment once installed to insure that the equipment is fully operational.
- (h) Laboratory work for specialty testing or inspections not ordinarily done by the signatory local unions.
- (i) All work done by employees of ALCOSAN, or of any State agency, authority or entity or employees of any municipality or other public employer.
- (j) All employees and entities engaged in ancillary Project work performed by electric utilities, gas utilities and telephone companies.

The Unions agree that there shall be no interference with, or disruption of work, of those contractors, employers and employees exempted from coverage of this Agreement by subparagraph (a) through (j) above.

This Agreement is a stand-alone agreement. While this Agreement expressly does not incorporate any local area collective bargaining agreements, such local area collective bargaining agreements may be referenced for the limited purposes as hereinafter set forth in this Agreement. However, to the extent, if any, that any provisions of this Agreement conflict with any provision of a local area collective bargaining agreement, the provisions of this Agreement shall control, except for all work performed under the NTL Articles of Agreement, the National Stack/Chimney Agreement, the National Cooling Tower Agreement, all instrument calibration work and loop checking shall be performed under the terms of the UA/IBEW Joint National Agreement for Instrument and Control Systems Technicians, and the National Agreement of the International Union of Elevator Constructors, with the exceptions of Article VII – Grievance Arbitration Procedure, Article VIII – Jurisdictional Disputes, and Article X – Work Stoppages, of this Project Agreement, which shall apply to such work.

Section 3. Contract Award and Consent to Agreement.

- (a) The GC, and/or Contractors, as appropriate have the absolute right to award contracts or subcontracts on the Project notwithstanding the existence or nonexistence of any Agreements between such contractor and any Union party provided only that such Contractor is willing, ready and able to execute and comply with this Agreement or a Letter of Assent thereto, should such Contractor be awarded work covered by this Agreement.
- (b) All subcontractors of a Contractor, of whatever tier, who have been awarded contracts of work covered by this Agreement on or after the effective date of this Agreement shall also be required to accept and to be bound by the terms and conditions of this Agreement, and shall evidence their acceptance by the execution of this Agreement or a Letter of Assent thereto, prior to the commencement of work. A copy of this Agreement or Letter of Assent executed by each Contractor shall be available for review by the Unions.

Section 4. Craft Jurisdiction. This Agreement shall recognize the traditional craft jurisdictions of the signatory unions. Any and all jurisdictional disputes shall be settled in accordance with Article VIII below. While this Agreement is a stand-alone Agreement and expressly does not incorporate any local are collective bargaining agreements, the Agreement will utilize the local area collective bargaining agreements of signatory locals as a reference to define the signatory local unions' craft jurisdiction.

Section 5. Subcontracting. ALCOSAN agrees that neither it nor any of its contractors or subcontractors will subcontract any work covered by this Agreement to be done on the Project except to a person, firm or corporation who is or agrees to become party to this Agreement. Any contractor or subcontractor working on the Project shall, as a condition to working on said Project, become a signatory to and perform all work under the terms of this Agreement. Contractors who are signatory to local collective bargaining agreements shall be

bound by the terms of their respective local collective bargaining agreements on subcontracting to the extent such terms are consistent with Article IV, Section 2 of this Agreement. Disputes concerning compliance with such local subcontracting provisions for this project shall be subject to all of the dispute resolution provisions of this Agreement.

Section 6. Liability. It is understood that the liability of the Contractor and the liability of the separate Unions under this Agreement shall be several and not joint. The Unions agree that this Agreement does not have the effect of creating any joint employer status between or among ALCOSAN and/or any Contractor and ALCOSAN shall not assume any liabilities of the Contractors.

Section 7. Abatement of Agreement. As areas of covered work on the Project are accepted by ALCOSAN, this Agreement shall have no further force or effect on such areas except where the Contractor is directed by ALCOSAN to engage in repairs or punch list modifications.

ARTICLE V

LABOR/MANAGEMENT COOPERATION JOINT ADMINISTRATIVE COMMITTEE

Section 1. The parties to this Agreement shall establish a Project Joint Administrative Committee ("Committee"). This Committee will be a three-person committee comprised of one member each from the General Contractor, from ALCOSAN, and from the signatory Unions, with an alternate signatory Union member available to replace the regular volunteer when a problem or grievance concerns the regular member's Union. The members of the Project Joint Administrative Committee shall be appointed by their respective principals at a time to be determined after the time the General Contract is awarded. Each member of the Committee shall designate an alternate who shall serve in the absence of the member for any purpose contemplated by this Agreement.

Section 2. The Committee shall meet at least quarterly or more often if special circumstances warrant, to discuss the administration of the Agreement, the progress of the Project, labor/management problems that may arise, and any other relevant matters. Any need for interpretation which might arise from the application of the terms and conditions of the Agreement shall be referred directly to the Committee for resolution.

ARTICLE VI

UNION RECOGNITION AND EMPLOYMENT

Section 1. Pre-Hire Recognition. Each Contractor recognizes the Unions as the sole and exclusive bargaining representative of all craft employees within their respective jurisdictions working on the Project under the Agreement. It is contemplated that such recognition under this Agreement is pursuant to the provisions of Section 8(f) of the Labor Management Relations Act, 29 U.S.C. §158(f) unless the signatory Contractor and Unions have another, preexisting legal relationship.

Section 2. Contractor's Right of Selection. Each Contractor shall have the right to determine the competency of all employees, the number of employees required and shall have the sole responsibility for selecting employees to be laid off.

Section 3. Union Referral. For Local Unions having a job referral system, each Contractor agrees to comply with such system, and the referral system shall be used exclusively by such Contractor, except as modified by this Article. Such job referral system will be operated in a non-discriminatory manner and in full compliance with Federal, State, and Local laws and regulations requiring equal employment opportunities and non-discrimination, and referrals shall not be affected in any way by the rules, regulations, by-laws, constitutional provisions or any other aspects or obligations of union membership, policies or requirements. The Union shall indemnify and hold each Contractor harmless with respect to any claim arising out of how the Union operates and administers its referral system. All hiring procedures, including related practices affecting apprenticeship and training, will be operated so as to facilitate the ability of the contractors to meet any and all equal employment opportunity/affirmative action obligations. The Contractor may reject any referral for any reason and request another, different referral.

Section 4. Lack of Job Referral System. In the event that a signatory Local Union does not have a job referral system as set forth in Section 3 above, the Contractor shall give the Union forty-eight (48) hours to refer applicants. The Contractor may reject any referral for any reason and request another, different referral. The Contractor shall notify the Union of employees hired from any source other than referral by the Union.

Section 5. Unavailability of Union Referrals. In the event that Local Unions are unable to fill any requisitions for qualified employees within forty-eight (48) hours after such requisition is made by the Contractor (Saturdays, Sundays, and Holidays excepted), the Contractor may employ applicants from any other available source. The Contractor shall inform the Union of the name and social security number of any applicants hired from other sources and refer the applicant to the Local Union for dispatch to the Project.

Section 6. No Cross-Referrals. The Local Unions shall not knowingly refer an employee currently employed by any Contractor working under this Agreement to any other Contractor, nor shall any Union engage in any activity which encourages workforce turnover or absenteeism.

Section 7. Union Best Efforts. The Local Unions will exert their utmost efforts to recruit sufficient numbers of skilled craft workers to fulfill the manpower requirements of each

Contractor, including calls to local unions in other geographical areas when its referral lists have been exhausted.

Section 8. Non-Discrimination. No employee covered by this Agreement shall be required to join any Union or pay any agency fees or dues as a condition of being employed, or remaining employed, on the Project. Where, however, there is in effect and in the possession of the Contractor a voluntary written dues deduction authorization executed by the employee on a standard form furnished by the Union, the Contractor agrees to deduct union dues from the pay of the employee and to remit the dues to the Union at the same time that trust fund contributions are required to be remitted to the administrators of the appropriate trust funds on behalf of that employee.

Section 9. Core Employees. To provide opportunities to participate on the Project to minority and women owned business enterprises as well as other enterprises which do not have a relationship with the Unions signatory to this Agreement and to ensure that such enterprises will have an opportunity to employ their "core" employees on this Project, the parties agree that any such enterprise has the right to select core employees whom it will employ on site, in accordance with the formula below and who:

- (a) possess any license required by the state or federal law for the Project work to be performed;
- (b) have worked a total of at least 1,200 hours per year in the construction craft during each of the prior 3 years, including participating in a state certified apprenticeship program;
- (c) were on the Contractor's active payroll for at least sixty (60) out of the one hundred (180) calendar days prior to the contract award;
- (d) have the ability to perform safely the basic functions of the applicable trade.

The first employee and the third employee, or up to ten percent (10%) percent of all employees, whichever is greater, hired by each contractor may be core employees. After such core employees have been hired by any contractor, all the employees shall thereafter be hiring hall referrals by the appropriate signatory unions in accordance with the provisions of the applicable local collective bargaining agreements.

Section 10. Craft and General Forepersons. The selection of craft foreman and/or general foreman and the number foreman required shall be the exclusive right and responsibility of each contractor.

Section 11. Helmets to Hardhats. The Employers and the Unions recognize a desire to facilitate entry into the building and construction trades of veterans who are interested in careers in the building and construction industry. The Employers and Unions agree to utilize the services of the Center for Military Recruitment, Assessment and Veteran's Employment (hereinafter "Center") and the Center's "Helmets to Hardhats" program to serve as a resource for preliminary orientation, assessment of construction aptitude, referral to apprenticeship programs or hiring halls, counseling and mentoring, support network, employment opportunities and other needs identified by the parties.

The Unions and Employers agree to coordinate with the Center to create and maintain an integrated database of veterans interested in working on this Project and of apprenticeship and employment opportunities for this Project. To the extent permitted by law, the Unions will give credit to such veterans for bona fide, provable past experience.

ARTICLE VII

GRIEVANCE ARBITRATION PROCEDURE

Section 1. This Agreement is intended to provide close cooperation between management and labor. Each of the Unions will assign a representative to this Project for the purpose of completing the construction of the Project economically, efficiently, continuously, and without interruptions, delays, or work stoppages.

Section 2. The Contractors, Unions, and the employees, collectively and individually, realize the importance to all parties to maintain continuous and uninterrupted performance of the work of the Project, and agree to resolve disputes in accordance with the grievance-arbitration provisions set forth in this Article.

Section 3. Any question or dispute arising out of and during the term of this Project Agreement (other than trade jurisdictional disputes) shall be considered a grievance and subject to resolution under the following procedures:

- Step 1:
- (a) When any employee subject to the provisions of this Agreement feels he or she is aggrieved by a violation of this Agreement, he or she, through his or her local union business representative or job steward, shall, within five (5) working days after the occurrence of the violation, give notice to the work-site representative of the involved Contractor stating the provision(s) alleged to have been violated. The business representative of the local union or the job steward and the work-site representative of the involved Contractor and the General Contractor shall meet and endeavor to adjust the matter within three (3) working days after timely notice has been given. The representative of the Contractor shall keep the meeting minutes and shall respond to the Union representative in writing (copying the General Contractor) at the conclusion of the meeting but not later than twenty four (24) hours thereafter. If they fail to resolve the matter within the prescribed period, the grieving party may, within forty-eight (48) hours thereafter, pursue Step 2 of the Grievance Procedure, provided the grievance is reduced to writing, setting forth the relevant information concerning the alleged grievance, including a short descriptions thereof, the date on which the grievance occurred, and the provision(s) of the Agreement alleged to have been violated.
 - (b) Should the Local Union(s) or the General Contractor or any Contractor have a dispute with the other party and, if after conferring, a settlement is not reached within three (3) working days, the dispute may be reduced to writing and proceed to Step 2 in the same manner as outlined herein for the adjustment of an employee complaint.

Step 2: The International Union Representative and the involved Contractor shall meet within seven (7) working days of the referral of a disputed to this second step to arrive at a satisfactory settlement thereof. Meeting minutes shall be kept by the Contractor. If the parties fail to reach and agreement, the dispute may be appealed in writing in accordance with the provisions of Step 3 within seven (7) calendar days thereafter.

Step 3: (a) If the grievance has been submitted but not adjusted under Step 2, either party may request in writing, within seven (7) calendar days thereafter, that the grievance be submitted to an Arbitrator mutually agreed upon by them. The Contractor and the involved Union shall attempt mutually to select an Arbitrator, but if they are unable to do so, they shall request the American Arbitration Association to provide them with a list of arbitrators from which the Arbitrator shall be selected. The rules of the American Arbitration Association shall govern the conduct of the arbitration hearing. The decision of the Arbitrator shall be final and binding on all parties. The fee and expenses of such arbitration shall be borne equally by the Contractor and the involved Local Union(s).

(b) Failure of the grieving party to adhere to the time limits established herein shall render the grievance null and void. The time limits established herein may be extended only by written consent of the parties involved at the particular step where the extension is agreed upon. The Arbitrator shall have the authority to make decisions only on issues presented to him or her, and he or she shall not have authority to change, amend, add to or detract from any of the provisions of this Agreement.

Section 4. The General Contractor and ALCOSAN shall be notified of all actions at Steps 2 and 3 and shall, upon their request, be permitted to participate in all proceedings at these steps.

ARTICLE VIII

JURISDICTIONAL DISPUTES

Section 1. The assignment of work will be solely the responsibility of the Contractor performing the work involved, and such work assignments will be in accordance with the Plan for the Settlement of Jurisdictional Disputes in the Construction Industry (the "Plan") or any successor Plan.

Section 2. There will be no strike, sympathy strike, jurisdictional strike, recognitional strike, slowdown, sabotage, work to rule, sickout, sitdown, picketing of any type (including informational picketing), handbilling, boycott, interruption of work or any disruptive activity that interferes with or interrupts in any way work on the Project by the Unions or their members arising out of, or because of, any jurisdictional dispute. All jurisdictional disputes on this Project, between or among Building and Construction Trades Unions and employers shall be settled and adjusted according to the present Plan established by the Building and Construction Trades Department or

any other plan or method of procedure that may be adopted in the future by the Building and Construction Trades Department. Decisions rendered shall be final, binding and conclusive on the Contractors and Unions party to this agreement. This Jurisdictional Dispute Resolution Procedure will only apply to work performed by Local Unions at the Project. Any Local Union involved in a jurisdictional dispute on this Project shall continue working in accordance with Sections 1 and 2 above without disruption of any kind, and the Contractor's initial assignment shall be adhered to until the dispute is resolved. Individuals violating this section shall be subject to immediate discharge.

Section 3. Each Contractor will conduct a pre-job conference with the appropriate Building and Construction Trades Council prior to commencing work. The General Contractor and the Owner will be advised in advance of all such conferences and may participate if they wish.

Section 4. Nothing in this Article of this Agreement shall preclude any Contractor from obtaining administrative or injunctive relief to halt any strike, picketing, or work stoppage pending resolution of a dispute pursuant to this Article.

ARTICLE IX

MANAGEMENT'S RIGHTS

Section 1. Exclusive Authority – Workforce. The GC and the Contractors retain the full and exclusive authority for the management of their operations and workforces. The GC and Contractors retain the right to plan, direct, and control the workforce, including the hiring, promotion, demotion, transfer, layoff, suspension, discipline or discharge for just cause of employees; the determination of crew make-up, crew size and manning levels; the selection of foremen, the assignment and scheduling of work; the promulgation of work rules; and the requirement of overtime work, the determination of when it will be worked and the number and identity of employees engaged in such work. No rules, customs, or practices which limit or restrict productivity, efficiency of the individual and/or joint working efforts of employees shall be permitted or observed. The GC and Contractors may utilize any methods or techniques of construction and operation.

Section 2. Materials, Design, Machinery, Equipment. There shall be no limitation or restriction by a signatory Union upon a Contractor's choice of materials or design, nor, regardless of source or location, upon the full use and utilization of equipment, machinery packaging, pre-cast, pre-fabricated, pre-finish, or pre-assembled materials, tools or other labor saving devices. The on-site installation or application of all items shall be performed by the craft having jurisdiction of such work; provided, however, that installation of specialty items may be performed by employees employed under this Agreement who may be directed by other personnel in a supervisory role, in circumstances requiring special knowledge of the particular items.

Section 3. Specialty Work. It is recognized by the Contractors, the Unions, and their members that the performance of certain work on the Project shall consist of the installation of certain materials, equipment, or supplies manufactured outside this local vicinity which must, for warranty purposes, be installed by the manufacturer and/or designated specialty contractors and that such installation work is not customarily performed by the members of such unions. The Unions and their members agree that they shall make no claims for such work; provided, however,

that the GC and/or the Joint Administrative Committee shall provide them with the necessary information establishing the nature of such specialty work.

Section 4. New Technology, Equipment. The use of new technology, equipment, machinery, tools and/or labor saving devices and methods of performing work may be initiated by any Contractor from time to time during the Project. The Union agrees that it will not in any way restrict the implementation of such new devices or work methods.

Section 5. Disputes. If there is any disagreement between any Contractor and the Union concerning the manner or implementation of such device or method of work, the implementation shall proceed as directed by the Contractor, and the Union shall have the right to grieve and/or arbitrate the dispute as set forth in Article VII of this Agreement.

ARTICLE X

WORK STOPPAGES

Section 1. No Strikes or Work Disruptions. There shall be no strike, sympathy strike, jurisdictional strike, recognitional strike, slowdown, sabotage, work to rule, sickout, sitdown, picketing of any type (including informational picketing), hand billing, boycott, interruption of work or any disruptive activity that interferes with or interrupts in any way work on the Project. The Unions signatory hereto, and each of their members, agree not to initiate, authorize, sanction, participate in, condone, or permit their members to engage in any such activity. Failure of any Union or employee covered by this Agreement to cross any picket line established by any Union, signatory or non-signatory to the Agreement, or by any other organization or individual at or in proximity to the Project construction site, is a violation of this Article. The signatory Union shall be responsible for any action of its members, which violates this section, and its members shall be subject to discipline up to and including discharge for violation of the provisions of this article.

Section 2. Union Responsibilities. The Union shall not sanction, aid or abet, encourage or condone any conduct or activity in violation of this Article, and shall undertake all means to prevent or to terminate any such conduct immediately. No employee shall engage in activities which violate this Article, and the Union shall pursue all disciplinary action permitted by its Constitution and By-laws against any employee who engages in any activity which violates this Article.

Section 3. Violation. If any Contractor and/or ALCOSAN contends that any Union or its member(s) has violated this Article, it will notify in writing the International President(s) of the Union(s) involved, advising him of the fact, with copies of such notice to the Local Union(s) involved, and the BCTC. The International President or Presidents will immediately instruct, order and use the best efforts of his office, including discipline procedures under its Constitution and By-laws, to cause the Local Union(s) or its members to cease any violation of this Article.

Section 4. Expedited Arbitration. Should ALCOSAN, GC or any Contractor believe that there has been any violation of this Article, it may institute this expedited arbitration procedure (in addition to any action at law or in equity, or any other contractual procedure available

to it). The parties to this Agreement have agreed that the Labor Arbitration Rules of the American arbitration Association shall apply, including the Rules governing Expedited Arbitration. The Arbitrator shall hold a hearing within Twenty-four (24) hours of verbal or written notice of a claimed violation of this Article and shall complete the hearing in one session. The sole issue at the hearing shall be whether or not a violation of this article has occurred. The Arbitrator shall have no authority to consider any matter in justification, explanation, or mitigation of such violation. The arbitral award shall be issued in writing within three (3) hours after the close of the hearing and may be issued without opinion. If any party desires an opinion, the arbitrator shall issue one within fifteen (15) days, but its issuance shall not delay compliance with, or enforcement of, the award.

ARTICLE XI

WAGES AND BENEFITS

Section 1. Classification – Wages. All employees covered by this Agreement shall be classified in accordance with work performed and paid the prevailing wage and benefit rates for these classifications. The GC, upon request, shall provide the Unions with substantiation that prevailing wages and benefits are being paid by Contractors on the Project.

Section 2. Payment of Benefits/Contribution. Each Contractor will also pay all required contributions in the amounts required by Section 1 of this Article to the established employee benefit funds that accrue to the direct benefit of the employees (such as pension and annuity, health and welfare, vacation, apprenticeship, training funds). With respect to contributions required in this Section to Employer-Union jointly trusted funds, the Contractor adopts and agrees to be bound by the written terms of the legally established trust agreement specifying the detailed basis on which payments are to be made into, and benefits paid out of, such Trust Funds. The Contractor authorizes the parties to such Trust Funds to appoint Trustees and successor Trustees to administer the Trust Funds and hereby ratifies and accepts the Trustees and successor Trustees to administer the Trust Funds and hereby ratifies and accepts the Trustees so appointed as if made by Contractor. This section does not apply to core employees unless any core employee voluntarily elects to join and become a member of any local union signatory to this Agreement, in which event this Section shall immediately apply with respect to any such core employee.

ARTICLE XII

LOCAL UNION NEGOTIATIONS DURING THE PENDENCY OF THE AGREEMENT

Section 1. All parties to this Agreement understand and acknowledge that some crafts who will be working on the Project are covered by local collective bargaining agreements that will expire prior to the projected completion of the project. All contracting parties understand and agree that irrespective of whether such local collective bargaining agreement negotiations are successful or unsuccessful, there shall be no strike, sympathy strike, jurisdictional strike, recognitional strike slowdown, sabotage, work to rule, sickout, sit-down, picketing of any type (including informational picketing), hand billing, boycott, interruption of work or any disruptive activity that

interferes with or interrupts in any way work on the Project by any Union involved in such local negotiations, or by any of its members, nor shall there be any lockout on the Project affecting such union or its members during the course of such negotiations. Irrespective of the status of any such local collective bargaining agreement negotiations, the affected Union and all of its members will observe and fully comply with the provisions of this Agreement.

Section 2. Wage/Benefit Increases. Should a craft covered by this Agreement negotiate an increase in wages or an increase in benefits with any Contractor to become effective during the term of the Project for the area of Western Pennsylvania, those wage and/or benefit increases shall be paid, as of the effective date of those increases, to those employees in that craft performing work covered by this Agreement.

ARTICLE XIII

HOURS OF WORK, OVERTIME, SHIFTS AND HOLIDAYS

Section 1. Work Day and Work Week. Except as provided in Section 4, the first shift shall consist of eight (8) or ten (10) hours per day between the hours of 6:00 a.m. and 5:30 p.m., plus one-half (1/2) hour for unpaid lunch, approximately mid-way through the shift. forty (40) hours per week shall constitute a regular week's work, whether consisting of five (5) eight (8) hour days, or four (4) ten (10) hour days. The work week will start on Monday and conclude on Sunday. A uniform starting time will be established for all crafts on each project or segment of work. Nothing herein shall be construed as guaranteeing any employee eight (8) or ten (10) hours per day or forty (40) hours per week. The Union(s) shall be informed of the work starting time set by the contractor at the pre-job conference which may be changed thereafter upon three (3) days' notice to the Union(s) and the employees. A second shift, if used, shall consist of eight hours between the 3:00 p.m. and 1:00 a.m.; a third shift, if used, shall begin between 10:00 p.m. and 1:00 a.m. For the purposes of Section 3, the third shift shall be considered as part of the prior day's work.

Section 2. Starting Times. Employees shall be at their place of work at the starting time and shall remain at their place of work (as designated by the Contractor) performing their assigned functions until quitting time, which is defined as the scheduled end of the shift. The parties reaffirm their policy of a fair day's work for a fair day's wage. There shall be no pay for time not worked unless the employee is otherwise engaged at the direction of the Contractor. Due to the magnitude of the project and congestion of the site, staggered starting times may be required. If necessary, these starting times would be between 6 AM and 8 AM. This policy could help reduce the transportation problems at start and completion times.

Section 3. Overtime. Overtime shall be defined as all hours worked in excess of forty (40) hours in a week, or for 8 hour shifts, in excess of 8 hours per day; or for 10 hour shifts, for work in excess of 10 hours per day; such work and work performed on Saturday shall be paid at one and one-half times the straight time rate of pay. However, in scheduled five day/eight hour shift work-weeks, Saturday may be scheduled as a "make-up" day at straight time to make up for a day lost (Monday through Friday) due to inclement weather; in scheduled for day/ten hour shift work weeks, Friday and/or Saturday may be scheduled as a "makeup" day at straight time to make up for a lost day (Monday through Thursday) due to inclement weather. In addition, if a makeup day is scheduled, all employees directed to work on such day will be guaranteed a minimum of

four (4) hours work or pay. In any week in which employees on the Project are scheduled on four day/ten hour shifts, an employee whose first day of work on the projects begins on Wednesday, or a later day of the schedule shall be paid, during the first week of his employment only, time and a half for all hours worked in excess of eight in a day for each day he worked during said week. Work on Sundays and Holidays shall be at double time. There will be no restriction on any Contractor's scheduling of overtime or the non-discriminatory designation of employees who will work. The Contractor shall have the right to schedule work so as to minimize overtime. There shall be no pyramiding of overtime pay under any circumstances.

Section 4. Shifts.

- (a) Shift work may be performed at the option of the Contractor(s) upon Three (3) days' prior notice to the Union and shall continue for + period of not less than five (5) working days. Saturdays and Sundays, if worked, may be used for establishing the five (5) day minimum work shift. If two shifts are worked, each shall consist of eight (8) hours of continuous work exclusive of a One-Half (1/2) hour non-paid lunch period for eight (8) hours pay.
- (b) The Contractor may establish a work week of four (4) consecutive ten (10) hour work days (exclusive of one-half hour unpaid lunch, approximately midway through the shift) between Monday and Friday.

Section 5. Holidays. Recognized holidays on the Project shall be New Year's Day, Good Friday, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the day after Thanksgiving Day, and Christmas Day. Work performed on holidays shall be paid at double the straight time rate of pay. A holiday falling on Sunday shall be observed the following Monday

Section 6. Meal Period. The Contractor will schedule a meal period of not more than one-half hour duration at the work location at approximately the mid-point of the scheduled work shift (4 hours in a five-day work week, 5 hours in a four-day work week), consistent with Section 1; provided, however, that the Contractor may, for efficiency of the operation, establish a schedule which coordinates the meal periods of two or more crafts. If an employee is required to work through his meal period, he shall be compensated for the time worked at the applicable overtime rate and the employee shall, when work permits, eat his lunch "on the fly."

Section 7. No Organized Work Breaks. There will be no organized breaks or other non-working time established during working hours. Individual nonalcoholic beverage containers will be permitted at the employee's work stations.

Section 8. Craft Worker Parking Facilities. Parking facilities or arrangements for employees working on the Project will be established by ALCOSAN by the time work on the Project commences.

ARTICLE XIV

APPRENTICES

Section 1. Need For. The parties recognize the need to maintain continuing support of programs designed to develop adequate numbers of competent workers in the

construction industry. The Contractor(s) will accordingly employ apprentices in their respective crafts to perform work on the Project within the apprentices' capabilities.

Section 2. **Ratios.** The Union agrees to cooperate with the Contractor in furnishing qualified apprentices as requested. There shall be no restrictions on the utilization of apprentices in performing the work of their craft provided they are properly supervised.

ARTICLE XV

DRUG AND ALCOHOL POLICY

Section 1. **Policy.** All parties understand and agree that a substance abuse program has been established by the Master Builders' Association of Western PA, Inc. (MBA) and/or the Constructors Association of Western Pa (CAWP), and will be in force for all work performed under the Agreement. The substance abuse program will prohibit the use, sale, transfer, purchase and/or possession of a controlled substance, alcohol and/or firearms while on the Project's premises and will require testing of employees. The substance abuse program will be incorporated into and made part of the Agreement and implemented for all Contractors and employees working on the Project.

ARTICLE XVI

NON-DISCRIMINATION

Section 1. **Policy.** It is the continuing policy of the GC, the Contractors and the Unions that the provisions of this Agreement shall be applied without discrimination because of age, race, sex, color, religion, creed, national origin or union signatory or membership status. There shall be no discrimination against an employee because of her or his membership in, or activities on behalf of Unions.

ARTICLE XVII

SOLE AND COMPLETE AGREEMENT

Section 1. The parties agree that this Agreement constitutes the sole and complete agreement between them governing the rates of pay and working conditions of the construction employees working on the Project, that it settles all demands and issues on the matters subject to collective bargaining, and that it shall not be modified or supplemented in any way except by written agreement executed by both parties.

ARTICLE XVIII

SEPARABILITY AND SAVINGS CLAUSE

Section 1. **Intent of Parties.** If any article or section of this Agreement shall be held invalid by law or by a tribunal of competent jurisdiction, or if compliance with or enforcement

of any article should be restrained pending a final determination as to its validity, the remainder of this Agreement shall not be affected and shall remain in full force and effect. In the event that any article or section is held invalid, the parties hereto shall, upon the request of the Unions, enter into collective bargaining negotiations for the purpose of arriving at a mutually satisfactory replacement for such article during the period of invalidity or restraint. If the parties hereto cannot agree on a mutually satisfactory replacement, either party shall be permitted to submit its demand to formal arbitration.

Section 2. Force of Agreement. The parties recognize the right of the ALCOSAN to withdraw, at its absolute discretion, the utilization of this Agreement as part of any bid specification should a court of competent jurisdiction issue any order which could result, temporarily or permanently, in delay of the bidding, awarding, and/or construction work on the Project. Notwithstanding such an action by the General Contractor, or such court order, the parties agree that the Agreement shall remain in full force and effect on the Project, to the maximum extent legally possible.

LETTER OF ASSENT

All contractors of whatever tier shall execute the following Letter of Assent prior to commencing work:

[Contractor's letterhead]

ALCOSAN
Kimberly Kennedy, P.E.
Director of Engineering and Construction
3300 Preble Avenue
Pittsburgh, PA 15233

Re: Contract No. 1714 – ROOF MODIFICATIONS FOR SCREENINGS GARAGE
AND POWER GENERATION BUILDING

Dear Ms. Kennedy:

Pursuant to Article IV, Section 3 of the above-referenced Agreement, the undersigned Contractor hereby agrees that it will be bound by and comply with all terms and conditions of said Project Stabilization Agreement, and any amendments thereto. The undersigned Contractor specifically stipulates that it will follow and be bound by the provisions of the Agreement related to referral of employees set forth in Article VI; the grievance and arbitration procedure stated in Article VII; and the procedure for resolution of jurisdictional disputes set forth in Article VIII of the Agreement.

This Letter of Assent shall be in effect during the period of time the Contractor performs work on the Project, and shall remain in effect for the duration of the Contractor's work on the Project.

Sincerely,

[Name of Contractor or Subcontractor]

By: _____

Title: _____

REPRESENTING THE FOLLOWING LOCAL UNIONS

Asbestos Workers Local No. 2

Boilermakers Local No. 154

Bricklayers and Allied Craftworkers Local No. 9

Greater Pennsylvania Regional Council of Carpenters

Heavy Construction Carpenters Local No. 2274

Cement Masons Local No. 526

International Brotherhood of Electrical Workers Local No. 5

Elevator Constructors Local No. 6

International Union of Operating Engineers Local No. 66

Construction General Laborers Local No. 373

Floor Coverers and Decorators Local No. 1759

Bridge, Structural, Ornamental, and Reinforcing Iron Workers Local No. 3

Laborers' District Council of Western Pennsylvania

Construction General Labor and Material Handlers Local No. 1058

Millmen's Local No. 1160

Millwright's Local No. 2235

Plasterers' Local No. 31

Plumbers Local No. 27

District Council 57 IUPAT

Pile Drivers Local No. 2235

United Union of Roofers, Waterproofers and Allied Workers Local No. 37

Sheet Metal Workers Local No. 12

Sprinkler Fitters Local No. 542

Steamfitters Local No. 449

Teamsters Local No. 341

TERM OF AGREEMENT

This Agreement shall take effect on the 11 day of Aug, 2009 and shall remain in full force and effect through

**BUILDING AND CONSTRUCTION
TRADES COUNCIL OF PITTSBURGH,
AFL-CIO**

By William Brooks
(President William Brooks)

Contractor

Dennis E. Eicker
(Sectary Treasurer Dennis E. Eicker)

Richard Stanizzo
(Business Manager Richard Stanizzo)

CONTRACT NO. 1714

**ROOF MODIFICATIONS FOR SCREENINGS GARAGE
AND POWER GENERATION BUILDING**

GENERAL CONTRACT CONDITIONS

ARTICLE 3

GENERAL CONTRACT CONDITIONS

ARTICLE 3

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3.1 DESCRIPTION OF WORK

A. THE PROJECT

This Article 3, General Contract Conditions ("Contract Provisions") is a part of that certain Contract Agreement (together with these General Conditions and the other Contract Documents, as defined herein, collectively referred to as the "Contract") awarded by the Allegheny County Sanitary Authority (the "Owner") to the Successful Bidder (hereinafter referred to as the "Contractor") for the construction of the **CONTRACT NO. 1714 – ROOF MODIFICATIONS FOR SCREENINGS GARAGE AND POWER GENERATION BUILDING** at the Owner's wastewater treatment facility located in Pittsburgh, Pennsylvania (the "Facility"). This Contract is for work that will form a part of a larger capital improvements project at the Facility (the "Project").

B. THE WORK UNDER THIS CONTRACT

The intent and meaning of the Contract Documents is that the Contractor, in order to fulfill its obligations under the Contract, shall provide any and all labor, supervision, materials, supplies, services (including detailed engineering), equipment, tools, transportation, facilities and appurtenances thereto, whether temporary or permanent, and such other items as indicated, required or implied by the Contract Documents and as necessary for removal and installation of new roofs for the Screenings Garage and Power Generation Buildings (the "Work").

C. SEPARATE CONTRACTS

The Contractor acknowledges that the Owner may bid and award to other contractors (together with the subcontractors of such other contractors collectively referred to hereinafter as "Other Contractors") separate contracts, to provide certain general, civil, mechanical, electrical, instrumentation, controls, heating, ventilating and other construction items, facilities, equipment and/or services in connection with the Project and related to the Work. The Contractor shall cooperate fully with the Owner in providing any and all design and construction information and details relative to the Work, in a timely manner, as necessary for the Owner to prepare the plans and specifications for such separate contracts, if any, or to enable the Owner's Other Contractors to complete the related work required there under (the Contractor and Other Contractors, not including their subcontractors, are sometimes collectively referred to hereinafter as the "Prime Contractors").

D. CONSULTANTS

Certain provisions throughout this document may refer to certain consultants retained by the Owner, including, without limitation, the Construction Manager, the Consulting Engineer(s) and the Engineering Program Manager, and describe certain of their duties and responsibilities. If any or all of the above-mentioned

consultants are not retained for this Project, their duties and responsibilities shall, unless otherwise specified, remain in the Owner's Director of Engineering and Construction ("Engineer") or the Engineer's written designee.

3.2 CONTRACT DOCUMENTS

A. DEFINITION

The term "CONTRACT DOCUMENTS" means the full and collective set of documents which form the Contract, including: Legal Notice; Article 1, Bid Form; Supplementary Information Package; Bid Bond; Certificate of M & WBE Participation; Non-Collusion Affidavit; Certificate of Compliance with the Pennsylvania Steel Products Procurement Act; Certification of Safety Procedures Compliance; Contractor's Experience Questionnaire; Prevailing Minimum Wage Predetermination; Article 2, Information for Bidders; Article 3, General Contract Conditions ; Article 4, Contract Agreement; Article 5, Performance Bond, Labor and Material Payment Bond, Maintenance Bond and associated Certificate of Satisfaction and Statements of Surety; Specifications; Drawings; all Addenda issued by the Owner prior to the time of opening of Bids, if any; any exceptions, changes, modifications and/or clarifications incorporated into or submitted by the Contractor along with its Bid, provided that each and every such exception, change, modification and/or clarification is specifically accepted by the Owner, in writing, as a part of the award of the Contract; and any duly executed changes, modifications and/or amendments to the Contract made and approved by the Owner's Board of Directors prior to Contract completion and any other form or document described as part of this Contract. The Contract Documents are all made a part of the Contract and supplement each other. It is the intent of the Contract Documents to describe the Work as a functionally complete system. Any work, materials or equipment that may be inferred reasonably from the Contract Documents as being required to produce the intended result, shall be supplied whether or not specifically called for.

B. MODIFICATIONS ONLY IN WRITING

The terms, conditions, drawings and specifications contained in the Contract Documents cannot be waived, altered or modified except by a written Change Order issued in accordance with Section 3.31 of these General Conditions entitled, "Change Orders."

C. CLARIFICATIONS

If, during the performance of the Work, the Contractor finds a conflict, error or discrepancy in the Contract Documents, the Contractor shall so report to the Construction Manager in writing at once before proceeding with the work affected thereby, and, if appropriate, shall obtain a written interpretation or clarification from the Construction Manager in accordance with Section 3.30 of these General Conditions entitled, "Requests for Information and Field

Instructions."

D. ORDER OF PRECEDENCE

In the event of conflicts or discrepancies among the Contract Documents, interpretations will be based upon the following order of precedence, to be followed seriatim with item 1. being consulted first:

1. Change Orders with those of a later date having precedence over those of an earlier date.
2. Addenda, with those of a later date having precedence over those of an earlier date.
3. General Contract Conditions.
4. Remaining Contract Documents (except the Specifications and Drawings).
5. Specifications (specific instructions shall supersede general instructions).
6. Drawings (details supersede plans and elevations; schedules supersede general notes).

If the foregoing order of precedence fails to resolve the conflict or discrepancy, then the better quality or greater quantity of Work shall be provided in accordance with the Owner's interpretation.

Except as otherwise specifically provided by the Owner in writing, the provisions of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity or discrepancy between the provisions of the Contract Documents and (a) the provisions of any standard, specification, manual, code or instruction (whether or not specifically incorporated by reference in the Contract Documents); or (b) the provisions of any laws or regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in a violation of any such law or regulation).

3.3 ADDITIONAL DEFINITIONS

Wherever the words defined in this Section, or pronouns used in their stead, occur in the Contract Documents, they shall have the meanings given as follows:

- A. AS-BUILT DRAWINGS refers to drawings that show how the constructed Work was installed or modified in size, arrangement, elevation, position, materials used, or other manner, from that shown on the Contract Documents.
- B. CONSTRUCTION MANAGER means the independent firm retained by the Owner to coordinate and direct activities between the Owner and the Contractor

and to assist with the Contract administration and the completion of this Project.

- C. CONSULTING ENGINEER(S), also referred to herein as "Final Design Consultant(s)," means the independent consultant(s) retained by the Owner to participate in the design the Project.
- D. CONTRACT SCHEDULE refers to a CPM formatted schedule, prepared by the Contractor, coordinated by the Construction Manager and acceptable to the Owner, covering the entire performance of the Work and incorporating such milestone dates as are necessary and appropriate to demonstrate that the Work will be completed in sufficient time to allow the achievement of the milestones set forth in the Project Schedule.
- E. CONTRACT SUM means the total amount payable to the Contractor by the Owner upon satisfactory completion of the Work under this Contract, as the same may be adjusted from time to time pursuant to the Contract Documents.
- F. DEFECTIVE WORK refers to Work that, in the sole discretion of the Owner, is unsatisfactory, faulty or deficient, or does not conform to the Contract Documents, or does not meet the requirements of any inspection, reference standard, test or approval referred to in the Contract Documents, or has been damaged prior to Final Acceptance of the Work (unless responsibility for the protection from damage thereof has been assumed in writing by the Owner).
- G. DIRECTOR OF ENGINEERING AND CONSTRUCTION (the "Engineer") means that person holding the position of or acting in the capacity of Director of Engineering and Construction of the Allegheny County Sanitary Authority, acting directly or through agents properly authorized in a writing signed by the Director of Engineering and Construction, such agents acting within the scope of their authorized duties.
- H. DIRECTOR or EXECUTIVE DIRECTOR means that person holding the position of or acting in the capacity of Executive Director of the Allegheny County Sanitary Authority, acting directly or through the Director of Engineering and Construction or through agents properly authorized in a writing signed by the Executive Director or the Director of Engineering and Construction, such agents acting within the scope of their authorized duties.
- I. DRAWINGS means the drawings which give guidance in illustrating the character and scope of the Work to be performed and which have been prepared or approved by the Consulting Engineer and are referred to in the full Contract Documents.
- J. FIELD INSTRUCTION refers to a writing issued by the Engineer through the Construction Manager which is necessary or appropriate to interpret or to resolve any ambiguity or error in the Specifications or Drawings or to make any minor change to the Specifications or Drawings that does not result in a net change in

the Contract Sum or Contract Time or the quality of materials or workmanship. Field Instructions may not change or alter the terms and conditions of the Contract.

- K. JOB SITE means the location on the Owner's premises at 3300 Preble Avenue, Allegheny County, Pittsburgh, Pennsylvania, 15233, where certain portions of the Work are to be performed or located, or any other location described in the Contract Documents.
- L. PROJECT MANAGER means that person of the Allegheny County Sanitary Authority, named in a writing signed by the Director of Engineering and Construction, holding or acting in the capacity of Project Manager within the scope of particular duties entrusted to such person in writing.
- M. PROJECT SCHEDULE refers to an integrated overall CPM formatted schedule, coordinated by the Construction Manager, which incorporates each Contractor's Contract Schedule.
- N. RECORD DRAWINGS refers to drawings that show how the equipment supplied under this Contract was manufactured. Record Drawings delivered to the Owner shall be certified as Record Drawings by the supplier and signed and, as appropriate under any applicable law and regulation, signed and sealed by a Licensed Professional Engineer.
- O. SCHEDULE OF VALUES refers to the listing of the installed value of the component parts of the Work in sufficient detail to serve as a basis for computing amounts of progress payments during construction.
- P. SEVERE WEATHER means adverse weather conditions not reasonably anticipated (based on the last five years on a monthly average) which impact the Job Site in such a way as to prevent the performance of any work scheduled or any other work available to be performed in a safe and efficient manner.
- Q. SHOP DRAWINGS refers to all drawings, diagrams, illustrations, schedules and other data which are specifically prepared by or for the Contractor to illustrate some portion of the Work and all illustrations, brochures, standard schedules, performance charts, instructions, diagrams and other information submitted by the Contractor to illustrate materials or equipment for all portions of the Work.
- R. SPECIFICATIONS, or Technical Specifications, refers to those portions of the Contract Documents consisting of written technical descriptions of materials, equipment, construction systems, standards and workmanship as applied to the Work and certain details thereof. The Specifications are found in Article 6.
- S. SUBSTANTIAL COMPLETION means the entire Work has progressed to the point where, in the opinion of the Engineer (as certified in writing by issuance of a Certificate of Substantial Completion), it is sufficiently complete, in accordance

with the Contract Documents, so that the Work can be utilized for the purposes for which it is intended. In no event shall the Work be certified as substantially complete until at least ninety percent (90%) of the Work is completed. The procedure for Certification of Substantial Completion is described in Section 3.49 hereof entitled "Certification of Substantial Completion." Substantial Completion of this Contract shall be interpreted pursuant to the state law entitled, "Award and Execution of Public Contracts," 73 P.S. 1621 et seq.

T. SUPERINTENDENT refers to the authorized agent appointed by the Contractor on a full time basis to supervise and coordinate all Job Site activities performed by the Contractor or any subcontractor or supplier employed directly or indirectly by the Contractor.

Any pronouns used in relation to, or in place of, any of the words or combinations of words, herein defined, shall have the same meaning as the words or combinations of words themselves.

Wherever the words "directed," "required," "permitted," "ordered," "designated," "prescribed," or words of like import are used in the Contract Documents, it shall be understood that the directions, requirements, permission, orders, designation or prescription of the Engineer are intended. Similarly, the words "approved," "acceptable," "suitable," "satisfactory," or words of like import shall mean approved by, acceptable to, suitable to, or satisfactory to the Engineer in each case.

3.4 TITLES NOT TO LIMIT TEXT

The titles or headings of the various divisions, sections, parts, paragraphs, or subparagraphs of the Contract Documents are for convenience of reference only and are not intended to limit, and shall not be construed as in any way limiting, the application of the text.

RIGHTS AND DUTIES OF THE CONTRACTOR

3.5 MEANS AND METHODS/QUALITY OF MATERIALS

The Contractor shall complete the Work to the reasonable satisfaction of the Owner and in accordance with the Contract Documents. The Contractor shall supervise, inspect and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. The Contractor shall be solely responsible for the means, methods, techniques, sequences and procedures of construction.

If requested by the Engineer or Consulting Engineer, through the Construction Manager, the Contractor shall furnish satisfactory evidence (including reports of required tests) as to the kind and quality of materials and equipment used in the Work. All materials and equipment shall be of first quality and applied, installed, connected, erected, used,

cleaned and conditioned in accordance with instructions of the applicable manufacturer, except as otherwise provided in the Contract Documents.

3.6 RESPONSIBILITY FOR THE WORK

The Contractor represents and warrants by submission of its Bid that it has thoroughly examined and has become familiar with the Contract Documents and determined the nature and location of the Work, the general and local conditions, the availability of labor, materials, supplies, and equipment and all other matters which can in any way affect the Work under this Contract. Failure to make any examination necessary for this determination shall not release the Contractor from the obligations of this Contract or be grounds for any claim based on unforeseen conditions.

The Contractor shall take all responsibility for the Work performed under this Contract. It shall in no way be relieved of its responsibility by any right of the Executive Director, Engineer, the Owner's employees or agents to give permission or orders, or by failure of such to give permission or to issue orders. The Contractor shall be responsible for all loss and damage incurred in transporting the equipment, materials or Work while under the direction or control of the Contractor, to, from or on the Job Site and for all loss and damage to the equipment, materials and/or Work or any part thereof caused by the Contractor, its agents, representatives or employees, any subcontractor, or any person or organization directly or indirectly employed or engaged by any of them to perform or furnish any of the Work or anyone for whose acts any of them may be liable, occurring prior to the Owner's Final Acceptance thereof.

3.7 COORDINATION

It shall be the Contractor's responsibility to coordinate all Work furnished under this Contract with the Construction Manager and with the Other Contractors to make sure that all Work performance guarantees are achieved and that the Work is properly constructed, assembled, installed and configured for reliable and continuous operation. The Contractor shall require its subcontractors to review the requirements set forth herein to insure that the Work and equipment integrated therein will be compatible and properly integrated, constructed, assembled and installed.

The Owner shall allocate the Work and designate the sequence of construction in case of controversy between the Contractor and Other Contractors and/or suppliers. The Contractor shall, at all times, have on site a Superintendent who is fully authorized as its agent. The Superintendent shall be capable of reading and thoroughly understanding the Contract Documents and shall receive and fulfill instructions from the Owner or its authorized representatives.

3.8 COOPERATION BETWEEN CONTRACTORS/DISPUTES OR ACTIONS BETWEEN CONTRACTORS

In the event the Owner contracts with Other Contractors or third parties for work on the Project on or near the Work covered by this Contract, the Contractor shall conduct its

work so as not to interfere with or hinder the progress or completion of the work being performed by such Other Contractors. The Contractor shall cooperate with the Other Contractors working on the Project and coordinate its work with that of the Other Contractors.

The Contractor shall be responsible under the Contract to include all considerations, financial and otherwise, resulting from the requirement herein to interface, coordinate, and cooperate with Other Contractors working on the Project, as well as with the Owner and its authorized representatives.

The Contractor shall afford each Other Contractor or third party performing work on the Project and each utility owner (and the Owner, if the Owner is performing additional work with the Owner's employees) proper and safe access to the Job Site and a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work. Unless otherwise provided in the Contract Documents, the Contractor shall do all cutting, fitting and patching of the Work that may be required to make its several parts come together properly and integrate and connect with work performed by Other Contractors. The Contractor shall not endanger any work by Other Contractors by cutting, excavating or otherwise altering their work and will only cut or alter their work with the prior written consent, through the Construction Manager, of the Other Contractors whose work will be affected.

If any part of the Contractor's Work depends for proper execution or results upon the work of any Other Contractor, the Contractor shall within 48 hours of its anticipated start of the Work in a particular area inspect the work of the Other Contractors and report in writing to the Construction Manager any apparent discrepancies, interferences, defects, or delays in such work that render it unsuitable for the proper execution and results of the Contractor's Work. Failure of the Contractor to so inspect and report shall constitute an acceptance of the Other Contractor's work as fit and proper to receive the Contractor's Work, except as to defects which may develop in the Other Contractor's work after the execution of the Contractor's Work.

The Contractor agrees that all claims, disputes and other matters in question between the Contractor and Other Contractors, which arise out of or are related to this Contract or the breach thereof, shall be settled by agreement or, failing agreement, resolved through arbitration in accordance with the Construction Industry Rules of the American Arbitration Association then in effect, unless the parties to the dispute mutually agree otherwise. 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.

Notice of the demand for arbitration shall be submitted in writing to the Other Contractor(s) and filed with the Pittsburgh Regional Office of the American Arbitration Association, with a copy to the Owner and the Construction Manager. The demand for arbitration shall be made within a reasonable time after the claim, dispute or other matter in question has arisen. Under no circumstances shall the Owner, the Engineering Program Manager, the Final Design Consultants, the Construction Manager or any of the

Owner's other agents or employees be made a party to such claim, dispute or other matter in question.

It is agreed by the parties to this Contract (the Owner as promisee and the Contractor as promisor) that the intent of this clause is to benefit the other as an indication of the mutual intent of the Owner and the Contractor that this clause raise such Other Contractors to the status of third party beneficiaries only as to the terms and conditions of this Contract Section. The Contractor agrees that this Contract Section is provided as a benefit to the Contractor and that it specifically excludes claims against the Owner, the Engineering Program Manager, the Final Design Consultants, and the Construction Manager for delay or other damages.

3.9 INSURANCE

The terms, conditions and provisions related to insurance are contained in Exhibit "A" attached hereto and made a part hereof. It shall be the responsibility of the Contractor to make certain that its subcontractors and suppliers comply with any such insurance requirements relating to them.

3.10 INDEMNIFICATION

The Contractor shall be liable for, and shall protect, indemnify and save harmless the Owner, the Consulting Engineer(s), the Construction Manager, the Engineering Program Manager and their officers, members, employees, agents and invitees (hereinafter, the "Indemnified Parties") against and from any and all liabilities, suits, actions, claims, demands, losses, expenses and costs of every kind and nature incurred by or asserted or imposed against the Indemnified Parties, or any of them, by reason of any accident, injury (including death) or damage to any person or property, or loss of use, however caused resulting from any act of commission or omission of the Contractor, any subcontractor of the Contractor of any tier, or any person or organization directly or indirectly employed or engaged by any of them to perform or furnish any of the Work or anyone for whose acts any of them may be liable, whether or not caused in part by the active or passive negligence or other fault of any of the Indemnified Parties; provided, however, that the foregoing obligations shall not arise if such liabilities, suits, actions claims, losses, expenses and costs are caused by the sole negligence of any of the Indemnified Parties. Furthermore, the foregoing obligations shall survive the completion of the Work and/or termination of the Contract.

In any and all claims against Indemnified Parties by any employee of the Contractor, any subcontractor, any person or organization directly or indirectly employed or engaged by any of them to perform or furnish any of the Work or anyone for whose acts any of them may be liable, the above defense, indemnification and hold harmless 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 such subcontractor or other person or organization under workers' or workmen's compensation acts, disability benefit acts, or other employee benefit acts, nor shall this defense, indemnification and hold harmless obligation be limited in any way by the amount or type of insurance coverage held by the

Owner, the Consulting Engineer, the Construction Manager, the Engineering Program Manager or any of their subcontractors.

The Contractor and its subcontractors shall require their insurance carriers, with respect to all insurance policies, to waive all rights of subrogation against the Indemnified Parties; provided, however, that such waiver shall not extend to the Consulting Engineer, the Engineering Program Manager or the Construction Manager, their agents or employees, for liability arising out of (1) the preparation or approval of maps, Drawings, opinions, reports, surveys, Change Orders, designs or Specifications or (2) the giving of, or the failure to give, directions or instructions by the Consulting Engineer, the Engineering Program Manager or the Construction Manager, their agents or employees provided that any such act or omission is the sole cause of the loss or damage claimed.

3.11 PERMITS

Unless otherwise provided in the Contract Documents or unless otherwise provided by the Engineer in writing, the Contractor shall, prior to beginning Work at the Job Site, obtain and pay for all permits and licenses necessary to complete the Work and shall provide a copy of such to the Construction Manager prior to beginning Work at the Job Site. The Owner shall assist the Contractor, when necessary, in obtaining such permits and licenses. The Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work, which are applicable at the time of opening of Bids, or, if there are no Bids, on the Effective Date of the Contract.

3.12 DOCUMENTS, RECORDS AND PAYROLLS

A. Documents

The Contractor shall keep at the Job Site for inspection by the Owner all Contract Documents that reflect changes made during the performance of the Contract. If there is more than one Job Site, the Contractor shall keep complete sets of such Contract Documents at each Job Site.

The Contractor shall prepare and/or maintain all documents required by this Contract in accordance with the Contract Documents and shall deliver such documents to the Construction Manager in the specified form and quantity before final payment is made.

The Contractor shall not be compensated for performing Work or ordering materials shown on construction, shop, and detailed drawings which have been prepared under its Contract until such drawings have been reviewed and accepted in accordance with the procedure established in the Contract Documents.

B. Records

The Owner or any duly authorized representative may inspect and copy the Contractor's records, pertinent books, documents and papers relating to the Project at any time up to four (4) years after the day final payment is made. In the

event of arbitration, litigation or the settlement of claims arising out of the performance of this Contract or any contracts with vendors, the time period provided in this paragraph shall be extended until any appeal, arbitration, litigation or claim shall have been finally disposed of.

The Contractor shall check all materials, equipment, and labor entering into the Work and shall keep such full and detailed accounts as may be necessary for verification of progress payment requests and other invoices issued by the Contractor under this Contract.

C. Payrolls

The Contractor shall furnish the Owner immediately after each pay period, two (2) copies of each certified payroll for its Work and the Work of its subcontractors, prepared on forms furnished by the Owner, or in a form approved by the Pennsylvania Department of Labor, and executed and sworn to by the Contractor's and subcontractors' respective payroll supervisor.

The Contractor shall keep and require their subcontractors to keep for four (4) years from the date of payment a record showing the name, craft, and hourly wage paid to each employee working on the Project.

Whenever the first payroll is filed with the Owner, or whenever a new payroll supervisor is employed, the Contractor shall file an affidavit, executed by the employer (or the employer's agent duly authorized by a written Power of Attorney or otherwise legally capable of binding the employer) setting forth the name of the payroll supervisor and that the payroll supervisor has full knowledge of the facts sworn in the payroll statement.

3.13 PATENTS AND PROPRIETARY RIGHTS

The Contractor shall acquire (in a form acceptable to legal counsel of the Owner), through assignment, purchase, license, or other means, all rights required to fully utilize all technology, know-how, trade secrets, inventions, processes, articles, procedures, equipment, apparatus, devices, or any part thereof, and any and all things or matters that are to be used in pursuance of performance of the Work under the terms and conditions of this Contract.

In case a temporary, preliminary or permanent injunction is secured because of an alleged patent or proprietary rights infringement which prevents the Owner from using the process, materials or equipment furnished, utilized or installed, the Contractor, at its option and expense, shall within thirty (30) calendar days following notification either: (1) procure the right for the Owner to continue using the same process, materials or equipment; (2) modify the process, materials or equipment; (3) provide a replacement process, materials or equipment which is non-infringing, it being understood that such modification must meet the approval of the Owner (which approval must be recorded in a writing signed by the Engineer); or, (4) take back the materials or equipment and refund

the purchase price. The Contractor will also be subject to the Owner's damages caused by any violation or alleged violation of payment or proprietary rights of a third party. The obligations of the Contractor under this paragraph continue without time limit.

The Contractor agrees to defend, indemnify and hold harmless Indemnified Parties from and against, and to reimburse the foregoing for all loss, damage, cost and expense (including attorneys fees) arising from or resulting from the infringement, alleged infringement or violation of a patent, copyright or other intellectual property or proprietary right, or violation of a patent right, copyright or other intellectual property or proprietary right with respect to equipment, apparatus, materials, supplies, documents, data, manuals, lists, information, technology, know-how, trade secret, invention, process, procedure, device or article, or any part thereof, furnished, utilized or installed by the Contractor or arising from or occasioned by the use or manufacture thereof, including their use by the Owner or resulting in any way from the Contractor's performance of the Work. The Contractor shall pay any loss, damage, cost and expense in a suit so defended. The Owner and the Contractor further agree that the Contractor waives any and all claims, rights and causes of action it may have, now or in the future, against the Owner arising out of compliance with any specifications the Owner furnishes to the Contractor. To wit, the Contractor hereby waives and relinquishes any claim, right or cause of action it may have against the Owner deriving from the Owner's duty, under state law or otherwise, to hold the Contractor harmless against claims for infringement or the like which arises out of compliance with said specifications.

3.14 CONTRACTOR'S CERTIFICATE AND SURETY COMPANY STATEMENT

Before final payment is made by the Owner, the Contractor shall furnish to the Owner a Certificate of Satisfaction, on the form included in the Contract Documents, or, if not so included, on the form customarily used by the Owner, stating that all bills for labor and equipment and all outstanding claims and indebtedness of whatsoever nature arising out of the performance of this Contract, including payments to all subcontractors and suppliers, have been paid. The Contractor shall also furnish statements by each surety, on the form included in the Contract Documents, that the surety is satisfied that payment of all the above such bills, claims and indebtedness has been made.

3.15 NO LIEN AGREEMENT/RELEASE

The Contractor, on behalf of itself, its subcontractors and suppliers, hereby specifically waives the right to file any mechanic's or other lien for work performed or materials furnished in or about the performance of this Contract, and it is hereby expressly agreed that no such claim or claims shall be filed by anyone or any entity and that the Contractor shall not file or permit any subcontractor, supplier, material man, mechanic or other person or entity to file any mechanic's or other lien for work performed or materials furnished in or about the performance of this Contract against the Owner, and/or the ground upon which the structure or work herein provided for is erected or performed, or against any structure thereon erected or to be erected, or against any structure or property of the Owner.

3.16 PERMISSION TO SUBLET OR ASSIGN

The Contract Agreement may not be assigned by the Contractor nor may any obligation of the Contractor hereunder be assumed by any other person or third party without the prior written consent of the Owner and concurrence by the surety. The Contractor shall be required to present a request for such an assignment to the Owner, in writing, for consideration and approval, and the assignment shall be consummated only upon receipt of the written approval of the Owner. In the case of the Owner's approval, the Contractor shall file copies of all related legal documents with the Owner. The Contractor may perform portions of this Contract through any of its subsidiaries, affiliates, subcontractors, or licensees, however, the Owner will administer this Contract solely through the Contractor and will not deal directly with any subsidiary, affiliate, subcontractor or licensee.

3.17 ASSIGNMENT OF ANTITRUST CLAIMS

The Contractor and the Owner recognize that in actual economic practice, overcharges by Contractor's subcontractors and/or suppliers resulting from violations of state or federal antitrust laws are in fact borne by the Owner. As part of the consideration for the award of this Contract, and intending to be legally bound, the Contractor assigns to the Owner all right, title and interest in and to any claims the Contractor now has or may hereafter acquire under state or federal antitrust laws relating to any products or the Work which is the subject of this Contract.

3.18 CONCERNING SUBCONTRACTORS AND OTHERS

The Contractor shall not employ any subcontractor, person or entity, including those initially acceptable to the Owner against whom the Owner may have a reasonable objection. In the event the Contractor fails or refuses to replace, within a reasonable time, any subcontractor, person or entity to which the Owner has taken reasonable objection, the Owner may stop the Contractor's performance until such time that a replacement is effectuated. The Contractor shall be liable for any and all damages related to any reasonable stoppage of the Contractor's performance under this Section. This Section shall not limit the Owner's right to recover for breach of contract or any other legally recognizable cause of action.

The Contractor shall establish the qualifications of subcontractors and will make sure that they comply with the insurance requirements of Exhibit "A". In addition, the Contractor shall establish that subcontractors providing any professional services have adequate professional liability insurance. The Owner's acceptance (either in writing or by failing to make written objection thereto by the date indicated for acceptance or objection in the Contract Documents) of any such subcontractor or other person or entity so identified may be revoked upon the Owner's written objection, in which case the Contractor shall submit a substitute acceptable to the Owner. No acceptance by the Owner of any such subcontractor or other person or entity shall constitute a waiver of any right of the Owner to reject Defective Work.

The Contractor shall be fully responsible to the Owner for all acts and omissions of its subcontractors and other persons and entities performing or furnishing any of the Work under a direct or indirect contract with the Contractor just as the Contractor is responsible for its own acts and omissions. Nothing in the Contract Documents shall create for the benefit of any such subcontractor or other person or entity any contractual relationship between the Owner and any such subcontractor or other person or entity, nor shall it create any obligation on the part of the Owner to pay or to see to the payment of any moneys due any such subcontractor, supplier or other person or entity.

The Articles and Sections of the Contract Documents and the identifications of any Drawings shall not prohibit or restrict the Contractor in dividing the Work among subcontractors or delineating the Work to be performed by any specific trade.

All Work performed for the Contractor by a subcontractor will be pursuant to an appropriate agreement between the Contractor and the subcontractor which specifically binds the subcontractor to the terms, conditions, requirements and prohibitions of the Contract Documents for the benefit of the Owner except where Owner approves otherwise, in writing. Whenever any such agreement is with a subcontractor who is listed as an additional insured on the property insurance provided in Exhibit "A", the Contract Documents or in a writing signed by the Engineer, the agreement between the Contractor and the subcontractor will contain provisions whereby the subcontractor waives all rights against the Owner, the Contractor and all other additional insureds for all losses and damages caused by, arising out of or resulting from any of the perils covered by such policies and any other property insurance applicable to the Work; provided, however, that such waiver shall not extend to the Consulting Engineer, the Engineering Program Manager or the Construction Manager, their agents or employees, for liability arising out of (1) the preparation or approval of maps, Drawings, opinions, reports, surveys, Change Orders, designs or Specifications or (2) the giving of, or the failure to give, directions or instructions by the Consulting Engineer, the Engineering Program Manager or the Construction Manager, their agents or employees provided that such giving, or failure to give, is the sole cause of the loss or damage arising there from. If the insurers on any such policies require separate waiver forms to be signed by any subcontractor or any other entity engaged to do the Work, the Contractor will obtain the same.

With regard to any claim or dispute with respect to payment of a subcontractor of any tier, the Contractor expressly agrees to defend, indemnify and hold the Owner harmless in the event any suit is brought on account of a dispute between any of the parties including, but not limited to, subcontractors, suppliers and material men. The Contractor shall assume the defense affirmatively at its sole cost whenever such suit is brought in any jurisdiction and shall keep the Owner advised as to all important developments.

3.19 ETHICS IN PUBLIC CONTRACTING

The Contractor certifies that it has entered into the Contract without collusion or fraud; that it has not offered or received any kickbacks or inducements from any other supplier, manufacturer or subcontractor in connection with the Contract; and that it has not conferred on any public employee having official responsibility for this construction

transaction any payment, loan, subscription, advance, deposit of money, services or anything of more than nominal value, present or promised.

3.20 INTOXICATING LIQUORS, CONTROLLED SUBSTANCES, OR SIMILAR ACTING DRUGS

The Contractor shall not sell or permit or suffer the introduction or use of intoxicating liquors, controlled substances (without benefit of prescription), or other similar-acting drugs on or about the Work.

The Contractor shall implement, maintain and document a controlled substance surveillance program for all on-site personnel. An outline of this program shall be submitted to the Construction Manager for record prior to the issuance of the Notice to Proceed.

3.21 SALES AND USE TAX

The Owner renders a public utility service, i.e., sewage treatment. Pennsylvania Department of Revenue Regulations provide, in part, that a contractor or subcontractor's purchase of "equipment, machinery or parts thereof" which are "used directly in the rendition of a public utility service upon installation" are exempt from Pennsylvania sales tax. See Section 204(k)(8)(C) of the Tax Reform Code of 1971, Act of March 4, 1971, P.L.6, as amended (the "Act") and Pennsylvania Department of Revenue Regulation 61 Pa. Code § 31.13(b). Accordingly, the Owner shall issue to Contractor one or more exemption certificates in the form attached hereto as Exhibit D so that Contractor may avail itself of the said sales and use tax exemption.

Notwithstanding the foregoing, the Owner makes no representation or warranty regarding the applicability of the exemption with respect to any particular purchase of property by Contractor in connection with the Work. The Contractor shall remain responsible for the full amount of sales and use tax, including interest and penalty, applicable to its Work under this Contract and required to be paid pursuant to Section 204 of the Act and Pennsylvania and local law. The Contractor represents that it is familiar with the Pennsylvania and local sales and use tax law, regulations and rulings applicable to construction contracts including Pennsylvania Department of Revenue Regulations 61 Pa. Code §§ 31.11, Construction Contractors-Definitions, 31.12, Construction Contractor-Imposition of Tax, and 31.13, Construction Contractors-Claim for Exemptions.

The Contractors shall be responsible for determining which materials and equipment it believes are entitled to exemption from sales and use tax. The Owner shall not be obligated to issue any exemption certificate if it believes an exemption is not applicable. Such decision by the Owner shall not entitle the Contractor to a change in the Contract Sum.

Contractor shall indemnify, defend and hold harmless the Owner, and all other parties entitled to indemnification under this Contract, from the obligation to pay any

Pennsylvania and local sales and use tax, interest and penalty which may become due under this Contract.

The Contractor hereby assigns to Owner the exclusive right to seek any and all refunds of Pennsylvania and local sales and use tax erroneously paid pursuant to this Contract. The Contractor shall cooperate fully with the Owner in developing information for the preparation of its refund claim including without limitation copies of purchase invoices and canceled checks. If Contractor concludes that use tax is due under this contract, it shall provide Owner with the basis for its determination at the time the use tax return is required to be made. The Contractor shall also provide Owner copies of its use tax returns and canceled checks for the payment of use tax. In any case where Owner files a refund claim, the Contract shall provide testimony and affidavits as necessary in support of Owner's claim.

RIGHTS AND DUTIES OF THE OWNER

3.22 AUTHORITY OF THE OWNER

The Owner, either directly or through its agents, shall be the sole judge of the intent and meaning of the Contract Documents and its decisions thereon and its interpretations thereof will be final, conclusive and binding on all parties.

The Engineer through the Construction Manager, shall be the representative of the Owner during the life of the Contract and will observe the Work in progress on behalf of the Owner. The Engineer shall have the authority:

- A. To act on behalf of the Owner to the extent expressly provided in the Contract or otherwise in a writing signed by the Executive Director;
- B. To stop the Work whenever such stoppage may be necessary, in its sole discretion, to prevent improper execution of the Work, or otherwise to protect the Owner's interests;
- C. To approve and direct the sequence of execution and general conduct of the Work and to direct that changes be made in such sequence where, in its sole discretion, public necessity or welfare, the interest of the Owner, or the progress of the Work will require; such approval or direction will, however, in no way relieve or diminish the responsibility of the Contractor for or in the performance of the Work;
- D. To determine the amount, quality, acceptability and fitness of all Work, materials and equipment required by the Contract; and,
- E. To decide all questions which arise in relation to the Work, the performance thereof, and the fulfillment of the Contract.

Any delay, failure or omission of the Owner to exercise any obligations or powers shall not impair any such obligations or powers, nor shall the same be construed to be a waiver thereof or any acquiescence therein, nor shall any such action or inaction by the Owner alter or impair the obligations of the Owner.

The Owner shall not, unless specifically required by the Contract Documents, supervise, direct or have control or authority over, or be responsible for the Contractor's means, methods, techniques, sequences or procedures of construction or the safety precautions and programs incident thereto, or for any failure of the Contractor to comply with laws and regulations applicable to the furnishing or performance of the Work. The Owner shall not be responsible for the Contractor's failure to perform or furnish the Work in accordance with the Contract Documents.

3.23 ACCESS TO WORK

The Owner, and its officers, agents, servants and employees may, during the hours of 7:00 A.M. to 5:00 P.M., Monday through Friday or at such other times when the Work is being performed, enter upon the premises used by the Contractor, including the Contractor's offices and/or factory for the purpose of inspection of the Work, and the Contractor shall at all times provide safe and proper facilities therefore. This provision shall not be interpreted as limiting or restricting, to any degree, the Owner's right to free and unrestricted access to its own property and facilities or any portion of the Work therein.

3.24 EXAMINATION OF WORK

The Contractor shall furnish the Owner with a minimum of seven (7) calendar days notice of the Contractor's and/or any subcontractor's or supplier's intent to conduct shop tests, Performance and Acceptance Tests and any other tests, as described herein, to enable the Owner to witness such testing. The Contractor shall provide the Owner with full access to all construction, manufacturing or testing facilities for the purposes of examining and inspecting the Work; for witnessing of testing; and for ascertaining that the Work is being performed in accordance with the requirements and intent of the Contract Documents. The Contractor shall furnish the Owner with every reasonable facility necessary for the Owner to make such inspections or examinations.

3.25 RIGHT TO TEST OR INSPECT

The Owner reserves the right to conduct any test or inspection it may deem advisable to assure that construction, supplies and services conform to the provisions of the Contract Documents. If such tests reveal that material and/or work does not meet Contract requirements, the Contractor will be responsible for the costs related to this testing or retesting.

3.26 RIGHT TO MATERIALS/REUSE OF DOCUMENTS

Nothing in the Contract shall be construed as vesting in the Contractor any right of

property in the materials, equipment, apparatus and other items furnished after they have been installed or incorporated in or attached or affixed to the Work or the Job Site, but all such materials, equipment, apparatus and other items shall, upon being so installed, incorporated, attached or affixed, become the sole and exclusive property of the Owner.

The Specifications, Drawings, manufacturing data and other information transmitted from the Owner to the Contractor in connection with the Contract are the property of the Owner and are disclosed in confidence on the condition that they are not to be reproduced, copied or used for any purpose other than performance of the Contract.

The Contractor and any subcontractor or supplier or other person or organization performing or furnishing any of the Work I) shall not have or acquire any title or ownership rights in any of the drawings, specifications or other documents (or copies of any thereof) prepared by or bearing the seal of the Engineer, the Consulting Engineer or the Engineering Program Manager and (ii) shall not reuse any such drawings, specifications or other documents or copies related to the Project without the express written consent of the Owner.

PERFORMANCE OF CONTRACT

3.27 PROJECT COORDINATION

A. Preconstruction Conference

The Owner shall designate the time and location of the Preconstruction Conference which shall be attended by principals of the Contractor, each subcontractor and each major supplier, or their designated representatives; the Owner; the Engineering Manager; the Consultant Engineer(s); the Construction Manager; and other involved parties to establish Project administrative procedures and to discuss any other appropriate items. The Contractor shall not begin performance of the Work prior to the Preconstruction Conference unless authorized by the Construction Manager in writing.

B. Progress Meetings

Progress Meetings shall be held weekly at times designated by the Construction Manager throughout the period of this Contract. Additional meetings may be arranged at the request of either party when deemed necessary or required by the Contract Documents.

C. Contractor's Superintendent

The Contractor shall identify prior to contract award and assign to the Work, at all times during the life of this Contract, its own competent Superintendent (acceptable to the Owner), who shall not be replaced without written notice to the Construction Manager. The Superintendent will be the Contractor's

representative at the Job Site and shall have authority to act on behalf of the Contractor. All communications to the Superintendent shall be as binding as if given to the Contractor.

D. Schedules

Prior to the start of Work, the Contractor shall submit the following preliminary schedules: a "Mobilization Schedule," which covers the first ninety (90) calendar days of performance of the Work; a "Shop Drawing and Sample Submittal Schedule"; and a completed Schedule of Values. Each preliminary schedule shall be submitted to the Construction Manager, within ten (10) working days of Notice of Award but, in all events, at least five (5) working days in advance of the Preconstruction Conference. Within thirty (30) calendar days of the receipt of the Notice to Proceed, the Contractor shall submit to the Construction Manager a complete "Contract Schedule" that covers the entire performance of the Work. No progress payments shall be made to the Contractor until the schedules referenced above are submitted to and found acceptable to the Construction Manager.

3.28 TIME FOR COMPLETION, MILESTONE DATES

A. Contract Time

The Contractor shall commence the Work immediately upon receipt of the written Notice to Proceed and shall prosecute the Work diligently to completion within the number of calendar days specified in Paragraph 3 of the Contract Agreement (the "Contract Time"). Time is of the essence as regards Contractor's Work.

B. Schedule

The Owner's operations, the scope of the Project and the Work to be furnished under this Contract require careful coordination by the Construction Manager and scheduling between the Contractor and all Other Contractors. Since it will be necessary for the Owner to maintain continuity of its current operations throughout the Contractor's performance, it will be necessary for the Work to be phased in such a manner that portions of the Work will be constructed, installed, started-up and completed in sequence with work performed by Other Contractors and suppliers. The Contract Schedule prepared by Contractor pursuant to Section 3.27D. above must be based upon, and demonstrate the Contractor's ability to meet, the milestones established for the Project ("Project Milestones"). Where the achievement of a Project Milestone is dependent upon the Contractor's completion of all or any portion of the Work to be performed under this Contract, a "Construction Milestone" applicable to the Contractor's Work will be established by the Owner and incorporated by the Contractor into the Contract Schedule.

C. Liquidated Damages

If the Work is not completed within the Contract Time for any Construction Milestone, damage will be sustained by the Owner. It is impracticable and extremely difficult to ascertain and determine actual damages which the Owner will sustain by reason of such delay. It is therefore agreed that the Contractor will be required to pay, as liquidated damages and not as penalty, for delay damages sustained solely by the Owner, the sum of money stipulated in Paragraph 3 of the Contract Agreement for each and every calendar day's delay in finishing the Work beyond the Contract Time prescribed for each Construction Milestone.

The Owner may, at its option, apply any liquidated damages as a credit against the Contract Sum by way of a change order or payment deduction. The remedies provided herein are not exclusive and are in addition to any other rights and remedies provided by law or under the Contract and the Contractor remains liable for damages caused by reasons other than delay.

3.29 TEMPORARY SUSPENSION OF THE WORK

The Owner shall have the authority to suspend the Work wholly, or in part, for such period or periods as it may deem necessary, due to unsuitable weather, or such other conditions as are considered unfavorable for the prosecution of the Work, or for such time as is necessary due to the failure on the part of the Contractor to carry out orders given or perform any or all provisions of the Contract for any other reason deemed necessary or appropriate by the Owner.

In the event that the Contractor is ordered by the Owner, in writing, to suspend the Work for some unforeseen cause not otherwise provided for in the Contract and over which the Contractor has no control and is not at fault, the Contractor may be reimbursed for actual out-of-pocket costs directly related to the suspension of the Work. No allowance will be made for loss profits or any incidental or consequential loss or damage. The period of shutdown shall be computed from the effective date of the Owner's order to suspend Work to the effective date of the Owner's order to resume the Work. Claims for additional compensation resulting from the shutdown shall be filed with the Owner within ten (10) working days of the Owner's order to resume Work unless otherwise stated in the Owner's order to resume Work. The Contractor shall, within twenty (20) calendar days or such other time as the Owner may specify, submit with its claim information substantiating the amount shown on the claim. The Owner will consider the Contractor's claim in accordance with the Contract Documents. No provision of this Section shall be construed as a waiver by the Owner of its right to subsequently terminate the Contract or as relieving the Contractor from its full responsibility for performance of its obligations under this Contract or as entitling the Contractor to compensation for delays due to: (I) the Contractor's failure to carry out orders given or to perform any or all provisions of the Contract; (ii) suspensions made at the request of the Contractor; or (iii) for any other delay provided for in the Contract Documents unless otherwise specified. Additionally, no provision of this section shall be construed as obligating the Owner to suspend Work for such reasons.

If it should become necessary to suspend Work for an indefinite period, the Contractor shall store all materials in such manner that they will not become an obstruction nor become damaged in any way. It shall take every precaution to prevent damage or deterioration of the Work performed and shall provide for proper drainage of the Work.

3.30 REQUESTS FOR INFORMATION AND FIELD INSTRUCTIONS

A. Requests for Information

Monitoring the "Request for Information" ("RFI") process is the responsibility of the Construction Manager. In general, the Contractor is responsible for initially issuing an RFI (pursuant to the form then currently utilized by the Owner) upon discovery of a problem or question. The Construction Manager may at times issue RFIs.

B. Procedure

1. The Contractor is responsible for being thoroughly familiar with the procedures, requirements and conditions of the Contract Documents which relate to the RFI.
2. If at any time after receiving the Notice to Proceed, the Contractor discovers conflicts, omissions, errors or ambiguity in the Contract Documents or between the Contract Documents and any provision of any law or regulation applicable to the performance of Work; or if it appears to the Contractor that the Work to be done or of any matter related thereto is not sufficiently detailed or explained in the Contract Documents; or if it appears to the Contractor that an order or direction of the Engineer, the Consulting Engineer or the Construction Manager is unclear, then, before proceeding with the Work affected, the Contractor shall notify the Construction Manager in writing and request information/clarification or additional detailed information concerning the Work on the RFI form.
3. If pursuant to the judgment of the Construction Manager, the RFI is an emergency, the resolution will be handled by telecopy or telephone.
4. If the answer to an RFI initiated by the Contractor is clearly contained in the Contract Documents, the Contractor shall be responsible and liable for any costs or delays associated with the review of the RFI.

C. Field Instructions

The Owner may issue Field Instructions, through the Construction Manager, from time to time as may be necessary or appropriate to interpret or to resolve any ambiguity or error in the Specifications or Drawings or to make any minor change to the Specifications or Drawings that does not result in a net change in the Contract Sum, the Contract Time or the quality of material or workmanship. Field Instructions shall be effective upon delivery to the Contractor. Field

Instructions may not change or alter the General Conditions.

3.31 CHANGE ORDERS

A. Contract Changes

1. The Owner reserves and shall have the right to make such alterations in the Work, including changes to the Contract Sum and Contract Time, as may be necessary or desirable to complete the Work in an acceptable manner.
2. This Contract may be revised at any time by means of a written Change Order issued in accordance with this Section of the General Conditions signed by both the Owner and the Contractor. This provision cannot be waived, and no oral amendment of this Contract shall be effective.
3. A change in the Work, the Contract Sum or the Contract Time shall be accomplished only by Change Order. Direction to proceed with a change in the Work may be given by the Owner through a Proposed Change Order (PCO) fully executed by the Owner and the Contractor which directs the Contractor to proceed with the change in the Work. Subsequently, a Change Order shall formalize any changes in the Work, Contract Sum and Contract Time related to such PCO that direct the Contractor to proceed with a change.
4. Accordingly, no course of conduct or dealings between the parties, nor express or implied acceptance of alterations or additions to the Work, and no claim that the Owner has been unjustly enriched by any alteration or addition to the Work, whether or not there is, in fact, any unjust enrichment shall be the basis of any claim to an increase in any amounts due under the contract Documents or a change in any time period provided for in the Contract Documents.
5. Until a Proposed Change Order (PCO) which directs the Contractor to proceed with a change in the Work is fully executed by the Owner and the Contractor, or a written Change Order is approved in writing by the Owner, no money or time shall be expended by the Contractor on performing work that is the subject of a Change Order pending approval and none of the money and time actually expended will be reimbursed to the Contractor and the cost of all corrective work will be the responsibility of the Contractor.

B. General

1. The Construction Manager will have primary responsibility for the administration of Change Orders approved by the Owner.
2. Upon receipt of a Proposed Change Order (PCO) from the Owner through

the Construction Manager, the Contractor shall, within ten (10) working days, submit a proposal for the work covered by the PCO, including any requested adjustment in the Contract Sum or the Contract Time, properly itemized and supported by sufficient substantiating data to permit evaluation. Failure to request a modification of the Contract Time when submitting such proposal shall constitute a waiver of the Contractor's right to subsequently claim an adjustment of the Contract Time based upon such changed work.

3. The cost or credit to the Owner resulting from a change in the Work shall be determined in one or more of the following ways:
 - a. At a Lump Sum Price agreed upon before the additional Work is commenced and stated in the Change Order for the Work;
 - b. On a unit price basis at the unit prices quoted in the Contractor's Bid or, if none are established, by unit prices inferred from the Contract and agreed to by the Owner and Contractor; or
 - c. On a time and material basis as provided in Section C below (the "Time and Material Method").
4. The Owner shall have no obligation to pay for profit or consequential loss claimed by the Contractor on Work eliminated by Change Order.
5. Notwithstanding any other provisions of the Contract, if the Owner and the Contractor are unable to agree upon an adjustment of the Contract Sum or the Contract Time connected with a change in the Work, the Owner reserves the right to make other arrangements for its completion.
6. Work in addition to that prescribed by the Contract Documents shall not be performed without a signed Change Order or signed PCO except under emergency circumstances which pose a clear and present danger to property or persons. Emergency changes shall be compensated using the Time and Material Method.
7. All Work performed pursuant to any Change Order will be performed under the applicable conditions and provisions of the Contract Documents (except as otherwise specifically provided). If notice of any change relating to the general scope of the Work or the provisions of the Contract Documents is required to be given to a surety, the giving of such notice will be the Contractor's responsibility, and the Contractor will make certain that the amount of each applicable Bond will be adjusted accordingly.
8. Agreement on any Change Order shall constitute a final settlement of all matters relating to the change in the Work which is the subject of the

Change Order, including, but not limited to, all direct and indirect costs associated with such change and any and all adjustments to the Contract Sum and the Contract Time. In the event a Change Order increases the Contract Sum, Contractor shall include the work covered by such Change Order in Applications for Payment as if such Work were originally part of the Contract Documents.

C. Time and Material Method

1. In the event the Contractor and Construction Manager are unable to agree on the basis for compensating the Contractor for a change in the Work, the Contractor, provided he receives a written Change Order signed by the Owner, shall promptly proceed with the work involved. The cost of such work shall then be determined on the basis of the reasonable expenditures and savings of those performing the work attributable to the change, including, in the case of an increase in the Contract Sum, a reasonable allowance for overhead and profit determined in accordance with Paragraph D. below. In such case, and also under Clauses B.4.b. and B.4.c. above, the Contractor shall keep and present an itemized accounting together with appropriate supporting data for inclusion in a Change Order.
2. Unless otherwise provided in the Contract Documents, cost shall be limited to the following: cost of materials, including sales tax and cost of delivery; cost of labor, including social security, old age and unemployment insurance, and fringe benefits required by agreement or custom; workers' compensation insurance; bond premiums; rental value of equipment and machinery; and the additional cost of supervision and field office personnel directly attributable to the change.
3. Pending final determination of cost to the Owner, payments on account shall be made monthly in accordance with the payment and other applicable provisions set forth in the Contract Documents. The amount of credit to be allowed by the Contractor to the Owner for any deletion or change which results in a net decrease in the Contract Sum will be the amount of the actual net cost. When both additions and credits covering related work or substitutions are involved in any one change, the allowance for overhead and profit shall be figured on the basis of the net increase, if any, with respect to that change.

D. Overhead and Profit

For any adjustments to the Contract Sum which are based on other than the unit prices method, the Contractor agrees to charge, and accept, as payment for overhead and profit, the following percentages of direct costs attributable to the change in the Work:

1. Twenty percent (20%) for work by the Contractor not involving

subcontractors;

2. Five percent (5%) for work by subcontractors;
3. When both additions and credits are involved in any one change, the allowance for overhead and profit shall be figured on the basis of the net increase, if any;
4. For additional work ordered as described above which will be executed by subcontractors, it is agreed that subcontractors will be permitted to charge fifteen percent (15%) for work not involving sub-subcontractors and five percent (5%) for work by sub-subcontractors. In no case will the cumulative total for overhead and profit exceed thirty percent (30%) of the direct cost of labor, materials and equipment, notwithstanding the number of contract tiers actually existing.

3.32 DELAYS AND EXTENSIONS OF TIME

If the Contractor is delayed at any time in the progress of the Work by any act or neglect of the Owner, or by changes requested by the Owner in the Work, or by labor disputes, fire, unusual delay in transportation, severe weather, unavoidable casualties, or any other cause beyond the reasonable control of Contractor and all subcontractors and not otherwise attributable to any fault of Contractor or any subcontractor, any breach by Contractor or any subcontractor of its obligations under the Contract Documents or its subcontract, as the case may be, or by any other cause which, in the judgment of Owner, justifies the delay, then the Contract Time shall be extended commensurately by written Change Order as provided in Section 3.31.

Any request for a change in the Contract Time shall be made in writing to the Owner not more than five days after the commencement of the delay. In the case of a continuing delay only one claim is necessary. The Contractor shall provide an estimate of the probable effect of such delay on the progress of the Work, the Construction Milestones Schedule, and Substantial Completion Dates.

Notwithstanding anything to the contrary in the Contract Documents, an extension in the Contract Time, to the extent permitted under Paragraph A above, shall be the sole remedy of the Contractor for any (1) delay in the commencement, prosecution or completion of the Work, (2) hindrance, interference or obstruction in the performance of the Work, (3) loss of productivity, or (4) other similar claims (collectively referred to in this Paragraph as "Delays") whether or not such Delays are foreseeable, unless a Delay is caused by acts of the Owner constituting active interference with the Contractor's performance of the Work, and only to the extent such acts continue after the Contractor furnishes the Owner with notice of such interference. In no event shall the Contractor be entitled to any compensation or recovery of any damages, in connection with any Delay, including, without limitation, consequential damages, lost opportunity costs, impact damages or other similar remuneration. The Owner's exercise of any of its rights or remedies under the Contract Documents (including, without limitation, ordering changes in the Work or

directing rescheduling or correction of the Work), regardless of the extent or frequency of the Owner's exercise of such rights or remedies, shall not be construed as active interference with the Contractor's performance of the Work.

3.33 PROGRESS ESTIMATES AND APPLICATIONS FOR PAYMENT

The parties hereto agree that Act 142 of 1994, amending the Public Works Contract Regulation Law (73 P.S. Section 1621) shall not apply to any Contract terms between the Owner and the Contractor.

For the purposes of this Contract, the Owner intends to make progress payments to the Contractor based upon the extent of the Work completed. Determination of the amount of Work completed will be determined in accordance with this Section 3.33.

The Contractor shall submit a proposed Schedule of Values to the Construction Manager pursuant to the Contract requirements to enable the Construction Manager to prepare an estimate form or review a payment form for use in determining the amount of monies periodically due to the Contractor for completed Work. In order to make progress payments, it will be necessary for the Contractor to include values for each item of Work shown as an activity on the Contractor's Project Schedule. The Construction Manager will have the right to approve, modify or reject this price breakdown if, in its sole opinion, the amounts reflected are not appropriate to the Work elements involved; there are missing or incomplete items; or the unit prices listed thereon are unbalanced. The determination of the Construction Manager with regard to the price breakdown shall be final, binding and nonappealable.

The Owner, at its option, may make payments for materials and equipment stored at the Job Site or at a facility acceptable to the Construction Manager. If payment is requested on the basis of materials and equipment not incorporated in the Work, but deliberately and suitably stored at the Job Site or at another location agreed to in writing, any application for payment shall be accompanied by a bill of sale, paid invoice or other documentation warranting that the Owner has received the materials and equipment free and clear of all liens and encumbrances and evidence that the materials and equipment are covered by Contractor supplied property insurance and other arrangements to protect the Owner's interest therein, all of which will be satisfactory to the Owner. Payment shall only be requested for those stored materials and equipment not incorporated into the Work if their unit cost is greater than \$500 or their bundled value is greater than \$1,000. (Broken bundles or boxes will be discounted.)

The Contractor warrants and guarantees that title to all Work, materials and equipment covered by any progress payment, whether incorporated in the Project or not, will pass to the Owner no later than the time of application for payment, free and clear of all liens and encumbrances.

If there exists a good faith dispute over the amounts to be paid, the Owner shall pay the undisputed amount, but the disputed portion may be withheld from the Contractor until resolution of the matter, with that portion due forty-five (45) calendar days after said

resolution. No request by the Contractor for an adjustment to the Contract Sum, regardless of the reason, shall be allowed if asserted after final payment under this Contract.

Any payment made pursuant to a progress estimate is not an acceptance by the Owner of any part of the Work, material or equipment covered by such progress estimate.

The Owner may refuse to make any partial payments under the Contract for Work performed after any applicable Milestone Date and shall be entitled to withhold payments as a result of the Contractor's failure to complete its Work in accordance with the specified Milestones.

Payments shall be subject to the retainage described in Section 3.35 of the General Conditions entitled "Monies May Be Retained Or Withheld" and may also be reduced by the Owner for any credits due to the Owner including amounts owed for liquidated damages, amounts resulting from Defective Work, amounts resulting from claims made against the Owner on account of the Contractor's performance or furnishing of the Work or amounts resulting from other items entitling the Owner to a set-off.

A. Payments to Subcontractors:

In the absence of a good faith reason, within fourteen (14) calendar days of the receipt of payment by the Contractor or fourteen (14) calendar days after receipt of a subcontractor's or supplier's invoice, whichever is later, the Contractor shall pay the subcontractor or supplier, with whom it has contracted, the full or proportional amount received for each such subcontractor's or supplier's Work and materials. Should the Contractor fail to pay a subcontractor or supplier without a good faith reason, the Owner may, at its discretion, withhold future payments owed to the Contractor. No subcontractor or supplier shall become a third party beneficiary of this provision and this provision shall not afford any subcontractor or supplier a cause of action against the Owner.

B. Procedure

1. General

During the Preconstruction Conference, the specific details for progress payments will be reviewed and sample forms distributed to the Contractor.

2. Schedule of Values

The Contractor shall provide a Schedule of Values outlining the values of each component of the Work as shown on its Project Schedule as an activity. The Schedule of Values will be computerized into a standard spreadsheet format established and acceptable to the Construction Manager.

3. Draft Application for Payment

The Contractor shall prepare a draft Application for Payment in the form provided through the Construction Manager for each pay period indicating the percentages of completion for each activity and properly stored materials and equipment for which payments are to be requested. This draft will be effective for the end of the month. A review will be performed by the Construction Manager to confirm that the amounts are acceptable. Any required adjustment will be discussed with the Contractor.

4. Formal Application for Payment

After agreement between the Contractor and the Construction Manager on quantities and their associated value, the Contractor shall submit an original Formal Application for Payment signed in blue ink, and two copies of the Formal Application for Payment for that pay period, and shall perform all extensions and arithmetic, and provide back-up documentation, etc., on the forms provided through the Construction Manager. The Formal Application for Payment shall be executed by an authorized officer of the Contractor's firm and submitted by the sixth calendar day of the month.

Upon receipt of each Formal Application for Payment, the Construction Manager staff will verify that any agreed-upon modifications have been made from the Draft Application for Payment, check all extension and arithmetic and ensure that all the Contractor provisions pertaining to progress payments have been met and that all necessary substantiating documentation is included. After review and approval of the Formal Application for Payment by the Construction Manager, the Owner shall pay the Contractor within sixty (60) calendar days of submitting its Formal Application for Payment unless the Owner is withholding payment.

When Work nears completion, cost estimates of uncompleted Work will be made by the Construction Manager as a means of verifying percentages of completed Work.

5. Retainage

The Construction Manager will assure the retainage, as prescribed by Section 3.35 of the General Conditions entitled "Monies may be Retained or Withheld", will be deducted from the payment request. The retained percentage will not be relied on to cover costs of correction of defects, omissions and the like; thus, additional sums may be withheld by the Owner to cover such items.

6. Miscellaneous

The Contractor will be advised by the Construction Manager in writing of reductions in the payment request for Work which has been performed but does not meet Contract Documents' requirements.

3.34 FINAL PAYMENT

Payment will be made by the Owner within forty-five (45) calendar days following submittal of the Contractor's Final Payment Application, less one and one half times any amount as is required to complete any then remaining uncompleted minor items as certified by the Engineer (and other adjustments and any liquidated damages as provided in the Contract Documents). The Owner's Certificate of Substantial Completion will include a punch list of uncompleted items (See Contract Provisions Section entitled "Certification of Substantial Completion"). Final payment of any amount withheld will be paid upon certification by the Engineer of Final Acceptance (See Section 3.50 entitled "Final Acceptance").

3.35 MONIES MAY BE RETAINED OR WITHHELD

The Owner shall at any time retain from any monies which could otherwise be payable an amount not exceeding the amount of retainage outlined in Act 317 known as the Contractor's Act approved November 26, 1978, and amended by Act 200, approved November 23, 1982. If the Act does not apply to purchases under this Contract, the Owner may utilize retention provisions similar to those contained in the Contractor's Act. The Owner may apply any moneys retained hereunder to reimburse itself for any and all costs, expenses, losses, damage and damages, liabilities, suits, judgments and awards incurred, suffered or sustained by the Owner and chargeable to the Contractor hereunder or as determined hereunder.

Whenever there is unacceptable or Defective Work, or there are outstanding or potential third party claims against the Owner arising from the Contractor's activities, or there is a reasonable doubt on the part of the Owner that the Contractor will satisfactorily complete its Contract, or when liquidated damages may be owed to the Owner pursuant to the terms of this Contract, the Owner may withhold so much as is necessary, in the Owner's discretion, to reimburse the Owner for any costs or expenses that may accompany these conditions.

3.36 SUBMITTALS

To assure that the products furnished under this Contract conform to the intent of the Contract Documents and requirements under the specifications, the Contractor shall submit: testing data and/or reports; manufacturer's data and pertinent system design information; certifications; installation drawings and instructions; Shop Drawings; samples; requests for substitutions as required by and in strict conformance with the Contract Documents; and, additional information as may be requested by the Owner.

3.37 FIELD SERVICES, FIELD INSPECTIONS AND START-UP TESTING

A. General

As part of the Work of this Contract, the Contractor shall provide (as required) field services at the Owner's facility before, during and after Work construction and/or installation, to inspect and approve the construction and/or installation of the Contractor's Work; to conduct commissioning inspections and start-up operations; to conduct Performance and Acceptance Tests; and to train the Owner's personnel in the proper operation and maintenance of the Work provided under this Contract, as set forth herein. Specific time periods will not be less than that specified in the Contract Documents or recommended by each Component Manufacturer.

The Contractor shall cooperate fully with the Construction Manager and all others involved in the field construction so that it does not delay or interfere with their work.

Field Services, Field Inspections and Start-Up Testing may be more fully described in Article 6.

3.38 FIELD SERVICE ASSISTANCE/OWNER-FURNISHED EQUIPMENT

If the installation of Owner-Furnished Equipment (as further described in Section 3.41C below) is part of the Work of this Contract, it is to be tested, started up and serviced as part of the Work of this Contract.

For those services specified as the responsibility of Owner-Furnished Equipment suppliers in separate contracts with the Owner, the Contractor shall schedule field services in conjunction with the Construction Manager and notify the Owner at least 21 calendar days before the manufacturers' representatives are needed for field inspection and testing of each Owner-Furnished Equipment.

Where the manufacturer's representatives of Owner-Furnished Equipment Manufacturers will provide training, the Contractor shall schedule training sessions in conjunction with the Construction Manager, determine appropriate locations for training, and provide the Owner at least 21 calendar days' advance notice of the training schedule.

The Owner shall assure that Owner-Furnished Equipment suppliers have provided spare parts and special tools and approved operations and maintenance manuals to the site before any field services commence.

3.39 TRAINING SERVICES

The Contractor shall adequately instruct designated employees or representatives of the Owner in the operation, maintenance and care of all Work provided under this Contract. Such training shall be coordinated and administered through the Construction Manager.

During the Acceptance Tests, the Owner's operating personnel will assist in the operation of the item of Work being tested, performing operating adjustments under the direction of the representatives of the Contractor. To that extent, the Owner's personnel will take an active role in the operation of the item of Work being tested, as a part of their training, under the direct supervision of the Contractor's representatives.

A. Responsibility During Tests

The Contractor shall be fully responsible for the operation of the respective Work provided under this Contract during all periods of testing and instruction and will neither have nor make any claim for damage to any item of Work prior to its Final Acceptance.

Training Services may be more fully described in Article 6.

3.40 TESTING

Three (3) types of testing are required for certain equipment and components covered under this Contract: Shop Tests; Acceptance Tests; and Performance Tests. All Tests shall be conducted so that they may be witnessed by representatives of the Owner. It shall be the responsibility of the Contractor to assure that such tests are performed and shall submit the written test reports and certificates to the Owner summarizing the results of all tests and indicating satisfactory completion of all required tests. The reports and certificates for Shop Tests shall be submitted to the Owner as soon as possible after shipment of the equipment and components to the Owner's facility, unless they can be submitted prior to shipment. In all cases such reports and certificates shall be submitted prior to Acceptance Testing on site.

The various tests and obligations of the Contractor during testing are more specifically described in Article 6.

The Contractor shall note that the design requirements provided in the Contract Documents including the Specifications for each component of work as well as overall performance are considered essential to meeting the minimum requirements of this Contract.

3.41 CONTROL OF MATERIALS

A. Quality Requirements

The materials, labor, equipment and systems used on the Work shall conform to the requirements of the Contract Documents.

The Owner expects that all manufactured and installed items, equipment, components and materials will perform at or above the manufacturer's or supplier's written specifications, as well as all applicable standards, laws and regulations.

The Contractor shall be responsible for the quality of the materials and construction and shall be solely responsible for complying fully with the Contract Documents.

The Owner may permit the use, prior to sampling and testing, of certain materials or assemblies when accompanied by the Manufacturer's or supplier's certificates of compliance stating that such materials or assemblies fully comply with the requirements of the contract.

The Owner or its authorized representative may inspect, at its source, any specified materials or assembly to be used in the Work. Manufacturing plants may be inspected from time to time for the purpose of determining compliance with specified manufacturing methods or materials to be used in the Work and to obtain samples required for the Owner's acceptance of the materials or assembly.

It is understood and agreed that the Owner shall have the right to retest any material which has been tested and approved at the source of supply after it has been delivered to the Job Site. The Owner shall have the right to reject material which, when retested, does not meet the requirements of the Contract, plans, or Specifications.

All storage sites on private property or the Job Site shall be restored to their original condition by the Contractor at its entire expense, except as otherwise agreed to (in writing) by the Owner or lessee of the property.

B. Unacceptable Materials

Any materials or assembly that does not conform to the requirements of the Contract Documents, shall be considered unacceptable and may be rejected. The Contractor shall remove any rejected materials or assembly from the Site of the Work, unless otherwise instructed by the Owner.

No rejected materials or assembly, the defects of which have been corrected by the Contractor, shall be returned to the Job Site of the Work until such time as the Contractor has demonstrated, to the Owner's satisfaction that the use of such materials or assembly in the Work will produce a finished product which complies, in all respects, with the requirements of the Contract Documents.

The decisions of the Engineer, through the Construction Manager, as to whether materials and workmanship should be accepted or rejected will be binding upon the Contractor.

The Owner will not be stopped by any measurement, estimate, or certificate made by it or any of its representatives from later showing that the Work, materials, or equipment do not conform to the requirements of the Contract Documents.

C. Owner-Furnished Materials and Equipment

The Contractor shall furnish all materials and equipment required to complete the Work, except those specified herein (if any) to be furnished by the Owner. Owner-furnished Materials and Equipment shall be made available to the Contractor at the location specified in the Contract Documents.

After any Owner-Furnished Material or Equipment has been received by the Contractor, the Contractor shall be responsible for any demurrage, damage, loss, or other deficiencies which may occur during the Contractor's handling, storage, or use of such Owner-Furnished Materials and Equipment. The Owner will deduct from any monies due or to become due the Contractor any cost incurred by the Owner in making good such loss due to the Contractor's handling, storage, or use of Owner-Furnished Materials and Equipment. After any Owner-Furnished Material or Equipment has been received by the Contractor, it shall become part of the Work for purposes of this Contract, including all indemnifications and warranty provisions as described in the Contract Documents including the Contract Provisions Sections entitled "Obligations and Liability of the Contractor" and "Warranty".

3.42 AUTHORITY AND DUTIES OF INSPECTOR

Inspectors employed by the Owner shall be authorized to inspect all Work done and all material furnished. Such inspection may extend to all or any part of the Work and to the preparation, fabrication, or manufacture of the materials to be used. Inspectors are not authorized to revoke, alter, or waive any provision of the Contract or accept any Work. Inspectors are not authorized to issue instructions contrary to the Contract Documents or to act as foremen for the Contractor.

3.43 INSPECTION OF THE WORK

All materials and each part or detail of the Work shall be subject to inspection by the Owner. The Owner shall be allowed access to all parts of the Work and shall be furnished with such information and assistance by the Contractor as is required to make a complete and detailed inspection.

If the Owner requests it, the Contractor, at any time before Final Acceptance of the Work, shall remove or uncover such portions of the finished Work as may be directed. After examination, the Contractor shall restore said portions of the Work to the standard required by the Specifications. Should the Work thus exposed or examined prove acceptable, the uncovering, or removing, and the replacing of the covering or making good of the parts removed will be paid for as extra Work; but should the Work so exposed or examined prove unacceptable or in any way defective, the uncovering, or removing, and the replacing of the covering or making good of the parts removed will be at the expense of the Contractor who performed the unacceptable Work.

Any Work done or materials used without inspection by an authorized representative of the Owner may be ordered removed and replaced at the Contractor's expense.

Should the Work include relocation, adjustment, or any other modification to existing facilities, not the property of the Owner or its authorized representative, the owners of such facilities shall have the right to inspect such Work. Such inspection shall in no way make any facility owner a party to the Contract, and shall in no way interfere with the rights of the parties to this Contract.

If any rule or and regulation of any body having jurisdiction require any Work (or any part thereof) specifically to be inspected, tested or approved by an employee or other representative of such body, the Contractor shall assume full responsibility for arranging and obtaining such inspections, tests or approvals, paying all costs in connection therewith, and shall furnish the Construction Manager the required certificates of inspection, for approval. The Contractor shall also be responsible for arranging and obtaining and shall pay for all costs in connection with inspection, tests or approvals required for the Owner's acceptance of materials or equipment to be Incorporated in the Work.

3.44 REMOVAL OF UNACCEPTABLE AND UNAUTHORIZED WORK

All Work which does not conform to the requirements of the Contract Documents will be considered Defective Work and unacceptable, unless otherwise determined acceptable by the Owner.

Defective Work, whether the result of poor workmanship, use of defective materials, damage through carelessness, or any other cause, shall be removed immediately and replaced in an acceptable manner in accordance with the Contract Documents. The Contractor shall pay all claims, costs, losses and damages caused or resulting from such correction or removal (including but not limited to all costs of repair or replacement of the Work of others).

Work done contrary to the instructions of the Owner, Work done contrary to the Specifications, except as herein specified, or any extra work done without authority, will be considered as unauthorized and will not be paid for under the provisions of the Contract. Work so done may be ordered removed or replaced at the Contractor's expense.

Upon failure on the part of the Contractor to comply within three (3) working days with any order of the Owner made under the provisions of this Section, the Owner will have authority to cause Defective Work to be remedied or removed and replaced and unauthorized Work to be removed and to deduct the costs (incurred by or on behalf of the Owner) from any monies due or to become due the Contractor.

3.45 OWNER MAY STOP THE WORK

If the Work is defective, or the Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to furnish or perform the Work in such a way

that the completed Work will conform with the Contract Documents, the Owner may order the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of the Owner to stop the Work shall not give rise to any duty on the part of the Owner to exercise this right for the benefit of the Contractor or any surety or any other party. Only such orders issued in a writing signed by the Engineer and issued through the Construction Manager shall be considered valid.

3.46 ACCEPTANCE OF DEFECTIVE WORK

If instead of requiring correction or removal and replacement of Defective Work, the Owner prefers to accept it, the Owner may do so. The Contractor shall pay all expenses, claims, costs, losses and damages attributable to the Owner's evaluation of and determination to accept such Defective Work. If any such acceptance occurs prior to final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and the Owner shall be entitled to an appropriate decrease in the Contract Sum. If the acceptance occurs after final payment, an appropriate amount will be paid by the Contractor to the Owner or, at the Owner's option, may be set-off from other amounts owed by Owner to the Contractor pursuant to other contracts.

3.47 OWNER MAY CORRECT DEFECTIVE WORK

If the Contractor fails within three (3) working days after receipt of a written notice from the Engineer to correct Defective Work or to remove and replace rejected Work as required by the Owner, or if the Contractor fails to perform the Work in accordance with the Contract Documents, or if the Contractor fails to comply with any other provision of the Contract Documents, the Owner may correct and remedy any such deficiency. In connection with such corrective and remedial action, the Owner may exclude the Contractor from all or part of the Job Site, take possession of all or part of the Work, and suspend the Contractor's services related thereto, take possession of the Contractor's tools, appliances, construction equipment and machinery at the Job Site and incorporate in the Work all materials and equipment stored at the Job Site or for which the Owner has paid the Contractor but which are stored elsewhere. The Contractor shall allow the Owner, the Owner's representatives, agents and employees access to the Job Site to enable the Owner to exercise the rights and remedies under this Section. All claims, costs, losses and damages incurred or sustained by the Owner in exercising such rights and remedies will be charged against the Contractor and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and the Owner shall be entitled to an appropriate decrease in the Contract Sum or any other remedy permitted in the Contract Documents or allowed by laws and regulations. Such claims, costs, losses and damages will include but not be limited to all costs of repair or replacement or Work of others destroyed or damaged by correction, removal or replacement of the Contractor's Defective Work. The Contractor shall not be allowed an extension of the Contract Time because of any delay in the performance of the Work attributable to the exercise by the Owner of the Owner's rights and remedies hereunder.

3.48 PROTECTION, MAINTENANCE AND SECURITY DURING CONSTRUCTION

The Contractor shall protect, maintain and secure the Work during construction and until the Work is accepted. This protection, maintenance and security shall constitute continuous and effective Work prosecuted day by day, with adequate equipment and forces so that the Work is protected, maintained and secured in satisfactory condition at all times.

All costs of protection, maintenance and security Work during construction and before the Project is accepted shall be included in the prices for the various Contract Items, and the Contractor will not be paid an additional amount for such Work.

Should the Contractor at any time fail to so protect, maintain and secure the Work, the Owner upon observing such a failure, shall notify the Contractor of such noncompliance. Such notification shall specify a reasonable time within which the Contractor shall be required to remedy such unsatisfactory condition.

Should the Contractor fail to respond to the Owner's notification, the Owner may suspend any of the Contractor's Work necessary for the Owner to correct such unsatisfactory protection, maintenance or security condition, depending on the exigency that exists. Any protection, maintenance or security cost incurred by the Owner, shall be deducted from monies due or to become due the Contractor.

3.49 CERTIFICATION OF SUBSTANTIAL COMPLETION

A. Preliminary Procedures:

Before requesting inspection for certification of Substantial Completion of entire work, the Contractor shall have completed the following:

1. In the Application for Payment that coincides with, or first follows, the date Substantial Completion is claimed, show 90 percent completion of the Work. Include supporting documentation for completion as indicated in the Contract Documents and a statement showing an accounting of changes to the Contract Sum, if any.
2. Advise the Owner of pending insurance change-over requirements.
3. Submit specific warranties, including all Manufacturer's warranties, Workmanship bonds, maintenance agreements, final certifications and similar documents.
4. Obtain and submit any releases enabling the Owner unrestricted use of the Work and access to services and utilities; include occupancy permits, operating certificates and other similar releases.
5. Submit As-Built and Record Drawings, operations and maintenance manuals, damage or settlement survey, property survey, (if any) and

similar final record information for all work completed at substantial completion.

6. Deliver tools, spare parts, extra stock, and similar items.
7. Make any final change-over of permanent locks and transmit keys to the Owner, if necessary. Advise the Owner's personnel of change-over in security provisions.
8. Certify that start-up, Performance and Acceptance testing of Work, and instruction and training of the Owner's operating and maintenance personnel has been completed. .
9. Submit Consent of Surety to Reduction in Retainage.
10. Submit such other documentation as may be requested by the Owner.

B. Inspection Procedures:

1. On receipt of a Contractor request for inspection for certification of Substantial Completion, which shall include any known exceptions to the items described in Section 3.41 above, the Construction Manager will coordinate, within a reasonable time thereof, a final inspection and advise the Contractor of any unfilled Contract requirements. The Owner will either prepare the Certificate of Substantial Completion form following the inspection, or, through the use of a punch list form, will advise the Contractor of Work that must be completed prior to issuance of the certification.
2. The Construction Manager will arrange another inspection when requested and assured by the Contractor that the Work has been substantially completed. The Contractor shall bear all costs the Owner may incur with regard to such reinspections. Results of the completed inspection will form part of the basis of the requirements for Final Acceptance.

B. Certificate of Substantial Completion:

Upon the Contractor's completion of all the above, and based upon the Construction Manager's recommendation, the Owner will issue a Certificate of Substantial Completion.

3.50 FINAL ACCEPTANCE

A. Preliminary Procedures:

At least [5] calendar days before requesting final inspection for certification of Final Acceptance and final payment, the Contractor shall have completed the

following in form and substance acceptable to the Owner:

1. Submit Guarantees and Bonds as required by the Contract.
2. Submit Maintenance Bond.
3. Submit the final payment request with releases and supporting documentation not previously submitted and accepted. Include certificates of insurance for products and completed operations where required.
4. Submit an updated final statement, accounting for final additional changes to the Contract Sum.
5. Submit a certified copy of the final inspection punch list of items to be completed or corrected, stating that each item has been completed or otherwise resolved for Final Acceptance, and the list has been endorsed and dated by the Engineer.
6. Submit final meter readings for utilities, a measured record of stored fuel, and similar data as of the date of Substantial Completion, or when the Owner took possession of and responsibility for corresponding elements of the Work.
7. Submit consent of surety to final payment.
8. Submit a final liquidated damages settlement statement.
9. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
10. Submit the Contractor's Release and Waiver of Claims.
11. Submit Releases and Waivers in form acceptable to the Owner from any or all subcontractors or suppliers or the like who performed Work or supplied labor, materials or services pursuant to the execution of this Contract or as may be requested by the Owner.
12. Submit the Contractor's Affidavit of Payment of Debts and Claims.
13. Submit written certification that:
 - a. the Contract Documents have been reviewed.
 - b. the Work has been inspected for compliance with the Contract Documents.
 - c. the Work has been completed in accordance with the Contract Documents.

- d. the Work has been tested in the presence of the Construction Manager and is operational.
 - e. the Work is complete and ready for final inspection.
14. Submit all other submittals required by the Contract Documents or otherwise reasonably requested by the Owner.

B. Reinspection Procedure:

The Construction Manger will coordinate reinspection of the Work upon receipt of Contractor notice that the Work, including inspection of punch list items from earlier inspections, has been completed. The Contractor shall bear all costs the Owner may incur with regard to such reinspections.

- 1. Upon completion of reinspection, the Owner will either prepare a Certificate of Final Acceptance, or, through the use of a punch list form, will advise the Contractor of Work that is incomplete or of obligations that have not been fulfilled but are required for Final Acceptance.
- 2. If necessary, reinspection will be repeated. This, however, shall not limit the Owner's right to receive liquidated damages for delay.
- 3. Non-Pennsylvania corporations and their sureties will not be relieved of their obligations until they furnish evidence that they have paid or posted security for, all state taxes and any other obligations owed to the Commonwealth.

If the Contractor refuses or fails to perform the punch list items, the Contractor hereby consents to the withholding of payments owed to the Contractor by the Owner for any reason or on any project, made at the discretion of the Owner and which may be deducted from any monies due or to become due the Contractor.

C. Certificate of Final Acceptance:

Upon the Contractor's completion of all the above, to the Construction Manager's satisfaction, the Owner will issue a Certificate of Final Acceptance.

D. Final Cleaning Up:

Upon completion of the Work and before Final Acceptance and Final Payment will be made, the Contractor shall remove from the Job Site all of its machinery, equipment, surplus and discarded materials, rubbish and temporary structures. The Contractor shall leave the Site in a neat and presentable condition and shall call the Work "Broom-Clean" or its equivalent, except as otherwise specified. Material cleared from the Site and deposited on adjacent property will not be considered as having been disposed of satisfactory, unless the Contractor has obtained the written permission of such property owner and disposes of the

material in a manner which complies fully with all applicable laws and regulations.

3.51 USE OR PARTIAL PAYMENT NOT ACCEPTANCE

It is agreed that this is an entire Contract for one whole and complete Work and that neither the Owner's entrance upon or use of any part of the Work nor any partial payments by the Owner shall constitute an acceptance of the Work or any part thereof before its entire completion and Final Acceptance. Accepting such instances where, as may be specifically provided for in the Specifications or by Written Amendment, the Owner provides acceptance covering one or more completed unit(s) or portion(s) of the Work.

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

3.52 ACCEPTANCE OF FINAL PAYMENT CONSTITUTES RELEASE OF OWNER

Acceptance by the Contractor of final payment shall release the Owner and any representative of the Owner, from all claims and all liability to the Contractor for all things done or furnished in connection with the Work, and from every act, omission or neglect of the Owner, its agents and others relating to or arising out of the Work. No payment, however, final or otherwise, shall operate to release the Contractor from its obligations under this Contract. Failure of the Owner or any of its agents or representatives during the progress of the Work to discover or reject materials, equipment or Work not in accordance with the Contract Documents shall not be considered an acceptance or a waiver of defects therein, and payment to the Contractor or partial occupancy by the Owner shall not be considered an acceptance of the Work or materials which are not strictly in accordance with the Contract Documents.

3.53 DISPUTIES AND CLAIMS

Subject to Section 3.32 and any other applicable provisions of the Contract Documents, any dispute, claim or controversy of any nature arising out of or relating to this Contract, or the breach thereof, or otherwise related to the Project, excluding claims and disputes between Prime Contractors described above in Section 3.8 (hereinafter called "Disputed Matter"), must be presented by the Contractor to the Construction Manager in writing within fifteen (15) calendar days of (a) discovery of the event giving rise to the Disputed Matter, or (b) when, by the exercise of reasonable diligence, the Contractor should have recognized the condition giving rise to the Disputed Matter.

In the event that the Contractor disputes the Initial Response given by the Construction

Manager, the Contractor must refer the Disputed Matter, in writing, with all material facts described, to the Executive Director for determination within fifteen (15) calendar days of the Initial Response from the Construction Manager. No Disputed Matter will be reviewed by the Executive Director and the Contractor shall have waived its right to contest the Disputed Matter unless the Contractor has complied with all procedures and/or requirements relating to the Disputed Matter found in the Contract Documents or otherwise established by the Owner.

As an additional express condition precedent to the Contractor's right to submit a Disputed Matter to the Executive Director, the Contractor may be required to provide certain materials utilized by the Contractor in preparation of its Bid, including, but not limited to, worksheets, quotations, calculations, pricing data, estimates and correspondence relating thereto, clarification, additional information or data requested, and shall present in writing to the Executive Director evidence regarding the Disputed Matter, including evidence regarding liability, causation and damages, sufficient to enable the Executive Director to render a decision with respect to the Disputed Matter, and such evidence must be submitted to the Executive Director within thirty (30) calendar days of the Initial Response from the Construction Manager. The Executive Director, in his/her sole discretion, may require an informal hearing prior to making a determination. The Executive Director may conduct the hearing or may appoint a hearing officer of his/her choice. If the hearing officer is other than the Executive Director, the hearing officer shall make a recommendation to the Executive Director as to the disposition of the Disputed Matter. The decision of the Executive Director, or hearing officer, shall be made in writing within fifteen (15) calendar days of the hearing.

It is mutually agreed that any controversies, claims or disputes of any nature arising out of or relating to this Contract, or the breach thereof, or otherwise related to the Project, including any unresolved Disputed Matter, may, at the Owner's sole discretion, be settled by arbitration in accordance with the then current Construction Industry Arbitration Rules of the American Arbitration Association (in the Pittsburgh, Pennsylvania office only) and that all findings and decisions by the arbitrators shall be conclusive and binding on both parties and shall not be appealable and judgment upon the award rendered by the arbitration panel may be entered in the Court of Common Pleas of Allegheny County. The Owner may exercise its discretion to utilize arbitration at any time and shall not be deemed to have waived such discretion by any lapse of time or performance of any act.

If so determined by the arbitrators, and to the extent so determined by the arbitrators, the fees, costs and expenses of the arbitration shall be borne by the party against whom the arbitration is determined.

It is mutually agreed that any controversies, claims or disputes of any nature arising out of or relating to this Contract, or the breach thereof, or otherwise related to the Project, including any unresolved Disputed Item, may, at the Owner's sole discretion be resolved by legal proceedings in the courts of the Commonwealth of Pennsylvania beginning in the Court of Common Pleas, Allegheny County Pennsylvania unless otherwise determined by the Owner.

The Contractor shall comply with all directions and decisions of the Owner and shall proceed diligently with performance of the Work including disputed Work pending final resolution of any Disputed Item and shall maintain the Contract Schedule during any claims, disputes, questions, or related matters or proceedings unless otherwise agreed to by the Contractor and the Owner in writing. If the Contractor is proceeding with the Work, or any portion thereof, under protest, the Contractor must notify the Construction Manager, in writing, prior to the commencement of such Work.

The Contractor shall make no claim against any officer, agent, or employee of the Owner for, or on account of, any act or omission to act in connection with the Contract, and hereby waives any and all rights to make any such claim or claims.

3.54 NO WAIVER OF RIGHTS

Neither inspection nor witnessing of tests by the Owner, nor any payment for, nor acceptance of, the whole or any part of the Work by the Owner, nor any extension of time, nor any possession taken, nor use made by the Owner, shall operate as a waiver of any provision of the Contract, nor of any power herein provided, nor shall any waiver, actual or implied, of any breach of the Contract be held to be a waiver of any other or subsequent breach. Issuance of the Final Acceptance or acceptance of any part of the Work by the Owner shall not be binding and conclusive upon the Owner with regard to Defective Work, fraud or bad faith, or such gross mistakes as may amount to fraud, or as regards to the Owner's rights under any warranty. Defective Work shall be corrected and unsuitable materials, equipment, apparatus and other Items shall be replaced by the Contractor, notwithstanding that such Work, materials, equipment, apparatus and other Items may have been previously overlooked and/or accepted or estimated for payment. Failure of the Owner to require strict compliance with any term or condition of the Contract in any specific instance shall not be deemed a waiver of the right to subsequent enforcement thereof.

No failure of the Owner to insist upon strict compliance by the Contractor to any requirements of this Contract or to promptly exercise any right accruing from any default of the Contractor shall impair the Owner's rights in case the Contractor's default continues or in case of any subsequent default by the Contractor.

3.55 BONDS

When the Contractor delivers the executed Contract Agreement, it shall also provide a Performance Bond and a Labor and Material Payment Bond on the forms included in these Contract Documents, each with corporate surety satisfactory to the Owner and valid Power of Attorney attached. Each such Bond shall be in the full amount (100%) of the Contract Sum, payable to the Allegheny County Sanitary Authority, said Bonds to be conditioned upon the full and faithful performance by the Contractor pursuant to the Contract Documents and payment by the Contractor for all materials and supplies furnished and labor supplied or performed and all other legal debts incurred in the prosecution of the Work. If the Contract Sum is increased pursuant to a Change Order, the Contractor shall increase the amount of each Bond proportionately. The Contractor

shall furnish the proper Performance Bond and Labor and Material Payment Bond to the Owner prior to the execution of the Contract by the Owner. The Owner reserves the right to reject any bond furnished where it determines it is in its best interest to do so. No bond shall be furnished from a Surety which is not registered to do business with the Pennsylvania Insurance Commission for the limits so required.

Upon Final Acceptance of the completed Work and before the Surety which has furnished the Performance Bond is released, the Contractor shall furnish a Maintenance Bond of a surety company acceptable to the Owner in the amount of One Hundred (100%) of the Contract Sum. The form of the Maintenance Bond shall not deviate from the form Maintenance Bond attached to the Contract Documents. The Owner reserves the right to reject any surety or bond furnished where it determines it is in the best interest of the Owner to do so.

All Bonds (including any Bid Bond) shall be duly executed by the Contractor as principal and by a corporate surety or sureties approved to do business in the Commonwealth of Pennsylvania and must be satisfactory to the Owner. If the surety on any bond furnished by the Contractor is declared a bankrupt or becomes insolvent or its right to do business in Pennsylvania is terminated, the Contractor shall immediately notify the Owner in writing, and shall within ten (10) working days thereafter substitute another bond and surety, both of which must be acceptable to the Owner.

3.56 WARRANTY

The Contractor represents and warrants that the Work and services to be performed under the Contract, and all workmanship, materials, Work and equipment provided, furnished, used or installed in the construction of the same, shall be safe, substantial and durable construction in all respects, of the highest quality and best obtainable in every respect, new (unless otherwise provided herein), shall be free from faults or defects, shall be performed and furnished in strict accordance with the Contract Documents, and that the strength of parts of all manufactured equipment shall be adequate and as specified and explicitly warrants the merchantability and the fitness for use and quality of all Owner approved substituted Items provided by it or its subcontractors and warrants that all Owner approved substituted Items will perform to the standard of the Item originally specified. If required by the Owner, the Contractor shall furnish satisfactory evidence as to the kind and quality of the materials and equipment. The Contractor further agrees on behalf of itself, any heirs, executors, administrators, successors and assigns that it shall repair and replace promptly, without charge, all workmanship, Work, materials or equipment (or any damage to owned or controlled real or personal property resulting from Defective Work, equipment or materials or resulting from the replacement of such) furnished under the Contract that fail to meet the above standard or are otherwise Defective. This obligation shall survive the completion of the Work and/or the termination of the Contract. If within three (3) working days after the Contractor has been notified of a defect, the Contractor has not made substantial progress nor shown a satisfactory attempt to make the necessary corrections, the Owner is hereby authorized to make the corrections or to order the Work to be done by a third party, and the cost of the corrections shall be paid by the Contractor. This warranty shall be for a period of

eighteen (18) months from the date of the delivery to the Job Site, or twelve (12) months from the date the Work is placed into service and Final Acceptance by the Owner, whichever is later to occur or such longer period of time as may be prescribed by law or by the terms of the Contract Documents (the "Warranty Period"). In special circumstances where a portion of the Work is accepted by the Owner, pursuant to a signed writing, before Final Acceptance of all the Work, the Warranty Period for that portion of the Work may start to run from an earlier date if so provided in the Specifications or by Written Amendment. If, during the Warranty Period, the Work, materials, equipment or system is unavailable due to defects covered by the warranty in excess of 15 calendar days during a 30 calendar day period, the Warranty Period shall be extended by 30 calendar days. This Warranty Period extension shall apply to all subsequent 30 calendar day periods where these provisions apply or such longer period of time as may be prescribed by law or by the terms of the Contract Documents. Repetitive malfunction of the Work, materials, equipment or any portion thereof shall be cause for the Work, materials or equipment replacement and an extension of the Warranty Period to a date twelve (12) months following acceptable replacement. Repetitive malfunction shall be defined as three failures of the same component or subsystem within the Warranty Period. Work, materials or equipment replacement shall be defined to mean the replacement of the major piece of the Work, materials or equipment containing the failed component or subsystem (e.g., pump, feed system, hydraulic power unit, control panel). Nothing herein shall limit the Owner's right to seek recovery for latent defects which are not observable until after the Warranty Period has expired. The Warranty provided herein shall be in addition to and not in limitation of any other warranty or remedy required by law or the Contract Documents. The Contractor will be responsible to make sure that all third party warranties flow through to the Owner and will enforce all such warranties for the benefit of the Owner. If the maker of any such warranties and guarantees fails to fulfill its obligations thereunder, the Contractor shall fulfill such obligation of the guarantor or reimburse the Owner for any costs incurred by the Owner in replacing Defective Materials and correcting Defective, unsound or improper Work covered by any such warranties and guarantees.

The Contractor further represents and warrants that: (1) it has the right to transfer title to the materials, parts, components and Items of Work to the Owner, free and clear of any liens, security interests or other encumbrances; (2) all of the materials, parts, components and Items of Work will be new; and (3) none of the materials, parts, components and Items of Work will be substitute components, unless such substitutions have been approved in advance, in writing by the Owner.

For equipment, products or systems that carry a Manufacturer's Warranty, the Contractor shall make sure that the Manufacturer supplies the Owner with the following prior to final close out.

- A. Certificate of Warranty for the equipment, product or system.
- B. Letter of acknowledgment identifying:
 - 1. The starting and end dates of the Warranty Period.

2. All conditions under which the Warranty operates or under which it can become null and void.
3. Names, Address and Telephone Number of the authorized Warranty Service Center or Servicing Company.

3.57 TERMINATION OF THE CONTRACT

A. Termination for Cause

The Owner may, upon seven (7) calendar days of written notice to the Contractor and its surety, terminate and/or take over the entire Contract, or any part of it, for reasons including but not limited to the following: (1) the Contractor's Work or performance impairs or delays the progress of the Project or any portion thereof or any Other Contractor at the Job Site, (2) the Contractor fails, refuses or neglects to supply sufficient skilled workmen or materials or equipment of proper quality and quantity or adequate equipment to perform the Work or fails to comply with the Specifications as required by this Contract, (3) the Contractor persistently or repeatedly fails to make prompt payment to subcontractors for material or labor, (4) the Contractor fails, refuses or neglects to remove materials or to perform anew such Work as may be rejected as unacceptable or unsuitable by the Owner or the Construction Manager, (5) the Contractor fails to keep its Work on schedule as required by the Owner through the Construction Manager, including modifications or remedial instructions or revisions, (6) the Contractor otherwise fails in any respect to comply with any provision of this Contract, or applicable law, ordinance or regulation, (7) the Contractor becomes insolvent, files a voluntary petition for bankruptcy or becomes the subject of an involuntary petition of bankruptcy, receivership, control of assets by a Trustee, or sequestration of assets or allows any final judgment to stand against him unsatisfied for a period of ten (10) calendar days, makes an assignment for the benefit of creditors, or (8) for any other cause whatsoever, fails to carry on the Work in an acceptable manner.

If the Contractor does not remedy nor make acceptable progress at the remedy of the deficiencies or failures which are the basis of the Owner's termination notice within the seven (7) calendar day notice period, the Owner may, at its option and without prejudice to any other right or remedy that the Owner may have under the Contract or otherwise and without any further notice or communication of any kind, correct the deficiency or failure and charge back the cost, expense, loss and damages (including the Owner's overhead and the Contractor's expected profit as reasonably determined by the Owner) for its correction to the Contractor as they accrue, and/or the Owner may withhold further payment to the Contractor until satisfactory performance has resumed, and/or the Owner may terminate this Contract in whole or in part in writing, and the Owner shall thereafter have the rights and remedies set forth in this Contract and as allowed by law. If the Contractor corrects the deficiency or failure within the notice period to the Owner's satisfaction, then this Contract shall continue in full force except that the

Contractor shall reimburse the Owner for all of the Owner's costs, expenses, damages, losses, and other liabilities related to the deficiency or failure.

If this Contract or any part of it is terminated, the Owner shall have the option to complete the Work required by the Contract, either in whole or in part, or re-let the remaining Work. If this Contract is terminated in whole or in part, the Owner shall have the right to take possession of all tools, equipment, scaffolding, materials, and supplies which are on the Job Site, in transit to the Job Site, or related to the Work at the Job Site, whether the Contractor owns those items or not, and to use or have others use those items to complete this Contract. The use of those items will be at no cost or liability to the Owner. The Owner may also notify and require the surety to complete the Work, either in whole or in part, in accordance with the Contract Documents.

To the extent this Contract is terminated, the Contractor shall immediately take all steps to protect the Work, discontinue the Work and not place additional orders or subcontracts for labor, materials, equipment, or services with respect to the terminated part of this Contract. The Owner may then suspend all further payments to the Contractor until after (1) this Contract Work is completed and (2) the Owner has made final payment for the Work. After the Owner makes final payment for the completed Work, and subject however to any pending or expected claims, by the Owner, the Owner shall pay the Contractor the amount or part of it, if any, due the Contractor for retainage and/or progress billings that were previously earned but unpaid as of the termination date.

In any event, the Owner's maximum liability to the Contractor shall be limited to the lesser of the pro-rata part of the Contract Sum for, or the value to the Owner of, Work actually and properly completed and incorporated into the Project before the termination date. However, the above liability shall be decreased by any amounts previously paid to the Contractor or on its behalf, and also decreased by all additional costs, expenses, damages, liabilities and losses the Owner incurs to complete this Contract and pay for the Work (including, but not limited to payment of any Owner's creditor claims arising from or related to this Contract, reasonable compensation for managerial and administrative services and other overhead of the Owner, the Owner's attorney fees and other legal expenses) and also decreased by all other damages, liabilities, losses, costs and expenses the Owner incurs arising out of or relating to this Contract or the Contract Work. Any savings realized shall be the sole property of the Owner. If the total amounts previously paid to the Contractor and on the Contractor's behalf plus the Owner's damages, losses, costs and expenses (including but not limited to overhead and the Contractor's expected profit as reasonably determined by the Owner reasonable profit) to complete this Contract plus other losses, damages, liabilities, costs and expenses of the Owner arising out of or relating to the Contractor's default, this Contract and the Work, exceeds the total Contract Sum, the Contractor and its surety shall be liable for and shall reimburse the Owner for the excess upon demand at any time. Without otherwise limiting its recovery, the Owner shall be entitled to deduct that amount or any part of it from any funds

otherwise payable to the Contractor. In addition to the above, the Contractor is liable for liquidated damages pursuant to the Contract Documents.

If this Contract is so terminated, the Contractor shall, at the Owner's option, assign in full force to the Owner those subcontracts of any tier (including supply contracts) held by the Contractor, or any part of them, for which the Owner requests assignment (the Contractor shall place in all of its subcontracts and supply contracts a provision allowing such assignment at the Owner's option). The Contractor shall remain liable for all its obligations to its suppliers, subcontractors and other persons on those assigned subcontracts and supply contracts for rights that accrued before, or upon, the assignment and shall remain liable to the Owner for any breaches of the assigned subcontracts and supply contracts whether occurring before or after such assignment.

The duties and obligations of the Contractor as stated or referred to hereunder shall also apply to the surety.

Notwithstanding any termination of this Contract, the Contractor's obligations to the Owner shall continue as to all Work performed. The obligations and duties of the Contractor under this Contract, including but not limited to warranty provisions, shall remain in full force after termination, except to the extent necessarily limited by such termination, and after completion of the Work. Termination for cause shall not waive or release any of the Owner's claims, rights or remedies against the Contractor or its surety, as allowed by this Contract or applicable law. If it is subsequently determined that adequate cause did not exist for the Owner's termination of this Contract for cause, this termination by the Owner shall be then considered a termination by the Owner for its convenience under Paragraph B.

The rights and remedies of the Owner provided in this provision are in addition to any other rights or remedies provided by law or under the Contract Documents.

B. Termination for Convenience

The Owner shall have the right to terminate this Contract or any part of it at any time without cause upon written notice to the Contractor specifying the extent to which this Contract is terminated and the date upon which such termination becomes effective. After the Contractor receives the Owner's Notice of Termination, and unless otherwise directed, the Contractor shall (i) stop Work on the terminated part of this Contract on the date and to the extent specified, (ii) place no further orders or subcontracts for equipment, materials, labor, services or facilities except what may be necessary for completion of that part of the Contract that is not terminated; (iii) transfer title for the terminated part and deliver to the Owner any Work in progress, completed Work and materials and equipment for which the Contractor has been or will be paid; (iv) complete performance of any part of the Work required by this Contract that is not terminated by the Owner's Notice of Termination; and (v) take such other actions as may be directed by the

Owner.

The Contractor shall notify the Owner in writing within seven (7) calendar days after receipt of the Owner's Notice of Termination of the effect of such order upon the Contractor's Work.

If the Owner terminates this Contract for its convenience the Owner's liability to the Contractor for the termination shall be expressly subject and limited to (1) payments and retainage actually and properly accrued and unpaid for Work, materials and equipment actually and properly completed, stored and incorporated into the Project before termination and (2) the reasonable costs and expenses for terminating supply contracts (not to exceed actual costs) which cannot be mitigated by the Contractor and which are necessarily and unavoidably incurred by the Contractor and caused by the Owner's Notice of Termination (subject to full prior advice, cooperation and concurrence with the Owner as to mitigation measures to reduce as much as possible such termination costs and expenses as well as subsequent verification and documentation of these costs and expenses), (3) less any claim the Owner has against the Contractor. If the sum of all previous payments and credits made by the Owner exceeds the sums payable above, such excess shall be refunded by the Contractor to the Owner immediately upon determination of such excess by the Owner or at the Owner's option may be the basis of a claim by the Owner against any other amounts due the Contractor.

If this Contract is so terminated, the contractor shall, at the Owner's option, assign in full force to the Owner those subcontracts of any tier (including supply contracts), or parts of them, held by the Contractor, for which the Owner requests such assignment. (The Contractor shall place in all its subcontracts a provision allowing assignment at the Owner's option.) The Contractor shall remain liable for all its obligations to suppliers and subcontractors and other persons on the assigned subcontracts and supply contracts for rights that accrued before, or upon, the assignment.

In no event will the Owner be liable for the loss of anticipated profits or overhead, or any special, consequential, incidental, overhead or other costs or liability arising from any termination for convenience other than that previously described. The Contractor agrees to remove promptly its tools, equipment, materials and employees from the Job Site upon the stated termination date. Notwithstanding any termination of this Contract, the Contractor's obligation to the Owner shall continue as to all Work performed. The obligations and duties of the Owner under this Contract, including but not limited to warranty provisions, shall remain in full force after termination, except to the extent necessarily limited by such termination, and after completion of the Work. This termination for convenience will not waive or release any of the Owner's claims, rights or remedies against the Contractor or its surety, as allowed by this Contract or applicable law.

3.58 LIMITATION OF LIABILITY

Notwithstanding any other provision of the Contract Documents, in no event shall the Owner, the Consulting Engineer, the Construction Manager, the Engineering Program Manager, their officers, Board members, indemnitees, agents, guests, invitees and employees be liable (in contract or in tort, including negligence) to the Contractor for incidental or consequential damages, including, but not limited to, interest or carrying charges on its investment, expenses arising from costs of capital, loss of profits on Work not performed, or for loss of use of or under-utilization of labor, equipment or facilities of the Contractor, resulting from any performance, nonperformance, or delay in performance on the part of the Owner, the Consulting Engineer, the Construction Manager the Engineering Program Manager, their officers, Board members, indemnitees, agents, guests, invitees and employees of obligations under this Contract, or from the Owner's delay, termination or suspension of the Work.

3.59 INTERPRETATION

Words of any gender used in this Contract shall be held and construed to include any other gender, and words in the singular number shall be held to include the plural, and vice versa, unless the context otherwise requires.

When words or phrases which have a well-known technical or construction industry or trade meaning are used to describe work, materials or equipment, such words shall be interpreted in accordance with that meaning unless defined otherwise in the Contract Documents.

Reference to standard specifications, manuals or codes of any technical society, organization or association, or to the Laws or Regulations of any governmental authority, whether such reference be specific or by implication, shall mean the latest standard specifications, manuals, codes or Laws or Regulations in effect at the time of the opening of Bids (or, on the Effective Date of the Contract if there were no Bids), except as may be otherwise specifically stated. However, no provision of any reference, standard, specification, manual, or code (whether or not specifically incorporated by reference in the Contract Documents) shall be effective to change the duties and responsibilities of the Owner or the Contractor or any of their consultants, agents or employees from those set forth in the Contract Documents.

3.60 PARTIAL INVALIDITY

In the event any one or more of the provisions of this Contract are found by a court of competent jurisdiction to be invalid or unenforceable, the remaining provisions of the Contract shall remain in full force and effect. The Owner and the Contractor agree that the Contract shall be reformed to replace such stricken provision or part thereof, with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

3.61 PROVISIONS REQUIRED BY LAW DEEMED INSERTED

Each and every provision of the laws and regulations required by law to be inserted in

this Contract shall be deemed to be inserted herein and the Contract shall be read and enforced as though they were included herein, and if through mistake or otherwise any such provision is not inserted, or is not correctly inserted, then upon the application of either party, the Contract will forthwith be physically amended to make such insertion or to correct such insertion.

3.62 BINDING EFFECT

The terms, provisions, covenants and conditions contained in this Contract shall apply to, inure to the benefit of and be binding upon the parties hereto and upon their respective heirs, legal representatives, successors and permitted assigns except as otherwise expressly provided.

3.63 SURVIVAL

All covenants, representations and warranties contained in this Contract shall remain in force in perpetuity unless terminated as provided in this Contract.

3.64 INTEGRATION

The terms of this Contract (including any document which is referenced by this Contract) sets forth the entire agreement and understanding between the parties.

3.65 MODIFICATIONS AND CHANGES

No verbal agreement or conversation with any officer, agent, consultant or employee of the Owner, either before or after the execution of this Contract, shall affect or modify any of the terms or obligations herein contained.

3.66 JURISDICTIONAL DISPUTES

The Owner or the Executive Director shall not be brought into any dispute or controversy by reason of inadvertence or seeming necessity for issuing the Contract Documents in the form herewith presented. No arrangement of topics or other interrelation or reference used throughout in connection with any of the Contract Documents shall be construed by anyone to be an interference on the part of either the Owner or the Executive Director with any jurisdictional or other trade rules or agreement.

3.67 GOVERNING LAW; FORUM

This Contract shall be governed construed and enforced in accordance with the laws of the Commonwealth of Pennsylvania. Pursuant to Section 3.53 hereof entitled "Disputes and Claims," the Executive Director may make a determination regarding any controversy, claim or dispute. The Owner may refer any controversy, claim or dispute to arbitration or court. The exclusive venue and jurisdiction for any court proceedings regarding this Contract shall be in the courts of the Commonwealth of Pennsylvania beginning in the Court of Common Pleas, Allegheny County Pennsylvania.

3.68 ATTORNEY'S FEES

In the event of any action brought by either party against the other to enforce any of the obligations hereunder or arising out of any dispute concerning the terms and conditions hereby created, the losing party shall pay the prevailing party such reasonable amounts for fees, costs and expenses.

REGULATORY REQUIREMENTS

3.69 COMPLIANCE WITH LAWS AND REGULATIONS

The Contractor shall give all notices and comply with all laws and regulations applicable to furnishing and performance of the Work. Except where otherwise expressly required by applicable laws and regulations, the Owner shall not be responsible for monitoring the Contractor's compliance with any laws and regulations.

If the Contractor performs any Work that is contrary to laws and regulations, the Contractor shall bear all claims, costs, losses and damages caused by, arising out of or resulting therefrom.

The Contractor shall, throughout the performance of the Contract, keep itself fully informed of all existing and future laws and regulations in any manner affecting those engaged or employed in the Work, or in any way affecting the conduct of the Work. If any discrepancy or inconsistency is discovered in the Contract Documents in relation to any such laws and regulations, the Contractor shall indemnify and forthwith report the same, in writing, to the Engineer and the Construction Manager.

The Contractor shall at all times itself observe and comply with and cause all its agents and employees to observe and comply with all such existing and future laws and regulations; and shall protect and indemnify the Owner, its officers and agents against any claims or liability arising from or based upon violation of such laws and regulations, whether by itself or its agents or employees.

No provisions of these Contract Documents shall act to make the Owner and its agents or any other party other than the Contractor responsible for safety. The Contractor shall indemnify, defend and hold harmless the Owner and its agents from and against any and all actions, damages, fines, suits and losses arising from the Contractor's failure to meet safety requirements and/or provide a safe worksite.

3.70 NONDISCRIMINATION CLAUSE

During the term of the Contract, the Contractor agrees as follows:

- A. The Contractor shall not discriminate against any employee, applicant for employment, independent contractor or any other person because of race, color, religious creed, ancestry, national origin, age, sex or handicap. The Contractor

shall take actions to insure that applicants are employed, and that employees or agents are treated without regard to national origin, sex, or handicap. Such actions shall include, but are not 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. The Contractor shall post in conspicuous places, available to employees, agents, applicants for employment, and other persons, a notice to be provided by the contracting agency setting forth the provisions of this nondiscrimination clause. The Contractor shall abide by the Contract Compliance Regulations issued by the Pennsylvania Human Relations Commission ("Compliance Regulations").

- B. The Contractor shall not discriminate against the Owner's employees or agents on any of the bases set forth in the preceding paragraph. This includes, but is not limited to, the Contractor's obligation to provide the Owner's employees and agents who deal with the Contractor, a work place that is free from any and all forms of harassment on the basis of race, color, religious creed, ancestry, national origin, age, sex or disability. As a condition of accepting and executing this Contract, the Contractor agrees to adopt and comply with the Owner's Sexual Harassment Policy which is attached hereto and made a part hereof as Exhibit "C".
- C. The Contractor shall, in advertisements or requests for employment placed by it or on its behalf, state that all qualified applicants will receive consideration for employment without regard to race, color, religious creed, ancestry, national origin, age, sex or handicap.
- D. The Contractor shall send each labor union or workers' representative with which it has a collective bargaining agreement or other contract or understanding, a notice advising said labor union or worker's representative of its commitment to this nondiscrimination clause. Similar notice shall be sent to every other source of recruitment regularly utilized by the Contractor.
- E. It shall be no defense to a finding of noncompliance of the Compliance Regulations or with this nondiscrimination clause that the Contractor had delegated some of its employment practices to any union, training program, or other source of recruitment which prevents it from meeting its obligations. However, if the evidence indicates that the Contractor was not on notice of the third-party discrimination or made a good faith effort to correct it, such factors shall be considered in mitigation in determining appropriate sanctions.
- F. Where the practices of a union or of any training program or other source of recruitment will result in the exclusion of minority group persons, so that the Contractor will be unable to meet its obligations, under the Compliance Regulations or under this nondiscrimination clause, the Contractor shall notify the Owner in writing and then employ and fill vacancies through other nondiscriminatory employment procedures.

- G. The Contractor shall comply with the Compliance Regulations and all local, state and federal laws prohibiting discrimination in hiring or employment opportunities. In the event of this Contractor's noncompliance with the nondiscrimination clause of this Contract or with any such laws, this Contract may be terminated or suspended, in whole or in part, and the Contractor may be declared temporarily ineligible for further Owner contracts, and other sanctions may be imposed and remedies invoked.
- H. The Contractor shall furnish all necessary employment documents and records to, and permit access to its books, records and accounts by, the Owner or other governmental agency, for purposes of investigation to ascertain compliance with the provisions of this clause. If the Contractor does not possess documents or records reflecting the necessary information requested, it shall furnish such information on reporting forms supplied by the Owner or applicable governmental agency.
- I. The Contractor shall actively recruit minority subcontractors or subcontractors with substantial minority representation among their employees.
- J. The Contractor shall include the provisions of this nondiscrimination clause in every subcontract, so that such provisions will be binding upon each subcontractor.
- K. The Contractor's obligations under this clause are limited to the Contractor's facilities within Pennsylvania, or, where the contract is for purchase of goods manufactured outside of Pennsylvania, the facilities at which such goods are actually produced.

3.71 PROVISIONS CONCERNING THE AMERICANS WITH DISABILITIES ACT

During the term of this Contract, the Contractor agrees as follows:

- A. Pursuant to federal regulations promulgated under the authority of The Americans With Disabilities Act, 28 C.F.R. 35.101 *et seq.* the Contractor understands and agrees that no individual with a disability shall, on the basis of the disability, be excluded from participation in this Contract or from activities provided for under this Contract except to the extent that accommodating such a person with a disability would impose an undue burden on the Contractor. As a condition of accepting and executing this Contract, the Contractor agrees to comply with the "General Prohibitions Against Discrimination," 28 C.F.R. §35.130, and all other regulations promulgated under Title II of The Americans With Disabilities Act which are applicable to the benefits, services, programs, and activities provided by the Owner through contracts with outside individuals and entities.
- B. The Contractor shall be responsible for and agrees to indemnify and hold harmless the Owner from all losses, damages, expenses, claims, demands, suits, and actions brought by any party against the Owner as a result of the Contractor's

failure to comply with the provisions of paragraph 1. above.

3.72 COMPLIANCE WITH HEALTH, SAFETY AND ENVIRONMENTAL LAWS

- A. The Contractor shall comply with all laws and regulations, including without limitation all health, safety and environmental regulations and standards.

The Contractor represents and warrants to the Owner that, to the extent it performs any Work or provides any services to the Owner, it shall be familiar and in full compliance with all applicable workplace requirements of, and standards and regulations issued by the Federal Occupational Safety and Health Administration ("OSHA") and/or by the Pennsylvania Department of Labor and Industry.

The Contractor represents and warrants to the Owner that, to the extent it or its subcontractors perform any work or provide any services to the Owner, it shall be familiar and in full compliance with all applicable workplace safety requirements and standards of ALCOSAN. A complete listing of all ALCOSAN safety requirements and standards is available to the Contractor from the Owner or Construction Manager.

- B. The following OSHA regulations are examples of those likely to be encountered while performing the Work. The list is not intended to be exhaustive or inclusive and the Owner does not hereby relieve the Contractor of its responsibility to determine what rules and regulations are applicable to the Work.

1. **Confined Spaces:** All work involving confined space entry will be in accordance with 29 CFR 1910.146. The Owner has adopted a Permit Required Confined Space Entry Program for its employees in accordance with OSHA requirements found at 29 C.F.R. 1910.146. This Permit Required Confined Space Entry Program or its equivalent must be adopted by the Contractor if its employees will be working in confined spaces. No Contractor employee shall be permitted to enter a "permit required confined space" as defined in 29 C.F.R. 1910.146 without having complied with all the requirements of said regulations, including the sign off on the "ALCOSAN ON-SITE CONFINED Space Entry Permit" or equivalent permit adopted by the Contractor. The Contractor shall have gas detection equipment which is capable of detecting combustibles, oxygen, hydrogen sulfide and carbon monoxide.
2. **Control of Hazardous Energy (Lockout/Tagout):** All work involving hazardous energy will be in accordance with 29 CFR 1910.147;
3. **Floor and Wall Openings:** All work involving work at heights of six feet or more will be in accordance with 29 CFR 1926.500 through 29 CFR 1926.503;

4. Excavations: All work involving excavations will be in accordance with 29 CFR 1926.650 through 29 CFR 1926.652; and
5. Hazard Communications: All work involving hazardous chemicals will be in accordance with 29 CFR 1926.59.

C. In addition to the requirements of subparagraphs A and B above, the following general rules apply to the Contractor while working in/on the Owner's facilities:

1. Personal Protective Equipment (PPE) (e.g., safety glasses, hard hats, chemical resistant gloves, respirators, etc.) will meet OSHA standards and be provided by the Contractor to its employees as warranted by the nature of the Work.
2. Cords, hoses, ropes, etc., that are used in walkways, stairways, aisles, and/or other work areas shall be routed and supported in a safe manner that will prevent tripping hazards and/or any other body contact.
3. Barriers, warning signs, and/or warning lights shall be installed wherever necessary to identify hazardous situations or conditions. These shall be removed as soon as they are no longer needed.
4. The Contractor must keep the Job Site reasonably clean and free from rubbish at all times. Rubbish must be removed daily or as directed by the Owner. At the completion of the Contractor's Work, the Contractor must remove all equipment, rubbish and debris; clean the work area and clean and repair any adjacent work areas that have been affected by the Contractor's Work.
5. Any open ditches, excavations, etc., shall be clearly identified as a safety hazard area and appropriate covers or barricades put in place to prevent personnel from falling into such areas.
6. Compressed gas cylinders shall be properly secured in an upright position whether or not in use. The cylinders must be capped when not in use to prevent valve damage.
7. Material shall never be thrown to the ground from upper levels. All hoisting activity up or down requires the use of a signalman. Hoisting areas shall be barricaded, roped off and identified. Material hoists are to be operated by "authorized operators." **THEY ARE NOT TO BE USED FOR PERSONNEL.** Gasoline engines for hoists must be stopped before refueling.
8. Gasoline and other flammable materials shall be dispensed from containers of approved design (National Fire Protection Association, Underwriters Laboratory, OSHA, etc.).

9. Appropriate fire fighting equipment (e.g. fire extinguishers) shall be provided by the Contractor as dictated by the nature of the Contractor's Work (e.g., cutting, welding, etc.).
 10. Any welding, burning, cutting or other spark producing operations in an area which may contain combustible vapors will require the Contractor to provide combustible gas meters to insure the work area is safe for "hot work" operations. The work area will be monitored prior to the initiation of any Work and continuously during the Work. Work will not be performed if the meter indicates the presence of combustible vapors.
 11. Permission shall be obtained from the Owner for the use of plant steam, water, electrical and/or air, with specific approval for tying any additional lines into any of these systems.
 12. All plant traffic regulations must be observed. The speed limit at the plant site is 15 miles per hour unless otherwise posted. Personnel shall not be permitted to ride on the bed of a truck unless proper seating equipment has been installed. No one is allowed to get on or off a moving vehicle.
 13. Personnel are not permitted to hitch rides on fork trucks, traveling cranes, tractors, winch trucks and other such mobile equipment.
 14. No emergency exits or aisles will be blocked by any of the Contractor's material or equipment at any time. Closure of exits or aisle ways will be approved by the Owner prior to the closure.
 15. Work involving the Owner's processes and/or equipment may involve possible contact with sewer sludge and water. The Contractor is required to insure its employees are aware of the infection hazard inherent in waste water treatment facilities. The Contractor's employees will be required to practice good personal hygiene, avoid sludge contact with open wounds and to use the proper personal protective equipment to avoid infection.
- D. The Contractor agrees to take all reasonable and necessary precautions to prevent injury to persons, property and equipment and shall be solely responsible for the implementation and enforcement of a written safety program. This written safety program shall be submitted to the Construction Manager prior to performing any Work on the Job Site. This written safety program shall cover all subcontractors working on the Job Site for the Contractor. An adequate safety program must include at a minimum: adequate training and proof of such training; adequate equipment which is in acceptable working condition; and adequate supervision to insure compliance. If at any time, and in the sole judgment and discretion of the Owner, proper safety measures are not being taken, or Work is being performed in an unsafe manner, such unsafe work shall be stopped and shall resume only after such unsafe conditions shall have been corrected. All costs incurred by the Contractor as a result of such stoppage of Work shall be borne by the Contractor

without any right of reimbursement from the Owner. This right to stop Work shall impose no liability upon the Owner or Its agents to the Contractor or to any third parties for establishment of safety requirements or enforcement of job safety.

- E. No Work shall be performed at the Owner's Job Site that could prevent the Owner from performing any daily operations. The Contractor shall supply and erect barricades or warning tape for all entrances or exits that exist around Work areas.

If at any time proper safety measures are not being taken or the work is being performed in an unsafe manner the Owner may take any or all of the following actions:

1. Notify the Contractor's insurance carrier of the safety violation.
2. Withhold part or all of a current payment request.
3. Require the removal of the Contractor's employee responsible for the safety violation, including the Contractor's superintendent.

Notwithstanding the Construction Manager's right to issue Safety Non-compliance notices and the Owner's right to take actions with regard to safety infractions as described in the Contract documents, neither the Owner nor its agents shall have any obligation to exercise these rights with respect to any safety infraction by the Contractor. Furthermore, the exercise or non-exercise of these rights shall not be deemed to make the Owner or the Construction Manager responsible for the Contractor's safety.

F. Contractor's Duties

1. The Contractor is wholly responsible for performing the Work in a safe manner that complies with the provisions of the Contract Documents and with the requirements of the governmental agencies responsible for establishing safe procedures for the workplace and protection to the public.
2. The Contractor is an independent contractor and neither the Contractor nor any of its subcontractors, nor the employees of the Contractor nor any of its subcontractors shall be deemed to be servants, employees, agents or under the control of the Owner.
3. If an accident should occur on the Job Site, the Contractor or party involved must notify the Engineer and the Construction Manager immediately after notifying any required emergency services. Copies of all accident reports shall be transmitted to the Construction Manager.
4. No provision of the Contract Documents shall act to make the Owner, Construction Manager or any other party other than the Contractor responsible for safety. The Contractor shall indemnify, defend, and hold

harmless the Owner, its Directors, the Construction Manager, the Designers, the Engineering Program Manager, and any of the owner's agents and employees from and against any and all actions, damages, fines, suits, and losses of any kind arising from the Contractor's failure to meet all safety requirements and/or provide a safe work site.

G. Contractor Notification

1. When an unsafe activity is observed, the Construction Manager's representative will express concern verbally to the Contractor and confirm it by Site Safety Notice.

H. The Contractor shall submit with its Bid a signed copy of the Certification of Safety Procedures Compliance.

3.73 HAZARDOUS SUBSTANCES

A. Labeling

The Contractor shall insure that each individual product (as well as the carton, container or package in which the product is shipped) of any of the following substances (as defined by the Worker and Community Right-to-Know Act and the regulations promulgated thereunder) supplied to the Owner by the Contractor is clearly labeled with the information listed in Paragraphs (1) through (4):

1. Hazardous substances;
 - a. the chemical name or common name,
 - b. hazard warning,
 - c. the name, address and telephone number of the Manufacturer, and
 - d. the contractor's name and project office telephone number, and ALCOSAN contract number.
2. Hazardous mixtures;
 - a. the common name, but if none exists, then the trade name,
 - b. the chemical or common name of special hazardous substances comprising 0.1% or more of the mixture,
 - c. the chemical or common name of hazardous substances comprising 1 % or more of the mixture,
 - d. a hazard warning,

- e. the name, address and telephone number of the Manufacturer, and
 - f. the contractor's name and project office telephone number, and ALCOSAN contract number.
3. Single chemicals;
- a. the chemical name or common name,
 - b. a hazard warning, if appropriate,
 - c. the name, address and telephone number of the Manufacturer, and
 - d. the contractor's name and project office telephone number, and ALCOSAN contract number.
4. Mixtures;
- a. the common name, but if none exists, the trade name,
 - b. a hazard warning, if appropriate,
 - c. the name, address and telephone number of the Manufacturer,
 - d. the chemical name or common name of either the top five substances by volume or those substances constituting 5.% or more of the mixture, and
 - e. the contractor's name and project office telephone number, and ALCOSAN contract number.

FAILURE TO PROPERLY LABEL EACH INDIVIDUAL PRODUCT AND THE CARTON, CONTAINER OR PACKAGE IN WHICH THE PRODUCT IS SHIPPED CAN RESULT IN THE REJECTION OF THE SHIPMENT.

B. Material Safety Data Sheet.

The Contractor shall provide Material Safety Data Sheets (MSDS) with the information required by the Act and the regulations for each hazardous substance or hazardous mixture. The Owner must be provided an appropriate MSDS with the initial shipment and with the first shipment after an MSDS is updated or product changed. For any other chemical, the Contractor shall provide an appropriate MSDS, if the Manufacturer, importer or supplier produces or possesses the MSDS. The Contractor shall also notify the Owner when a substance or mixture is subject to the provisions of the Act. Material Safety Data Sheets should be attached to the carton, container or package mailed to the Owner at the time of shipment.

- C. If the Contractor performs any Work or provides any services at the Owner's Site, the Contractor shall comply with all applicable surveying, posting, labeling, reporting, disclosure and training requirements of the OSHA Hazard Communication Standard and of the Worker and Community Right-to-Know Act and the regulations promulgated thereunder. The Contractor hereby represents and warrants that it is familiar with the above-mentioned Standard Act and regulations.

3.74 WORKING HOURS

Work performed at the Job Site shall be performed during normal working hours (7:00 A.M. to 5:00 P.M.) or at other times approved by the Owner.

The Contractor shall schedule all Job Site Work so that its working hours and the normal working hours of the Owner coincide. Should it be necessary to work hours other than the Owner's normal working hours, the Contractor shall arrange for access to the area with the Construction Manager, in writing, no less than 48 hours prior to this need.

Work performed after hours, during the Owner holidays and weekends shall be overseen by the Construction Manager, at the sole expense of the Contractor except for the cost of the Owner's employees. Owner will waive Construction Manager costs for work performed during construction constraints that interrupt normal operation as identified in the contract documents.

The Owner observes the following holidays on the day that is designated by the Federal Government:

New Year's Day
Martin Luther King, Jr. Day
President's Day
Good Friday
Memorial Day
Independence Day (Fourth of July)
Labor Day
Columbus Day
Election Day
Veteran's Day
Thanksgiving Day
Day After Thanksgiving Day
Christmas Day

Any Contractor that wishes to perform work on these holidays will be responsible for any

additional costs incurred by the Owner, including but not limited to, the cost of the Owner's staff, the CM's staff and the EPM's staff.

3.75 MINIMUM WAGE RATES

The Contractor shall pay not less than the minimum wage rates established by the governmental agency having jurisdiction. The Contractor shall comply with the requirements of the Pennsylvania Prevailing Wage Act, Act No. 442, approved August 15, 1961.

3.76 BUY AMERICAN

It is the desire of the Owner that items supplied under this Contract shall be manufactured and assembled in the United States of America and utilize American materials to the maximum practical extent, consistent with the needs of this Contract and the availability of products and components of American manufacture. In this respect, all items supplied under this Contract shall comply with all applicable State and Federal laws relating to utilizing products, materials supplies of local or domestic origin.

3.77 PENNSYLVANIA STEEL PRODUCTS PROCUREMENT ACT

The Contractor agrees to comply with the Pennsylvania Steel Products Procurement Act and shall submit with its Bid a signed copy of the Certificate of Compliance with the Pennsylvania Steel Products Procurement Act that is incorporated as part of the Contract Documents.

3.78 TRADE PRACTICES ACT

The Contractor agrees to comply with the Trade Practices Act and shall not use or permit to be used in the Work any aluminum or steel products made in a foreign country which discriminates against aluminum or steel products manufactured in Pennsylvania.

3.79 WORKMEN'S COMPENSATION

The Contractor agrees, in any contract involving construction or doing any work involving construction or doing any work involving the employment of labor, to accept the provisions of the Workmen's Compensation Act and any reenactment, supplements or amendments thereto and shall insure it liability thereunder or file with the Owner a certificate of exemption of insurance from the Department of Labor and Industry of the Commonwealth of Pennsylvania.

EXHIBIT A

INSURANCE

EXHIBIT "A"

INSURANCE

All insurance required by the Contract Documents (including this Exhibit) to be purchased and maintained by the Contractor shall be obtained from insurance companies that are duly licensed or authorized in the Commonwealth of Pennsylvania for the issuance of insurance policies for the limits and coverages so required. Such insurance companies shall also meet such additional requirements and qualifications as may be provided in the Contract Documents and provided below.

All coverage shall be without voluntary deductibles, and if the insurance contains deductibles, the Contractor shall pay all costs and expenses not covered because of such deductibles. All insurance shall be on an occurrence basis.

The Contractor shall provide to the Engineer and the Construction Manager (with copies to each additional insured identified in the Contract Documents) prior to commencing Work, Certificates of Insurance evidencing the required insurance (as well as any other evidence of insurance requested by the Owner or any other additional insured). Each certificate shall, in addition to the insurance coverage, contain the following:

1. Inception and expiration dates of insurance policy(ies);
2. Limits of liability;
3. Nature of coverage(s) provided including special hazards, if required;
4. Name(s) of insurance company(ies);
5. Policy Number(s);
6. Notation of deductible and self-insurance retention applicable to any contract of insurance;
7. Notation of policy endorsement that provides for thirty (30) calendar days prior written notice to the Owner in the event of change, canceling or renewal;
8. Underlying insurance requirements for excess liability contracts; and

The Owner will accept no certificate which exculpates the issuer or reduces any right conferred on the Owner by the above certificates, nor will the Owner accept certificates unless the certificates bear the signature of a direct representative of the insurance company authorized to do business in Pennsylvania.

The Contractor will furnish a certificate of renewal or extension of the policy that expires during the term of this contract thirty (30) calendar days prior to the expiration date of the policy.

The Contractor shall deliver to the Owner a certified copy of each policy required hereunder, as well as a copy of the endorsement adding additional insureds hereunder (on 150 Form B for general liability coverage) as well as a listing of all policy exclusions different from the standard for CG 00 01 prior to beginning the Work.

Contractor's Liability Insurance:

The Contractor shall purchase and maintain such liability and other insurance as is appropriate for the Work being performed and furnished and as will provide protection from claims set forth below which may arise out of or result from the Contractor's performance and furnishing of the Work and the Contractor's other obligations under the Contract Documents, whether it is to be performed or furnished by the Contractor, any subcontractor or supplier, or by anyone directly or indirectly employed by any of them to perform or furnish any of the Work, or by anyone for whose acts any of them may be liable for not less than the following amounts or greater if required by law:

1. claims under workers' compensation, disability benefits and other similar employee benefit acts pursuant to the amounts provided in 2 below;
2. claims for damages because of bodily injury, occupational sickness or disease, or death (including wrongful death) of the Contractor's employees; Worker's Compensation Insurance in compliance with all states in which the Contractor does business, including coverage B Employers' Liability;
 - Bodily Injury by accident, \$100,000 for each accident;
 - Bodily Injury by disease \$500,000 policy limit;
 - Bodily Injury by disease \$100,000 for each employee;
3. claims for damages because of bodily injury, sickness or disease, or death (including wrongful death) of any person other than the Contractor's employees;
4. claims for damages insured by customary personal injury liability coverage which are sustained:
 - (I) by any person as a result of an offense directly or indirectly related to the employment of such person by the Contractor, or
 - (II) by any other person for any other reason;
5. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom.

The Contractor's liability insurance shall also include completed operations and product liability coverages and eliminate the exclusion with respect to property under the care, custody and control of the Contractor for not less than the following amounts:

- a. General Aggregate
(except Products - Completed Operations) \$2,000,000
- b. Products
Completed Operations Aggregate \$2,000,000
- c. Personal and Advertising Injury
(Per Person/Organization) \$1,000,000
- d. Each Occurrence
(Bodily Injury and Property Damage) \$1,000,000
- e. Property Damage Liability Insurance will
provide explosion, collapse, underground
coverages where appropriate
- f. Excess Liability
General Aggregate \$2,000,000
Each occurrence \$2,000,000
- g. claims for damages because of bodily injury or death of any person or property
damage arising out of the ownership, maintenance or use of any motor vehicle.
- 6. Automobile Liability:
 - (1) Bodily Injury:
 - Each Person \$1,000,000
 - Each Accident \$1,000,000
 - and
 - Property Damage:
 - Each Accident \$1,000,000
 - or
 - (2) Combined Single Limit

(Bodily Injury and Property Damage):

Each Accident \$1,000,000

The policies of liability insurance so required by above to be purchased and maintained shall:

- (a) with respect to insurance required by paragraphs 3,4,5 and 6 include as additional insureds (subject to any customary exclusion in respect of professional liability) the Owner, Consulting Engineer and any other persons or entities identified by the Owner, all of whom shall be listed as additional insureds, and include coverage for the respective officers and employees of all such additional insureds;
- (b) include completed operations insurance;
- (c) include contractual liability insurance covering the Contractor's indemnity obligations with coverage of not less than (1) General Aggregate \$ 2,000,000, (2) Each Occurrence (Bodily Injury and Property Damage) \$ 1,000,000.
- (d) remain in effect at least until final payment and at all times thereafter when the Contractor may be correcting, removing or replacing Defective Work in accordance with the Contract Documents; and
- (e) with respect to completed operations insurance, it shall remain in effect for at least two years after final payment (and the Contractor shall furnish the Owner and each other additional insured identified by the Owner to whom a certificate of insurance has been issued evidence satisfactory to the Owner and any such additional insured of continuation of such insurance at final payment and two years thereafter).

Owner's Protective Liability:

The Contractor shall purchase and maintain protective liability which will protect the Owner against claims which may arise from operations under the Contract Documents, with coverages of not less than:

General Aggregate \$1,000,000

Each Occurrence \$1,000,000

Property Insurance:

The Contractor shall purchase and maintain property insurance upon the Work at the site in the amount of the full replacement cost thereof. This insurance shall:

- 1. include the interests of the Owner, the Contractor, subcontractors, Consulting Engineer, Engineering Program Manager, Construction Manager each of whom is deemed to have an insurable interest and shall be listed as an insured or additional insured:

2. be written on a Builder's Risk "all-risk" or open peril or special causes of loss policy form that shall at least include insurance for physical loss and damage to the Work, temporary buildings, false work and Work in transit and shall insure against at least the following perils: fire, lightning, extended coverage, theft vandalism and malicious mischief, earthquake, collapse, debris removal, demolition occasioned by enforcement of any laws, water damage, and such other perils as may be specifically required by the Owner.
3. include expense incurred in the repair or replacement of any insured property including but not limited to fees and charges of engineers and architects;
4. include coverage for loss of use or time delay;
5. cover materials and equipment in transit for incorporation in the Work or stored at the site or at another location that was agreed to in writing by the Owner prior to being incorporated in the Work.
6. Contain no partial occupancy restriction for utilization of the Project by the Owner for the purpose intended.
7. be maintained in effect until final payment is made unless otherwise agreed to in writing by the Owner, and shall provide thirty (30) calendar days written notice to each other additional insured to whom a certificate of insurance has been issued.

The Contractor shall purchase and maintain boiler and machinery insurance including coverage for explosion, damage, mechanical breakdown and business interruption which will include the interests of the Owner, subcontractors, Consulting Engineer and any other persons or entities identified by the Owner, each of whom is deemed to have an insurable interest and shall be listed as an insured or additional insured, with coverages of not less than the following amounts or greater if required by law:

\$500,000

Waiver of Rights:

The Owner and the Contractor intend that all policies purchased related to the Work will protect the Owner, the Contractor, subcontractors, Consulting Engineer, Construction Manager and all other persons or entities identified by the Owner to be listed as insureds or additional insureds in such policies and will provide primary coverage for all losses and damages caused by the perils covered thereby. All such policies shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any of the insureds or additional insureds thereunder. The Owner and the Contractor waive all rights against each other and their respective officers, directors, employees and agents for all losses and damages cause by; arising out of or resulting from any of the perils covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against subcontractors, Consulting Engineer and all other persons or entities identified by the Owner to be listed as insureds or additional insureds under such policies for losses and damages

so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance otherwise payable under any policy so issued.

None of the above waivers shall extend to the Consulting Engineer, the Engineering Program Manager or the Construction Manager, their agents or employees, for the liability arising out of (1) the preparation or approval of maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications or (2) the giving of, or the failure to give, directions or instructions by the Consulting Engineer, the Engineering Program Manager or the Construction Manager, their agents or employees, provided any such act or omission is the sole cause of the Damages.

EXHIBIT B

COST REDUCTION INCENTIVE

EXHIBIT "B"

COST REDUCTION INCENTIVE

The provisions herein will apply only to contracts awarded to the lowest bidder pursuant to competitive bidding. The status of lowest bidder will be determined without reference to any cost reduction incentives that are proposed by the Contractor.

On projects with original contract amounts in excess of \$100,000.00, the Contractor may submit to the Owner, in writing, proposals for modifying the plans, specifications or other requirements of the Contract for the purpose of reducing the cost of construction. The cost reduction proposal shall not impair, in any manner, the essential functions or characteristics of the project, including but not limited to service life, economy of operation, ease of maintenance, desired appearance, design and safety standards. Such a cost reduction proposal shall, also, not impose additional time or cost restraints upon other contractors working on the project. This provision shall not apply unless the proposal submitted is specifically identified by the Contractor as being presented for consideration as a value engineering proposal.

As a minimum, the following information shall be submitted by the Contractor with each proposal:

- (a) A description of both the existing Contract and proposed requirements for performing the Work and the proposed changes, with a discussion of the comparative advantages and disadvantages of each;
- (b) An itemization of the Contract requirements that must be changed if the proposal is adopted;
- (c) A detailed estimate of the cost of performing the Work under the existing Contract and under the proposed changes;
- (d) A statement of the time by which a Change Order adopting the proposal must be issued;
- (e) A statement of the effect that adoption of the proposal will have on the Contract Time; and
- (f) The Contract Items of work affected by the proposed changes, including any quantity variation attributable to them.
- (g) An assessment of the impact the proposal would have on other work or projects of the Owner.
- (h) The Contractor shall also provide for whatever financial assistance the Owner may require to review and/or approve proposals.

The Contractor may withdraw, in whole or in part, any cost reduction proposal not accepted by the Owner, within the period specified in the proposal. The provisions of this Section shall not

be construed to require the Owner to consider any cost reduction proposal which may be submitted.

The Contractor shall continue to perform the Work in accordance with the requirements of the Contract until a Change Order incorporating the cost reduction proposal has been issued. If a Change Order has not been issued by the date upon which the Contractor's cost reduction proposal specifies that a decision should be made, or such other date as the Contractor may subsequently have requested in writing, such cost reduction proposal shall be deemed rejected.

The Owner shall be the sole judge of the acceptability of a cost reduction proposal and of the estimated net savings from the adoption of all or any part of such proposal. In determining the estimated net savings, the Owner may disregard the Contract Bid prices if, in the Owner's judgment, such prices do not represent a fair measure of the value of the Work to be performed or deleted.

The Owner may, whether the Contractor's proposal is accepted or not, require the Contractor to pay the Owner's costs of investigating a cost reduction proposal submitted by the Contractor as a condition of considering such proposal. Where such a condition is imposed, the Contractor shall acknowledge acceptance of it in writing. Such acceptance shall constitute full authority for the Owner to deduct the cost of investigating a cost reduction proposal from amounts payable to the Contractor under the Contract. If the Contractor fails to acknowledge and accept such a request from the Owner his proposal shall be deemed rejected.

If the Contractor's cost reduction proposal is accepted in whole or in part, such acceptance will be by a Contract Change Order which shall specifically state that it is executed pursuant to this Section. Such Change Order shall incorporate the changes in the plans and specifications which are necessary to permit the cost reduction proposal or such part of it as has been accepted and shall include any conditions upon which the Owner's approval is based. The Change Order shall also set forth the estimated net savings attributable to the cost reduction proposal. The net savings shall be determined as the difference in costs between the original Contract costs for the involved Work Items and the costs occurring as a result of the proposal change. The Change Order shall also establish the net savings agreed upon and shall provide for adjustment in the Contract Sum that will divide the net savings providing the Owner with sixty percent (60%) of the net savings and the Contractor with forty percent (40%) of the net savings.

The Contractor's forty percent (40%) share of the net savings shall constitute full compensation to the Contractor for the cost reduction proposal and the performance of the Work.

Acceptance of the cost reduction proposal and performance of the cost reduction Work shall not extend the Contract Time unless specifically provided for in the Contract Change Order.

EXHIBIT C

SEXUAL HARASSMENT POLICY

EXHIBIT "C"

Effective Date - December, 2002
ALLEGHENY COUNTY SANITARY AUTHORITY
NO HARASSMENT POLICY

This Exhibit applies to the conduct of the Contractor's employees at the Job Site, and the conduct of the Contractor's employees when representatives of the Owner visit the Contractor's facilities:

The Allegheny County Sanitary Authority is committed to maintaining a work environment free of discrimination. In keeping with this commitment, ALCOSAN will not tolerate harassment of its employees by anyone, including any supervisor, co-worker, vendor, client, contractor, or customer of ALCOSAN or any third party, based on inherent characteristics such as race, color, sex, national origin, ancestry, place of birth, age, religious beliefs, disability and sexual orientation.

Harassment consists of unwelcome conduct, whether verbal, physical or visual. Harassment includes pranks, kidding and teasing. It includes displaying derogatory material or objects, such as cartoons or symbols that threaten or ridicule a particular race, religion or ethnic group. It also includes telling jokes based on racial, ethnic or sexual stereotypes, or which mock individuals based on their disability, race, color, sex, age, national origin, ethnicity, and ancestry, place of birth, religion or sexual orientation. Harassment may include interfering with someone's personal belongings, working space, tools, and equipment as well as touching, pushing, and other physical contact.

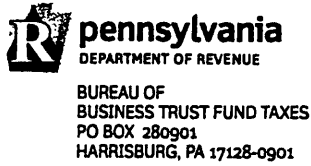
Sexual harassment is conduct based on sex, whether directed towards a person of the opposite or same sex, and may include explicit sexual propositions, sexual innuendo, sexually suggestive comments, gesture or noises, off-color jokes, sexually oriented "kidding," "teasing", or "practical jokes", talking about sexual behavior or sexual preferences, creating or displaying sexually suggestive, sexually demeaning or sexually explicit objects, graffiti, magazines, posters or other printed or visual material, and physical contact such as patting, pinching, grabbing, or brushing against another person's body.

All ALCOSAN employees are responsible for ensuring that the work environment is free of harassment. ALCOSAN urges any employee who believes he or she has been harassed to report the harassment to the Manager of Human Resources, or, if the employee prefers, to the Executive Director. Employees who believe they have witnessed an act of harassment against another are to notify the Manager of Human Resources or the Executive Director.

ALCOSAN'S policy is to investigate all harassment complaints thoroughly and promptly. To the fullest extent possible, ALCOSAN will keep complaints confidential. ALCOSAN will take appropriate corrective action, if an investigation confirms that a violation of this policy has occurred.

EXHIBIT D

PA TAX EXEMPTION CERTIFICATE



**PENNSYLVANIA EXEMPTION
CERTIFICATE**

CHECK ONE:

- STATE OR LOCAL SALES AND USE TAX
- STATE OR LOCAL HOTEL OCCUPANCY TAX
- PUBLIC TRANSPORTATION ASSISTANCE TAXES AND FEES (PTA)
- VEHICLE RENTAL TAX (VRT)

(Please Print or Type)

This form cannot be used to obtain a Sales Tax License Number, PTA License Number or Exempt Status.

**Read Instructions
On Reverse Carefully**

THIS FORM MAY BE PHOTOCOPIED - VOID UNLESS COMPLETE INFORMATION IS SUPPLIED

- CHECK ONE:** PENNSYLVANIA TAX UNIT EXEMPTION CERTIFICATE (USE FOR ONE TRANSACTION)
 PENNSYLVANIA TAX BLANKET EXEMPTION CERTIFICATE (USE FOR MULTIPLE TRANSACTIONS)

Name of Seller, Vendor, or Lessor

Street	City	State	ZIP Code
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NOTE: Do not use this form for claiming an exemption on the registration of a vehicle. To claim an exemption from tax for a motor vehicle, trailer, semi-trailer or tractor with the PA Department of Transportation, Bureau of Motor Vehicles, use one of the following forms:

- FORM MV-1 Application for Certificate of Title (first time registrations)
- FORM MV-4ST Vehicle Sales and Use Tax Return/Application for Registration (other registrations)

Property and services purchased or leased using this certificate are exempt from tax because: (Select the appropriate paragraph from the back of this form, check the corresponding block below and insert information requested.)

- 1. Property or services will be used directly and predominately by purchaser in performing purchaser's operation of: _____
- 2. Purchaser is a/an: Municipal Authority created under the "Municipality Authorities Acts".
- 3. Property will be resold under License Number _____. (If purchaser does not have a PA Sales Tax License Number, include a statement under Number 7 explaining why a number is not required.)
- 4. Purchaser is a/an: _____ holding Exemption Number _____
- 5. Property or services will be used directly and predominately by purchaser performing a public utility service.
 PA Public Utility Commission PUC Number _____ and/or US Department of Transportation MC/MX _____
- 6. Exempt wrapping supplies, License Number _____. (If purchaser does not have a PA Sales Tax License Number, include a statement under Number 7 explaining why a number is not required.)
- 7. Other _____
 (Explain in detail. Additional space on reverse side.)

I am authorized to execute this Certificate and claim this exemption. Misuse of this Certificate by seller, lessor, buyer, lessee, or their representative is punishable by fine and imprisonment.

Name of Purchaser or Lessee	Signature	EIN	Date
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Street	City	State	ZIP Code
3300 Preble Avenue	Pittsburgh	PA	15233

1. ACCEPTANCE AND VALIDITY:

For this certificate to be valid, the seller/lessor shall exercise good faith in accepting this certificate, which includes: (1) the certificate shall be completed properly; (2) the certificate shall be in the seller/lessor's possession within 60 days from the date of sale/lease; (3) the certificate does not contain information which is knowingly false; and (4) the property or service is consistent with the exemption to which the customer is entitled. For more information, refer to Exemption Certificates, Title 61 PA Code §32.2. An invalid certificate may subject the seller/lessor to the tax.

2. REPRODUCTION OF FORM:

This form may be reproduced but shall contain the same information as appears on this form.

3. RETENTION:

The seller or lessor must retain this certificate for at least four years from the date of the exempt sale to which the certificate applies.

DO NOT RETURN THIS FORM TO THE PA DEPARTMENT OF REVENUE.

4. EXEMPT ORGANIZATIONS:

This form may be used in conjunction with form REV-1715, Exempt Organization Declaration of Sales Tax Exemption, when a purchase of \$200 or more is made by an organization which is registered with the PA Department of Revenue as an exempt organization. These organizations are assigned an exemption number, beginning with the two digits 75 (example: 75-00000-0).

GENERAL INSTRUCTIONS

Those purchasers set forth below may use this form in connection with the claim for exemption for the following taxes:

- a. State and Local Sales and Use Tax;
- b. PTA rental fee or tax on leases of motor vehicles;
- c. Hotel Occupancy Tax if referenced with the symbol (●);
- d. PTA fee on the purchase of tires if referenced with the symbol (+);
- e. Vehicle Rental Tax (VRT)

EXEMPTION REASONS

- 1.) Property and/or services will be used directly and predominately by purchaser in performing purchaser's operation of:
- | | | | | | |
|------------------|-----------|-------------|---------------|------------|-----------------|
| A. Manufacturing | B. Mining | C. Dairying | D. Processing | E. Farming | F. Shipbuilding |
|------------------|-----------|-------------|---------------|------------|-----------------|

This exemption is not valid for property or services which are used in: (a) constructing, repairing, or remodeling of real property, other than real property which is used directly in exempt operations; or (b) maintenance, managerial, administrative, supervisory, sales, delivery, warehousing or other nonoperational activities. Effective October 1, 1991, this exemption does not apply to certain services and PTA tire fee.

- 2.) Purchaser is a/an:
- + A. Instrumentality of the Commonwealth.
 - + B. Political subdivision of the Commonwealth.
 - + ● C. Municipal Authority created under the "Municipality Authorities Acts".
 - + ● D. Electric Cooperative Corporations created under the "Electric Cooperative Law of 1990".
 - E. Cooperative Agricultural Associations required to pay Corporate Net Income Tax under the Cooperative Agricultural Association Corporate Net Income Tax Act (exemption not valid for registered vehicles).
 - + ● F. Credit Unions organized under "Federal Credit Union Act" or Commonwealth "Credit Union Act".
 - + ● G. United States Government, its agencies and instrumentalities.
 - H. Federal employee on official business (Exemption limited to Hotel Occupancy Tax only. A copy of orders or statement from supervisor must be attached to this certificate.)
 - I. School Bus Operator (This Exemption Certificate is limited to the purchase of parts, repairs or maintenance services upon vehicles licensed as school buses by the PA Department of Transportation. For purchase of school buses, see NOTE below.)
- 3.) Property and/or services will be resold or rented in the ordinary course of purchaser's business. If purchaser does not have a PA Sales Tax License Number, complete Number 7 explaining why such number is not required. This Exemption is valid for property or services to be resold: (1) in original form; or (2) as an ingredient or component of other property.

4.) **Renewable Entities beginning with the two numbers 75:**

- A. Religious Organization
- B. Volunteer Firemen's Organization
- C. Nonprofit Educational Institution
- D. Charitable Organization

Permanent Exemptions beginning with the two numbers 76:

- E. School District

Special Exemptions:

- F. Direct Pay Permit Holder
- + ● G. Individual Holding Diplomatic ID
- H. Keystone Opportunity Zone
- I. Tourist Promotion Agency

Exemption limited to purchase of tangible personal property or services for use and not for sale. The exemption shall not be used by a contractor performing services to real property. An exempt organization or institution shall have an exemption number assigned by the PA Department of Revenue and diplomats shall have an identification card assigned by the Federal Government. The exemption for categories "A, B, C and D" are not valid for property used for the following: (1) construction, improvement, repair or maintenance of any real property, except supplies and materials used for routine repair or maintenance of the real property; (2) any unrelated activities or operation of a public trade or business; or (3) equipment used to maintain real property.

- 5.) Property or services will be used directly and predominately by purchaser in the production, delivery, or rendition of public utility services as defined by the PA Utility Code.

This Exemption is not valid for property or services used for the following: (1) construction, improvement, repair or maintenance of real property, other than real property which is used directly in rendering the public utility services; or (2) managerial, administrative, supervisor, sales or other nonoperational activities; or (3) tools and equipment used but not installed in maintenance of facilities or direct use equipment. Tools and equipment used to repair "direct use" property are exempt from tax.

- 6.) Vendor/Seller purchasing wrapping supplies and nonreturnable containers used to wrap property which is sold to others.
- 7.) Other (Attach a separate sheet of paper if more space is required.)

CONTRACT NO. 1714

**ROOF MODIFICATIONS FOR SCREENINGS GARAGE
AND POWER GENERATION BUILDING**

CONTRACT AGREEMENT

ARTICLE 4

CONTRACT AGREEMENT

This CONTRACT AGREEMENT ("Agreement"), executed in the County of Allegheny, in the Commonwealth of Pennsylvania, this _____ day of _____, 20__ by and between the ALLEGHENY COUNTY SANITARY AUTHORITY (hereinafter called the "Authority" or "Owner," acting through its Chairman, who acts herein solely for the Authority and without personal liability to himself) and _____ of _____ (hereinafter called the "Contractor.")

WITNESSETH:

WHEREAS, the Authority, pursuant to authority vested in it by Acts of Assembly of the Commonwealth of Pennsylvania, did, by advertisement heretofore made in accordance with the provisions of said Acts, invite bids for **CONTRACT NO. 1714 – ROOF MODIFICATIONS FOR SCREENINGS GARAGE AND POWER GENERATION BUILDING;**

WHEREAS, in accordance with said advertisement and the Information for Bidders prepared by the Authority and submitted to Bidders, the Contractor submitted to the Authority a Bid for the materials or services herein described and a Contract was duly awarded by the Authority to the Contractor, for the materials or services to be furnished under **CONTRACT NO. 1714 – ROOF MODIFICATIONS FOR SCREENINGS GARAGE AND POWER GENERATION BUILDING**, for the price specified in the Bid. Said Bid and all related Contract Documents are hereby made a part of this Agreement, whether or not hereto attached and are hereinafter referred to as the "Contract"; and,

WHEREAS, the Bid includes the following quoted amounts:

Lump Sum Work:

Item	Description	Quantity	Unit	Extended Total Amount
1.	Screenings Garage - Roof Replacement	1	Lump Sum	\$
2.	Power Generation Building - Roof Replacement	1	Lump Sum	
3.	Dewatering Building - Roof Repair	1	Lump Sum	\$
TOTAL OF EXTENDED ITEM AMOUNTS FOR LUMP SUM PRICE WORK LISTED ABOVE (Total for Items 1 through 3):				\$

plus:

Unit Price Work in an estimated amount of:

Item	Description	Quantity	Unit	Unit Price	Extended Total Amount
1.	Dewatering Building Roof - Replacement of Wet Isocyanurate Insulation	20	SF/IN (Square Feet/Inch)		
2.	Screenings Garage - Replacement of Corroded Metal Ribbed Deck	500	SF (Square Feet)	\$	\$
3.	Power Generation Building - Replacement of Corroded Metal Ribbed Deck, 18 Gage	100	SF (Square Feet)		
4.	Power Generation Building - Replacement of Corroded Metal Ribbed Deck, 20 Gauge	100	SF (Square Feet)		

Item	Description	Quantity	Unit	Unit Price	Extended Total Amount
5.	Power Generation Building - Replacement of Corroded Metal Ribbed Deck, 22 Gauge	100	SF (Square Feet)		
6.	Power Generation Building - Repair of precast concrete deck	200	SF (Square Feet)	\$	\$
TOTAL OF EXTENDED ITEM AMOUNTS FOR UNIT PRICE WORK LISTED ABOVE (Total for Items 1 - 6):					\$

Subject to additions and deletions as provided in the Contract Documents.

TOTAL CONTRACT PRICE (Lump Sum plus Total Extended Unit Price Work)

_____ Dollars

(Words)

and _____ Cents \$ _____

(Words)

(Figures)

NOW, THEREFORE, in consideration of their mutual covenants and agreements and intending to be legally bound thereby, the Authority and the Contractor agree as follows:

1. The Contractor agrees to provide any and all labor, supervision, materials, supplies, services (including detailed engineering), equipment, tools, transportation, facilities and appurtenances thereto, whether temporary or permanent, and such other items as indicated, required or implied by the Contract Documents and as necessary for a complete, functional and operational grit and screenings handling systems (the "Work").
2. The Contractor further agrees and acknowledges that time is of the essence of the Contract and that Contractor shall commence the Work immediately upon receipt of the Notice to Proceed and shall prosecute the Work diligently to completion within **130 Calendar Days** ("Contract Time") and as specified for each

Construction Milestone and Substantial Completion of the entire Work as set forth below:

Construction Milestone	Contract Time
Substantial Completion of Contract 1714	130 days

3. Owner and Contractor recognize that Owner will suffer financial loss if the Work is not completed within the Contract Time specified in paragraph 2., plus any extensions thereof allowed in accordance with the General Conditions. They also recognize the delay, expense, and difficulty involved in proving, in a court action or other dispute resolution proceeding, the actual loss suffered by the Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty) Contractor shall pay Owner at the daily rate indicated below for each day that expires after the Contract Time specified in paragraph 2, plus any extensions thereof allowed in accordance with the General Conditions, until the particular Construction Milestone or Substantial Completion of the entire Work, as the case may be, is achieved.

Construction Milestone	Liquidated Damages
Substantial Completion of Contract 1714	\$300/day

4. The Contractor by executing this Agreement represents and warrants that it has read, and fully understands, each and every clause in each of the Contract Documents, including:
- a. Legal Notice
 - b. Bid Form and Bid Bond
 - c. Supplementary Information Package (if any)
 - d. Certificate of M & WBE Participation
 - e. Non-Collusion Affidavit
 - f. Certificate of Compliance with the Pennsylvania Steel Products Procurement Act
 - g. Contractor's Experience Questionnaire
 - h. Information for Bidders
 - i. General Contract Conditions
 - j. Certificate of Safety Procedures Compliance
 - k. Contract Agreement
 - l. Bonds, Certificates and Statements
 - m. Technical Specifications and Appendices, if any
 - n. Addenda issued prior to the opening of bids, if any
 - o. Prevailing Minimum Wage Predetermination

- p. Contract Drawings
 - q. Exceptions submitted by the Bidder and accepted in writing by the Owner
5. In order to induce the Owner to enter into this Agreement, Contractor further represents and warrants as follows:
- a. Contractor has familiarized itself with the nature and extent of the Contract Documents, Work, site, locality, general nature of work to be performed by Owner or others at the site that relates to Work required by the Contract Documents and local conditions and federal, state, and local laws and regulations that in any manner may affect cost, progress, performance, or furnishing of the Work.
 - b. Contractor has studied carefully reports of explorations and tests of subsurface conditions and drawings of physical conditions available at the project site. Contractor acknowledges that such reports and drawings are not Contract Documents.
 - c. Contractor has obtained and carefully studied (or assumes responsibility for obtaining and carefully studying) examinations, investigations, explorations, tests, and studies (in addition to or to supplement those referred to above) which pertain to the conditions (subsurface or physical) at or contiguous to the site or otherwise and which may affect the cost, progress, performance, or furnishing of the Work as Contractor deems necessary for the performance and furnishing of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract Documents, and no additional or supplementary examinations, investigations, explorations, tests, reports, or similar information or data are or will be required by Contractor for such purposes.
 - d. Contractor has reviewed and checked information and data shown or indicated in the Contract Documents with respect to existing underground facilities at or contiguous to the site and has included appropriate costs.
 - e. Contractor has correlated information known to Contractor and results of such observations, familiarizations, examinations, investigations, explorations, tests, and studies with the Contract Documents.
 - f. Contractor has given the Owner written notice of conflicts, errors, ambiguities, or discrepancies that it has discovered in the Contract Documents and the written resolution thereof by Owner is acceptable to Contractor, and the Contract Documents are generally sufficient to

indicate and convey understanding of the terms and conditions for performing and furnishing the Work.

6. This Contract is entered into under and pursuant to the laws of the Commonwealth of Pennsylvania and will in all respects be construed in accordance with the laws of said Commonwealth.
7. No assignment by a party hereto of any rights under or interests in the Contract Documents will be binding on another party hereto without the written consent of the party sought to be bound; and specifically but without limitation monies that may become due and monies that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.
8. Owner and Contractor each binds itself, its partners, successors, assigns, and legal representatives to the other party hereto, its partners, successors, assigns, and legal representatives in respect of all covenants, agreements, and obligations contained in the Contract Documents.

IN WITNESS WHEREOF, the parties hereto have executed this instrument in Allegheny County, Pennsylvania under their several seals on the date of this Agreement the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to the authority of its governing body.

ALLEGHENY COUNTY SANITARY AUTHORITY

By: _____
Arletta Scott Williams
Executive Director

(Seal of Authority)

ATTEST:

Executive Assistant

Date: _____

CORPORATION COMPLETE THIS PAGE

_____ is corporation organized and existing under the laws of _____ with principal place of business at:

(Street Address) (City, State and Zip Code)

and, if a non-Pennsylvania corporation [has] / [has not] been granted a certificate of authority to do business in Pennsylvania, as required by the Pennsylvania Business Corporation Law of 1988, approved December 21, 1988, P.L. 1444, as amended, 15 Pa. C.S.A. §§ 4101 et seq.

ATTEST:

(Name of Corporation)

(Signature of Certifying Officer)

(Signature of Authorized Officer)

Date: _____, 20____

(Typed name of Authorized Officer)

(AFFIX CORPORATE SEAL)

(The Corporation shall make certain that the secretary or assistant secretary certifies the official character and authority of the person or persons executing this Contract Agreement for the Contractor according to the form attached hereto. In lieu of such certificate, attach to the Contract Agreement copies of the records of the corporation that show the official character and authority of the officer signing. The records shall be duly certified to be true copies by the secretary or assistant secretary under corporation seal.

**CORPORATION COMPLETE THIS PAGE
CERTIFICATE AS TO CORPORATE OFFICER**

I, _____, certify that I am
[secretary]/[assistant secretary] of the corporation executing the within Contract Agreement; that
_____ who signed the said Contract Agreement; on behalf
of the corporation was then _____ of said corporation; that I know
his signature and his signature thereto is genuine; and that said Contract Agreement was duly
signed, sealed and attested for and in behalf of said corporation by authority of its governing
body.

Dated: _____, 20____

(Signature of secretary
(or assistant and secretary))

(AFFIX CORPORATE SEAL)

PARTNERSHIP COMPLETE THIS PAGE

_____ is a partnership trading under a fictitious or assumed name and [has]/[has not] registered under the Fictitious Names Act of Pennsylvania, namely, the Act of December 16, 1982, P.L. 1309, as amended, 54 Pa. C.S.A. §§ 301 et seq.

(Fictitious or assumed name)

WITNESS:

*(SEAL)
(Partner trading as above)

*(SEAL)
(Partner trading as above)

Date: _____, 20____

(Street Address)

(City, State and Zip Code)

* If the executing party is a partnership, the document must be signed in the name of the partnership by all partners, and the names and addresses of all the partners must be listed on the attached Certificate. By executing this Contract Agreement the partners agree that two general partners are authorized to act to bind the partnership with regard to all matters under this Contract. The partnership must also attach Certificate of registration under the provisions of the Fictitious Names Act.

**PARTNERSHIP COMPLETE THIS PAGE
CERTIFICATE AS TO PARTNERSHIP**

I, a partner of _____, the partnership named as Contractor in the within Contract Agreement, certify that the following are the names and addresses of all partners of said partnership:

(Name)

(Name)

(Address)

(Address)

(City, State and Zip Code)

(City, State and Zip Code)

(Name)

(Name)

(Address)

(Address)

(City, State and Zip Code)

(City, State and Zip Code)

Date: _____, 20____

(Signature of Certifying Partner)

CONTRACT 1714

**ROOF MODIFICATIONS FOR SCREENINGS GARAGE
AND POWER GENERATION BUILDING**

BONDS, CERTIFICATES AND STATEMENTS

ARTICLE 5

**BONDS, CERTIFICATES AND STATEMENTS
ARTICLE 5**

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CONTRACT NO. 1714 – ROOF MODIFICATIONS FOR SCREENINGS GARAGE AND POWER GENERATION BUILDING	
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Contractor's Certificate of Satisfaction	5 – 21
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PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS, that we _____,
_____ as Principal, and the
_____, a corporation, incorporated
under the Laws of the State of _____, as Surety, are held and firmly bound unto the Allegheny
County Sanitary Authority, herein called the "Authority" or "Owner", its attorneys, successors or
assigns in the sum of
_____ Dollars
(\$ _____), lawful money of the United States of America, for
payment of which sum will and truly be made, we bind ourselves, our heirs, legal representatives,
successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has entered into a Contract with the Owner, dated _____
_____, 20___, being Allegheny County Sanitary Authority **CONTRACT 1714 –**
ROOF MODIFICATIONS FOR SCREENINGS GARAGE AND POWER
GENERATION BUILDING, (herein called the "Contract").

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if
the Principal shall faithfully perform, fulfill and faithfully keep all undertakings, duties,
covenants, terms, conditions and agreements (including any warranties) agreed by it to be
performed and kept at the time and in the manner provided in the Contract and related Contract
Documents, as the same may from time to time be amended or altered and shall defend,
indemnify and save harmless the Owner, its officers, agents, Board members and employees
from any and all cost, damage, liens and demands by reason of the manner in which such
undertakings are performed or kept and from any expense incurred by reason of the Principal's
failure to perform and keep all its undertakings under the Contract or Contract Documents and
from damages growing out of the manner of performance of said Contract Documents so set
forth in the Contract Documents and actual damages caused by delayed performance or non-
performance of the Principal including liquidated damages and including but not limited to
patent, trademark, copyright infringements or other intellectual property violations, as set forth

in the Contract Documents, then this obligation shall become void and of no effect; otherwise it shall remain in full force and effect.

It is further agreed that any changes, extensions, alterations, deductions or additions which may be made in the terms of the Contract Documents, or in the Work to be done, or Materials to be furnished, or labor to be supplied or performed, or equipment to be rented, or public utility services to be rendered, or the giving by the Owner of any extension of time for the performance of the Contract, or reduction of the retainage percentage as permitted by the Contract, or any other forbearance on the part of either the Owner or the Principal to the other, shall not in any way release the Principal and the Surety or either of them, their heirs, executors, administrators, successors or assigns, from their liability for such and hereunder; notice to the Surety or Sureties of any such changes, extensions, alterations, deductions, additions or forbearance being hereby waived.

It is further agreed that in case of default and/or any action arising out of the rights and liabilities secured by this obligation, any party thereto or any person claiming by or through either may use for the purpose of establishing its or their claim a copy of this obligation, certified by the Owner and the action or actions, if any, arising on the within obligation, shall not be a bar to any subsequent action that may arise through any liability incurred in any other action therein or based upon any other part of this obligation. In the event of termination of the Supplier for cause, the Surety shall remain fully liable to the Owner for the Supplier's failure to timely complete the Contract and any liquidated damages.

It is further stipulated and agreed that if the Principal is a non-Pennsylvania corporation, neither the Principal nor the Surety shall be discharged from liability on this Bond, nor the Bond surrendered, until such Principal files with the Owner a certificate from the Pennsylvania Department of Revenue evidencing the payment in full of all bonus taxes, assessments, penalties, charges and interest, and a certificate from the Bureau of Employment and Unemployment Compensation of the Pennsylvania Department of Labor and Industry, evidencing the payment of all unemployment compensation contributions, penalties and

interest due the Commonwealth of Pennsylvania from the said Principal, or any non-Pennsylvania corporation, subcontractor thereunder, or for which liability has accrued but the time for payment has not arrived, as required by the Act of June 10, 1947, P.L. 493, 8 P.S. sec 23, or as amended or superseded.

Said Surety agrees that its liability hereunder shall be absolute regardless of any liability of the Principal hereunder whether by reason of any irregular or unauthorized execution of or failure to execute this Bond or otherwise.

The Contract, together with all related Contract Documents, shall be deemed a part hereof as fully as if set forth herein, a true and correct copy of which has been obtained by the Surety, receipt of which is hereby acknowledged. Failure of the Surety to obtain a copy of the Contract Documents shall not be grounds for refusal by the Surety to investigate and respond to a claim under this Bond made by the Owner.

This Bond shall be governed and enforced in accordance with the laws of the Commonwealth of Pennsylvania.

IN WITNESS WHEREOF, the Principal and Surety have executed this instrument under their several seals this _____ day of _____, 20____, the name and corporate seal of each party being hereto affixed and these presents duly signed by its undersigned representative pursuant to authority of its governing body.

SURETY COMPLETE THIS PAGE

(Corporate Surety)

(Street Address)

(City, State and Zip Code)

ATTEST:

By: _____ *
(Signature)

(Title)

Date: _____, 20____

(AFFIX CORPORATE SEAL)

* The Surety should attach to this Performance Bond a currently certified Power of Attorney which should be dated, sealed and executed by a live (not facsimile) signature showing that the person signing this Bond for the Surety has the current authority to do so.

CORPORATION COMPLETE THIS PAGE

_____ is a corporation organized and existing under the laws of _____ with principal place of business at:

(Street Address) (City, State and Zip Code)

and, if a non-Pennsylvania corporation [has] / [has not] been granted a certificate of authority to do business in Pennsylvania, as required by the Pennsylvania Business Corporation Law of 1988, approved December 21, 1988, P.L. 1444, as amended, 15 Pa. C.S.A. §§ 4101 et seq.

ATTEST:

(Name of Corporation)

(Signature of Certifying Officer)

(Signature of Authorized Officer)

Date: _____, 20__

(Typed name of Authorized Officer)

(AFFIX CORPORATE SEAL)

(The corporation shall make certain that the secretary or assistant secretary certifies the official character and authority of the person or persons executing this Performance Bond for the Contractor according to the form attached hereto. In lieu of such certificate, attach to this Bond copies of the records of the corporation that show the official character and authority of the officer signing. The records shall be duly certified to be true copies by the secretary or assistant secretary under corporate seal.)

**CORPORATION COMPLETE THIS PAGE
CERTIFICATE AS TO CORPORATE OFFICER**

I, _____, certify that I am [secretary]/[assistant secretary] of the corporation executing the within Performance Bond; that _____ who signed the said Bond; on behalf of the corporation was then _____ of said corporation; that I know his/her signature and his/her signature thereto is genuine; and that said Bond was duly signed, sealed and attested for and in behalf of said corporation by authority of its governing body.

Date: _____, 20__

(Signature of secretary (or assistant secretary))

(AFFIX CORPORATE SEAL)

PARTNERSHIP COMPLETE THIS PAGE

_____ is a partnership trading under a fictitious or assumed name and [has] / [has not] registered under the Fictitious Names Act of Pennsylvania, namely, the Act of December 16, 1982, P.L. 1309, as amended, 54 Pa. C.S.A. §§ 301 et seq.

(Fictitious or assumed name)

WITNESS:

(Partner trading as above) *(SEAL)

(Partner trading as above) *(SEAL)

Date: _____, 20__

(Street Address)

(City, State and Zip Code)

* If the executing party is a partnership, the document must be signed in the name of the partnership by at least two general partners, and the names and addresses of all the partners must be listed on the attached Certificate. The partnership must also attach Certificate of registration under the provisions of the Fictitious Names Act.

**PARTNERSHIP COMPLETE THIS PAGE
CERTIFICATE AS TO PARTNERSHIP**

I, a partner of _____, the partnership named as Contractor in the within Performance Bond, certify that the following are the names and addresses of all the partners of said partnership:

(Name)

(Name)

(Address)

(Address)

(City, State and Zip Code)

(City, State and Zip Code)

(Name)

(Name)

(Address)

(Address)

(City, State and Zip Code)

(City, State and Zip Code)

Date: _____, 20__

(Signature of Certifying Partner)

**INDIVIDUAL COMPLETE THIS PAGE
(WHEN THE PRINCIPAL IS AN INDIVIDUAL DOING BUSINESS UNDER
A FIRM NAME)**

_____ is an individual trading under a fictitious or assumed name and [has] / [has not] registered under the Fictitious Names Act of Pennsylvania, namely, the Act of December 16, 1982, P.L. 1309, as amended, 54 Pa. C.S.A. §§ 301 et seq.

(Fictitious or assumed name)

WITNESS:

By: _____ (SEAL)
(Individual doing business as above)

(Street Address)

Date: _____,
20 ____

(City, State and Zip Code)

**(WHEN THE PARTY IS AN INDIVIDUAL DOING BUSINESS IN
HIS/HER INDIVIDUAL NAME)**

(Fictitious or assumed name)

WITNESS:

By: _____ (SEAL)
(Individual doing business as above)

(Street Address)

Date: _____,
20 ____

(City, State and Zip Code)

STATEMENT OF SURETY COMPANY

In accordance with the provisions of **CONTRACT 1714**, dated _____, 20____, by and between the ALLEGHENY COUNTY SANITARY AUTHORITY and _____ the Contractor , the Surety on the Performance Bond of the said Contractor, after a careful examination satisfied this company that all claims which in any way relate to the performance of the work under this Contract have been satisfactorily settled, hereby approves of the final payment to the said, _____ Contractor, and by these presents witnesseth that payment to the Contractor of the final estimate shall not relieve the Surety Company of any of its obligations to the Allegheny County Sanitary Authority as set forth in the said Surety Company's bond.

IN WITNESS WHEREOF, the said Surety Company has hereunto set its hand and seal this day of _____, 20__.

ATTEST:

Secretary

Surety Company

By: _____
President

(AFFIX CORPORATE SEAL)

NOTE: The Surety should attach to this Statement a currently certified Power of Attorney which should be dated, sealed and executed by a live (not facsimile) signature showing that the person signing this Statement for the Surety has the current authority to do so.

LABOR AND MATERIAL PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS, that we
 _____, as Principal, and the
 _____, a corporation, incorporated under the Laws of the State
 of _____, as Surety, are held and firmly bound unto the Allegheny County Sanitary Authority,
 herein called the "Authority" or "Owner", its attorneys, successors or assigns, in the sum of
 _____ Dollars
 (\$ _____), lawful money of the United States of America, for the payment
 of which we bind ourselves, our heirs, legal representatives, successors and assigns, jointly and
 severally, firmly by these presents.

WHEREAS, the Principal has entered into a Contract with the Owner
 dated _____, 20____, being Allegheny County Sanitary Authority
CONTRACT NO. 1714, (herein called the "Contract").

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if
 the Principal shall promptly pay or cause to be paid all sums of money which may be due any
 person, co-partnership, association or corporation, whether as subcontractor or otherwise for
 all material or supplies furnished and labor supplied or performed in the prosecution of the
 Work, including rental for equipment employed and services rendered by public utilities,
 whether or not said material, supplies or labor entered into or became a component part of the
 Work or improvement contemplated in the Contract, then this obligation shall become void
 and of no effect; otherwise it shall remain in full force and effect.

It is further agreed that any changes, extensions, alterations, deductions or additions
 which may be made in the terms of the Contract Documents, or in the Work to be done, or
 material or supplies to be furnished, or labor to be supplied or performed, or equipment to be
 rented, or public utility services to be rendered, or the giving by the Owner of any extension
 of time for the performance of the Contract, or reduction of the retainage percentage as

permitted by the Contract, or any other forbearance on the part of either the Owner or the Principal to the other, shall not in any way release the Principal and the Surety or either of them, their heirs, executors, administrators, successors or assigns, from their liability for such and hereunder; notice to the Surety or Sureties of any such changes, extensions, alterations, deductions, additions or forbearance being hereby waived.

The Principal and Surety further jointly and severally agrees with the Owner that every person, co-partnership, association or corporation, who, whether as subcontractor or otherwise, has furnished material or supplies or performed labor or rented equipment or furnished public utility services in the prosecution of the Work and who has not been paid therefore, may maintain an action therefore on this Bond and have execution thereon as though such person, co-partnership, association or corporation were named as obligee herein, provided, however that the Authority shall not be liable for the payment of any costs or expenses of any such suit.

It is further agreed that in case of default in, and/or any action arising out of rights and liabilities secured by this obligation, any party hereto or any person claiming by or through either may use for the purpose of establishing its or their claim a copy of this obligation, certified by the Owner and the action or actions, if any, arising on the within obligation, shall not be a bar to any subsequent action that may arise through any liability incurred in any other action therein or based upon any other part of this obligation.

It is further stipulated and agreed that if the Principal is non-Pennsylvania corporation, neither the Principal nor the Surety shall be discharged from liability on this Bond, nor the Bond surrendered, until such Principal files with the Owner a certificate from the Pennsylvania Department of Revenue evidencing the payment in full of all bonus taxes, assessments, penalties, charges and interest, and a certificate from the Bureau of Employment and Unemployment Compensation of the Pennsylvania Department of Labor and Industry, evidencing the payment of all unemployment compensation contributions, penalties and interest due the Commonwealth of Pennsylvania from the said Principal, or any non-Pennsylvania corporation, subcontractor thereunder, or for which liability has accrued but

the time for payment has not arrived, as required by the Act of June 10, 1947, P.L. 493, 8 P.S. sec. 23, or as amended or superseded.

Said Surety agrees that its liability hereunder shall be absolute regardless of any liability of the Principal hereunder whether by reason of any irregular or unauthorized execution of or failure to execute this Bond or otherwise.

The Contract, together with all related Contract Documents, shall be deemed a part hereof as fully as if set forth herein, a true and correct copy of which has been obtained by the Surety, receipt of which is hereby acknowledged. Failure of the Surety to obtain a copy of the Contract Documents shall not be grounds for refusal by the Surety to investigate and respond to a claim under this Bond.

This Bond shall be governed and enforced in accordance with the laws of the Commonwealth of Pennsylvania.

IN WITNESS WHEREOF, the Principal and Surety have executed this instrument under their several seals this _____ day of _____, 20__ the name and corporate seal of each party being hereto affixed and these presents duly signed by its undersigned representatives, pursuant to authority of its governing body.

SURETY COMPLETE THIS PAGE

(Corporate Surety)

(Street Address)

(City, State and Zip Code)

ATTEST:

By: _____ *
(Signature)

(Title)

Date _____, 20____

(AFFIX CORPORATE SEAL)

* The Surety should attach to this Labor and Material Payment Bond a currently certified Power of Attorney which should be dated, sealed and executed by a live (not facsimile) signature showing that the person signing this Bond for the Surety has the current authority to do so.

CORPORATION COMPLETE THIS PAGE

_____ is a corporation organized and existing under the laws of _____ with principal place of business at:

(Street Address) (City, State and Zip Code)

and, if a non-Pennsylvania corporation [has] / [has not] been granted a certificate of authority to do business in Pennsylvania, as required by the Pennsylvania Business Corporation Law of 1988, approved December 21, 1988, P.L. 1444, as amended, 15 Pa. C.S.A. §§ 4101 et seq.

ATTEST:

(Name of Corporation)

(Signature of Certifying Officer)

(Signature of Authorized Officer)

Date: _____, 20__

(Typed name of Authorized Officer)

(AFFIX CORPORATE SEAL)

(The corporation shall make certain that the secretary or assistant secretary certifies the official character and authority of the person or persons executing this Labor and Material Payment Bond for the Contractor according to the form attached hereto. In lieu of such certificate, attach to this Bond copies of the records of the corporation that show the official character and authority of the officer signing. The records shall be duly certified to be true copies by the secretary or assistant secretary under corporate seal.)

**CORPORATION COMPLETE THIS PAGE
CERTIFICATE AS TO CORPORATE OFFICER**

I, _____, certify that I am [secretary]/[assistant secretary] of the corporation executing the within Labor and Material Payment Bond; that _____ who signed the said Bond; on behalf of the corporation was then _____ of said corporation; that I know his/her signature and his/her signature thereto is genuine; and that said Bond was duly signed, sealed and attested for and in behalf of said corporation by authority of its governing body.

Date: _____, 20_____

(Signature of secretary (or assistant secretary))

(AFFIX CORPORATE SEAL)

PARTNERSHIP COMPLETE THIS PAGE

_____ is a partnership trading under a fictitious or assumed name and [has] / [has not] registered under the Fictitious Names Act of Pennsylvania, namely, the Act of December 16, 1982, P.L. 1309, as amended, 54 Pa. C.S.A. §§ 301 et seq.

(Fictitious or assumed name)

WITNESS:

(Partner trading as above) *(SEAL)

(Partner trading as above) *(SEAL)

Date: _____, 20____

(Street Address)

(City, State and Zip Code)

* If the executing party is a partnership, the document must be signed in the name of the partnership by at least two general partners, and the names and addresses of all the partners must be listed on the attached Certificate. The partnership must also attach Certificate of registration under the provisions of the Fictitious Names Act.

**PARTNERSHIP COMPLETE THIS PAGE
CERTIFICATE AS TO PARTNERSHIP**

I, a partner of _____, the partnership named as Contractor in the within Labor and Material Payment Bond, certify that the following are the names and addresses of all the partners of said partnership:

(Name)

(Name)

(Address)

(Address)

(City, State and Zip Code)

(City, State and Zip Code)

(Name)

(Name)

(Address)

(Address)

(City, State and Zip Code)

(City, State and Zip Code)

Date: _____, 20____

(Signature of Certifying Partner)

**INDIVIDUAL COMPLETE THIS PAGE
(WHEN THE PRINCIPAL IS AN INDIVIDUAL DOING BUSINESS UNDER
A FIRM NAME)**

_____ is an individual trading under a fictitious or assumed name and [has] / [has not] registered under the Fictitious Names Act of Pennsylvania, namely, the Act of December 16, 1982, P.L. 1309, as amended, 54 Pa. C.S.A. §§ 301 et seq.

(Fictitious or assumed name)

WITNESS:

By: _____ (SEAL)
(Individual doing business as above)

(Street Address)

Date: _____,
20 _____

(City, State and Zip Code)

**(WHEN THE PARTY IS AN INDIVIDUAL DOING BUSINESS IN
HIS/HER INDIVIDUAL NAME)**

(Individual Name)

WITNESS:

By: _____ (SEAL)
(Individual)

(Street Address)

Date: _____, 20 _____

(City, State and Zip Code)

STATEMENT OF SURETY COMPANY

In accordance with the provisions of **CONTRACT NO. 1714**, dated _____, 20____, by and between the ALLEGHENY COUNTY SANITARY AUTHORITY and _____ the Contractor, the Surety on the Labor and Material Payment Bond of the said Contractor, after a careful examination satisfied this company that all claims which in any way relate to the performance of the work under this Contract have been satisfactorily settled, hereby approves of the final payment to the said, _____ Contractor, and by these presents witnesseth that payment to the Contractor of the final estimate shall not relieve the Surety Company of any of its obligations to the Allegheny County Sanitary Authority as set forth in the said Surety Company's Bond.

IN WITNESS WHEREOF, the said Surety Company has hereunto set its hand and seal this _____ day of _____, 20____.

ATTEST:

Secretary

Surety Company

By: _____
President

(AFFIX CORPORATE SEAL)

NOTE: The Surety should attach to this Statement a currently certified Power of Attorney which should be dated, sealed and executed by a live (not facsimile) signature showing that the person signing this Statement for the Surety has the current authority to do so.

CONTRACTOR'S CERTIFICATE OF SATISFACTION

COUNTY OF ALLEGHENY)
COMMONWEALTH OF PENNSYLVANIA) SS:

Before me, the undersigned, _____ in and for said County and Commonwealth, personally appeared * _____, who being duly sworn according to law, deposes and says that all outstanding claims and indebtedness of whatsoever nature arising out of the performance of its or their Contract(s) with the Allegheny County Sanitary Authority, being a Contract for _____, being Contract(s) ** _____ have been paid in full and satisfactorily settled.

Contractor (or Partner or Corporate

Officer)
Sworn to and subscribed before me this

____ day of _____, 20____

My commission expires _____

- * Must be signed and sworn to by the individual Contractor, Partner (if the Contractor is a partnership), or the Corporate Officer (if the Contractor is a corporation).
- ** Enter Contract or Contracts awarded.

MAINTENANCE BOND

KNOW ALL MEN BY THESE PRESENTS, that we
 _____, as Principal, and the
 _____, a corporation, incorporated under the Laws of
 the State of _____, as Surety, are held and firmly bound unto the Allegheny County Sanitary
 Authority, herein called the "Authority" or "Owner", its attorneys, successors or assigns in the sum
 of _____ Dollars
 (\$ _____), lawful money of the United States of America, for payment of
 which sum will and truly be made, we bind ourselves, our heirs, legal representatives, successors
 and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has entered into a Contract with the Owner dated
 _____, 20__ being Allegheny County Sanitary Authority **CONTRACT
 NO. 1714: ROOF MODIFICATIONS FOR SCREENINGS GARAGE AND POWER
 GENERATION BUILDING**, (herein called the "Contract").

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if the
 Principal shall promptly remedy without cost to the Owner any Defects which may develop within
 a period of one (1) year from _____, 20__, the date of the Certificate
 of Final Completion for the Work performed under the Contract (or longer if so stated in the
 Contract Documents), provided such Defects, in the judgment of the Owner or its successors
 having jurisdiction in the premises, are caused by defective or inferior Materials, workmanship or
 design, then this obligation shall become void and of no effect; otherwise it shall remain in full
 force and effect.

It is further agreed that any changes, extensions, alterations, deductions or additions which
 may be made in the terms of the Contract Documents, or in the Work to be done, or Materials to
 be furnished, or labor to be supplied or performed, or equipment to be rented, or public utility
 services to be rendered, or the giving by the Owner of any extension of time for the performance

of the Contract, or reduction of the retainage percentage as permitted by the Contract, or any other forbearance on the part of either the Owner or the Principal to the other, shall not in any way release the Principal and the Surety or either of them, their heirs, executors, administrators, successors or assigns, from their liability for such and hereunder; notice to the Surety or Sureties of any such changes, extensions, alterations, deductions, additions or forbearance being hereby waived.

Said Surety agrees that its liability hereunder shall be absolute regardless of any liability of the Principal hereunder whether by reason of any irregular or unauthorized execution of or failure to execute this Bond or otherwise.

The Contract together with all related Contract Documents, shall be deemed a part hereof as fully as if set forth herein, a true and correct copy of which has been obtained by the Surety, receipt of which is hereby acknowledged. Failure of the Surety to obtain a copy of the Contract Documents shall not be grounds for refusal by the Surety to investigate and respond to a claim under this Bond.

This Bond shall be governed and enforced in accordance with the laws of the Commonwealth of Pennsylvania.

IN WITNESS WHEREOF, the Principal and Surety have executed this instrument under their several seals this ____ day of _____, 20 ____, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its proper officer, pursuant to authority of its governing body.

SURETY COMPLETE THIS PAGE

(Corporate Surety)

(Street Address)

(City, State and Zip Code)

ATTEST:

By: _____ *
(Signature)

(Title)

Date: _____, 20____

(AFFIX CORPORATE SEAL)

* The Surety should attach to the Maintenance Bond a currently certified Power of Attorney which should be dated, sealed and executed by a live (not facsimile) signature showing that the person signing this Bond for the Surety has the current authority to do so.

CORPORATION COMPLETE THIS PAGE

_____ is a corporation organized and existing under the laws of _____ with principal place of business at:

(Street Address) (City, State and Zip Code)

and, if a non-Pennsylvania corporation [has] / [has not] been granted a certificate of authority to do business in Pennsylvania, as required by the Pennsylvania Business Corporation Law of 1988, approved December 21, 1988, P.L. 1444, as amended, 15 Pa. C.S.A. §§ 4101 et seq.

ATTEST:

(Name of Corporation)

(Signature of Certifying Officer)

(Signature of Authorized Officer)

Date: _____, 20____

(Typed name of Authorized Officer)

(AFFIX CORPORATE SEAL)

(The corporation shall make certain that the secretary or assistant secretary certifies the official character and authority of the person or persons executing this Maintenance Bond for the Contractor according to the form attached hereto. In lieu of such certificate, attach to this Bond copies of the records of the corporation that show the official character and authority of the officer signing. The records shall be duly certified to be true copies by the secretary or assistant secretary under corporate seal.)

**CORPORATION COMPLETE THIS PAGE
CERTIFICATE AS TO CORPORATE OFFICER**

I, _____, certify that I am [secretary]/[assistant secretary] of the corporation executing the within Maintenance Bond; that _____ who signed the said Bond; on behalf of the corporation was then _____ of said corporation; that I know his/her signature and his/her signature thereto is genuine; and that said Bond was duly signed, sealed and attested for and in behalf of said corporation by authority of its governing body.

Date: _____, 20_____ (Signature of secretary (or assistant secretary))

(AFFIX CORPORATE SEAL)

PARTNERSHIP COMPLETE THIS PAGE

_____ is a partnership trading under a fictitious or assumed name and [has] / [has not] registered under the Fictitious Names Act of Pennsylvania, namely, the Act of December 16, 1982, P.L. 1309, as amended, 54 Pa. C.S.A. §§ 301 et seq.

(Fictitious or assumed name)

WITNESS:

(Partner trading as above) *(SEAL)

(Partner trading as above) *(SEAL)

Date: _____, 20__

(Street Address)

(City, State and Zip Code)

* If the executing party is a partnership, the document must be signed in the name of the partnership by at least two general partners, and the names and addresses of all the partners must be listed on the attached Certificate. The partnership must also attach Certificate of registration under the provisions of the Fictitious Names Act.

**PARTNERSHIP COMPLETE THIS PAGE
CERTIFICATE AS TO PARTNERSHIP**

I, a partner of _____, the partnership named as Contractor in the within Maintenance Bond, certify that the following are the names and addresses of all the partners of said partnership:

(Name)

(Name)

(Address)

(Address)

(City, State and Zip Code)

(City, State and Zip Code)

(Name)

(Name)

(Address)

(Address)

(City, State and Zip Code)

(City, State and Zip Code)

Date: _____, 20__

(Signature of Certifying Partner)

**INDIVIDUAL COMPLETE THIS PAGE
(WHEN THE PRINCIPAL IS AN INDIVIDUAL DOING BUSINESS UNDER
A FIRM NAME)**

_____ is an individual trading under a fictitious or assumed name and [has] / [has not] registered under the Fictitious Names Act of Pennsylvania, namely, the Act of December 16, 1982, P.L. 1309, as amended, 54 Pa. C.S.A. §§ 301 et seq.

(Fictitious or assumed name)

WITNESS:

By: _____ (SEAL)
(Individual doing business as above)

(Street Address)

Date: _____, 20__

(City, State and Zip Code)

**(WHEN THE PARTY IS AN INDIVIDUAL DOING BUSINESS IN
HIS/HER INDIVIDUAL NAME)**

(Individual Name)

WITNESS:

By: _____ (SEAL)
(Individual)

(Street Address)

Date: _____, 20__

(City, State and Zip Code)

ARTICLE 6

SPECIFICATIONS

ARTICLE 6

DIVISION 1

GENERAL REQUIREMENTS

**SECTION 01010
SUMMARY OF WORK**

PART 1 GENERAL

1.1 DESCRIPTION

A. General:

1. It is the intent of the Contract Documents to describe a functionally complete project.
2. The work included in this project is at the Allegheny County Sanitary Authority (OWNER) Woods Run Wastewater Treatment Plant in Pittsburgh, Pennsylvania and described in detail in the rest of this Section.
3. Furnish all labor, materials, tools, equipment and services as indicated in accordance with provisions of Contract Documents.
4. Furnish and install all supplementary or miscellaneous items, appurtenances, and devices incidental to or necessary for a sound, secure, complete, and functional installation of the Work.
5. In addition to this individual project, there may be construction activities underway at the plant site during part or all of the construction period for this project.
6. In addition to this individual project, there may be Owner (Operations & Maintenance) activities underway at the plant site during part or all of the construction period for this project. See Section 01050, Construction Sequencing, for further details.
7. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

B. This Contract 1714 will be performed by one Prime Contractor to meet the requirements of the Contract Documents. The following organizations may be present at the Job Site and have responsibilities described generally in Article 3, General Contract Conditions:

1. Construction Manager (CM)
2. Engineer
3. Contractor
4. Supplier
5. Owner (ALCOSAN)

C. Owner (OWNER)

1. The Owner may be identified as the responsible entity for certain actions in the sections of Divisions 1 through 7. The Owner may elect to delegate certain of these respective duties and responsibilities to the aforementioned parties.
2. All contact between the Contractor and the remaining aforementioned parties shall be through the Construction Manager, or designated Owner representative.

1.2 WORK COVERED BY CONTRACT DOCUMENTS

A. Work Included in Individual Prime Contract:

1. The following is a general description of the work to be performed, and is in no way meant to limit or restrict the Work required under this Contract. Refer to the remainder of the Specifications and Contract Drawings for additional detail on the scope of the Work. The completed Work will provide the Owner with new roof systems for the Screenings Garage and Power Generation Building, and a repaired roof for the Dewatering Building.

B. Scope of Work for Contract 1714 – Roof Modifications for Screenings Garage and Power Generation Building.

1. Screenings Garage (Building 513):

- a. Demolition of existing roof system: removal of the existing roof system, including membrane, insulation, gypsum board, and flashing, down to the metal deck structure, and proper off-site disposal of all materials.
- b. Furnishing and installing a new fully adhered TPO membrane roofing system, including insulation, on the roof area of the Screenings Garage.
- c. Replacement of corroded metal ribbed deck: A portion of the existing 1 ½ in. ribbed metal roof structure may need to be replaced. The Bid Form provides an estimate for quantity (square feet) of area to replace.
- d. Contractor to supply new drain hardware, i.e. drain bolts, drain rings and metal drain strainers. Drain rings and strainers shall be painted construction yellow.
- e. Contractor is responsible for replacing all flashing.
- f. Contractor will remove and reinstall the metal capping/coping on

the roofs as needed.

2. Power Generation Building (Building 411):

- a. Demolition of existing roof system: removal of the existing roof systems, including membranes and built-up, insulation, gypsum board, flashing, and stone ballast down to the metal or precast concrete deck structure, and proper off-site disposal of all materials.
 - i.) The overall existing Power Generation Building roof is made up of seven (7) areas at varying elevations, and is comprised of several types of roof systems (EPDM membrane, and multi-ply built up roof with gravel/stone ballast) and deck structures (ribbed 1 ½ in. and 2 in. steel, and precast concrete).
- b. Furnishing and installing a new fully adhered TPO membrane roofing system, including insulation, on all of the roof areas of the Power Generation Building.
- c. Contractor to supply new drain hardware, i.e. drain bolts, drain rings and metal drain strainers. Drain rings and strainers shall be painted construction yellow.
- d. Contractor is responsible for replacing all flashing.
- e. Contractor will remove and reinstall the metal capping/coping on the roofs as needed.
- f. Contractor will remove and reinstall any insulated metal wall panels adjacent to roof areas or levels as needed.
- g. Replacement of corroded metal ribbed deck: A portion of the existing 1 ½ in. ribbed metal roof structures may need to be replaced. The Bid Form provides an estimate for quantity (square feet) of area to replace for each of the gauges used throughout the various roof areas/sections.
- h. Repair of precast concrete deck: areas of existing precast concrete roof deck may require repair. The Bid Form provides an estimate for quantity (square feet) of area to repair

3. Dewatering Building (Building 400):

- a. Furnishing and installing repaired areas on the existing roof area of the Dewatering Building (Building 400), including the following:
- b. Replacement of wet insulation. A portion of the existing isocyanurate insulation appears to be soft/wet, and shall be

replaced. The Bid Form provides an estimate for quantity (square feet/in.) of insulation to be replaced.

- c. Repair of Built-up Roof system. Repair areas of the built-up roof system in areas where wet insulation was removed and replaced to match existing built-up roof system.
 - d. Repair of Pitch Pockets: remove existing top layer of elastomeric filler material from all pockets, clean and prime metal penetrations or tubes with rust-inhibitive primer, refill pockets with elastomeric sealant material.
 - e. Repair of Flashing: Apply protective elastomeric coating system (base coat and topcoat) to existing flashing along the eastern edge of the roof gravel stop/cant.
 - f. Replace missing fascia: Approximately 110 feet of fascia from the existing gravel stop assemblies on the north and south perimeters of the building are missing. Furnish and install new fascia to match existing.
4. Site work and other work activities, including:
- a. Prepare, maintain, and secure Contractor's staging area(s) and dumpsters.
 - b. Mobilization(s)/Demobilizations(s)
 - c. Work as described under Specification Section 01500, Construction Facilities and Temporary Control.
 - d. Receipt, unloading, storage, and transportation to the project site of any equipment, materials, or items under this contract.
 - e. Contractor shall not be permitted to throw any material off the roofs during the course of all work activities.
 - f. Contractor shall employ means to prevent debris from falling onto areas below the perimeter work areas during the course of all work activities.
 - g. Furnish, install, maintain, and remove any temporary scaffolding, rigging, lifts, hoists, cranes, motors, and/or any equipment as needed to access the work areas and perform all work as specified in this section and in the Contract Documents.
 - h. Providing (including arranging, scheduling, and paying for) field services of the manufacturers' representatives as required by the technical specifications and Contract Documents.

- i. Clean-up and restoration of areas directly adjacent to project site, and any lay-down areas, to pre-construction conditions.
- j. Clean-up and disposal off-site of any and all construction debris, materials, extra materials, etc.

C. Specification Sections as follows are included in this Contract:

- 1. Contract 1714 , Volume 1, Contract Documents
 - a. Article 1 - Bidding Documents
 - b. Article 2 - Information for Bidders
 - c. Article 3 - General Contract Conditions
 - d. Article 4 - Contract Agreement
 - e. Article 5 - Bonds, Certificates and Statements
 - f. Article 6, Division 1 - General Requirements
 - g. Article 7 – Prevailing Wage Determination
- 2. Contract 1714 , Volume 1, Contract Documents , Technical Specifications
 - a. Division 02 – Site Work
 - b. Division 07 – Thermal and Moisture Protection

D. Schedule of Drawings: These Specifications are accompanied by Contract Drawings, herein referred to as “the Drawings”. The Work shall conform to the Drawings titled “Contract 1714, Roof Modifications For Screenings Garage and Power Generation Building” with drawing numbers and descriptions as follows:

DRAWING TITLE	DRAWING NO.
Site Location Plan	1714-Cover-01 (Cover sheet)
Roof Modifications – Site Utilization Plan	1714-SU-01 (Sheet 1 of 32)
Roof Modifications – Enlarged Site Utilization Plan	1714-SU-02 (Sheet 2 of 32)
Dewatering Building As-Built Roof Plan	400-A-01 (Sheet 3 of 32)
Overall Power Gen Building As-Built Roof Plan	411-A-01 (Sheet 4 of 32)
Enlarged Power Gen Building As-Built Roof Plan	411-A-02 (Sheet 5 of 32)

DRAWING TITLE	DRAWING NO.
Lower Power Gen Building & Emergency Generator As-Built Roof Plan	411-A-03 (Sheet 6 of 32)
Truck Loading (Screenings Garage) As-Built Roof Plan & Sections	513-A-01 (Sheet 7 of 32)
Reference Drawings	Sheets 8 thru 32

1.4 REFERENCE DRAWINGS AND INFORMATION

In preparation of the Contract Documents, the Engineer has utilized information from the following. A selection of drawings and details from these contracts are included in the Drawings, labeled "REFERENCE DRAWING."

A. Screenings Garage (Building 513):

1. Contract 917A, B, C: Furnishing and Installing a Materials Handling System for Screenings and Grit. Construction Drawings and As-Builts. (1992-1993)
2. Contract 1336: – Interim Grit and Screenings Improvements. (May 2005)

B. Power Generation Building (Building 411):

1. Contract 34 - 40: Pittsburgh Sewage Treatment Plant. (1955)
2. Contract 916X-1: Modifications to the Power Generation Building – General. (July 1993)
3. Contract 916W-1&2: Modifications to the Power Generation Building – Phase 2 Construction. (January 1994)
4. Contract 1018C: Heating, Ventilation, and Air Conditioning. (November, 1993)
4. Contract 1220: Deaerator and Boiler Feed Pump Modifications. (October 1999)
5. Contract 1254: New Standby Boiler. (October 2002)

C. Dewatering Building (Building 400):

1. Contract 1540A: Dewatering Building Roof and Window Replacement. (April 2000)

1.4 HAZARDOUS AND CONTAMINATED MATERIALS

- A. It is not anticipated that Lead and/or Chromium Paint will be encountered in the Work area. Should this be discovered, stop work in the area of possible contamination and notify the Construction Manager.
- B. It is not anticipated that asbestos containing material (ACM) is located within the project limits. Should this be discovered, stop work in the area of possible contamination and notify the Construction Manager.
 - 1. Note: There is a section of the Power Generation Building (formerly called the "Sludge Heater Building") from the original 1950's construction of the ALCOSAN wastewater treatment plant. Prior to tear-off of this section of the Power Generation Building roof (labelled "Lower Rooftop" on the Drawings and Specifications), the Owner shall sample and test this existing built-up roof system for the presence of any asbestos containing material.

1.5 CONFINED SPACES

- A. All work involving confined space entry will be in accordance with 29 CFR 1910.146. The Owner has adopted a Permit Required Confined Space Entry Program for its employees in accordance with OSHA requirements found at 29 CFR 1910.146. This Permit Required Confined Space Entry Program must be adopted by the Contractor if its employees will be working in confined spaces. No Contractor employee shall be permitted to enter a "permit required confined space" as defined in 29 CFR 1910.146 without having complied with all the requirements of said regulations, including the sign off on the "OWNER On-Site Confined Space Entry Permit" adopted by the Contractor. The Contractor shall have gas detection equipment which is capable of detecting combustibles, oxygen, hydrogen sulfide and carbon monoxide.
- B. The following work areas within the contract are defined as "Confined Space."
(NOT APPLICABLE)
- C. The Contractor shall comply with the requirements of the applicable permit-required confined space entry program whenever the potential exists that work in such spaces could be hazardous. Any work involving confined space entry will be in accordance with OSHA requirements as presented in 29 CFR 1910.146. Contractor's personnel must not enter any areas identified by Owner as confined spaces without first receiving written approval from the responsible Owner Shift Superintendent and without first having complied with all the requirements of said regulations. This includes the sign off on the "OWNER On-Site Confined Space Entry Permit" or equivalent permit adopted by the Contractor.

- D. If confined space entry is required, the Contractor shall supply personal protective equipment (PPE) and gas detection equipment, which is capable of detecting combustibles, oxygen, hydrogen sulfide and carbon monoxide.
- E. The Contractor shall identify to the Construction Manager any new confined or enclosed space that is created as a result of the performance of the Contract Work. The Contractor shall comply with the requirements of the applicable permit-required confined space entry program whenever the potential exists that work in such spaces could be hazardous.

1.6 DESCRIPTION OF PROJECT PERSONNEL AND THEIR RESPONSIBILITIES

- A. CONTRACTOR'S PERSONNEL : As described in these Contract Documents and as follows:

1. Project Manager and Site Superintendent: Must be on site at all times when Work in individual Contract is proceeding. The Owner reserves the right to approve the Contractor's proposed Project Manager and Site Superintendent. If at any time during the execution of the Contract the Owner determines that the Contractor's Project Manager or Site Superintendent are not executing the Work in conformance with the Contract Documents, the Owner may request in writing that he/she be replaced. Contractor shall not replace the Project Manager or Site Superintendent without written notice to the Construction Manager except under extraordinary circumstances. The Project Manager or Site Superintendent will be Contractor's representative at the site and shall have the authority to act on behalf of the Contractor. All communications to the Project Manager or Site Superintendent shall be as binding as if given to the Contractor. If at any time during the Project the Project Manager or Site Superintendent must leave the Project site while Work is in progress, the Construction Manager shall be notified and provided with the name of the Contractor's representative having responsible charge.
2. Quality Control Representative: Responsible for Contractor's quality control program while Work is in progress. Notify Construction Manager of any change in quality control assignment.
3. Safety and Protection Representative:
 - a. Contractor shall designate a qualified and experienced Safety Representative at the site whose duties and responsibilities shall be to prevent accidents and to maintain and supervise the implementation of the Contractor's safety plan. The Safety Representative shall be trained in First Aid

and CPR. The Safety Representative's qualifications shall be submitted to the Construction Manager prior to beginning work on site.

- b. Initiate, maintain, and supervise the Safety Plan in connection with the Work. Take all necessary precautions for safety and provide for the necessary protection to prevent damage, injury, or loss to:
 - (1) All persons on the work site or who may be affected by the Work;
 - (2) All the Work and materials and equipment to be incorporated therein, whether in storage on or off the site; and
 - (3) Other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.
- c. Comply with all applicable Laws and Regulations of any public body having jurisdiction for the safety of persons or property or to protect them from damage, injury, or loss.
- d. Before any work at the site is started, the Contractor shall prepare a written project-site specific Safety Plan and submit to the Construction Manager for record.
- e. The Safety Representative shall revise the Safety Plan at appropriate times to reflect changes in construction conditions, the Work, Contractor's means, methods, techniques, sequences and procedures of construction. The Safety Representative will submit the revised Safety Plan to the Construction Manager for record.
- f. Contractor's personnel are obligated to act, without direction or authorization from Owner or Construction Manager, to prevent any potential injury or property loss when confronted with any emergency situation affecting the safety or protection of persons or the Work or property at the site or adjacent thereto.
- g. Contractor shall give Construction Manager prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused by any unforeseen emergency situation. If Construction Manager determines that a change in the Contract Documents is required because of the action taken

by Contractor in response to such an emergency, Construction Manager will proceed in accordance with Article 3, Contract Provisions.

- h. In emergencies affecting the safety or protection of persons or the Work or property at the site or adjacent thereto, each Contractor, without special instruction or authorization from Owner or Construction Manager, is obligated to act to prevent threatened damage, injury or loss. Contractor shall give Construction Manager prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby. If Construction Manager determines that a change in the Contract Documents is required because of the action taken by Contractor in response to such an emergency, Construction Manager will proceed in accordance with Article 3, General Contract Conditions.
- i. Contractor shall take precautions to prevent any materials related to the Work from falling into active process tanks such as the aeration basins, secondary clarifiers, primary sedimentation basins, etc. It will be the Contractor's responsibility to retrieve any such debris at his own expense with assistance from ALCOSAN. Contractor may be back-charged ALCOSAN's costs for assistance in retrieving Contractor debris from process tanks.

B. OWNER (ALCOSAN): As described in these Contract Documents and as follows:

- 1. Can enter into legal contract with Contractor for completion of the Work.
- 2. Can approve contract amendments, progress payments, and make final acceptance of the Work.
- 3. Can participate in coordination of site construction activity.
- 4. Can participate in training, testing and startup activity.

C. CONSTRUCTION MANAGER(CM): As described in these Contract Documents and as follows:

- 1. Inspect and monitor Contractor progress and quality of work during all construction work.
- 2. Contractor shall provide all required assistance for the Construction Manager's inspection of the work.
- 3. Assist Contractor in obtaining access to all work sites within the plant.
- 4. Provide on-site representative and construction inspection services.

5. Coordinate training, testing and startup activity.

D. ENGINEER:

1. Provide engineering support services.
2. Performs weekly site inspections.
3. Technical and shop drawing reviews.
4. Prepare drawing revisions and cost estimates.
5. Assist in training, testing and startup activity.

E. SUPPLIER (Material & equipment): As described in these Contract Documents and as follows:

1. Provide manufacturer services in installation, on-site training, testing, start-up and close-out.
2. Coordinate support of Contractor through the Construction Manager.
3. Will provide submittals, and Operation and Maintenance Manuals for equipment and material as specified.

PART 2 PRODUCTS - (Not Used)

PART 3 EXECUTION - (Not Used)

--END OF SECTION--

**SECTION 01025
MEASUREMENT AND PAYMENT**

PART 1 GENERAL

1.1 REFERENCE

- A. See Article 3, Contract Provisions, for general requirements concerning payment.

1.2 MEASUREMENT-GENERAL

- A. Weighing, measuring, and metering devices used to measure quantity of materials for Work shall be suitable for purpose intended and conform to tolerances and specifications as specified in National Institute of Standards and Technology, Handbook 44.
- B. Whenever pay quantities of material are determined by weight, the material shall be weighed on the truck scales at the plant site and certified accurate by the state agency responsible. A weight or load slip shall be obtained from the weigher and delivered to the Owner's representative at the point of delivery of the material.
- C. If material is shipped by rail, the car weights will be accepted provided that actual weight of material only will be paid for and not minimum car weight used for assessing freight tariff, and provided further that car weights will not be acceptable for material to be passed through mixing plants.
- D. Vehicles used to haul material being paid for by weight shall be weighed empty daily and at such additional times as required by Owner. Each vehicle shall bear a plainly legible identification mark.
- E. Items will be measured as follows:
 - 1. Lump Sum:
 - a. Screenings Garage (Bldg. 513) - Replacement of Roof
 - b. Power Generation Building (Bldg. 411) - Replacement of Roof
 - c. Dewatering Building (Bldg. 400) - Repair of Roof
 - 2. Unit Price:
 - a. Screenings Garage – Replacement of Corroded Metal Deck; Square Feet (Sq.Ft. of SF)

- b. Dewatering Building Roof – Replacement of Wet Insulation; Square Feet per Inch (Sq.Ft./In. of SF/IN.)
- c. Power Generation Building – Replacement of Corroded Metal Deck, 18GA; Square Feet (Sq.Ft. of SF)
- d. Power Generation Building – Replacement of Corroded Metal Deck, 20GA; Square Feet (Sq.Ft. of SF)
- e. Power Generation Building – Replacement of Corroded Metal Deck, 22GA; Square Feet (Sq.Ft. of SF)
- f. Power Generation Building – Repair of precast concrete deck; Square Feet (Sq.Ft. of SF)

1.3 PAYMENT

- A. General: Progress payments will be made monthly on the date established at the preconstruction meeting.
- B. The Contractor must obtain the Owner's prior approval before performing the Unit Price work.
- C. Payment for all Work shown or specified in the Contract Documents that is not identified as Unit Price work is included in the Lump Sum.
- D. The Contractor shall include a line item in the Schedule of Values for the submission of approved As-Built Drawings and Documentation with an associated value of 0.25 percent of the Contract Value, or \$1,000 dollars, whichever is greater.
- E. Payment for Lump Sum Items will be as follows:
 - 1. Screenings Garage (Bldg. 513) - Replacement of Roof
 Payment for this Item shall include: all labor, materials, rigging, equipment, tools, supervision, crane/hoist, and hardware to remove existing roof materials including demolition and disposal of existing materials, and to install the new roofing materials as specified in the Contract Documents. Providing manufacturer's representative at site as specified.
 - 2. Power Generation Building (Bldg. 411) - Replacement of Roofs
 Payment for this Item shall include: all labor, materials, rigging, equipment, tools, supervision, crane/hoist, and hardware to remove existing roof materials including demolition and disposal of existing

materials, and to install the new roofing materials as specified in the Contract Documents. Providing manufacturer's representative at site as specified.

3. Dewatering Building (Bldg. 400) - Repair of Roof

Payment for this Item shall include: all labor, materials, rigging, equipment, tools, supervision, crane/hoist, and hardware to repair existing roof materials including demolition and disposal of existing materials, and to complete roofing repair as specified in the Contract Documents. Providing manufacturer's representative at site as specified.

F. Payment for Unit Price Items will be as follows:

1. Screenings Garage – Replacement of Corroded Metal Deck; Square Feet (SF or Sq. Ft.)

Payment for this Item shall include:

- a. Examine work area of metal ribbed deck with Construction Manager to verify if metal ribbed deck is corroded.
- b. Remove all damaged corroded metal decking and replace with the same material as was removed.
- c. Payment for this item will be based on actual amount removed and replaced. This quantity will be in SF (square feet, or Sq. Ft.). This unit price work will be the true measure of all labor, materials, overhead type labor, disposal, and any equipment needed to complete this item.

2. Dewatering Building Roof – Replacement of Wet Insulation; Square Feet per Inch (SF/IN or Sq.Ft./In.)

Payment for this Item shall include:

- a. Examine work area of roof with Construction Manager to verify area(s) of wet insulation.
- b. Remove wet isocyanurate insulation.
- c. Replacment of dry isocyanurate insulation.
- d. Payment for this item will be based on actual amount removed and replaced. This quantity will be in SF/IN (square feet per inch, or Sq. Ft./In.). This unit price will be the true measure of all labor, materials, overhead type labor, disposal and any equipment needed to complete this item.

3. Power Generation Building – Replacement of Corroded Metal Deck; 18,

20 or 22 GA; Square Feet (SF or Sq. Ft.)

Payment for this Item shall include:

- a. Examine work area of metal ribbed deck with Construction Manager to verify if metal ribbed deck is corroded.
- b. Remove all damaged corroded metal decking and replace with the same material as was removed.
- c. Payment for this item will be based on actual amount removed and replaced. This quantity will be in SF (square feet, or Sq. Ft.). This unit price work will be the true measure of all labor, materials, overhead type labor, disposal, and any equipment needed to complete this item.

4. Power Generation Building – Repair of precast concrete deck; Square Feet (SF or Sq. Ft.)

Payment for this Item shall include:

- a. Examine work area of precast concrete deck with Construction Manager to verify if deck is deteriorated and/or adjoining precast concrete segments are more than 1/2" out of alignment.
- b. Repair concrete.
- c. Payment for this item will be based on actual amount repaired. This quantity will be in SF (square feet, or Sq. Ft.). This unit price work will be the true measure of all labor, materials, overhead type labor, disposal, and any equipment needed to complete this item.

1.4 NONPAYMENT FOR REJECTED OR UNUSED PRODUCTS

A. Payment will not be made for following:

1. Loading, hauling, and disposing of rejected material.
2. Quantities of material wasted or disposed of in manner not called for under Contract Documents.
3. Rejected loads of material, including material rejected after it has been placed by reason of failure of Contractor to conform to provisions of Contract Documents.
4. Material not unloaded from transporting vehicle.
5. Defective Work not accepted by Owner.
6. Material remaining on hand after completion of Work.

1.5 PARTIAL PAYMENT FOR STORED MATERIALS AND EQUIPMENT

- A. Partial Payment: No partial payments will be made for materials and equipment delivered or stored unless Shop Drawings, preliminary operation and maintenance manuals, Maintenance Summary Forms and Recommended Spare Parts for Owners' Inventory are completed and acceptable to Construction Manager.
- B. Final Payment: Will be made only for products incorporated in Work; remaining products, for which partial payments have been made, shall revert to Contractor unless otherwise agreed, and partial payments made for those items will be deducted from final payment.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION

3.1 INITIAL APPLICATION FOR PAYMENT

- A. Administrative actions and submittals that must precede the first Application for Payment include the following:
 - 1. Contractor's Mobilization Schedule (First 90 Days)
 - 2. Contractor's Schedule of Values
 - 3. Contractor's Submittal Schedule
 - 4. List of Subcontractors (if required)
 - 5. List of Principal Suppliers and Fabricators (if required)
 - 6. List of Contractor's staff assignments (if required)
 - 7. Copies of licenses and authorizations from governing authorities for performance of the Work (if applicable)
 - 8. Certificates of Insurance
 - 9. Required Bonds
 - 10. MSDS sheets
 - 11. Safety Program accepted
 - 12. WBE/MBE/DBE submittal accepted
 - 13. Preconstruction photograph session completed

3.2 MONTHLY APPLICATION FOR PAYMENT

- A. Administrative actions and submittals that must precede each monthly Application for Payment include the following:
1. Contractor's Project Schedule w/ Narrative (Updated)
 2. Contractor's Submittal Schedule (Updated)
 3. Certified Payrolls
 4. Certificates of Insurance (Updated)
 5. Required backup/approved shop drawings for Materials Stored on Site
 6. Maintenance of on-site As-Built drawings
 7. Resolution of all Site Safety Notices
 8. Disposition of all Non-Conformance Notices
 9. WBE/MBE/DBE compliance update
 10. Weekly safety meeting minutes

3.3 FINAL APPLICATION FOR PAYMENT

- A. Administrative actions and submittals that must precede the Final Application for Payment are outlined in the Contract Provisions Article Three Section entitled "Final Acceptance".

---END OF SECTION---

**SECTION 01040
COORDINATION**

PART 1 GENERAL

1.1 DEFINITIONS

- A. Definitions for common terms used in these documents are provided in Article 3, Contract Provisions.

1.2 CONTRACT WORK

- A. The work of this and other contracts at the ALCOSAN site will be coordinated by the Construction Manager, with the assistance of the Owner and Engineer, as appropriate.
- B. The Contract 1714, Roof Modifications For Screenings Garage and Power Generation Building drawings 1714-SU-01, Site Utilization Plan, and 1714-SU-02 Enlarged Site Utilization Plan, designates Contractor staging areas and placement of contractor dumpsters. These drawings are provided for information and planning purposes. Refer to Section 01500, CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS, as well for detailed information.
- C. The Contractor shall recognize that varying interactions with plant operations and other contract activity will occur over the course of prosecuting the Work under this Contract. Coordination of work activities is critical to the effective completion of the Work, and the Contractor shall cooperate fully with the Owner and Construction Manager in planning and executing the Work in the most effective manner to ensure quality construction and proper plant operations.

1.3 UTILITY WORK (Not Used)

1.4 WORKING HOURS

- A. Normally, Contractor (and Subcontractor) working hours consist of 8 working hours within a 10-hour period between 7:00 A.M. to 5:00 P.M., on a regularly scheduled basis, excluding Sundays and holidays. Work hours outside of this time frame must be approved through the Construction Manager. Approval for work outside normal working hours shall be requested no later than 48 hours prior to start of the respective work period.

- B. The Contractor shall schedule all Job Site Work so that its working hours and the normal working hours of the Owner coincide. Should it be necessary to work hours other than the Owner's normal working hours, the Contractor shall arrange for access to the area with the Construction Manager, in writing, no less than 48 hours prior to this need.

- C. Work performed after hours, during the Owner-designated holidays, and on weekends shall be overseen by the Construction Manager, at the sole expense of the Contractor except for the cost of the Owner's employees. The Contractor will not be required to reimburse the Owner for the cost of the Owner's employees when the Contractor's work is approved by the Owner to occur on Owner designated holidays or weekends. Compensation to the Owner for such work for the Construction Manager's time shall be based on the Construction Manager's designated rate of pay and shall be processed as a Contractor credit change order to the Owner.
 - 1. Owner-designated holidays are as follows:
 - a. New Year's Day
 - b. Martin Luther King, Jr. Birthday
 - c. Presidents Day
 - d. Good Friday
 - e. Memorial Day
 - f. Independence Day (Fourth of July)
 - g. Labor Day
 - h. Columbus Day-Indigenous Peoples Day
 - i. Federal Election Day
 - j. Veterans Day
 - k. Thanksgiving Day
 - l. Day after Thanksgiving Day
 - m. Christmas Day

1.5 PROJECT MEETINGS

A. General:

- 1. The Construction Manager will:
 - a. Schedule and provide physical arrangements for meetings throughout progress of Work.
 - b. Prepare meeting agenda with Owner, Engineering, and Contractor input.
 - c. Distribute written notice of each meeting, with agenda attached, no less than 48 hours prior to the scheduled meeting,

- d. Preside at meetings.
 - e. Record minutes to include significant proceedings and decisions, assign actions and deadlines to all issues, and reproduce and distribute copies of minutes within 5 days after each meeting to participants and parties affected by meeting decisions.
2. Representatives of Owner, Construction Manager, Engineer, and Contractor shall attend meetings.

B. Pre-Construction Conference:

- 1. Reference Article 3, General Contract Conditions.
- 2. Contractor shall be prepared to discuss, at a minimum, the following subjects:
 - a. Mobilization schedule.
 - b. Preliminary schedule of technical and administrative submittals.
 - c. Procedures for processing submittals.
 - d. Preliminary schedule of values.
 - e. Sequencing of critical path work items.
 - f. Maintenance required records.
 - g. Status of Bonds and Insurance.
 - h. Project changes and clarification procedures.
 - i. Use of site, access, office and storage areas, security and temporary facilities.
 - j. Major product delivery and priorities.
 - k. Contractor's safety plan and site representative.
 - l. Progress payment procedures.
- 3. Attendees shall include but not necessarily be limited to:
 - a. Contractor's Project Manager and Superintendent.
 - b. Contractor's quality control representative.
 - c. Subcontractor representatives whom Contractor may desire or Owner may request to attend.
 - d. Construction Manager.
 - e. Engineer.
 - f. Owner representatives.

C. Progress Meetings:

- 1. Reference Article 3. Contract Conditions.

2. The Construction Manager will schedule bi-weekly progress meetings at site to review Work progress, progress schedule, Shop Drawing and Sample submissions schedule, Application for Payment, contract clarifications and modifications, coordination with ALCOSAN and other Contractors, and other matters pertinent to project execution.
3. Attendees will include:
 - a. Owner's representative(s), as appropriate.
 - b. Contractor, Subcontractor, and Suppliers, as appropriate.
 - c. Construction Manager.
 - d. Engineer.
4. Attendance is mandatory for all Contractors working on the site at the time of the meeting. Contractors Project Managers shall attend all weekly progress meetings.

D. Quality Assurance and Coordination Meeting(s):

1. The Construction Manager will schedule on a regular basis, and as necessary, meetings to review test and inspection reports, and other matters relating to quality control of the Work.
2. Attendees will include Contractor, Contractor's designated quality control representative, selected Subcontractors and Suppliers, Construction Manager, and others deemed necessary by Construction Manager.

E. Process Instrumentation and Control System Coordination Meetings: As specified in Section 13400, INSTRUMENTATION AND CONTROL SYSTEMS (PICS) — (Not Used)

F. Pre-Start /Pre-Installation Meetings:

1. When required in individual Specification sections, or as stipulated in Section 01050, CONSTRUCTION SEQUENCING, convene at site prior to commencing Work of that section or task. Refer to individual sections and Section 01050, CONSTRUCTION SEQUENCING for specific requirements.
2. Requires attendance of entities directly affecting, or affected by, Work of that section.
3. The Contractor shall comply with notification requirements as outlined in the specific specification sections. In the absence of a specific notification requirement, requests for a meeting shall be made to the Construction Manager by the Contractor no less than 14 calendar days in advance of the proposed meeting date.

4. Accompanying the request for a meeting shall be a proposed agenda prepared by the Contractor to include, at a minimum:
 - a. Reviewing conditions of installation,
 - b. Preparation, installation, and/or application procedures,
 - c. And coordination with related Work and work of others.
5. An on-site meeting must be held with the Construction Manager and with any Contractor and/or Subcontractor who is mobilizing, re-mobilizing, or moving to a new work area. Contractor shall provide information pertaining to safety, coordination with Operations, and Contractor's means and methods.

G. Other Meetings in accordance with Contract Documents and as may be required by Owner or Construction Manager.

1.6 SEQUENCE OF WORK

A. Sequence of work in this Contract will be combined with the Specification Section 01050, CONSTRUCTION SEQUENCING.

1.7 ADJACENT FACILITIES AND PROPERTIES

A. Examination:

1. After the effective date of the contract and before Work at site is started, Contractor, Owner, and Construction Manager, and affected property Owners and utility Owners shall make thorough examination of pre-existing conditions including existing buildings, structures, and other improvements in vicinity of Work, as applicable, which could be impacted by construction operations. Periodic reexamination shall be jointly performed to include, but not be limited to, traffic coordination, operational impacts or disruptions, damage to property or assets, and similar conditions.
2. Construction Manager shall document all observations for corroboration by Owner and Contractor.

B. Documentation:

1. The Prime Contractors will provide three original sets of photographs, videotape, and/or other records documenting examination for Owner's and Contractor's signature. Owner and Contractor will review, sign, and date

each observation document, and return all three sets to the Construction Manager. The Construction Manager shall then distribute one set to the Contractor to be kept on file in Contractor's field office as site records. A second set will be retained by the Construction Manager, and the Owner will keep the third set.

2. These observation documents are intended for use as indisputable evidence in ascertaining whether and to what extent damage occurred as a result of Contractor's operations, and are for the mutual protection of adjacent Property Owners, Contractor, and Owner.

1.8 WATER CONTROL PLAN – (Not Used)

1.9 OWNER'S OCCUPANCY

- A. Owner will occupy the premises during the entire period of construction for the conduct of its normal operations. Contractor will cooperate with Owner in all construction operations to minimize conflict and to facilitate Owner usage. Reference Section 01050, CONSTRUCTION SEQUENCING.

1.10 PHYSICAL CONDITIONS – (Not Used)

- A. Exercise reasonable care to first verify locations of existing subsurface structures and underground facilities prior to all excavation and subsurface work.
- B. Thoroughly check immediate and adjacent areas subject to excavation by visual examination (and by electronic metal and pipe detection equipment, as necessary) for indications of subsurface structures and underground facilities.
- C. Make exploratory excavations where existing underground facilities or structures may potentially conflict with proposed underground facilities or structures. Conduct exploratory excavations in presence of Construction Manager and sufficiently ahead of construction to avoid possible delays to Contractor's Work.

1.11 REFERENCE POINTS AND SURVEYS

- A. Reference Points: Owner shall provide engineering surveys to establish reference points and monuments. Contractor shall report to Construction Manager whenever any reference point is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points by Professional land surveyor

registered in the Commonwealth of Pennsylvania.

B. Owner's Responsibilities:

1. Establish bench marks convenient to Work.
2. Establish horizontal reference points or coordinate system with bench marks and reference points for Contractor's use as necessary to lay out Work.

C. Location and elevation of bench marks are shown on Drawings.

D. Dimensions for lines and elevations for grades of structures, appurtenances, and utilities are indicated on Drawings, together with other pertinent information required for laying out Work. If conditions vary from those indicated, notify Construction Manager immediately, who will make adjustments as required.

E. Construction Manager may perform checks to verify accuracy of Contractor's layout Work and that completed Work complies with Contract Documents.

F. Any existing survey points or other control markers destroyed without proper authorization will be replaced by the owner of the survey points or control markers at the Contractor's expense.

G. Contractor's Responsibilities:

1. Provide additional survey and layout required.
2. Locate and protect reference points prior to starting site preparation.
3. Notify Construction Manager at least 5 working days in advance of time when grade and line to be provided by others will be needed.
4. Check and establish exact location of existing facilities prior to construction of new facilities and any connections thereto.
5. In event of discrepancy in data or staking provided by Owner, request clarification before proceeding with Work.
6. Preserve and leave undisturbed control staking until Construction Manager has completed checks it deems necessary.
7. Re-establish reference points resulting from destruction by Contractor's operations.
8. Establish clearing limits, center lines of roads and pipelines, set toe of fill and top of cut stakes, and set bench marks convenient for use as necessary to establish basic layout of Work.
9. For gravity pipelines or sewer lines over 500 feet in length, set offset

stakes indicating cut-to-flow line at each manhole or alignment change, 25 feet each side of manhole or alignment change and at approximate 50-foot intervals along line.

10. Provide professional land surveyor or civil engineer registered in Pennsylvania who shall perform or supervise engineering surveying, competent employee(s), tools, stakes, and other equipment and materials as may be required to:
 - a. Establish temporary control points, lines, and site limits.
 - b. Replace disturbed control points or bench marks.
 - c. Check layout, survey, and measurement Work performed by others.
 - d. Measure quantities for payment purposes.
 - e. Verify all as-built drawing changes made to contract drawings.
11. Cooperate with Construction Manager so that checking and measuring may be accomplished with least interference to Contractor's operations.
12. Maintain complete and accurate log of survey Work as it progresses as a Record Document. Submit to Construction Manager quarterly updates for review and acceptance.

PART 2 - PRODUCTS (Not Used)

PART 3 EXECUTION

3.1 CUTTING, FITTING, AND PATCHING

- A. This specification is intended to provide general requirements for cutting, fitting, and patching existing site features, facilities, structures, and utilities where new installations interface with existing. In the event cutting, fitting, and patching is addressed in a technical section of the contract documents (i.e. Divisions 2 through 15, or the Drawings), this section shall be superseded by the technical specification. In cases involving prior approval for work activities, Section 01050, CONSTRUCTION SEQUENCING shall supersede this section, as appropriate.
- B. General:
 1. Cut, fit, adjust, or patch the Work, including excavation and backfill as required, to make the Work complete and useable.

2. Obtain authorization, no less than five (5) working days prior to initiating the work, from the Construction Manager before cutting or otherwise altering:
 - a. Existing structural or reinforcing steel, structural columns or beams, elevated slabs, trusses, or any other structural member.
 - b. Weather- or moisture-resistant components or elements, building shells, waterproof or water-holding components or structures, new or existing pipe.
 - c. Work of others.

3. Refinish surfaces of new and existing materials to provide a uniform and even appearance and finish.
 - a. Roadway surfaces shall be patched and restored to provide a continuous and uniform surface.
 - b. Areas of new installation that cannot be matched with existing shall be refinished to the extent that results in a uniform, finished area or surface (for example, a painted wall that has been penetrated cannot be spot painted to match the rest of the existing wall, therefore, the entire wall shall be painted to match the adjoining/adjacent walls as closely as possible).

4. All restoration work shall be accomplished with new materials, with the exception of excavated materials that satisfy the requirements of acceptable backfill material.

- C. Penetrations, cuts, or connections in masonry components shall be patched and pointed with matching materials and finished in a neat and workmanlike manner so as to maintain a uniform appearance with the existing component. Weathertight conditions shall be restored or maintained as appropriate.

- D. Any damages to existing structures, facilities, components, elements, or property resulting from cutting, fitting, or patching shall be repaired and restored to a condition equal to or better than was existing prior to the damage. Replacement of a damaged article, element, or component, should that be the preferred option of repair/restoration, shall be with a new article, element, or component.

- E. Should specific assignment of the restorative work associated with cutting or fitting not be made in the technical sections of these documents, responsibility for the restorative effort shall fall to the party executing the cutting or fitting.

3.2 WEATHER PROTECTION

- A. All material delivered to ALCOSAN shall be properly stored on pallets or supports, effectively keeping the stored item off the ground surface or floor. If stored outside and not under cover, the item shall also be completely covered with a properly and effectively secured durable polyethylene sheet to protect the item from the weather.

3.2 SALVAGE OF MATERIALS

- A. Materials, elements, or components identified to be salvaged shall be removed in a manner to assure no damage occurs. Salvaged items shall be moved immediately to an area within the ALCOSAN plant site, as designated by the Owner.
- B. Coordinate with the Construction Manager no less than five (5) working days prior to dismantling items to be salvaged to establish the respective storage location for the salvaged item(s). Refer to Section 01050, CONSTRUCTION SEQUENCING for scheduling and approval requirements associated with such work.
- C. In the event salvaged items are damaged during the removal process, the Contractor shall repair or replace in kind the damaged item.
- D. Salvaged items shall be properly stored on pallets or supports, effectively keeping the stored item off the ground surface or floor. If stored outside and not under cover, the item shall also be completely covered with a properly and effectively secured durable 60-mil polyethylene sheet to protect the item from the weather.

--END OF SECTION--

**SECTION 01050
CONSTRUCTION SEQUENCING**

PART 1 GENERAL

1.1 PURPOSE

- A. This section identifies mandatory construction sequencing requirements and constraints to provide coordination among multiple prime contracts in this contract package, to allow numerous overall contracts at the site to be executed in the same time frame, and to permit continuous and effective wastewater treatment throughout the construction period.
- B. Prime contracts included in this overall contract are:
1. General Contractor
- C. Construction sequences presented in this section (or elsewhere in the contract documents) outline the intent of the Owner with respect to the general progress of work. Sequences and construction activities noted are not intended to be comprehensive or all inclusive. Many other construction activities and work components, although not specifically noted, are integral parts of the work included in the Contract Documents and must be both scheduled and completed. These include but are not limited to the following:
1. Examination of Contract Work Area.
 2. Quality control testing.
 3. Painting.
 4. Providing manufacturers' services.
 5. Functional and Performance Testing.
 6. Closeout.
- D. Construction Work must be in stages allowing for the Owner's continuous occupancy and for uninterrupted operation and maintenance during construction. Unless specifically indicated otherwise, new systems or subsystems as appropriate shall be substantially complete before existing systems are taken out of service and made available to the Contractor. Coordinate construction schedule and plant operations with Owner.
- E. Be responsible for flow bypass facilities and temporary connections, as required, to maintain Owner's operations. Sequences other than those specified will be considered by Construction Manager provided they afford equivalent continuity of wastewater treatment and plant operations.
- F. Operations requiring actions by the Owner, such as but not limited to redirection of flow, isolating or draining tanks and channels, and short-term process and

power outages, shall be included in Contractor's detailed progress schedule. Such scheduled operations will be considered upon 14 days written request to the Owner. Describe the reason, anticipated length of time, and areas affected by the outage in the written request. Provide temporary means for continuing power supply to critical existing facility components if requested by Owner.

- G. In addition to identifying and providing written notice for operations requiring actions by the Owner, Contractor shall include a "reasonable" time period in schedule (minimum of 14 days unless noted otherwise) for the Owner to prepare and respond to work request prior to construction activities.
- H. Perform Work continuously and expeditiously during critical connections and changeovers, and as required to prevent interruption of the Owner's operations. Do not proceed with Work affecting a facility's operation without obtaining Owner's advance approval of the need for and duration of such Work.
- I. All operations of valves and gates required to perform the work shall be done by ALCOSAN personnel. The Construction Manager, Shift Superintendent, and ALCOSAN Operations personnel will coordinate this work, and no valve, gate or other equipment shall be operated without their knowledge.

1.2 DRAINING AND CLEANING OF EXISTING FACILITIES

- A. Where the Drawings indicate modifications, demolition, relocation, and/or connections to existing piping, it shall be the Contractor's responsibility to drain and clean such systems and facilities after agreeing upon appropriate procedures and isolation points with Owner. Any hosing or cleaning of the pipe, if considered necessary by the Contractor, shall be done at the sole discretion of the Contractor to suit the means and methods of construction employed and to protect the health and safety of construction personnel.
- B. Contractor to ensure debris/dust from demolition work and general construction activity is contained to the immediate work area and cleaned up promptly. Active plant operations outside of Work Areas must not be impacted by construction activity.

1.3 FLOW AND LEAKAGE HANDLING

- A. Owner will open and close existing valves, in order to accommodate scheduled construction activities. However, the Contractor shall be responsible for providing and operating temporary facilities to contain and/or remove leakage through these sluice gates, knife gates, and valves as necessary to suit construction activities.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION**3.1 GENERAL**

- A. Include the Milestones and sequences of Work specified herein as a part of the progress schedule required under Section 01310, CONSTRUCTION SCHEDULES.
- B. Coordination:
1. Construction work performed under this contract shall interfere to the least extent possible with the normal operation of the ALCOSAN Wastewater Treatment Plant. Plant shall be maintained in continuous operation at all times during the course of the work performed under this Contract.
 2. All operations of valves and gates required to perform the work shall be done by ALCOSAN personnel. Construction Manager, Shift Superintendent, and ALCOSAN Operations personnel will coordinate this work, and no valve, gate or other equipment shall be operated without their knowledge. Shift Superintendent shall be informed at least 24 hours in advance of the need to operate valves or gates or other actions which could affect the operation of the treatment plant.
 3. Insofar as possible, equipment and facilities shall be tested and in operating condition before final tie-ins are made to connect new equipment and facilities to existing equipment and facilities.
 4. ALCOSAN receives deliveries of numerous bulk chemicals that are critical to the normal operation of the Wastewater Treatment Plant. The Contractor shall keep all surrounding roadways/driveways open to the maximum extent possible to accommodate these deliveries. All requests for road closures or restrictions for construction activities shall require prior review and written approval by the Construction Manager and ALCOSAN.
- C. Operation and Shutdown of Existing Facilities:
1. Conduct Work outside regular working hours only with the prior written consent of Construction Manager. Construction Manager may approve work outside normal working hours to maintain Project Schedule or avoid undesirable conditions. However, under no circumstances cease Work at the end of a normal working day if such actions may cause a cessation of any facility operating process. In such cases, remain onsite until necessary Work is complete.
 2. Do not proceed with Work affecting a facility's operation without obtaining Owner's advance approval of the need for and duration of such Work.

3. Provide request for approval to Owner 14 days in advance of need to shut down a process or facility. For shutdowns requiring regulatory agency permission, Owner will determine amount of time required to secure such permission and Contractor will provide appropriate notice.
4. All connections to Owner's existing utility services must be carefully coordinated in advance through the Construction Manager.

D. Relocation of Existing Facilities:

1. During construction, it is expected that minor relocations of Work will be necessary. This is considered incidental and included in the Contract Price.
2. Provide complete relocation of existing structures, including piping, utilities, equipment, structures, electrical conduit wiring, electrical duct bank, and/or other necessary items as required by the Contract Documents.
3. Use only new materials for relocated facilities. Match materials of existing facilities, unless otherwise shown or specified.
4. Perform relocations to minimize downtime of existing facilities.
5. Install new portions of existing facilities in their relocated position prior to removal of existing facilities, unless otherwise approved by Owner.

3.2 CONSTRUCTION SEQUENCE GENERAL CONSTRAINTS

- A. Throughout the construction of the Project, operations of the ALCOSAN Wastewater Treatment Plant are to be disrupted to the least extent possible. This requires that the frequency and duration of plant system and/or subsystem outages or shutdowns be minimized. The sequence and requirements outlined in this section are intended to establish a general approach to accomplishing specific aspects of the work under this contract (not all aspects of the Work are addressed within this section).
- B. Alternatives to the specified approaches and duration limits are possible, however, deviating from the specified sequences or duration limits will require development of a formal proposal which can be reviewed by the Construction Manager for subsequent review with the Owner. Development and submission of an alternative approach or duration limit does not constitute approval by the Owner. The Contractor must be prepared to execute the Work in concert with the manner and sequences specified herein.
- C. All work within this contract, including the details outlined in this section, shall be scheduled in accordance with Section 01310, CONSTRUCTION SCHEDULES. While all work within the project scope shall be clearly identified within the schedule, work requiring a system, subsystem, or component outage or shutdown shall be preceded by no less than a 14-day confirmation notice to the Construction Manager that the outage/shutdown is planned to occur. This

confirmation notice shall be made in writing, and shall be identified as, at a minimum, a milestone activity within the schedule. Confirmation notice is subject to approval by the Owner, and should operational issues require rescheduling of the specific work activity, the Contractor will be notified within 48 hours of submission of the confirmation notice that such rescheduling will be required.

- D. Existing level of site lighting must be maintained over the course of construction. Demolition of existing site lighting as a requirement to conduct construction operations must result in provision of temporary lighting to allow maintenance of plant site lighting levels. This applies to both indoor and outdoor systems. Temporary site lighting must be maintained until that point when the Contractor is complete with the work and demobilized off the site, or the permanent site lighting has been installed, whichever occurs first.
- E. Valves, breakers, or circuits shall be opened and closed only by the Owner or, at the option of the Owner, by the Contractors personnel with the Owner present.
- F. Access to the plant must be maintained at all times during construction. Planned deliveries or construction activities that will result in a temporary road blockage shall be coordinated with the Construction Manager and the Owner. In any case of a temporary road blockage, proper signage shall be placed at entrances to the affected road to clearly communicate that passage along that particular route is no longer available, and what other routes are available. This signage shall be provided by the Contractor. Please reference Section 3.1.B.4 for additional coordination requirements related to delivery of bulk chemicals at the ALCOSAN Wastewater Treatment Plant.
- G. Material and equipment laydown areas, and dumpsters, will be established as directed on Drawing 1714-SU-01, Site Utilization Plan, and Drawing 1714-SU-02, Enlarged Site Utilization Plan.

3.3 CONSTRUCTION SEQUENCES

A. Operational Requirements:

- 1. All buildings are process and personnel areas and contain equipment and appurtenances that cannot be at risk to weather impacts during construction.

B. Construction Requirements:

- 1. Construction must be coordinated to protect existing building uses and facilities from water damage or wind damage due to temporary conditions during construction activities by the Contractor.
- 2. Contractor shall take measures to provide control of all residuals from the Work. Contractor shall submit a residuals control plan to the Engineer/Owner for review and approval.

C. Construction Sequence:

1. The Screenings Garage (Building 513) shall be the first roof to replace due to its poor condition and the amount of water leakage that is occurring.
2. Open House: The Owner will be holding its annual Open House at the treatment plant on Saturday, September 12, 2020. The Contractor should anticipate being requested to restrict, modify, or suspend its work up to 5 business days prior to the Open House to allow the Owner sufficient time to prepare the treatment plant facilities for this public event. The Contractor shall factor this event into its overall construction schedule.
3. Contractor shall submit Construction Sequence for planned progression and sequence of the Work.

3.4 INSTALLATION/CONSTRUCTION DURATIONS AND CONSTRAINTS

- A. All durations stated herein are calendar days.
- B. Roof replacements and repair work shall be substantially complete within 130 days after contract notice to proceed.

--END OF SECTION--

**SECTION 01092
ABBREVIATIONS**

PART 1 GENERAL

1.1 REFERENCE TO STANDARDS AND SPECIFICATIONS OF TECHNICAL SOCIETIES

- A. Reference to standards and specifications of technical societies, and reporting and resolving discrepancies associated therewith shall be as provided in Article 3 - Contract Provisions and as may otherwise be required herein and in the individual specification sections.
- B. Work specified by reference to the published standard or specification of a government agency, technical association, trade association, professional society or institute, testing agency, or other organization shall meet the requirements or surpass the minimum standards of quality for materials and workmanship established by the designated standard or specification. Where Work is specified in accordance with a standard, the most current standard at the time of Bid applies; when Work is in accordance with a regulatory code, the code in effect (not necessarily the most recently published) applies.
- C. Where so specified, products or workmanship shall also meet or exceed the additional prescriptive or performance requirements included within the Contract Documents to establish a higher or more stringent standard of quality than that required by the referenced standard.
- D. Where two or more standards are specified to establish quality, the product and workmanship shall meet or exceed the requirements of the most stringent as determined by the Engineer.
- E. Where both a standard and a brand name are specified for a product in the Contract Documents, the proprietary product named shall meet or exceed the requirements of the specified reference standard.
- F. Copies of standards and specifications of technical societies:
 - 1. Copies of applicable referenced standards have not been bound in these Contract Documents.
 - 2. Where copies of standards are needed by the Contractor, obtain a copy or copies directly from the publication source and maintain in an orderly manner at the site as Work site records, available to the Contractor's personnel, Subcontractors, Owner, Construction Manager and Engineer.

- G. Where the Contractor is to perform work in accordance with standards, the most current standard shall apply. Where work is to conform to codes, the current code in effect (not necessarily the most recently published) shall apply.

1.2 ABBREVIATIONS

- A. Abbreviations for trade organizations and government agencies: Following is a list of construction industry organizations and government agencies to which references may be made in the Contract Documents, with abbreviations used.

- | | | |
|-----|--------|--|
| 1. | AA | Aluminum Association |
| 2. | AABC | Associated Air Balance Council |
| 3. | AAMA | American Architectural Manufacturers Association |
| 4. | AASHTO | American Association of State Highway and Transportation Officials |
| 5. | ACHD | Allegheny County Health Department |
| 6. | ACI | American Concrete Institute |
| 7. | AFBMA | Anti-Friction Bearing Manufacturers' Association |
| 8. | AGA | American Gas Association |
| 9. | AGMA | American Gear Manufacturers' Association |
| 10. | AI | Asphalt Institute |
| 11. | AISC | American Institute of Steel Construction |
| 12. | AISI | American Iron and Steel Institute |
| 13. | AITC | American Institute of Timber Construction |
| 14. | ALS | American Lumber Standards |
| 15. | AMA | Acoustical Materials Association |
| 16. | AMCA | Air Movement and Control Association |
| 17. | ANSI | American National Standards Institute |
| 18. | APA | American Plywood Association |
| 19. | API | American Petroleum Institute |
| 20. | APWA | American Public Works Association |
| 21. | AREA | American Railway Engineering Association |
| 22. | ARI | Air Conditioning and Refrigeration Institute |

23.	ASA	American Standards Association
24.	ASAE	American Society of Agricultural Engineers
25.	ASCE	American Society of Civil Engineers
26.	ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.
27.	ASME	American Society of Mechanical Engineers
28.	ASTM	American Society for Testing and Materials
29.	AWI	Architectural Woodwork Institute
30.	AWPA	American Wood Preservers' Association
31.	AWPB	American Wood Preservers Bureau
32.	AWPI	American Wood Preservers' Institute
33.	AWS	American Welding Society
34.	AWWA	American Water Works Association
35.	BHMA	Builders Hardware Manufacturers' Association
36.	BOCA	Building Officials and Code Administrator's
37.	CBMA	Certified Ballast Manufacturers' Association
38.	CDA	Copper Development Association
39.	CGA	Compressed Gas Association
40.	CIPRI	Cast Iron Pipe Research Institute
41.	CISPI	Cast Iron Soil Pipe Institute
42.	CMAA	Crane Manufacturers' Association of America
43.	CRSI	Concrete Reinforcing Steel Institute
44.	CS	Commercial Standard
45.	CSA	Canadian Standards Association
46.	CSI	Construction Specifications Institute
47.	CTSS	Caltrans Standard Specification
48.	EJCDC	Engineers Joint Contract Documents' Committee
49.	ETL	Engineering Test Laboratories
50.	FCC	Federal Communications Commission
51.	FEMA	Federal Emergency Management Agency
52.	FGMA	Flat Glass Marketing Association
53.	FM	Factory Mutual

54.	Fed. Spec.	Federal Specifications
55.	FS	Federal Specification
56.	GA	Gypsum Association
57.	HI	Hydraulic Institute
58.	HMI	Hoist Manufacturers' Institute
59.	ICBO	International Conference of Building Officials
60.	ICEA	Insulated Cable Engineers' Association
61.	IEEE	Institute of Electrical and Electronics Engineers, Inc.
62.	IES	Illuminating Engineering Society
63.	IFI	Industrial Fasteners Institute
64.	ISA	Instrument Society of America
65.	ISO	Insurance Service Office
66.	JIC	Joint Industry Conferences of Hydraulic Manufacturers
67.	MIA	Marble Institute of America
68.	Mil. Sp. or MIL	Military Specification
69.	MS	Military Specifications
70.	MMA	Monorail Manufacturers' Association
71.	NAAMM	National Association of Architectural Metal Manufacturers
72.	NACE	National Association of Corrosion Engineers
73.	NBHA	National Builders' Hardware Association
74.	NEC	National Electrical Code
75.	NECA	National Electrical Contractor's Association
76.	NEMA	National Electrical Manufacturers' Association
77.	NESC	National Electric Safety Code
78.	NFPA	National Fire Protection Association
79.	NHLA	National Hardwood Lumber Association
80.	NHPMA	Northern Hardwood and Pine Manufacturer's Association
81.	NLA	National Lime Association
82.	NLMA	National Lumber Manufacturers' Association
83.	NRCA	National Roofing Contractors Association

84.	NSF	National Sanitation Foundation Testing Laboratory
85.	NSPE	National Society of Professional Engineers
86.	NTMA	National Terrazzo and Mosaic Association
87.	NWWDA	National Wood Window and Door Association
88.	OECI	Overhead Electrical Crane Institute
89.	OSHA	Occupational Safety and Health Act (both Federal and State)
90.	PADEP	Pennsylvania Department of Environmental Protection
91.	PCI	Prestressed Concrete Institute
92.	PEI	Porcelain Enamel Institute
93.	PPI	Plastic Pipe Institute
94.	PS	Product Standards Section-U.S. Department of Commerce
95.	RMA	Rubber Manufacturers' Association
96.	SAE	Society of Automotive Engineers
97.	SCPRF	Structural Clay Products Research Foundation
98.	SDI	Steel Deck Institute
99.	SDI	Steel Door Institute
100.	SIGMA	Sealed Insulating Glass Manufacturing Association
101.	SJI	Steel Joist Institute
102.	SMACNA	Sheet Metal and Air Conditioning Contractors National Association
103.	SPI	Society of the Plastics Industry
104.	SSPC	Steel Structures Painting Council
105.	SWI	Steel Window Institute
106.	TEMA	Tubular Exchanger Manufacturers' Association
107.	TCA	Tile Council of America
108.	UBC	Uniform Building Code
109.	UFC	Uniform Fire Code
110.	UL	Underwriters Laboratories Inc.
111.	UMC	Uniform Mechanical Code
112.	US	U.S. Bureau of Standards
113.	USBR	Bureau of Reclamation
114.	WCLIB	West Coast Lumber Inspection Bureau

115. WWPA Western Wood Products Association

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

--END OF SECTION--

**SECTION 01300
SUBMITTALS**

PART 1 GENERAL

1.1 GENERAL

- A. Refer to Article 3, Contract Provisions:
- B. Identification of Submittals:
 - 1. Complete, sign, and transmit with each Submittal package, one Transmittal Form furnished by the Construction Manager.
 - 2. Identify each Submittal with the following numbering and tracking system:
 - a. The Construction Manager will sequentially number each Submittal.
 - b. Resubmission of a Submittal will have original number assigned by the Construction Manager with sequential alphabetic suffix.
 - 3. Format: Orderly, indexed with labeled tab dividers.
 - 4. Show date of submission.
 - 5. Show Project title and Owner's contract identification and contract number.
 - 6. Show names of Contractor, Subcontractor or Supplier, and manufacturer as appropriate.
 - 7. Identify, as applicable, Contract Document section and paragraph to which Submittal applies.
 - 8. Identify Submittal type; submit only one type in each Submittal package.
 - 9. Identify and indicate each deviation or variation from Contract Documents.
 - 10. Each submittal will have a cover sheet with the above information and proposed locations for the submitted item to be used.
- C. Resubmissions: Clearly identify each correction or change made.

D. Incomplete Submission of Submittals:

1. At CM or Engineer's discretion, CM will either (i) return the entire Submittal for Contractor's revision/correction and resubmission, or (ii) retain portions of the Submittal and request submission/resubmission of specified items or as noted thereon.
2. Submittals which do not clearly bear Contractor's specific written indication of Contractor review and approval of Submittal or which are transmitted with an unsigned or uncertified submission form or as may otherwise be required under Contract Documents, will be returned to Contractor unreviewed for resubmission.
3. Delays, resequencing or other impact to Work resulting from Contractor's submission of unchecked or unreviewed, incomplete, inaccurate or erroneous, or nonconforming Submittals, which will require Contractor's resubmission of a Submittal for the Engineer's review, shall not constitute a basis of claim for adjustment in Contract Price or Contract Time.

E. Review of Submittals:

1. Contractor: Prior to submittal to the Construction Manager for the Engineer's review, the Contractor shall use all means necessary to fully coordinate all submitted material, including but not limited to the following procedures:
 - a. Determine and verify all necessary dimensions, conditions, materials, product information and similar data.
 - b. Indicate all deviations from the Contract Documents.
 - c. Submittals shall be marked with the date, the checker's name and be stamped "Approved for Submittal." Submittals not marked in this manner may be returned without action by the Engineer.
 - d. Submittals are intended to amplify the Contract Documents. Proposed deviations shall be clearly noted on the letter of transmittal by the Contractor.
 - e. Check submittals for correctness, proper identification, and completeness. Verify that the submittal meets all Contract requirements.
2. Engineer:
 - a. The Engineer shall review each submittal for approval. Such

approval shall be in writing by the Engineer and shall be coded (1)"No Exceptions Taken," (2)"Make Corrections Noted," (2R) "Approved as Noted, Resubmit," (3)"Amend and Resubmit," (4)"Rejected."

- b. The Engineer will return submittals to the Construction Manager for return to the Contractor for appropriate action. Under codes (1), (2) and (2R) the Work may proceed. Under codes (3) and (4) the Work may not proceed. Under code (2R) corrected copies of the submittal are required for the Engineer's and Owner's files. Resubmittals under Code (2R) will only be reviewed to verify review comments have been incorporated.
- c. No Material or Equipment shall be processed or fabricated for the Work nor delivered to the Jobsite or installed without prior written approval, Codes (1), (2), or (2R) of Shop Drawings by the Engineer which is to be obtained by the Contractor.
- d. The Engineer's approval of Submittals, will involve a general check to ascertain conformance with the design. The Contractor is responsible for confirmation and correlation of dimensions; for information pertaining solely to fabrication and installation processes or techniques; and for coordination of major system component manufacturers.
- e. The Engineer's review shall be made as soon as practical following the Construction Manager's receipt of each submittal. In scheduling, allow 20 working days for the Engineer's review.

1.2 SAMPLES

- A. Quantity: Submit a minimum of two, unless otherwise specified in an individual Specification Section or in sufficient quantity and of size to enable examination as required, to establish quality or equality thereof. The Owner will retain one sample.
- B. Identification: In accordance with Part 1.4.B.
- C. Colors and Patterns: Unless the precise color and/or pattern is specifically described in the Contract Documents and whenever a choice of color or pattern is available in a specified product, the Contractor shall submit a complete, current, and accurate set of color/pattern charts for review and selection of color/pattern by the Engineer.

1.3 ADMINISTRATIVE SUBMITTALS

- A. Description: Submittals required by Contract Documents that are not Shop Drawings, or Samples, or that do not reflect quality of product or method of construction. Administrative Submittals may include, but will not be limited to those Submittals identified below.
- B. **Safety Program: The Contractor shall submit his site specific Safety Plan/Program as required in Article 3; Plan must be approved prior to commencing any work on site.**
- C. Schedules:
1. Project Schedule(s): Meet the requirements of Section 01310, CONTRACTOR'S PROJECT SCHEDULE.
 2. Submittal Schedule:
 - a. The Contractor shall submit and maintain a Submittal Schedule which shall list all of the contract required administrative, quality control, technical, and close-out submittals required to complete the Work.
 - b. This Schedule will contain all of the projected submittal and return dates for the required submittals, particularly emphasizing long lead items of procurement. Submittal Schedule shall contain, as a minimum, the following information for each submittal:
 - (1) Contract Article/Specification Section Reference.
 - (2) Submittal Number/Package.
 - (3) Submittal Description.
 - (4) Submission date /Return date/Review duration.
 - (5) Review Action Code.
 - (6) Comments.
 - c. Coordinate with Project Schedule and prepare schedule of submittals submissions to show for each clearly identified submittal, the following:
 - (1) Specifically requested and clearly identified review time if shorter than that set forth herein for Engineer, with justification for such request and critical dates Submittals will be needed from Construction Manager.

- (2) For first 3-month period from the date the Contract Time commences or following any update or adjustment of the schedule of submittals submissions, the estimated submittal submission date shall be week, month, and year; for submittals submissions beyond 3-month time periods, show closest month and year.
- d. The Submittal Schedule shall support the Project Schedule and reflect the dates shown on the Project Schedule.
- e. The Contractor's Submittal Schedule shall be submitted and will be reviewed by the Engineer and the Construction Manager. It will be revised by the Contractor, as required, in order to support the Project Schedule and requirements of the Contract Documents. To be listed as a minimum are;
 - (1) Shop Drawings and Samples.
 - (2) Certificates of inspection.
 - (3) Test reports.
 - (4) Operation and maintenance manuals.
 - (5) Record documents.
 - (6) Specifically required certificates, warranties, and service agreements.
 - (7) Listing of Specifications and products for which substitutes or "or approved equals" will be proposed.
 - (8) Quality Assurance/Quality Control Procedures, reports and qualification.
- f. Identify items for which Contractor anticipates proposing substitute or "or approved equal" products or methods.
- g. Submit to Construction Manager monthly (i) updated submittals schedule if changes have occurred, otherwise submit a written communication confirming existing schedule, (ii) adjusted schedule of submittals submissions reflecting submittal submission activity planned for forthcoming 3-month time period and beyond. Coordinate with progress schedule updates and (iii) it shall be submitted within 20 working days of Notice-to-Proceed and approved prior to first payment.
- 3. Schedule of Values:
 - a. The Schedule of Values is a statement furnished by the Contractor

to the Construction Manager. It shall be submitted to the Construction Manager and shall reflect the portions of the contract price allocated to various portions of the Work.

- b. Once accepted by the Construction Manager, the Schedule of Values shall be the basis for reviewing Payment Applications by the Contractor in accordance with the Schedule of Payments in the Contract Provisions.
- c. This Schedule will contain all of the major components making up the Work, shall be coordinated with the Schedule of Payments, and shall contain, as a minimum, the following information:
 - (1) Organization of Work Items by Specification Section Reference.
 - (2) For all major Work Items/Components:
 - (a) Listing of Labor Value.
 - (b) Listing of Material/Equipment/Deliverable Value
 - (3) Reflect all activities shown on the Project Schedule.
 - (4) Show all Subtotals and Totals as directed by the Construction Manager to support the Payment Application Form.

D. Training Materials: Meet the requirements of Section 01640, MANUFACTURER'S SERVICES.

E. Submittals Required by Laws and Regulations and Governing Agencies:

- 1. Promptly submit notifications, permits, reports, certifications, payrolls, and otherwise as may be required, directly to the applicable federal, state, or local governing agency or their representative.
- 2. Transmit to Construction Manager one copy of correspondence and transmittals (to include enclosures and attachments) between Contractor and governing agencies.

F. Disposition: Construction Manager will review, stamp, and indicate requirements for resubmission or acceptance on Administrative Submittals as follows:

- 1. Accepted:
 - a. Schedules: Acceptance will indicate that schedules provide for the orderly progression of the Work to completion within any specified milestones and the Contract Times, but such acceptance

will neither impose on Construction Manager responsibility for the sequencing, scheduling, or progress of the Work nor interfere with or relieve Contractor from Contractor's full responsibility therefore.

- b. Acceptance of other Administrative Submittals will indicate that Submittal conforms to intent of Contract Documents as to form and substance.
 - c. Contractor may proceed to perform Submittal related Work.
 - d. One copy furnished to Owner.
 - e. Two copies furnished to Construction Manager.
 - f. One copy retained in Engineer's file.
 - g. Remaining copies returned to Contractor appropriately annotated.
2. Rejected as Noted:
- a. Two copies retained in Engineer's file.
 - b. Two copies retained in the Construction Manager's file.
 - c. Remaining copies returned to Contractor appropriately annotated.
 - d. Contractor shall revise/correct or develop replacement and resubmit.

1.4 SHOP DRAWINGS

- A. Description: All drawings, diagrams, and schedules; manufacturer product information in the form of shop drawings and product data; and other data or information required to illustrate the Work.
- B. Identify and Indicate:
 - 1. Pertinent Specification Section, Drawing sheet(s) and detail number(s), products, units and assemblies, and system or equipment identification or tag numbers.
 - 2. Critical field dimensions and relationships to other critical features of Work.
 - 3. Each proposed deviation or variation from Contract Documents.
 - 4. Pertinent information on Contractor review stamp to include the following:

- a. Contractor name and address.
 - b. Name of project/area of project.
 - c. Contract number.
 - d. Reviewer name/Telephone Number.
 - e. Date.
 - f. Specification section and paragraph.
 - g. Contract Drawing number.
 - h. Submittal number revision.
 - i. Equipment Number.
5. Submit with Owner's transmittal form.
- C. Resubmissions: Clearly identify each correction or change made.
- D. Foreign Manufacturers: When proposed, include following additional information:
1. Names and addresses of at least two companies closest to Project that maintain technical service representatives.
 2. Complete inventory of spare parts and accessories for each piece of equipment.
 3. Complete documentation of why the Buy American requirements in Article 3, Contract Provisions cannot be complied with by the Contractor.
- E. Sample Disposition: Samples will not be returned.
- F. "Or -Equal" and "Alternate" Submittal: Clearly declare work is proposed as an or-equal or alternate to the specified work in accordance with Section 01600, MATERIAL & EQUIPMENT.

1.5 QUALITY CONTROL SUBMITTALS

- A. Certificates:
1. Manufacturer's Certificate of Compliance:
 - a. When specified in individual Specification Sections or where products are specified to a recognized standard or code, submit prior to installation of product or material into the Work.
 - b. When Contractor proposes to furnish an "or approved equal",

- submit with shop drawing submittals.
 - c. Engineer may permit use of certain materials or assemblies prior to sampling and testing if accompanied by acceptable certification of compliance.
 - d. Signed by product manufacturer certifying that materials, manufacture, and product specified conforms to or exceeds specified requirements and intent for which product will be used. Submit supporting reference data, affidavits, and certifications as appropriate.
 - e. May reflect recent or previous test results on material or product, but must be acceptable to Engineer.
 - f. The Construction Manager shall receive copies of all required Certificates of Compliance.
 - g. Materials incorporated in the Work without required certification shall either be removed from the Work or allowed to remain pending further investigation and testing by the Owner at the expense of the Contractor.
2. **Manufacturer's Certificate of Compliance:** Shall clearly identify the following:
- a. Identity of the materials.
 - b. Quantity of the materials.
 - c. Conformance to specified requirements.
 - d. Suitability of materials for intended use.
 - e. Name and number of Contract.
3. **Certificates of Successful Testing or Inspection:** Submit when testing or inspection is required by Laws and Regulations or governing agency or specified in the individual Specification Sections.
4. **Manufacturer's Certificate of Proper Installation:** As required in Section 01640, MANUFACTURERS' SERVICES.
- B. Operation and Maintenance Manual:** As required in Section 01430, OPERATION AND MAINTENANCE DATA.
- C. Statements of Qualification:** Evidence of qualification, certification, or registration. As required in these Contract Documents, to verify qualifications of professional land surveyors, engineers, materials testing laboratories, specialty subcontractors, trades, specialists, consultants, installers, manufacturer service representatives, and other professionals.

- D. Written Test Reports of Each Shop/Field Test and Inspection: As a minimum, include the following:
1. Date of test and date issued, Project title and number, testing laboratory name, address, and telephone number, and name and signature of laboratory inspector.
 2. Date and time of sampling or inspection and record of temperature and weather conditions.
 3. Identification of product and Specification Section, location of Sample, test or inspection in the Project, type of inspection or test with referenced standard or code, certified results of test.
 4. Compliance with Contract Documents, and identifying corrective action necessary to bring materials and equipment into compliance.
 5. Interpretation of test results.
- E. Disposition: Engineer will review, stamp, and indicate requirements for resubmission or acceptance on Submittal as follows:
1. Accepted:
 - a. Acceptance will indicate that Submittal conforms to intent of Contract Documents as to form and substance.
 - b. Contractor may proceed to perform Submittal related Work.
 - c. One copy furnished Owner.
 - d. Two copies furnished Construction Manager.
 - e. One copy retained in Engineer's file.
 - f. Remaining copies returned to Contractor appropriately annotated.
 2. Rejected as Noted:
 - a. Two copies retained in Engineer's file.
 - b. Two copies retained in Construction Manager's file.
 - c. Remaining copies returned to Contractor appropriately annotated.
 - d. Contractor shall revise/correct or develop replacement and resubmit.

1.6 COORDINATION DRAWINGS

- A. The Contractor shall initially prepare basic roofing coordination drawings for

project use, showing the location of all equipment, piping and appurtenances, and the insulation and flashing detail standards to follow for the material to be installed under his Contract. The Contract Documents shall be used as a guide initially; however, as shop drawings are approved and changes are made during the course of construction, the coordination drawings shall be modified to reflect changes that may impact the current coordination drawings or other Prime Contractor's work.

- B. Coordination drawings shall be used to govern installation sequences and will be submitted to the Construction Manager for the record each time they are developed and revised.

1.7 CONTRACT CLOSEOUT SUBMITTALS

- A. Record and As Built Drawings: Submit in accordance with Section 01700, CONTRACT CLOSEOUT.

- B. Special Bonds, Special Warranties, Guarantees, and Service Agreements:

- 1. Form of Submittals:

- a. Bind in commercial quality, 8½ by 11-inch three-ring side binders with hardback, cleanable, plastic covers.
- b. Label cover of each binder with typed or printed title WARRANTIES AND BONDS, with title of Project; name, address, and telephone number of Contractor; and name of responsible principal.
- c. Table of Contents: Neatly typed, in the sequence of the Table of Contents of the Project O&M Manual, with each item identified with the number and title of the specification section in which specified, the name of the Product or Work Item and the dates documents are effective.
- d. Separate each Warranty or Bond with index tab sheets keyed to the Table of Contents listing. Provide full information, using separate typed sheets as necessary. List Subcontractor, Contractor, and Manufacturer, with name, address, and telephone number of responsible principal.
- e. Meet all requirements specified under Article 3, Contract Provisions.

- 2. Preparation for Submission:

- a. Obtain notarized Warranties and Bonds, executed in duplicate by

responsible Subcontractors, Suppliers, and Manufacturers, within 10 days after completion of the applicable item or Work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until the date of Substantial Completion is determined.

- b. Retain Warranties, Bonds, and Service Agreements until time specified for submission.
- c. Other required Submittals: In accordance with the Contract Documents.

C. Disposition: Engineer will review, stamp, and indicate requirements for resubmission or acceptance on Submittal as follows:

- 1. Accepted:
 - a. Acceptance will indicate that Submittal conforms to intent of Contract Documents as to form and substance.
 - b. Contractor may proceed to perform Submittal related Work.
 - c. Two copies furnished to Owner.
 - d. Two copies furnished to Construction Manager.
 - e. One copy retained in Engineer's file.
 - f. Remaining copies returned to Contractor appropriately annotated.
- 2. Rejected as Noted:
 - a. Two copies retained in Engineer's file.
 - b. Two copies retained in Construction Manager's file.
 - c. Remaining copies returned to Contractor appropriately annotated.
 - d. Contractor shall revise/correct or develop replacement and resubmit.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION

3.1 PREPARATION

A. Submittals

- 1. Grouping: Whenever possible, schedule for and combine Submittals

required for submission by Specification Section or Division into a single Submittal package. Also combine product data for like items into a single Submittal package.

2. Presentation: In detailed and scaled drawings with plan and sectional views adequate to depict sufficient detail to show type, size, arrangement, installation, and function of components, materials, and devices and compliance with Contract Documents. Identify details by reference to sheet and detail, and schedule or room numbers shown on Drawings. Show relative location and incorporation with adjacent equipment.
3. Product Data: As a minimum;
 - a. Clearly mark each copy to identify pertinent products or models and show performance characteristics and capacities, details of construction, assembly details, dimensions and clearances required, weights, finishes, O&M data, wiring or piping diagrams and controls, instrumentation taps and mounts, Bill of Materials, and external connections, anchorages, and supports required.
 - b. Modify to delete information that is not applicable to Work.
 - c. Supplement standard information to provide information specifically applicable to Work.
4. Equipment and Component Titles: Identical to that shown on Drawings and in the Specifications.
5. Partial submittals and submittals that fail to meet any of the contract requirements may be rejected. Any delays resulting from such rejection shall not be considered as cause for a Time Extension.
6. Quantities: The Contractor shall submit seven (7) copies of all submittals plus the number to be returned to the Contractor of all Submittals for this Contract unless specifically directed otherwise.
7. Information shall be submitted on 8½ inch by 11 inch sheets to the extent practicable. All drawings and plans shall be 22 inches by 34 inches in size (ANSI size "D").

B. Design Data:

1. Provide a Professional Engineer licensed in the Commonwealth of Pennsylvania and in the appropriate engineering discipline to perform design, oversee preparation of Shop Drawings, manufacturing, and installation, as appropriate, and to stamp and certify that Shop Drawings conform with design requirements and requirements of Laws and

Regulations and governing agencies.

2. When specified, provide in English units Project-specific information as required and as necessary to clearly show calculations, dimensions, logic and assumptions, and referenced standards and codes upon which design is based.

---END OF SECTION---

**SECTION 01310
CONSTRUCTION SCHEDULES**

PART 1 GENERAL

1.1 REQUIREMENTS INCLUDED

- A. Procedures for preparation and updating of the Critical Path Method (CPM) CONSTRUCTION SCHEDULE.

1.2 RELATED REQUIREMENTS

- A. The Contractor shall comply with all Contract requirements related to prosecution of the work, scheduling, and time of completion including, but not limited to, the following:
 - 1. Article 3.27 - PROJECT COORDINATION
 - 2. Article 3.28 - TIME FOR COMPLETION, MILESTONE DATES
 - 3. Article 3.32 - DELAYS AND EXTENSIONS OF TIME
 - 4. Article 3.7 - COORDINATION
 - 5. Article 3.8 - COOPERATION BETWEEN CONTRACTORS / DISPUTES OR ACTIONS BETWEEN CONTRACTORS
 - 6. Section 01010 - SUMMARY OF WORK
 - 7. Section 01025 - MEASUREMENT AND PAYMENT
 - 8. Section 01040 - COORDINATION
 - 9. Section 01050 - CONSTRUCTION SEQUENCING
 - 10. Section 01300 - SUBMITTALS
 - 11. Section 01300 (1.3C.3) - SCHEDULE OF VALUES

1.3 CPM CONSTRUCTION SCHEDULING

- A. Contractor will provide a Project CPM Schedule for this contract in accordance with the requirements of this section and the General Requirements.
- B. The purpose of the Project CPM Schedule will be to assure that the Contractor coordinates his work and to assist the Construction Manager in monitoring the progress of the work and evaluating the impact of proposed changes on the

contract time.

- C. The Project CPM schedule will reflect the major activities of this contract, and will also reflect the major interface points. Major activities and interface points will include activities restricting access to certain areas, or any other activity designated by the Construction Manager. The Project CPM schedule will also reflect all work activities that will affect ALCOSAN Operations and Maintenance in any way. The Project CPM schedule will be based on the Contractor's plan for the execution of the contract and all assumptions made in preparing that plan.
- D. Any request by a Contractor to modify the time of completion must be supported by a CPM analysis that demonstrates effect on the critical path for the project.
- E. Float is to be used for the benefit of the project. Contractor is to pursue the Original Early Schedule dates unless all parties agree to a revised schedule, and then the Contractor will work to the early dates in the revised schedule. Any dispute arising out of the use of float will be handled in accordance with the requirements of Article 3.8 of the Contract.

1.4 INITIAL SUBMITTAL AND NETWORK PREPARATION

- A. Following award of the contract, the Contractor must prepare a Project CPM schedule and logic that demonstrates the Contractor's plan for the execution of the work.
- B. Within 10 working days after the pre-construction meeting, the Contractor shall provide the Construction Manager with a Project CPM Schedule including information consisting of, but not limited to, the following:
 - 1. List of all construction activities.
 - 2. Anticipated durations for construction activities in workdays.
 - 3. Predecessor and successor activities for each construction activity.
 - 4. List of all procurement activity items.
 - 5. List of all submittals with final submittal dates. The Contractor's failure to make submittals early enough to allow time for resubmittals shall not be an excusable delay or an acceptable reason for not meeting the Schedule.
 - 6. Anticipated fabrication and delivery times after receipt of approved drawings for all submittal items, as well as, for materials and equipment supplied by others.

7. Identification of all tie-ins to existing facilities with requested system downtimes and any other activity that affects ALCOSAN Operations and Maintenance.
8. Identification of all activities performed by subcontractors, suppliers, fabricators and others shall also be included in the list of activities with predecessors, successors and anticipated durations.
9. Failure to include an activity in the activity list or failure to include a logical constraint to that activity will not excuse the Contractor from meeting the obligation to perform the work in such a fashion so as not to delay other parties, cause additional cost to the OWNER, or from meeting any of the intermediate or final milestone dates.
10. The Contractor, in preparing its anticipated durations and plan for executing the work, should consider seasonal weather conditions.
11. The Construction Manager and the Contractor may meet as needed to review the activity lists to clarify the scope of the activities, durations and the logic.

1.5 REVIEW AND APPROVAL

- A. After the Project CPM schedule has been prepared by the Contractor, it will be submitted to the Construction Manager for review, comment and approval.
- B. The Construction Manager shall review the Project CPM schedule for completeness including, but not limited to, activities, durations, logic, and interfaces with the OWNER's operations and maintenance activities.

1.6 UPDATED AND REVISED SCHEDULES

- A. The Project CPM Schedule, adopted as indicated in Section 01310, Paragraph 1.5, will be established as the baseline schedule. The baseline schedule will be updated by the Contractor on a bi-weekly basis or as requested by the Construction Manager. The Contractor will mark actual start dates and remaining durations in workdays on the look-ahead schedules provided in the Progress Meetings. As part of the update process, a marked up look-ahead schedule will be presented to the Construction Manager before 8:00 AM on the day prior to the Weekly Progress Meeting. Progress against the schedule shall be reviewed and recorded in the Progress Meetings.
- B. Should the Contractor request a revision(s) to the schedule logic, it should present

the revision(s) in writing to the Construction Manager. If the requested revision(s) to schedule logic are approved by the Construction Manager, and the OWNER, they will be included in a Revised Schedule.

1.7 RESPONSIBILITY FOR COMPLETION

- A. The Contractor will furnish sufficient forces, materials and equipment as necessary to ensure completion of the work in accordance with all Contract requirements. If, in the opinion of the Construction Manager, the Contractor fails to comply with any of the Contract requirements for completion of the work, the Construction Manager may advise the Contractor to take any means necessary to recover any lost progress without additional cost to the OWNER. Any and all additional expenses incurred by the Contractor due to failure of a Contractor to comply with any of the requirements of this Section 01310 will be handled in accordance with the provisions of Article 3.8 of the Contract. Notwithstanding the provisions of Article 3.8, the OWNER may also recover liquidated damages that are due as indicated in the Contract.

- B. If the Contractor fails to comply with the requirements the Contract, the OWNER and / or the Construction Manager may contact the Contractor's bonding company. Failure to maintain progress will require the Contractor, at the request of the Construction Manager, to develop a schedule recovery plan to demonstrate the Contractor's plan to recover schedule progress.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION (Not Used)

---END OF SECTION---

**SECTION 01430
OPERATION AND MAINTENANCE DATA**

PART 1 GENERAL

1.1 REFERENCE

- A. Refer to Article 3, Contract Provisions.

1.2 DEFINITIONS

- A. **Maintenance Activity:** As used in the Maintenance Summary Form is defined to mean any routine activity required to ensure satisfactory performance and longevity of equipment. Examples of typical maintenance activities are lubrication, belt tensioning, adjustment of pump packing glands, and routine adjustments.

1.3 QUALITY ASSURANCE

- A. Manuals for equipment and systems shall be prepared by equipment manufacturer or system Supplier. Any additional instructions and data required shall be prepared by personnel experienced in the maintenance and operation of the described products.

1.4 SEQUENCING AND SCHEDULING

- A. **Manual Outline:** Submit for the Engineer's review and approval after Notice to Proceed, a detailed outline of each manual prior to preparation and submittal of the Draft O&M Manual.
- B. **Manuals for Equipment and Systems:**
 - 1. **Draft Manuals:** Submit two (2) "photocopy quality" draft manuals prior to equipment installation or storage on site. Include copy of warranties, bonds, and service agreements if specified. A copy with Owner and Engineer's review comments will be returned to the Contractor for preparing the final manuals.
 - 2. **Final Manuals:** Submit five (5) "original quality" final manual prior to the start-up and testing of equipment, systems, subsystems, or components. The Engineer shall verify that the final manuals have incorporated all previous draft manual review comments.

1.5 GENERAL

- A. Furnish Operation and Maintenance Manuals for each item of equipment or system as specified in the individual Specification Sections, and for all equipment and other Items furnished under this Contract which require any operation or maintenance attention on a regular basis or which may require repair at any time. These Manuals shall set forth all information necessary for the Owner to operate all equipment; to make full and efficient use thereof; and to perform any maintenance troubleshooting or servicing as would ordinarily be performed by the Owner.
- B. Prepare data for use by Owner's personnel in the form of an instructional manual. Information shall be given in simple, non-technical language with sufficient diagrams and explanations as required to be readily understandable to the average layman. Possible hazards shall be particularly pointed out with instructions cautioning against mistakes that might result in damage to equipment or buildings and/or pose a danger to personnel.
- C. All copies of the Final Operation and Maintenance Manual shall comprise original copies of all brochures, catalog "cuts" and other pre-printed Manufacturer's literature. Photocopy reproductions of such Material will not be acceptable for incorporation into the final versions of the Operation and Maintenance Manuals. All such information shall be annotated to indicate only the specific equipment or other Items furnished. References to other sizes, types or models of similar items shall be deleted or neatly lined out.
- D. Manual Format:
1. Size: 8½ inches by 11 inches.
 2. Paper: 20-pound minimum, white for typed pages.
 3. Text: Manufacturer's printed data, or neatly typewritten.
 4. Three-hole punch data for binding and composition; arrange printing so that punched holes do not obliterate data.
 5. Provide colored fly-leaf for each separate product, or each piece of operating equipment, with typed description of product and major component parts of equipment and provide with heavy section dividers with numbered plastic index tabs.
 6. Provide each manual with title page placed in non-glare sheet protector and typed Table of Contents with consecutive page numbers. Place contents of entire set, identified by volume number, in each binder.

7. Cover and Spine: Identify each volume with typed or printed title "OPERATION AND MAINTENANCE MANUAL, VOLUME NO. _____ OF _____", if applicable, and list:
 - a. Project title.
 - b. Contract number.
 - c. Designate the system or equipment for which it is intended.
 - d. Identity of separate structure/facility as applicable.
 - e. Identity of ALCOSAN equipment number and Specification section.

8. Assemble and bind material in same order as specified, as much as possible.

9. Material shall be suitable for reproduction, with quality equal to original. Photocopying will not be acceptable for the final copies of the manuals.

10. Binders:
 - a. Draft Manuals: Heavy paper covers.
 - b. Final Manuals: Commercial quality, substantial, permanent, three- ring, D-type binders with durable, cleanable, plastic covers.

11. Table of contents neatly typewritten, arranged in a systematic order:
 - a. Contractor, name of responsible principal, address, and telephone number.
 - b. List of each product required to be included, indexed to content of each volume.
 - c. List with Each Product: Name, address, and telephone number of Subcontractor, Supplier, installer, and maintenance contractor, as appropriate.
 - (1) Identify area of responsibility of each.
 - (2) Provide local source of supply for parts and replacement.
 - d. Identify each product by product name and other identifying numbers or symbols as set forth in Contract Documents.

12. Product Data:
 - a. Include only those sheets that are pertinent to specific product.
 - b. Clearly annotate each sheet to:

- (1) Identify specific product or part installed.
 - (2) Identify data applicable to installation.
 - (3) Delete references to inapplicable information.
13. Drawings: Supplement product data with Drawings as necessary to clearly illustrate:
- a. Relations of component parts of equipment and systems.
 - b. Control and flow diagrams.
 - c. Coordinate drawings with Project record documents to assure correct illustration of completed installation.
 - d. Do not use Project record documents as maintenance manual drawings.
 - e. Provide reinforced punched binder tab, bind in with text.
 - f. Reduced to 8½ inches by 11 inches, or 11 inches by 17 inches folded to 8½ inches by 11 inches.
 - g. Where reduction is impractical, fold and place in 8½-inch by 11-inch envelopes bound in text.
 - h. Identify Specification Section and product on Drawings and envelopes.
14. Instructions and Procedures: Within text, as required to supplement product data.
- a. Handling, storage, maintenance during storage, assembly, erection, installation, adjusting, testing, operating, shutdown in emergency, troubleshooting, maintenance, interface, and as may otherwise be required.
 - b. Organize in a consistent format under separate heading for each different procedure.
 - c. Provide a logical sequence of instructions for each procedure.
 - d. Provide information sheet for Owner's personnel, including:
 - (1) Proper procedures in the event of failure.
 - (2) Instances that might affect the validity of warranties or Bonds.
15. Warranties, Bonds, and Service Agreements: Include a copy of each.

E. Electronic Format: ALCOSAN intends to integrate the Operations and Maintenance information provided under this Contract into its on-line Facility

Information Manager (FIM). If electronic versions of the Operations and Maintenance information are available, for example on CD-ROM, notify the Owner the details on how these versions can be obtained. Include the available media type, file formats, and associated costs.

1.6 SUBMITTAL PROCEDURE

- A. Refer to Section 01300, SUBMITTALS, and Contract Provisions.

1.7 MANUALS FOR EQUIPMENT AND SYSTEMS

- A. Content for Each Unit (or Common Units) and System:

1. Description of unit and component parts, including controls, accessories, and appurtenances:
 - a. Function, normal operating characteristics, and limiting conditions.
 - b. Performance curves, engineering data, nameplate data, and tests.
 - c. Complete nomenclature and commercial number of replaceable parts.
2. Operating Procedures:
 - a. Startup, break-in, routine, and normal operating instructions.
 - b. Test procedures and results of factory tests where required.
 - c. Regulation, control, stopping, and emergency instructions.
 - d. Description of operation sequence by control manufacturer.
 - e. Shutdown instructions for both short and extended durations.
 - f. Summer and winter operating instructions, as applicable.
 - g. Safety precautions.
 - h. Special operating instructions.
 - i. Installation instructions.
3. Maintenance and Overhaul Procedures:
 - a. Routine operations.
 - b. Guide to troubleshooting.
 - c. Disassembly, removal, repair, reinstallation, and reassembly.
 - d. Preventive maintenance tasks.
4. Installation Instructions: Including alignment, adjusting, calibrating, and checking.

5. Original manufacturer's parts list, illustrations, detailed assembly drawings showing each part with part numbers and sequentially numbered parts list, and diagrams required for maintenance.
6. Spare parts ordering instructions.
7. Where applicable, identify installed spares and other provisions for future work (e.g., reserved panel space, unused components, wiring, terminals).
8. Manufacturer's printed operating and maintenance instructions.
9. As-installed, color-coded piping diagrams.
10. Charts of valve tag numbers, with the location and function of each valve.

B. Maintenance Summary:

1. Compile an individual Maintenance Summary for each equipment item, respective unit or system, and for components or subunits.
2. Format:
 - a. Use Maintenance Summary Form bound with this section, or an electronic facsimile of such.
 - b. Each Maintenance Summary may take as many pages as required.
 - c. Use only 8½-inch by 11-inch size paper.
 - d. Complete using typewriter or electronic printing.
3. Include detailed lubrication instructions and diagrams showing points to be greased or oiled; recommend type, grade, and temperature range of lubricants and frequency of lubrication.
4. Recommended Spare Parts:
 - a. Data to be consistent with manufacturer's Bill of Materials/Parts List furnished in O&M manuals.
 - b. "Unit" is the unit of measure for ordering the part.
 - c. "Quantity" is the number of units recommended to be kept in the Owners inventory to support maintenance.
 - d. "Unit Cost" is the current purchase price.

C. Content for Each Electric or Electronic Item or System: (Not Used)

1. Description of Unit and Component Parts:
 - a. Function, normal operating characteristics, and limiting conditions.

- b. Performance curves, engineering data, nameplate data, and tests.
 - c. Complete nomenclature and commercial number of replaceable parts.
 - d. Interconnection wiring diagrams, including all control and lighting systems.
- 2. Circuit Directories of Panelboards:
 - a. Electrical service.
 - b. Controls.
 - c. Communications.
 - 3. List of electrical relay settings, and control and alarm contact settings.
 - 4. Electrical interconnection wiring diagram, including control and lighting systems.
 - 5. As-installed control diagrams by control manufacturer.
 - 6. Operating Procedures:
 - a. Routine and normal operating instructions.
 - b. Sequences required.
 - c. Safety precautions.
 - d. Special operating instructions.
 - 7. Maintenance Procedures:
 - a. Routine operations.
 - b. Guide to troubleshooting.
 - c. Adjustment and checking.
 - d. List of relay settings, control and alarm contact settings.
 - 8. Manufacturer's printed operating and maintenance instructions.
 - 9. List of original manufacturer's spare parts, manufacturer's current prices, and recommended quantities to be maintained in storage.

1.8 MANUALS FOR MATERIALS AND FINISHES

A. Content for Architectural Products, Applied Materials, and Finishes:

- 1. Manufacturer's data, giving full information on products:

- a. Catalog number, size, and composition.
 - b. Color and texture designations.
 - c. Information required for reordering special-manufactured products.
2. Instructions for Care and Maintenance:
- a. Manufacturer's recommendation for types of cleaning agents and methods.
 - b. Cautions against cleaning agents and methods that are detrimental to product.
 - c. Recommended schedule for cleaning and maintenance.
- B. Content for Moisture Protection and Weather Exposed Products:
- 1. Manufacturer's data, giving full information on products:
 - a. Applicable standards.
 - b. Chemical composition.
 - c. Details of installation.
 - 2. Instructions for inspections, maintenance, and repair.

1.9 SUPPLEMENTS

- A. The supplements listed below, following "END OF SECTION," are part of this Specification.
- 1. Forms: Maintenance Summary Form.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION (Not Used)

---END OF SECTION---

MAINTENANCE SUMMARY FORM

PROJECT: Roof Modifications for Screenings Garage and Power Generation Building

CONTRACT NO.: 1714

1. EQUIPMENT ITEM _____

2. MANUFACTURER _____

3. EQUIPMENT/TAG NUMBER(S) _____

4. WEIGHT OF INDIVIDUAL COMPONENTS (OVER 100 POUNDS) _____

5. NAMEPLATE DATA (hp, voltage, speed, etc.)

6. MANUFACTURER'S LOCAL REPRESENTATIVE
a. Name: _____ Telephone No. _____
b. Address _____

**SECTION 01500
CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS**

PART 1 GENERAL

1.1 GENERAL

- A. Refer to the Article Three, Contract Provisions.
- B. Refer to Article Six - Technical Specifications.

1.2 SUBMITTAL

- A. Administrative Submittal: Copies of permits and approvals for construction as required by Laws and Regulations, the Contract Documents, and governing agencies.
- B. Shop Drawings: When requested the Contractors shall submit shop drawings of proposed temporary facilities, including but not limited to:
 - 1. The Contractor shall submit the following Temporary Construction Facility Submittal:
 - a. Proposed access and haul roads including cross sections and drainage facilities.
 - b. Parking area plans.
 - c. Plan for temporary facilities for staging, lay down areas, and contractor dumpsters, including proposed layouts for field offices, storage yards, storage buildings and graveled surface areas.
 - d. Fencing and protective barrier location and details.
 - e. Staging Area Plan.
 - f. Traffic Control and Routing Plans as specified herein and proposed revisions thereto.
 - g. Plan for maintenance of existing plant operations.
 - 2. Temporary Control Submittal:
 - a. Contractors shall be required to submit Noise Control Plans.

- b. The Contractor shall submit a plan for disposal of waste materials and intended haul routes.

1.3 MOBILIZATION

- A. Use of Premises: The site utilization plan designates the staging areas to be used for the Contractor's trailers, storage and parking. The Contractor and its Subcontractors shall use these areas only and shall not park at other areas of the plant site, including access roads, except for deliveries of materials. All plant roadways must be kept open at all times to allow for plant deliveries and normal operations of the treatment plant.
- B. Mobilization shall include, but not be limited to, these principal items. The Contractor shall coordinate individual mobilization activities within this contract package.
 - 1. Obtaining necessary Permits as may be required.
 - 2. Moving Contractor's temporary facilities onto site.
 - 3. Installing temporary facilities and utilities as required.
 - 4. Providing onsite communication facilities.
 - 5. Submitting required schedules, submittals, etc.
 - 6. Arranging for and erection of Contractor's work and storage yard.
 - 7. Posting OSHA required notices and establishing safety programs and procedures.
 - 8. Having the Contractor's project manager and/or superintendent at the site full time during the period when work in the Contract is proceeding.
 - 9. Early construction activities such as:
 - a. Site survey and layout.
 - b. Soil and erosion control

1.4 CONTRACTORS' USE OF PREMISES

- A. Premises furnished by Owner upon which Contractor shall perform the Work are limited to the confines of the project area(s) and the staging area(s) designated on the site utilization plan provided in the Contract Drawings. Other use of the site will not be permitted. The Contractor is responsible to document coordination and approval of the Owner work site prior to mobilization.

1. The Contractor shall at all times coordinate use of premises with the Construction Manager and shall assume properties on which Contract work takes place will be temporarily transferred to the custody of the Contractor. The Contractor then becomes responsible for all site activities except for those operation and maintenance activities which ALCOSAN staff must perform and for which purpose the Contractor will facilitate continuous access and egress.

1.5 PERMITS

- A. Permits, Licenses, or Approvals: The Contractor shall obtain and pay for (and retain onsite) permits, licenses, and approvals necessary for the completion of the work identified in this document, including but not necessarily limited to:
 1. City of Pittsburgh Building permits for all applicable sub codes.
 2. Temporary easements and rights-of-way.
 3. Road opening permits.
 4. Utility cuts and/or connections.
 5. Contractor performing abrasive blasting shall obtain an Allegheny County Health Department Abrasive Blasting Permit and any other required permits.
- B. The Owner will obtain permits required from agencies of the State of Pennsylvania and the United States of America.

1.6 PROTECTION OF WORK AND PROPERTY

- A. Comply with HEALTH, SAFETY AND ENVIRONMENTAL LAWS in the Contract provisions while on OWNER's property.
- B. The Contractor must advise the Construction Manager of all accidents that involve personal injury, damage to the Owner's facilities or damage to the property of other Contractors, as well as, any claims related to any accident.
 1. The Contractor must submit a copy of their Employer's report of Occupational Injury or Disease to the Construction manager within 24 hours after any accident.
 2. The Contractor must report property damage and/or damage to the Owner's facilities, resulting from, but not limited to, theft or vandalism, to

the Owner's security department within 24 hours after any incident.

- C. Use of Explosives: No blasting or use of explosives will be allowed on the site.
- D. During the performance of the Work, the Contractor is responsible for adapting their means, methods, techniques, sequences and procedures of construction to allow Owner to maintain operation at the existing level of wastewater treatment. In performing such Work, and in cooperating with the Owner to maintain operations, it will be required for the Contractor to plan, design, and provide various temporary services, utilities, temporary piping and heating, structures, access, and similar items which will be included within the Contract Price.

1.7 CONSIDERATION FOR EMPLOYEE HYGIENE

- A. The Contractor is advised that the work to be performed under the contract is in an operating sewage treatment facility. The Contractor is advised that it should consider all factors that may affect employee hygiene, including, but not limited to, air quality, ventilation, contact with process liquids, chemicals and other elements of the environment.
- B. The Contractor must take all precautions required for compliance with all applicable regulatory requirements and as necessary to provide an appropriate hygiene program for its employees.

1.8 VEHICULAR TRAFFIC

- A. Contractor's vehicular traffic must comply with Owner's requirements. Construction Manager will coordinate vehicular traffic; Construction Manager will identify access points (gates), parking areas, and off-limits are (due to vehicle weights).

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 RESPONSIBILITIES

- A. The Contractor shall provide temporary facilities and controls (as specified throughout this Section) for use by all Subcontractors in this contract package at the site or sites of the Work until the project is complete and the project facilities

are placed under the Owner's operation.

- B. The Contractor is solely responsible for installation, maintenance and removal of their respective temporary facilities and restoration of the affected area when the temporary facilities and controls are no longer needed or required.
- C. The Contractor shall include a line item in their schedule of values for each temporary facility.
- D. The Owner pays for public utility consumption.

3.2 TEMPORARY UTILITIES

- A. Unless specified otherwise, the following will apply to temporary utilities:
 - 1. Contractor taps the required utility on Owner's property; Contractor is responsible and pays for the installation of the temporary utility conveying/distribution system.
 - 2. Owner pays for utility consumption.
- B. Temporary Electric and Lighting:
 - 1. The Contractor shall provide and maintain adequate temporary lighting for all areas of work where adequate natural lighting is not available or where existing lighting has been removed or disconnected. Lighting shall be provided by the Contractor as required so that all contract work may be performed in a workmanlike manner and all plant operations may be maintained. At a minimum, temporary lighting shall meet OSHA standards.
 - 2. The Contractor performing work may utilize available existing utilities, in the area, for temporary power and light if approved by the Owner. If the available existing utilities in those areas are inadequate for the Contractor's use or not approved by the Owner, the Contractor shall provide and pay for temporary provisions, such as portable generators.
 - 3. Any Contractor requiring temporary power or temporary light in addition to that required by this section shall arrange and pay for provision of the same.
- C. Heating and Ventilating
 - 1. Definitions:

- a. **Temporary Enclosure:** Sufficient enclosure of the structure, or major unit thereof, to prevent entrance or infiltration of rain-water, wind or other elements and which will prevent undue heat loss and equipment damage from within the enclosed area.
 - b. **Permanent Enclosure:** Stage of construction at which all moisture and weather protection elements of construction have been installed in accordance with the contract documents for the entire structure or a designated portion thereof.
2. **Responsibilities for Heat and Ventilation:**
- a. Prior to Temporary Enclosure the Contractor shall provide, operate and maintain all provisions of heating and ventilating equipment necessary to protect the work of the contract and existing structures and equipment including costs of installation, fuel, electrical service, operation, maintenance and removal. The costs associated with electrical service include extending the temporary power system as necessary to support the temporary heating system. Electrical utility consumption will be paid for by the Owner.
 - b. For work not located within heated areas the Contractor shall provide, operate and maintain all provisions of heating and ventilating equipment necessary to protect the work of the contract including costs of installation, fuel, electrical service, operation, maintenance and removal.
 - c. During the Period of Temporary Enclosure the Contractor shall provide, operate and maintain temporary heat and ventilation provisions, including the costs of installation, fuel, electrical service, operation, maintenance and removal of equipment. The costs associated with electrical service include extending the temporary power system as necessary to support the temporary heating system. Electrical utility consumption will be paid for by the Owner. Temporary Enclosure status shall be determined by the Construction Manager.
 - d. When a portion of the structure, which is designed to be heated, is Permanently Enclosed, as defined above and as determined by the Construction Manager, the Contractor shall become responsible for provision of heat and ventilation. Upon Permanent Enclosure the following procedure shall be followed:
 - (1) The Contractor shall issue 30 day Notice of Permanent Enclosure in writing to the Construction. The Contractor shall remain responsible for providing temporary heat and ventilation until the end of the 30 day notice period.

- (2) At the end of the 30 Notice of Permanent Enclosure period the Contractor shall become responsible for Temporary Heat and Ventilation.
3. At the end of the notification period the Contractor may either provide and operate approved temporary portable units or operate the permanent system, if the installation has been completed to the extent necessary to make its use possible. If a Temporary system is used, the Contractor shall pay all costs of installation, fuel, maintenance, operation, electrical service, and removal. The costs associated with electrical service include extending the temporary power system as necessary to support the temporary heating system. Electrical utility consumption will be paid for by the Owner. If the permanent Heating and Ventilating system is to be used, the Contractor shall:
- a. Enforce conformance with applicable codes and standards.
 - b. Enforce energy conservation measures.
 - c. Prevent abuse of services and equipment.
 - d. Utilize equipment in a manner that will not jeopardize the warranty of the equipment.
 - e. Extend Warranties and service agreements as necessary for the period used so that all warranties remain in force for the period of time specified after final completion.
 - f. Clean, inspect, adjust, refilter and provide all maintenance requested by the Owner for all equipment used prior to Owner acceptance.
4. Requirements for Temporary Heat and Ventilation:
- a. Provide temporary heat and ventilation as required to maintain environmental conditions to facilitate the progress of the work, to meet minimum conditions for installation of materials, and to protect materials and finishes from damage due to temperature and humidity. A minimum temperature of 60 degrees F shall be maintained at all times. Outside make up air shall be used as necessary to reduce humidity.
 - b. Select heater units and fuels for temporary heat in accordance with requirements of OSHA and NFPA. Heater units shall vent combustion air to the exterior of the building or enclosure.
 - c. Provide adequate forced ventilation of interior and enclosed areas for curing of installed materials, to disperse humidity and to prevent hazardous accumulation of dust, fumes, vapors or gases.

d. The use of electric heaters will not be permitted.

D. Construction Water:

1. Water: Water for construction purposes shall be obtained from the existing water system as directed by the Construction Manager. Contractor will provide temporary facilities and piping required to bring water to the point of use, and remove them when no longer required. The Owner will pay for water used for construction purposes.
2. Furnish drinking water for Contractor personnel connected with the Work.

E. Sanitary and Personnel Facilities:

1. The Contractor shall provide and maintain sanitary facilities, within the project limits, for the use of their employees and subcontractors until Contract completion. Temporary sanitary facilities shall be supplied in sufficient number and cleaned at a frequency that complies with OSHA regulations.
2. Adequate sanitary facilities shall be supplied within 2 working days of Notice to Proceed and shall remain on site until the project is complete and the Contractor is demobilized.
3. Process liquids may contain various elements that may pose a hazard to those exposed to them. The Contractor is advised that clothing that has been in contact with process liquids or other elements of the plant environment may transport contamination. Considering the plant environment, at a minimum, washing hands before eating or smoking, laundering clothes at the project site, and employee wash facilities at the site may be advisable.
4. The Contractor is responsible for providing an appropriate hygiene program for its employees. Any facility, service or other item required to implement its hygiene program is to be provided by the Contractor at no additional cost to the Owner. The Contractor is advised that it is prohibited from use of the Owner's facilities or services for any part of its program.
5. Use of Owner's existing facilities by construction personnel is not permitted and shall be reason for the Owner to request dismissal of the employee.

F. Telephone Service:

1. The Contractor shall arrange and provide onsite telephone service for Contractor's use during construction. Contractor shall pay all costs of installation, equipment, and monthly bills.
 2. Use of the Owner's plant telephone system is prohibited.
- G. The Owner will pay for utility consumption, as detailed above, for the Contractor responsibly making use of those utilities in the execution of the work of this contract. The Contractor shall take appropriate energy conservation measures. Improper or wasteful use of utilities shall be cause for the Owner to discontinue provision of utilities for the Contractor.
- H. Abuse of any Owner-paid utility by the Contractor will warrant to the Owner the right to discontinue use of said utility and force the Contractor to supply said utility needs.

3.3 PROTECTION OF WORK AND PROPERTY

A. General:

1. Perform Work within contract limits in a systematic manner that precludes inconvenience to Owner.
2. Maintain in continuous service all pipelines, underground power, telephone or communication cable, water mains, sewers, poles and overhead power, and all other utilities encountered while performing the Work.
3. Where completion of Work requires temporary or permanent removal and/or relocation of an existing utility, coordinate all activities with Construction Manager and perform all work to the satisfaction of the Owner.
4. Protect, shore, brace, support, and maintain underground pipes, conduits, drains, and other underground utility construction uncovered or otherwise affected by construction operations.
5. Keep fire hydrants and water control valves free from obstruction and available for use at all times.
6. In areas where the Contractor's operations are adjacent to or near a utility such as gas, telephone, television, electric power, water, sewer, or irrigation system and such operations may cause damage or inconvenience, suspend operations until arrangements necessary for protection thereof have been made by the Contractor.
7. Notify Construction Manager of any public utility that may be affected by

the construction operation at least 2 working days in advance.

- a. Before exposing a utility, obtain Construction Manager's permission. Should service of utility be interrupted due to the Contractor's operation, notify Construction Manager immediately. The Contractor responsible for the interruption shall restore service as promptly as possible and bear costs incurred.
- 8. Do not impair operation of existing sewer systems. Prevent construction material, pavement, concrete, earth, volatile and corrosive wastes, and other debris from entering sewers, pump stations, or other sewer structures. Maintain original site drainage wherever possible.
- 9. The Contractor remains responsible for complying with PA One Call Legislation. ALCOSAN personnel must be contacted 24 hours in advance of any excavation on ALCOSAN property. Limits of excavation must be laid out prior to contact with ALCOSAN.
- B. Existing Structures: When the Contractor contemplates removal of small structures that interfere with Contractors' operations, the Contractor shall obtain approval from the Owner to remove such structures. Replace those removed in a condition equal to or better than original.
- C. Where the work requires temporary removal of the Plant's perimeter fence the Contractor removing the fence shall install temporary fence at an alternate location to maintain the plant's fenced perimeter. The temporary fence shall be of the same height and construction as that which was removed. The temporary fence must be in place before the existing fence is removed.
- D. Contractors performing work in finished areas shall protect finished floors, walls and ceilings, architectural items, doors, windows, skylights, and all other finished Work until Final Acceptance by the Owner.
- E. Waterways: All contractors shall keep ditches, culverts, and natural drainage continuously free of construction materials and debris.
- F. Dewatering: The Contractor shall construct, maintain, and operate sumps, pumps, or other temporary diversion and protection works as required executing the work of the contract. Furnish materials required, install, maintain, and operate necessary pumping and other equipment for the environmentally safe removal and disposal of water from the various parts of the Work. Maintain the excavations, foundations and all parts of the Work free from water.
- G. Archaeological Finds: --(Not Used)--

3.4 TEMPORARY CONTROLS

A. Air Pollution Control:

1. Minimize air pollution from construction operations.
2. Burning of waste materials, rubbish, or other debris will not be permitted on or adjacent to the site.
3. The Contractor shall conduct trucking operations to cause a minimum of dust. The Contractor shall give unpaved streets, roads, detours, or haul roads used in the construction area a dust-preventive treatment or periodically water, as required, to prevent dust. The Contractor shall give paved streets and roads used in the construction area a street cleaning and vacuuming one time per day or as directed by the Construction Manager. Strictly adhere to applicable environmental regulations for dust prevention.
4. The Contractor shall be responsible to provide and maintain temporary dust-tight partitions, bulkheads, or other protective devices during construction to permit normal operation of existing facilities. Construct partitions of plywood, insulating board, plastic sheets, or similar material(s). Construct partitions in such a manner that dust and dirt from demolition and cutting will not enter other parts of existing building or facilities. Remove temporary partitions as soon as the need no longer exists.

B. Noise Control: Provide acoustical barriers so noise from tools or equipment will neither exceed permissible OSHA noise levels nor interfere with Plant operations.

C. Water Pollution Control:

1. Do not dispose of volatile or hazardous wastes into storm or sanitary drains. Disposal of wastes into streams or waterways is prohibited.
2. Divert sanitary sewage and non-storm waste flow interfering with construction and requiring diversion to sanitary sewers. Do not cause or permit action to occur which would cause an overflow to an existing waterway.
3. Prior to commencing any excavation or construction, obtain Construction Manager's agreement with detailed plans showing procedures intended to handle and dispose of sewage, groundwater, and storm water flow, including dewatering pump discharges.
4. Comply with procedures outlined in Allegheny County Conservation District with regard to erosion and sedimentation control.

- D. Erosion, Sediment, and Flood Control: The Contractor shall provide, maintain, and operate temporary facilities to control erosion and sediment releases, and to protect Work and existing facilities from flooding during construction period.

3.5 STORAGE YARDS AND CONSTRUCTION STAGING AREAS

- A. Coordinate requirements with Section 01600, MATERIAL AND EQUIPMENT.
- B. Access Roads, Temporary Storage Yards and Staging: The Contractor shall construct and maintain, for the use of all Contract 1714 Contractors, the construction staging area shown on the Site Utilization Plan. The Contractor shall perform any and all site grading and demolition required to properly install the staging area. The Contractor shall maintain the staging areas such that it prevents the tracking of mud from the area into the plant operations area. The staging area shall be restored to pre-construction condition at the completion of construction. The location of area(s) available for storage, staging, and dumpsters are shown on Drawing 1714-SU-01 Site Utilization Plan and Drawing 1714-SU-02 Enlarged Site Utilization Plan. These locations are subject to the Construction Manager's approval and subject to change to accommodate the Owner's ongoing plant operations. The Contractor shall be permitted one office and one storage trailer in the staging area.
- C. Temporary Storage Trailers: Trailers may be utilized for temporary storage, subject to Owner's approval.
- D. The Contractor's use of the premises will be limited to the assigned staging area as it is designated on the Site Utilization Plan. If storage or additional staging area is required it shall be the contractor's responsibility to arrange and pay for accommodations remote to the project site.
- E. Mortar Mixer Wash Out Area: The Contractor shall locate an area within the staging area to wash out mixers including a shallow depression that is lined with 10mil plastic covered with a minimum of 2" of drainage rock. Contractor shall remove and restore wash out area following completion of mortar repointing for the project. (Not Used)

3.6 PARKING AREAS

- A. **Parking for vehicles belonging to employees of the Contractor or their subcontractors will be limited to areas approved by the Owner or Construction Manager. Parking will not be permitted on Tracy Street or on**

Preble Avenue. The Contractor shall be allotted 2 parking spaces. If additional parking is required the Contractor shall arrange and pay for off site parking including provisions for transportation to and from the offsite parking area.

- B. Vehicle site passes will be issued to the Contractor, in the quantities stated above. This vehicle site pass must be displayed in the vehicle windshield whenever a vehicle is on site. The vehicle access pass will permit passage through the site from the designated access point to the construction site. Vehicles found parked in other areas of the plant will be towed offsite at the Contractor's expense.

3.7 SITE SECURITY

- A. All Contractors' employees will be issued identification badges, which must be worn whenever the individual is on ALCOSAN property. Contractor's employees will be permitted only within the contract limits of the project for which the Contractor is responsible. Contractor's employees will not be permitted at other locations in the plant.
- B. The Contractor must submit a complete listing of all employees on site, including subcontractor employees, to the designated site security office within the first two hours of a shift.
- C. The Contractor and all of its employees and subcontractors shall enter the site at one location to be determined and announced at the preconstruction meeting.

3.8 VEHICULAR TRAFFIC

- D. Comply with Laws and Regulations regarding closing or restricting the use of public streets or highways. No public or private road shall be closed, except by written permission of the proper authority. Assure the least possible obstruction to traffic and normal commercial pursuits.
- E. Conduct Work to interfere as little as possible with public travel, whether vehicular or pedestrian.
 - 1. Whenever it is necessary to cross, close, or obstruct roads, driveways, and walks, whether public or private, provide and maintain suitable and safe bridges, detours, or other temporary expedients for accommodation of public and private travel.
 - 2. Road Closures: Maintain satisfactory means of access for Owner at all times. If it is necessary to close off a site roadway providing vehicular

access to Owner's facilities for periods greater than 2 hours, provide written notice to the Construction Manager 7 days prior to such closure. In such cases, closings of up to 4 hours may be allowed. Closures of up to 10 hours may be allowed if a week's written notice is given and undue hardship, to the Owner, does not result.

3. In making roadway crossings, do not block more than one-half the road at a time. Whenever possible, widen the shoulder on the opposite side to facilitate traffic flow. Provide temporary surfacing on shoulders as necessary. The contractor shall maintain at least one lane of traffic at all times.
- F. Contractor's shall maintain top of backfilled trenches before they are paved, to allow vehicular and equipment traffic to pass over and provide temporary access driveways where required. Paving operations shall follow immediately behind backfilling.
 - G. When flaggers and guards are required by regulation or when deemed necessary for safety, Contractor's shall provide and pay for approved safety apparel and other regulation traffic control devices.
 - H. Snow removal to facilitate vehicular traffic in the Plant will be provided by the Owner. Snow removal within the Project Contract Limits will be the Contractor's responsibility, including snow removal from parking lots, staging areas, work areas and access roads.
 - I. Coordination: Coordinate traffic routing with that of others working in the same or adjacent areas and the Traffic Plan.

3.9 CLEANING DURING CONSTRUCTION

A. General:

1. The Contractor shall wet down exterior surfaces and roadways prior to sweeping to prevent blowing of dust and debris. Daily or when requested by Construction Manager the Contractor shall, sweep all floors and pick up all misc. debris and dispose. The Contractor shall pickup and dispose of debris on a daily basis or when requested to do so by the Construction Manager.
2. Unless noted otherwise, the Contractor shall provide approved containers (dumpsters) for collection and disposal of all waste materials, debris, and rubbish for the work of all Contract 1714 Contractors and their subcontractors. The Contractor shall be responsible for collecting its own

rubbish and debris on a daily basis and depositing it in the containers provided as described above. At least at weekly intervals, properly dispose of such waste materials, debris, and rubbish offsite.

3. The Contractor shall provide one man for one full day per week to participate in a general trash cleanup of the project. This does not take the place of Contractor's responsibility to cleanup the work site on a daily basis.
4. The Contractor shall include a line item in the schedule of values equal to the value of his cleanup. The value shall be consistent with the anticipated number of weeks that the Contractor will be on-site working.
5. The Contractor shall broom clean interior spaces daily or at the direction of the Construction Manager.
6. When requested by the Construction Manager, the Contractor shall mechanically sweep and vacuum the entry drive and roadways, and all other streets and walkways affected by Work and where adjacent to Work.
7. Prior to substantial completion and at the direction of the Construction Manager the Contractor shall perform final cleaning as follows:
 - a. The Contractor shall remove temporary protection and labels, not required to remain, from equipment.
 - b. Clean surfaces free of grease, mastic, adhesives, dust, dirt, stains, fingerprints, labels, and other foreign materials from interior and exterior surfaces.
 - c. Clean transparent glossy materials to a polished condition, remove foreign substances, polish reflective surfaces to a clear shine.
 - d. Clean surfaces of equipment.
 - e. Restore site to its original condition.
8. The Contractor shall perform an overall final cleaning of the Work site(s) and grounds as appropriate or recommended to the satisfaction of the Owner.

--END OF SECTION--

**SECTION 01600
MATERIAL AND EQUIPMENT**

PART 1 GENERAL

1.1 GENERAL

- A. Unless otherwise expressly provided within the Contract Documents, only new Material and Equipment shall be incorporated into the Work. All Materials and Equipment furnished by the Contractor incorporated into the Work shall be subject to inspections and testing by the Owner's representative. All Materials and Equipment furnished by the Contractor shall be tested by the Contractor in accordance with the methods and requirements of the Contract Documents.
- B. The Contractor bears the full responsibility to demonstrate to the Owner's satisfaction that the Materials and Equipment being incorporated into the Work are of the specified quality and conform, in all respects, to the Contract requirements. The Contractor shall maintain a quality control program that provides assurance that Materials and Equipment conform to contract requirements whether they are self-manufactured, processed, or procured from other sources. The Contractor shall be responsible for testing of Materials and Equipment when so specified in the Contract Documents. If testing is implied and not assigned to the Contractor it shall be the responsibility of the Construction Manager.

1.2 DEFINITIONS

- A. Products: At times throughout this specification the term Products will be used and is intended to include:
1. New items for incorporation in the work, whether purchased by Contractor or Owner for the Project, or taken from previously purchased stock and may also include existing materials or components required for reuse.
 2. The terms material, equipment, machinery, components, subsystem, system, hardware, software, and terms of similar intent and is not intended to change the meaning of such other terms used in the Contract Documents as those terms are self-explanatory and have well recognized meanings in the construction industry.
 3. Items identified by manufacturer's product name, including make or model designation, indicated in the manufacturer's published product literature, that is current as of the date of the Contract Documents.

1.3 ENVIRONMENTAL REQUIREMENTS

- A. Provide systems, equipment, and components, including supports and anchorages, in accordance with the provisions of the International Building Code, 2006 Edition with City of Pittsburgh Amendments.
 - 1. Wind: 90 mph, with exposure C condition and an importance factor of 1.15.
 - 2. Snow Load: 20 psf, with exposure coefficient 0.9 and an importance factor of 1.10.
 - 3. Seismic: Acceleration coefficient equals 0 - 10, importance factor of 1.25, unless otherwise specified.
- B. Altitude: Provide Materials and Equipment suitable for installation and operation under rated conditions at 726 feet above sea level.
- C. Provide Equipment and devices installed outdoors or in unheated enclosures capable of continuous operation within an outdoor ambient temperature range of -25°F to 110°F unless otherwise specified.

1.4 FACILITY-SPECIFIC ENVIRONMENTAL REQUIREMENTS

- A. Throughout the individual specifications, the materials of construction and paint systems to be used for some items are dependent on the specific environment types to which the items will be exposed.
- B. These environment types are:
 - 1. Interior, dry.
 - 2. Interior, wet.
 - 3. Submerged.
 - 4. Corrosive.
 - 5. Exterior.
- C. As an example, the required material for a pipe support may be galvanized steel if the environment type where the support is to be located is "exterior" and may be "stainless steel" if the environment type is submerged. The individual specifications define the materials of construction required for the various environment types, unless the material for the item is specifically called out otherwise in the Drawings or details.

- D. The "CLASSIFICATION OF ENVIRONMENTS TABLE" below identifies the environment types associated with the locations where the item(s) will be located.
- E. If a location employed in the design is not identified in the "CLASSIFICATION OF ENVIRONMENTS TABLE," the Contractor shall assume that the environment is either interior wet, exterior, or corrosive as applicable to the installation.

CLASSIFICATION OF ENVIRONMENTS TABLE			
FACILITY NUMBER	FACILITY	SPECIFIC LOCATION	ENVIRONMENT TYPE (See Note 1)
400	Dewatering Facility	Exterior Interior	Exterior Mildly Corrosive
401	Lime Building	Exterior Interior	Exterior Interior, wet, and Corrosive
403	Potassium Permanganate Storage & Feed Building	Exterior Interior	Exterior Interior, wet, and Corrosive
404	Sludge Processing & Loading Facility	Exterior Interior, Electrical Rooms Interior, all other areas	Exterior Interior, dry Interior, wet and Corrosive
420	Headworks Odor Control Systems	Exterior Chemical Building Electrical Room Pump Room	Corrosive Corrosive Interior, dry Interior, wet and Corrosive
410	Energy Recovery Facility	Exterior Interior	Exterior Corrosive
411	Power Generation Building	Exterior Pump and Process Areas Chemical Storage & Containment Area Electrical Room	Exterior Interior, wet and Corrosive Interior, Corrosive Interior, dry
500	Main Pump Station	Exterior Interior	Exterior Interior, wet

CLASSIFICATION OF ENVIRONMENTS TABLE			
FACILITY NUMBER	FACILITY	SPECIFIC LOCATION	ENVIRONMENT TYPE (See Note 1)
501	Main Pump Station Electric/Generator Building	Exterior Interior	Exterior Interior, dry
510	Rack & Chlorination Building	Exterior Interior	Exterior Corrosive
512	Grit Handling Building	Exterior Interior	Exterior Interior, wet, Corrosive
513	Screenings Garage (Truck Loading)	Exterior Interior	Exterior Interior, wet, Corrosive
514	Grit Chambers (covered)	Exterior Above top of tanks and channels Below top of tanks and channels	Exterior Corrosive Submerged
<p>Notes: "Submerged" is defined as below a plane even with the top of open water-holding basins; below the top of covered liquid holding tanks, wet wells, or structures; below top of channel walls, submersible pump stations, scum pits, and manholes; and below top of subgrade structures named above.</p>			

1.5 SUBMITTALS

- A. Refer to Section 01300, SUBMITTALS, and Contract Provisions, Article 3.
- B. The Owner will consider proposals by way of technical submittals for "alternate" and "or equal" materials, equipment, and/or methods other than those specified only when such proposals are accompanied by full and complete technical submittals which allow the Engineer to evaluate proposed "alternate" and "or equal" products and recommend their acceptance or rejection to Owner.
 - 1. Submit two sets of information, clearly identified by Specification Section and product or system. Failure to submit the requested information shall be considered appropriate cause for rejection of the "or equal." Any ambiguities shall also be cause for rejecting an "or equal."
 - 2. Submit, as a minimum the following (incl. those applicable to the item):

- a. All information listed in the Specifications specifying the product or system and not listed below.
- b. Complete description of the equipment, system, process, or function including a list of system components, features, dimensional and weight information on separate components and assemblies, drawings, catalog information and cuts, manufacturer's specifications, including materials.
- c. All differences between the specified product or system and the Specifications and the proposed "or equal" shall be clearly stated in writing. The proposed "or equal" Supplier shall perform a paragraph-by-paragraph review of the Specifications comparing the "or equal" with the Specifications. The proposed "or equal" Supplier shall perform a detailed review of all Drawings associated with the proposed "or equal" offering. Any differences with respect to the Specifications and Drawings shall be clearly identified and completely described. Any differences shall be appropriately indexed by Specification section paragraph/subparagraph number and/or Drawing number including applicable plan, section, and/or detail designation.
- d. Addresses and phone numbers of nearest service centers and a listing of the manufacturer's or manufacturer's representative's services available at these locations.
- e. Addresses and phone numbers for the nearest parts warehouses capable of providing full parts replacement and/or repair services shall be provided.
- f. A list of installations where similar equipment by the manufacturer has been in service for a minimum of five (5) years; include contact name, telephone number, mailing address, and the names of the engineer, owner, and installation contractor.
- g. Detailed information on structural, electrical, mechanical, and all other changes or modifications necessary to adapt the equipment or system to the arrangement shown and/or functions described on the Drawings and in the Specifications.
- h. Any additional space requirements necessary to provide the minimum clear space around the equipment as shown.
- i. Any requested exceptions to the Contract Documents.
- j. Affect on construction schedule if "or equal" accepted.

1.6 ALTERNATE AND "OR EQUAL" PRODUCTS

- A. Whenever more than one item of Material or Equipment is specified or described in the Contract Documents by using the names of proprietary items or the names of a particular manufacturer, the Material or Equipment item used as the basis of design may not be listed first.
- B. Whenever an item of Material or Equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular manufacturer, the specification or description is intended to establish the type, function and quality required. Unless the specification or description contains or is followed by words reading that "no like," "no equivalent," "no substitution," or "no alternate" is permitted, other items of Material or Equipment may be accepted by Owner under the following circumstances:
1. "Or Equal":
 If in Owner's sole discretion an item of Material or Equipment proposed by Contractor is equivalent to or better in form, function, performance, reliability, quality, features, materials of construction, operation and maintenance cost, static and dynamic loads, general dimensional configuration, size, weight and appearance to that named and sufficiently similar so that no change in related Work will be required, it may be considered by Owner as an "or equal" item.
 2. "Alternate" Items:
 If in Owner's sole discretion an item of Material or Equipment proposed by Manufacturer does not qualify as an "or equal" item, it will be considered a proposed "alternate."
 - a. Contractor shall submit sufficient information to allow Owner to determine that the item of Material or Equipment proposed is an acceptable "alternate" item.
 - b. Requests for review of proposed "alternate" items of Material or Equipment will not be accepted by Owner from anyone other than Contractor. If Contractor wishes to furnish or use a "alternate" item of Material or Equipment, Contractor shall first make written application to Owner for acceptance thereof, certifying that the proposed "alternate" will perform adequately the functions and achieve the results called for by the general design, be similar in substance to that specified, and be suited to the same use as that specified.
 - c. The application will state the extent, if any, to which the evaluation and acceptance of the proposed "alternate" will prejudice Contractor's timely achievement of Project Milestones, whether or not acceptance of the "alternate" for use in the Work will require a change in any of the Contract Documents (or in the provisions of

any other direct contract with Owner for work on the Project) to adapt the design to the proposed "alternate" and whether or not incorporation or use of the "alternate" in connection with the Work is subject to payment of any license fee or royalty.

- d. All variations of the proposed "alternate" from that specified will be identified in the application and available maintenance, repair and replacement service will be indicated. The application will also contain an itemized estimate of all costs (Contractor's responsibility) or credits due the Owner that will result directly or indirectly from acceptance of such "alternate", including costs of redesign and claims of other contractors affected by the resulting change, all of which will be considered by Owner in evaluating the proposed "alternate". Owner may require Contractor to furnish additional data about the proposed "alternate."

3. Substitute Construction Methods or Procedures:

If a specific means, method, technique, sequence or procedure of construction is shown or indicated in and expressly required by the Contract Documents, Contractor may furnish or utilize a substitute means, method, technique, sequence or procedure of construction acceptable to Owner. Contractor shall submit sufficient information to allow Owner, in Owner's sole discretion, to determine that the substitute proposed is equivalent to that expressly called for by the Contract Documents. The procedure for review by Owner will be similar to that provided in subparagraph above for "alternate" items.

4. Engineer's Evaluation:

The Engineer will be allowed a reasonable time within which to evaluate each proposal or submittal. The Engineer will be the sole judge of acceptability.

- a. No "or equal" or "alternate" item will be purchased or manufactured without Engineer's prior written acceptance which will be evidenced by approved shop drawings and an approved Change Order.
- b. Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any approved "or equal" or "alternate".
- c. Engineer will record time required by Engineer and it's Consultants in evaluating "alternate" proposed or submitted and in making changes in the Contract Documents (or in the provisions of any other direct contract with Owner for work on the Project) occasioned thereby. Whether or not Engineer accepts an

“alternate” item so proposed or submitted by Contractor, Contractor shall reimburse Owner by way of a deductive change order for the charges of Engineer and Engineer's Consultants for evaluating each such proposed “alternate” item at the rate of \$125/hr.

- C. Listing of proposed "alternates," "or equal" items, or “substitution” methods.
 - 1. With consideration of the additional evaluation time necessary for Engineer’s review of these items, indicate on the Contractor's Submittal Schedule and Project Schedule for each item the review status (either "alternate," "or equal," or "substitution method") and estimated submission date.
 - 2. Contractor, in indicating the review status of the proposed item, acknowledges that the time allowed in the Contract Documents for Engineer’s review on the current project schedule is sufficient only to allow Engineer to accomplish review for specified items/methods and not necessarily sufficient to perform a review for proposed "or equal," "alternate," or "substitution method" status or a subsequent review for the specified product if the proposed "or equal," "alternate," or "substitution method" is not approved.
 - 3. Engineer may return unreviewed those submissions (i) not shown on the current project and submittal schedules, (ii) for which the review status differs from that indicated on the accepted list unless previously approved in writing by Engineer, (iii) not in accordance with the requirements of this section, (iv) which are incomplete, or (v) which are uncertified, in which case Contractor shall provide the specified product.
- D. Submit in accordance with Section 01300, SUBMITTALS.
- E. Disposition in accordance Section 01300, SUBMITTALS.
- F. Performance Record of “Alternate” or “Equal” products.
 - 1. Any product proposed as an “alternate” or “equal” to the material or equipment specified must have a minimum of five (5) years of continuous, satisfactory performance in a similar installation.
 - 2. Any product that can not be documented as having a minimum of five (5) years of satisfactory experience, as determined by the Owner, will not be considered.

PART 2 PRODUCTS

2.1 GENERAL

- A. Provide manufacturer's standard Products suitable for required service conditions unless otherwise specified in the Specifications.
- B. Like Products furnished and installed in the Work shall be of the same manufacturer and of the same series or family of models to achieve standardization for appearance, operation and maintenance, spare parts and replacement, and manufacturer's services and shall implement the same or similar process instrumentation and control functions.
- C. Equipment, Components, Systems, Subsystems: Design and manufacture with due regard for health and safety of operation, maintenance, and accessibility, durability of parts, and comply with applicable OSHA, state, and local health and safety regulations.
- D. Provide Products listed by UL wherever standards have been established by that agency.
- E. Product Finish:
 - 1. Provide manufacturer's standard finish and color, except where a specific finish and color is indicated in the Contract Documents.
 - 2. If applicable, in accordance with Section 09900, Painting and Protective Coatings, or individual specification sections.
- F. Provide interchangeable components of the same manufacturer, for similar components, unless otherwise specified.
- G. Spare Parts: Furnish to the Owner through the Construction Manager as required, complete, prior to Owner Beneficial Occupancy, Substantial Completion, or Final Acceptance, whichever occurs first. Furnish spare parts and extra materials as specified in the supplement to this section.

2.2 FABRICATION AND MANUFACTURER

- A. General:
 - 1. Manufacture parts to USA standard sizes and gauges.
 - 2. Two or more items of the same type shall be identical, by the same manufacturer, and interchangeable.

3. Design structural members for anticipated shock, vibratory and other expected loads.
4. Use ½"-inch minimum thickness for steel that will be submerged, wholly or partially, during normal operation.
5. Modify standard products as necessary to meet performance Specifications.
6. Comply with Contract Provisions concerning "Buy American."
7. Comply with the Contract provisions concerning the "Steel Procurement Act."

PART 3 EXECUTION

3.1 DELIVERY AND INSPECTION

- A. Contractor procured Materials and Equipment: Will be inspected by the Contractor. Inspect Materials and Equipment for signs of any deleterious effects of shipment and/or storage. Do not install Material or Equipment showing such effects. Remove damaged Material or Equipment from the site and expedite delivery of identical new Material or Equipment. Delays to the Work resulting from Material or Equipment damage which necessitates procurement of new products will be considered delays within Contractor's control.
- B. Deliver products F.O.B. the Jobsite in accordance with the accepted current project schedule and coordinate to avoid conflict with Work and conditions at the site. Deliver anchor bolts, embedded items, and templates sufficiently early to permit setting prior to placement of structural concrete. Coordinate deliveries with Construction Manager and Project Schedule to avoid long-term storage on site.
- C. Deliver products in undamaged condition, in original container or packaging, with identifying labels intact and legible. Include on label date of manufacture and shelf life, where applicable. Include UL labels on products so specified.
- D. Owner-furnished Materials will be inspected jointly by the Owner and Contractor upon delivery or turnover to Contractor. Once accepted in writing by the Contractor, the Contractor will assume all storage, handling and insurance responsibilities for these Owner-furnished Materials.
- E. Should the Owner, or Owner's representative, choose to conduct an inspection of the construction operations on site, at an off-site manufacturing facility, at an off-site storage facility, or any operation related to the Work, the following conditions shall be provided by the Contractor:

1. Owner shall have the full cooperation and assistance of the Contractor, Supplier, Manufacturer, warehouse, or other persons with whom the Contractor has contracted.
2. Owner shall have the full access to the facilities to be inspected, at all reasonable times.
3. If required by the Owner, the Contractor shall arrange for safe access, adequate and conveniently located office or working space, and any assistance that may be reasonably needed for conducting these inspections.

3.2 HANDLING, STORAGE, AND PROTECTION

- A. Handle all products in accordance with the manufacturer's written instructions, and in a manner to prevent damage. Store products, upon delivery, in accordance with manufacturer's instructions, with labels intact and legible, in approved storage yards or sheds provided in accordance with Section 01500, Construction Facilities and Temporary Controls. Provide manufacturer's recommended maintenance during storage, installation, and until products are accepted for use by Owner.
- B. Arrange storage in a manner to provide easy access for Owner inspection. Make periodic inspections of stored products to assure that products are maintained under specified conditions, and free from damage or deterioration. Keep running account of products in storage to facilitate inspection and to estimate progress payments for products delivered but not installed in the Work.
- C. Store fabricated products aboveground, on blocking or skids, and prevent soiling or staining. Store loose granular materials in a well-drained area on solid surfaces to prevent mixing with foreign matter. Cover products that are subject to deterioration with impervious sheet coverings; provide adequate ventilation to avoid condensation.
- D. Store finished products that are ready for installation in dry and well ventilated areas. Do not subject to extreme changes in temperature or humidity.
- E. Hazardous Materials: Prevent contamination of personnel, the storage building, and the site. Meet the requirements of the product specifications, codes, and manufacturer's instructions. Make MSDS available at construction site and submit to Construction Manager, if requested.
- F. Submit record of equipment maintenance to Construction Manager if requested.

3.3 PREPARATION FOR SHIPMENT

- A. When practical, factory assemble products. Match mark or tag separate parts and assemblies to facilitate field assembly. Cover machined and unpainted parts that may be damaged by the elements with a strippable protective coating.
- B. Package products to facilitate handling and protect from damage during shipping, handling, and storage. Mark or tag outside of each package or crate to indicate its purchase order number, bill of lading number, contents by name, Project contract name and number, Contractor, equipment number, and approximate weight. Include complete packing lists and Bills of Materials with each shipment.
- C. Spare Parts, Special Tools, Test Equipment, Expendables, and Maintenance Materials:
 - 1. Properly package to avoid damage, in original cartons insofar as possible. Replace parts damaged or otherwise inoperable.
 - 2. Firmly fix to, and prominently display on, each package.
 - a. Minimum 3-inch by 6-inch manila shipping tag with the following information printed clearly:
 - 1) Manufacturer's part description and number.
 - 2) Applicable Equipment description.
 - 3) Equipment number.
 - 4) Quantity of parts in package.
 - 5) Equipment manufacturer.
 - 6) Applicable Specification section.
 - 7) Name of Contractor.
 - 8) Project name.
 - 3. Deliver Materials to site or off-site storage area as directed by the Construction Manager.
 - 4. Notify Construction Manager 24 hours in advance of arrival of all deliveries.
- D. Protect all Products from exposure to the elements and keep thoroughly dry and dust-free at all times. Protect painted surfaces against impact, abrasion, discoloration, or other damage. Grease or oil all bearings and similar items.
- E. Request a minimum 7-day advance notice of shipment from manufacturers.

- F. Shop Test Results: Reviewed and accepted by Engineer before product shipment as required in individual specification sections.

3.4 INSTALLATION

- A. Drawings show general locations of equipment, devices, and raceway, unless specifically dimensioned.
- B. No shimming between machined surfaces is allowed.
- C. Install Work in accordance with the specified Standards unless otherwise specified.
- D. Touch up painted surfaces that are damaged prior to equipment acceptance in accordance with specifications.
- E. Handle, install, connect, clean, condition, and adjust Products in accordance with manufacturer's instructions and as may be specified. Retain a copy of manufacturers' instruction at site, available for review at all times.
- F. For Material and Equipment specifically indicated or specified to be reused in the Work:
 - 1. Use special care in removal, handling, storage, and reinstallation to assure proper function in the completed Work.
 - 2. Arrange for transportation, storage, and handling of products that require offsite storage, restoration, or renovation. Include costs for such Work in the Contract Price.

3.5 MATERIAL AND EQUIPMENT QUALITY CONTROL

- A. The Contract Documents require certain shop, acceptance and performance testing. All testing shall be performed in accordance with accepted test procedures. The test criteria and obligations of the Contractor during these tests are more specifically described in Divisions 2-16.
 - 1. Shop Test: Testing that is done by the manufactures at the place of manufacture, assembly, or testing facility for the purpose of proving that Material and/or Equipment meet the technical requirements of the contract documents before shipment to the Jobsite.
 - 2. Acceptance and Performance Testing: Reference Specification Section 01650 - FACILITY START-UP. --(Not Used)--

- B. Where Specifications call for shop testing to be witnessed, notify Construction Manager for coordination not less than 14 calendar days prior to scheduled test date, unless otherwise specified.

- C. Calibration Instruments: Calibration Instruments shall bear the seal of a reputable laboratory certifying that instruments have been calibrated within the previous 12 months to a standard endorsed by the National Institute of Standards and Technology (NIST). Submit substantiating calibration documentation for Owner's records upon request.

--END OF SECTION--

**SECTION 01640
MANUFACTURERS' SERVICES**

PART 1 GENERAL

1.1 DEFINITIONS

- A. Reference the Contract Provisions.
- B. Person-Day: One person for eight (8) continuous working hours regardless of time of day.
- C. Owner-furnished equipment Supplier: The party under separate contract with Owner to furnish identified equipment, and responsible for specified services during facility startup.
- D. Time periods: Those given in the supplements at the end of this section for field services by representatives and each type of field service to be provided, as further described in Article 6, are approximate and may be redistributed by the Owner, at its sole discretion, to meet the needs of the Work. This Contract is based upon the Owner's purchasing of the amounts of time for each Component of Work, and the Owner shall be entitled to receive the total of the number of days listed for all field activities for any such purposes it may deem necessary or appropriate.

1.2 SUBMITTALS

- A. Training Materials:
 - 1. Furnish complete training materials, to include operation and maintenance data as required in this section.
- B. Quality Control Submittals: When specified in the individual Specifications, submit:
 - 1. Manufacturer's Certificate of Proper Installation: On form appended to this section.
 - 2. Testing Reports: For all Shop, Acceptance and Performance Testing required by the contract documents and performed.

1.3 OWNER-FURNISHED MATERIALS AND EQUIPMENT (NOT USED)

1.4 QUALIFICATION OF MANUFACTURER'S REPRESENTATIVE

- A. A Manufacturer's Representative shall be an authorized representative of the equipment manufacturer, factory trained, and experienced in the technical applications, installation, operation, and maintenance of respective equipment, subsystem, or system. Representatives are subject to acceptance by Owner and Engineer. No substitute representatives will be allowed unless prior written approval by Engineer has been given.

1.5 FULFILLMENT OF SPECIFIED MINIMUM SERVICES

- A. Where manufacturers' services are specified, furnish manufacturer's qualified representative.
 - 1. Where time is taken in excess of that stated in the Specifications by manufacturers' representative for reasons beyond the control of the Owner, additional time required to perform the specified services shall be considered incidental work.
 - 2. Where time taken by manufacturers' representative to perform the specified services is less than that stated in the Specifications, the value of the remaining time shall be credited to the Owner.
 - 3. Where time is taken by manufacturers' representative to perform additional services beyond the scope of that stated in the Specification, the value of the surplus time shall be added to the contract by a change order.
- B. Contractor will schedule their own and coordinate all Owner furnished equipment manufacturer onsite services to avoid conflicting with other onsite testing or other manufacturer's onsite services.
 - 1. Determine that all conditions necessary to require manufacturer services have been met before requesting same. Verify and coordinate with the Construction Manager.
- C. Only those days of service approved by Construction Manager will be credited to fulfill the specified minimum services. Manufacturer representative shall document all time spent on site with the Construction Manager.
- D. Time periods listed for manufacturers' services in the Supplements to this section are tabulated by Specification Section. In the event that different manufacturers furnish the same equipment under one specification section, both manufacturers

shall furnish the specified manufacturers' services for the required time periods.

E. Unless specified otherwise, manufacturer's on-site services shall include as a minimum:

1. Assistance during equipment installation to include observation, guidance, and instruction of Contractor's assembly, erection, installation and/or application procedures.
2. Inspection, checking, and adjustment as required for equipment to function as warranted by manufacturer and as necessary to furnish written approval of installation.
3. Revisiting the site as required to correct problems and until installation and operation are acceptable to the Owner.
4. Resolution of assembly or installation problems attributable to, or associated with, respective manufacturer's products and systems.
5. Taking the lead role in conducting respective acceptance testing, performance testing, startup activities, and until product acceptance by the Owner.
6. Training of Owner's personnel in the operation and maintenance of respective equipment as required herein.
7. Completion of Manufacturer's Certificate of Proper Installation (form enclosed at end of this section) with applicable certificates for proper installation, testing and service.
8. Reporting to the Construction Manager any unusual circumstances that occur during installation and testing that may require additional manufacturer representative time at the jobsite which would cause the stipulated time in the contract to be exceeded.

1.6 TRAINING SCHEDULE (NOT USED)

1.7 TRAINING PLAN (NOT USED)

1.8 TRAINING COORDINATION MEETING (NOT USED)

1.9 TRAINING OWNER'S PERSONNEL (NOT USED)

1.10 TRAINING EVALUATION (NOT USED)

1.11 SUPPLEMENTS

- A. The supplements listed below, following "END OF SECTION," are part of this Specification.
 - 1. Forms: Manufacturer's Certificate of Proper Installation.
 - 2. Section 01640 – Manufacturer's On-site Services.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION

3.1 MANUFACTURER REPRESENTATIVE FIELD INSPECTIONS

- A. This applies to Owner as well as Contractor furnished Equipment and Material
- B. The purpose of the Manufacturer Representative's field inspections is to assure the Work has been constructed and/or installed in accordance with the Contract Documents including the design Drawings, Specifications, and any Manufacturer's recommendations. The Contractor shall coordinate all inspections through the Construction Manager.
- C. The Manufacturer Representative shall exercise particular care to verify all component interconnecting facilities and such other Items of a critical nature to the proper and safe operation of the Work are in place, protected or otherwise ready for start-up and initial operations.
- D. The Manufacturer Representative's inspections shall include, but will not be limited to, the following points as applicable: soundness of construction and/or installed equipment, if any (without cracked or otherwise damaged parts); completeness in all details, as specified; correctness of setting, alignment and relative arrangement of various parts; adequacy and correctness of all interface connections, utilities and necessary support facilities.
- E. All Defective or deficient construction, materials, components or workmanship disclosed through these inspections and tests shall be repaired, replaced or corrected immediately under the supervision of the manufacturer's representative, or provisions shall be made by the Contractor for their prompt repair, replacement or correction. The remedial work shall be done at the expense of the responsible party as determined by the Owner.

- F. No electrical power shall be turned on to any of the Work until the Manufacturer's Representative has inspected the construction and/or installed items and certified that the construction and/or installation is satisfactory; that the electrical power may be applied; and that nothing in the construction and/or installation shall negate any warranty which covers any portion of the Work and the Manufacturer Representative has submitted a signed writing verifying the above.

--END OF SECTION--

MANUFACTURER'S CERTIFICATE OF PROPER INSTALLATION

PROJECT: ROOF MODIFICATIONS FOR SCREENINGS GARAGE AND POWER GENERATION BUILDING

CONTRACT NO.: 1714 EQPT. SERIAL NO.: _____

EQUIPMENT NO.: _____ EQPT/SYSTEM: _____

SPEC. SECTION: _____

I hereby certify that the above-referenced equipment/system has been:

(Check Applicable)

- Installed in accordance with Manufacturer's recommendations and approved shop drawings.
- Inspected, checked, and adjusted.
- Serviced with proper initial lubricants.
- Electrical and mechanical connections meet required quality and safety standards.
- All applicable safety equipment has been properly installed.
- Acceptance and performance tested, and meets or exceeds specified performance requirements.
(See attached testing report.)

Comments: _____

I, the undersigned Manufacturer's Representative, hereby certify that I am (i) a duly authorized representative of the manufacturer, (ii) empowered by the manufacturer to inspect, approve, and operate his equipment and (iii) authorized to make recommendations required to assure that the equipment furnished by the manufacturer is complete and operational, except as may be otherwise indicated herein. I further certify that all information contained herein is true and accurate.

Date: _____, 20____

Manufacturer: _____

By Manufacturer's Authorized Representative: _____
(Authorized Signature)

MANUFACTURERS ON-SITE SERVICES

Notes: Number of trips refers to separate, non-consecutive visits to the ALCOSAN plant site. A "person-day" is one person for eight consecutive working hours regardless of the time of day.

ITEM	REQUIREMENTS	NUMBER OF TRIPS	Time in Person-Days	
			Assistance during preparation, installation, and inspection	Acceptance/Performance Testing, and Certificate of Proper installation
Screenings Garage Roof	See Specifications	2	1	1
Power Generation Building Roof	See Specifications	4	2	2
Dewatering Building Roof	See Specifications	2	1	1

**SECTION 01700
CONTRACT CLOSEOUT**

PART 1 GENERAL

1.1 SUBMITTALS

- A.. Contract Closeout Submittals: Submit as required under the Contract Provisions and Specification Section 01300, SUBMITTALS prior to a request for Certificate for Substantial Completion or Final Acceptance.

1.2 RECORD DOCUMENTS

- A. Definition: Record Drawings and As-Built Drawings (including Technical Specifications) as required under the Contract Provisions.

- B. Quality Assurance:

1. Furnish qualified and experienced person, whose duty and responsibility shall be to maintain all contract as-built documents.
2. Accuracy of Records:
 - a. Coordinate changes within all contract as-built documents, making legible and accurate entries on each page of Specifications, each sheet of the Drawings, and all other contract documents where such entry is required to show change.
 - b. Purpose of as-built documents is to document factual information regarding aspects of Work, both concealed and visible, to enable future modification of Work to proceed without lengthy and expensive site measurement, investigation, and examination.
3. Record information concurrently with construction progress and within 24 hours after receipt of information that change has occurred. Do not cover or conceal Work until required information is recorded.
4. Prior to submitting each request for progress payment, request Construction Manager's review and approval of current status of as-built drawings and Engineer's review and approval of as-built drawing status. Failure to properly maintain, update, and submit as-built documentation may result in a deferral by Construction Manager to recommend the whole

or any part of the Contractor's Application for Payment, either partial or final.

1.3 RELEASES FROM AGREEMENTS

- A. Furnish Owner written releases from any or all subcontractors or suppliers or the like who performed Work or supplied labor, materials or services pursuant.
- B. In the event Contractor is unable to secure written releases, inform the Owner of the reasons:
 - 1. Owner or its representatives will examine the site and/or Work, and Owner will direct Contractor to complete Work that may be necessary to satisfy terms of the agreement.
 - 2. Should Contractor refuse to perform this Work, Owner reserves the right to have it done by separate contract and deduct the cost of same from the Contract Price, or require the Contractor to furnish a satisfactory Bond in a sum to cover legal claims for damages.

PART 2 - PRODUCTS (Not Used)

PART 3 EXECUTION

3.1 MAINTENANCE OF AS-BUILT DOCUMENTS

- A. As-Built: Drawings and Technical Specifications
 - 1. Delete Engineer's title block and seal from all documents.
 - 2. Label or stamp each as-built document with title, "AS-BUILT DOCUMENTS," in neat large printed letters.
 - 3. Record information concurrently with construction progress and within 24 hours after receipt of information that change has occurred. Do not cover or conceal Work until required information is recorded.
- B. Record Drawings: All final shop drawings shall be submitted with a label or stamp "RECORD DRAWINGS" in neat large letters.
 - 1. Procedure
 - a. Make all corrections and add full information on the originally

approved shop drawings and furnish to the Owner through the Construction Manager.

- b. Submit four (4) sets of Record Drawings/Certified Vendor Drawings.
- c. Mark drawings "Record Drawings" and all changes made and notes added shall be clearly indicated and keyed to a legend of revisions made to the Drawings.

C. Preservation:

- 1. Maintain all record and as-built documents in a clean, dry, legible condition and in good order. Do not use record or as-built documents for construction purposes.
- 2. Make record and as-built documents and samples available at all times for observation by Construction Manager and Engineer.

D. Making Entries on As-Built Drawings (including Technical Specifications):

- 1. Using an erasable colored pencil (not ink or indelible pencil), clearly describe change by graphic line and note as required.
 - a. Color Coding:
 - (1) Green when showing information deleted from Documents.
 - (2) Red when showing information added to Documents.
 - (3) Blue and circled in blue to show notes.
- 2. Date entries.
- 3. Call attention to entry by "cloud" drawn around area or areas affected.
- 4. Legibly mark to record actual changes made during construction, including, but not limited to:
 - a. Coordinates and elevations of various elements of structures at top, bottom, inside and outside corners of all slabs, walls, footings and grade beams.
 - b. Location of internal utilities and appurtenances concealed in the construction referenced to visible and accessible features of the structure.
 - c. Locate existing facilities, piping, equipment, and items critical to the interface between existing physical conditions or construction and new construction at every vertical and/or horizontal change in

- direction triangulated to permanent structures.
- d. Changes made by Addenda and Field Orders, Work Change Directive, Change Order, Written Amendment, and Engineer's written interpretation and clarification using consistent symbols for each and showing appropriate document tracking number.
5. Dimensions on Schematic Layouts: Show on as-built drawings, by dimension, the centerline of each run of items such as are described in previous subparagraph above.
- a. Clearly identify the item by accurate note such as "cast iron drain," "galv. water," and the like.
 - b. Show, by symbol or note, vertical location of item ("under slab," "in ceiling plenum," "exposed," and the like).
 - c. Make identification so descriptive that it may be related reliably to the Technical Specifications.
6. Technical Specifications: Legibly mark to record and reference actual changes made during construction, including, but not limited to:
- a. Approved changes to material, equipment or construction procedures referencing the document (RFI, CO, Addendum, Shop Drawing Submittal, etc.) that authorized the change.
 - b. Note all changes to material and equipment design, performance and maintenance criteria.

3.2 FINAL CLEANING

- A. At completion of Work or of a part thereof and immediately prior to Contractor's request for Certificate of Substantial Completion; or if no Certificate is issued, immediately prior to Contractor's notice of completion, clean entire site or parts thereof, as applicable.
 - 1. Leave the Work and adjacent areas affected in a cleaned condition satisfactory to Owner.
 - 2. Remove grease, dirt, dust, paint splatter, stains, labels, fingerprints, and other foreign materials from exposed surfaces.
 - 3. Repair, patch, and touch up marred surfaces to specified finish and match adjacent surfaces.
 - 4. Broom clean exterior paved driveways and parking areas.

5. Hose clean sidewalks, loading areas, and others contiguous with principal structures.
 6. Rake clean all other surfaces.
 7. Leave water courses, gutters, and ditches open and clean.
- B. Use only cleaning materials recommended by manufacturer of surfaces to be cleaned.

--END OF SECTION--

ARTICLE 6

DIVISION 2

SITE WORK

**SECTION 02050
DEMOLITION**

PART 1 GENERAL

1.1 WORK INCLUDED

- A. Unless specifically noted otherwise, all work shall be performed in accordance with the requirements of the Contract Documents, including the General Conditions of these specifications.
- B. The Contractor shall provide all labor, materials, equipment, tools, and incidentals as shown, specified and required for demolition, removals, and disposal Work.
- C. The Work under this Specifications section includes, but is not necessarily limited to demolition and removal of existing materials as shown or indicated in the Contract Documents. The Work includes demolition of roofs and related appurtenances at the Screenings Garage (Building 513), Power Generation Building (Building 411), and Dewatering Building (Building 400).
- D. The Contractor shall contact the OWNER prior to starting work on this portion of the Contract and also during construction to determine the exact location of any existing structures or conduit, which would be in the area of or which, would be affected by, the Contractor's operation. The Contractor shall relocate or mark if removal is not required and protect any facility.
- E. The Contractor assumes all responsibility and liability for all property damage and bodily injury that may result from his damaging or disturbing any structures, facilities, water and gas mains, electric conduits, sewer lines, etc. and for all damages to utilities, structures, power lines, gas, water, sewers, etc., resulting from operation. He shall restore same to their original condition as soon as possible and prior to completion of work.
- F. The Contractor shall pay all costs associated with transporting and, as applicable, disposing of materials resulting from demolition and removals Work.

1.2 QUALITY ASSURANCE

- A. Referenced Standards:
 - 1. National Fire Protection Association (NFPA):
 - a. 241, Safeguarding Construction, Alteration, and Demolition Operations.

B. Regulatory Requirements:

1. Demolition, removals, and disposal Work shall be in accordance with 29 CFR 1926.850 through 29 CFR 1926.860 (Subpart T – Demolition), and all other Laws and Regulations.
2. Comply with requirements of authorities having jurisdiction.

1.3 SUBMITTALS

A. Quality Control Submittals:

1. Schedule phased demolition in accordance with Sequence of Work found in Section 01050, CONSTRUCTION SEQUENCING and consistent with the progress schedule specified in Section 01310 CONTRACTOR'S PROJECT SCHEDULE.
2. Methods of demolition and equipment proposed to demolish each structure.
3. Copies of any authorization and permits required to perform work.
4. Copies of permits for the transport and disposal of debris.

B. Demolition and Removal Plan:

1. Schedule of phased demolition as part of and consistent with the progress schedule specified in Section 01310, CONTRACTOR'S PROJECT SCHEDULES.
2. Methods of demolition and equipment proposed to demolish the Screenings Garage roof, Power Generation Building roof, and select areas or items of the Dewatering Building roof.
3. Contractor shall outline in his Demolition plan method to prevent debris from falling into the paved and grassed areas.
4. Copies of any authorizations and permits required to perform work. Submit demolition plan for OWNER approval. Demolition plan must be approved prior to the start of demolition.

C. Contract Closeout Submittals: as part of and consistent with Section 01700, CONTRACT CLOSEOUT.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION

3.1 SCOPE OF WORK

- A. The Contractor shall perform the demolition shown on the drawings, including the following:
- B. Removal of roof materials, insulation, any flashing coverings, stone ballast material from Screenings Garage, Power Generation Building, and Dewatering Building. Chutes shall be used as appropriate to minimize dust and contain the debris field. The Contractor shall not be permitted to throw or drop materials from the roof to the ground level at any time.
- C. All roof material, insulation, stone ballast, flashing coverings and any other debris from the demolition shall be removed from the site by the Contractor and disposed of in the appropriate manner at no additional cost to the OWNER.
- D. All demolition work shall be sequenced in accordance with Section 01050, CONSTRUCTION SEQUENCING.
- E. The Contractor shall consult the Drawings and make any necessary pre-bid field visits to determine the scope of the demolition and removal work.

3.2 PREPARATION

- A. Notify OWNER to turn off affected utility services before starting demolition.

3.3 DISPOSAL

- A. Remove and dispose of debris and other non-salvaged materials off-site in licensed landfill.

---END OF SECTION---

ARTICLE 6

DIVISION 7

THERMAL AND MOISTURE PROTECTION

**SECTION 07510
BUILT-UP BITUMINOUS ROOFING**

PART 1 GENERAL

1.1 SUMMARY

- A. Furnish all labor, materials, equipment and incidentals required for the repair of built-up bituminous roofing system and related work at the Dewatering Building (Building 400) as shown on the Drawings and as specified herein.
- B. Provide repaired built-up bituminous roofing system to match the current built-up roof system at existing building construction.
- C. Remove and dispose of existing materials as required immediately prior to new materials installation.

1.2 SCOPE OF WORK.

- A. The scope of work is further defined as follows:
- B. Replacement of wet/soft insulation: Small areas (approximately 2 ft x 2 ft, and 2 ft x 1 ft) of the existing isocyanurate insulation in two locations in the southeastern corner of the roof appear to be soft/wet, and shall be replaced with new insulation material to match existing insulation.
- C. Repair of Built-up Roof System: Following replacement of wet insulation, repair built-up roof to match existing system. A sheet showing the existing roof build up profile is included in the Appendix to this specification.
- D. Repair of Flashing: Flashing membrane along the eastern edge of the roof gravel stop/cant appears weathered and has areas of alligatoring present. Apply protective elastomeric coating system (base coat and topcoat) to existing flashing as specified herein.
- E. Repair of Pitch Pockets: There are seventy-one (71), 8" x 8" roof pitch pockets (or roof penetration pans). For each pitch pocket, the top layer of existing elastomeric material shall be removed (typically the top 1-2"); the metal penetration, support or tube shall be cleaned to bare metal and coated with rust inhibitive primer; new elastomeric material shall be poured into the top of pocket to seal the penetration as specified herein.

- F. Replace missing fascia from gravel stop assembly: Approximately 110 feet of fascia from the existing gravel stop assemblies on the north and south perimeters of the building are missing. Furnish and install new fascia to match existing. A detail of the original gravel stop/fascia assembly is included in the appendix to this specification.

1.3 REFERENCE STANDARDS

- A. The following is a list of standards that may be referenced in this section:
1. American Society for Testing and Materials (ASTM):
 - a. C552-91, Standard Specification for Cellular Glass Thermal Insulation.
 - b. C578-87a, Standard Specification for Preformed, Cellular Polystyrene Thermal Insulation.
 - c. C726-88, Standard Specification for Mineral Fiber Roof Insulation Board.
 - d. C728-91, Standard Specification for Perlite Thermal Insulation Board.
 - e. C984-83, Standard Specification for Perlite Board and Rigid Cellular Polyisocyanurate Composite Roof Insulation.
 - f. D41-85, Standard Specification for Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing.
 - g. D312-89, Standard Specification for Asphalt Used in Roofing.
 - h. D1227-87, Standard Specification for Emulsified Asphalt Used as a Protective Coating for Roofing.
 - i. D1863-86, Standard Specification for Mineral Aggregate Used on Built-Up Roofs.
 - j. D2178-89, Standard Specification for Asphalt Glass Felt Used in Roofing and Waterproofing.
 - k. D2829-76, Sampling and Analysis of Built-Up Roofs, Standard Practice for (R 1986).
 - l. D3672-86, Standard Specification for Venting Asphalt-Saturated and Coated Inorganic Felt Base Sheet Used in Roofing.
 - m. D4586-86, Standard Specification for Asphalt Roof Cement, Asbestos-Free.
 - n. D4601, Standard Specification for Asphalt-Coated Glass Fiber Base Sheet Used in Roofing.
 2. Factory Mutual (FM): Loss Prevention Data, 1983.

- a. 1-28S, Wind Uplift Pressure on Roofs.
3. National Roofing Contractor's Association (NRCA) – Roofing and waterproofing manual.
4. Federal Specifications (FS): HH-1-1972/2, Insulation Board, Thermal, Polyurethane or Polyisocyanurate Faced with Asphalt/Organic Felt or Asphalt/Glass Fiber Felt on both sides of the Foam.
5. Uniform Building Code (UBC) Standard, 32-4, Roof Construction and Covering, Roof Insulation.
6. Where reference is made to one of the above standards, the revision in effect at the time of bid opening shall apply.

1.4 SUBMITTALS

A. Shop Drawings:

1. Materials proposed for use, including roofing materials, insulation, coatings, fascia, sealant, and fasteners.
2. Roofing materials Manufacturer's product data sheets and installation guidelines.

B. Quality Control Submittals:

1. A letter from roofing manufacturer stating roofer is approved by manufacturer to install and repair roof and roof components.
2. Manufacturer's Field Service Reports.

C. Contract Closeout Submittals:

1. Record drawing of completed repair work.

1.5 QUALITY ASSURANCE

A. Installer:

1. Trained and approved, authorized or licensed by the roofing system Manufacturer to install the Manufacturer's products and perform maintenance-type repairs with its products.
2. Have a minimum of 5 years of experience in the installation and repair of roofing and flashing systems specified.

B. Pre-roofing Conference:

1. Attendees: Conduct pre-roofing conference with the following present: Owner and/or Owner's representatives, Construction Manager, Contractor, Roofer, Manufacturer's representative for roofing system materials, and all other subcontractors likely to be on the roof.
2. Agenda: Review of roofing system repair methods, materials, and details.
3. Document proceedings, including corrective measures or actions required, and furnish copy of record to each participant.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Deliver materials in Manufacturer's original, unopened containers and rolls with labels intact and legible. Labels on bitumen must show composition, softening point (SP) range, minimum flashpoint (FP), minimum finished blowing temperature (BT), and equiviscous temperature (EVT) range.
- B. Handle roll goods so as to prevent damage to edge or ends. Store roll goods on end.
- C. Store rigid roof insulation materials on clean, raised platforms.
- D. Protect materials against direct sunlight, wetting, moisture absorption, mud, dust, sand, oil, grease, dirt, and construction traffic.

1.7 ENVIRONMENTAL REQUIREMENTS

- A. Temperature:
 1. Apply roofing only in dry weather and when ambient temperature is above 40 degrees F.
 2. When temperature is below 45 degrees F, application must be approved by, and under supervision of, roofing materials Manufacturer.
- B. Do not apply roofing membrane to damp or frozen deck surface or when precipitation is occurring.
- C. Do not expose materials vulnerable to water or sun damage in quantities greater than can be weatherproofed the same day:

PART 2 PRODUCTS**2.1 EXISTING BUILT-UP ROOFING SYSTEM**

- A. The following are details for the existing roofing system installed at the Dewatering Building (Building 400). Installation on this roof was completed in October 2000. Further details of construction (including manufacturer's cut sheets and product data) can be found in the Appendix section at the end of this specification.
- B. General
 - 1. Fire-retardant, gravel surfaced built-up bituminous roofing system selected from Manufacturer's specifications.
 - 2. Materials: UL listed with finished assembly classified "A".
 - 3. All Materials: Furnished to match existing roofing system Manufacturer
- C. Non-nailable Deck, Manufacturer's specifications: Johns Manville; 4GIG.

2.2 EXISTING ROOFING MATERIALS

- A. Primer: ASTM D41-85 asphalt.
- B. Asphalt:
 - 1. For roof slopes up to 1/2 inch per foot: ASTM D312, Type II low slope asphalt.
 - 2. For slopes more than 1/2 inch per foot and less than 3 inches per foot: ASTM D312, Type III steep asphalt.
- C. Felt Base Sheet: ASTM, 4601-89, type II asphalt-coated glass fiber mat.
 - 1. As manufactured by roofing system materials Manufacturer.
- D. Vented Base Sheet: Asphalt-coated glass fiber mat with mineral granules and pattern embossing to allow venting below the sheet meeting the requirements of ASTM D3672-86,
 - 1. As manufactured by roofing system materials Manufacturer.
- E. Finishing or Roofing Felt: ASTM D2178, Type IV or VI asphalt-coated glass fiber mat.
 - a. Johns Manville; GlasPly IV.

- F. Sheathing Paper: Rosin-sized building paper weighing 5 pounds per 100 square feet (2.5 kg per 10 sq.m) as manufactured by roofing system materials Manufacturer.

- G. Composition Flashing:
 - 1. Flashing sheet combining SBS polymer modified bitumen, polyester reinforcement, and mineral surfacing for application in hot asphalt as manufactured by:
 - a. Johns Manville, DynaFlex.

- H. Fasteners:
 - 1. Into Insulation and Fiberboard: A case-hardened, polymer coated, hex head #12 or #14 Screw for use in securing roof insulation to a metal, sizes 2 7/8" or larger to accommodate the crickets.
 - a. UltraFast Screw/Plate, Johns Mansville.
 - 2. Into Wood: Zinc-coated, 12-gauge roofing nails with 1-inch diameter metal caps or heads and deformed shanks.
 - 3. Into Metal Deck: Fasteners as manufactured or approved by roofing system materials Manufacturer.

- I. Surfacing Gravel:
 - 1. Dense, well-worn river-run, hard, durable, and surface-dry, free of dust, clay, loam, sand, or other foreign substances and meeting the requirements of ASTM D1863, size No. 67.
 - 2. Minimum Bulk Density: 60 pounds per cubic foot.
 - 3. 100 percent shall pass on a 3/4-inch sieve, with no more than 5 percent passing on a No. 8 sieve or 15 percent passing on a No. 4 sieve.
 - 4. Color: Match existing roof gravel.

- J. Plastic Roof Cement: ASTM D4586, Type II.
 - 1. Johns Manville, MBR Utility Cement.

- K. Roof Walkways: Slip-resistant asphalt plank, minimum size 1/2-inch thick by 1-foot by 2-foot, surfaced with ceramic granules to match existing roof color, as manufactured by:

1. Johns Manville, DynaTred.

2.3 EXISTING RIGID ROOF INSULATION

- A. Expanded Perlite Board: ASTM C728, minimum size 2 feet by 4 feet, as manufactured by:
 - a. Johns Manville; Fesco Board.
- B. Polyisocyanurate Foam Board: Federal Specification HH-I-1972 GEN and HH-I-1972/2 with Factory Mutual Class I approval, minimum size 2 feet by 4 feet, as manufactured by:
 - a. Johns Manville; Ultragard (Tapered Ultragard used at crickets) and E'NRG'Y 2.

2.4 EXISTING TAPERED EDGE, CRICKETS, AND CANT STRIPS

- A. Johns Manville; Tapered Fesco Board, used at drain sumps.
- B. Johns Manville; FesCant Plus Cant Strip, used at vertical corners.

2.5 EXISTING GRAVEL STOP/FASCIA SYSTEM

- A. Manufacturer: Atas International, Inc.
 1. Style STS480, 0.050-inch Aluminum, with Kynar 500 Finish in Dove Grey.
- B. Provide fascia in lengths required from original manufacturer, or shop fabricate and finish coat to match existing. Existing fascia sections are 8.5-inches x 10-ft sections (typical length).

2.6 COATING FOR ROOF EDGE FLASHING

- A. One-part acrylic elastomeric roof coating. Manufacturer: Johns Manville.
 1. Primer/Basecoat: Topgard Base Coat.
 - a. Application: 1 coat, 20 mils thickness (wet).
 2. Finish Coat: Topgard 4000.
 - a. Application: 1 coat, 20 mils thickness (wet).

2.7 POURABLE SEALER FOR PITCH POCKETS

- A. Two-part, elastomeric, liquid-applied flashing material, for use with Built-Up Roof membrane products. Manufacturer: Johns Manville.
 - 1. Flashing Cement: MBR Flashing Cement.
 - 2. Utility Cement: MBR Utility Cement.
 - 3. Primers:
 - 1. Permaflash Primer: For use with MBR Flashing Cement.
 - 2. Asphalt Primer: For use with MBR Utility Cement.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Conduct thorough inspection of the Dewatering Building roof system with Construction Manager:
 - 1. Check full field of roof for areas of soft/wet insulation.
 - 2. Check all pitch pockets (penetration pockets).
 - 3. Check roof edges and flashings (for alligatoring and cracking).
 - 4. Check gravel stop/fascia assemblies.
- B. Report immediately to Owner cracks, breaks, holes, or other unusual irregularities in the surface.

3.2 REPLACEMENT OF SOFT/WET INSULATION AND REPAIR OF BUILT UP ROOF SYSTEM

- A. General:
 - 1. System Installation:
 - a. Do not phase application of roofing system.
 - b. Install all components of an assembly, including surfacing, over area covered in 1 day.
 - c. Seal off edges of system at the end of the day with one layer of mopped-in felt.

2. Asphalt:
 - a. Maintain kettle temperature so as not to exceed the flashpoint of the asphalt.
 - b. Apply asphalt at the equiviscosity temperature, plus or minus 25 degrees F.
 - c. Do not exceed the finish blowing temperature.
 - d. Moppings Between Layers: Range from 20 to 25 pounds per square.
3. Felts:
 - a. When applying felts, thoroughly, uniformly, and firmly broom felts into asphalt as they are rolled out.
 - b. Broom from center of felt to edge removing all air bubbles from under felts.
 - c. Asphalt should be visible at all laps on completion.

B. Insulation:

1. Keep insulation dry before and during application.
2. Apply rigid insulation in accordance with insulation and roofing materials Manufacturer's specifications.
3. Over Vapor Retarder: Apply insulation in flood coat of steep asphalt.
4. Over Wood and Steel Decks: Apply insulation in two layers with staggered joints. Position first layer so edges are supported by roof deck. Mechanically fasten to the deck to meet Factory Mutual I-90 windstorm resistance classifications.
5. On Concrete Decks: Apply insulation to fully primed deck with flood coat of steep asphalt in quantity as recommended by roofing materials Manufacturer.
6. Where more than one layer of insulation is used, secure second layer to previous layer with flood coat of steep asphalt in quantity as recommended by roofing materials Manufacturer. Place insulation immediately into applied asphalt and then press into place to ensure embedment.
 - a. Lay tapered insulation, where applicable, in accordance with insulation Manufacturer's instructions.
7. When tapered blocks are urethane or polystyrene foam, overlay with 3/4-inch minimum thickness of perlite or fibrous glass board before applying roofing membrane.

C. Preparation

1. Remove existing gravel, roof membrane and wet/soft insulation.
2. Inspect deck for damage and notify Owner of areas that appear wet or deteriorated.

D. Surfacing

1. Apply built-up roofing system (membrane, insulation, felts, bitumen, flashing, surfacing, etc.) to match existing Johns Manville, Type 4GIG, Built-Up Roof (BUR) system, with the same materials, in the same number of layers of materials, and in accordance with the Johns Manville Manufacturer's specifications and installation instructions. Reference Roof Build Up Profile in the Appendix to this specification.
2. Cover repaired area with three layers of felt:
 - a. Solid mop each layer into place in hot bitumen.
 - b. Overlap test cut area 3 inches on all sides with first layer.
 - c. Lap each succeeding layer 3 inches on all sides over layer below.
3. Evenly distribute gravel and ensure bond with flood coat. Extend gravel to bottom edge of cant strips.

3.3 REPAIR OF FLASHING

- A. Rake back existing gravel to expose flashing membrane along perimeter of roof.
- B. Membrane surface shall be clean, dry, and free of any dirt, grease, oil or other debris that may interfere with proper adhesion of coatings. Sweep or vacuum flashing membrane surface as needed.
- C. Examine flashing membrane for areas of weathering and alligating.
- D. Base/Primer Coat: Using a brush, roller, or spray equipment, apply 1-coat of Base/Primer Coat at a 20 wet mil thickness to areas of weathering and alligating.
 1. Temperatures must be 50F and rising during time of application.
 2. Do not apply within 24 hours of anticipated rain, dew, or freezing temperatures.

3. Allow Base/Primer Coat to dry (normally of 4 – 12 hours) prior to applying Top Coat. Cooler temperatures and high humidity will slow cure time.
- E. Top/Finish Coat: Using a brush, roller, or spray equipment, apply 1-coat of Top/Finish Coat at a 20 wet mil thickness to areas of weathering and alligating.
1. Temperatures must be 50F and rising during time of application.
 2. Do not apply within 24 hours of anticipated rain, dew, or freezing temperatures.
 3. Allow Base/Primer Coat to dry (normally of 4 – 12 hours) prior to applying Top Coat. Cooler temperatures and high humidity will slow cure time.
- F. After Top/Finish Coat has completely dried, rake gravel back into place over coated flashing membrane.

3.4 REPAIR OF PITCH POCKETS (PENETRATION POCKETS)

- A. Remove existing layer of dried and cracked elastomeric material from top of pitch pocket, taking care to not damage or deform existing metal pocket or penetration (metal support, tubes, pipe). Existing layer of elastomeric material is typically 1-2 inches in depth. Below this elastomeric material, the remaining depth of the pocket is filled with grout.
- B. Mechanically clean penetration to bare metal to remove any rust or flaking/peeling coatings on penetration.
- C. Prime inside of metal pocket with primer. Apply primer using a brush or spray equipment according to manufactures' directions. Allow primer to fully dry.
- D. Prime surface of metal penetration to 3-inches above penetration pocket. Apply primer using a brush or spray equipment according to manufactures' directions. Allow primer to fully dry.
- E. Prepare 2-part Flashing Cement according to manufacturers' mixing instructions.
- F. Pour Flashing Cement into pocket to level slightly above pocket edges; use a trowel to spread the material to obtain a full coverage coating to all edges of pocket and metal penetration. Slope flashing cement in manner to prevent ponding of rainwater.
 1. Apply Flashing Cement at temperatures between 40F and 100F.

3.5 REPLACEMENT OF FASCIA/GRAVEL STOP

- A. Install missing fascia in sections fabricated, cut-to-size (typically 10-ft lengths) and coated to match existing manufacturer's system.
- B. Attach new sections of fascia to gravel stop assembly (snap-on/friction fit).
- C. Use sheet metal screws every 12" inches to attach fascia to building exterior to provide additional reinforcement.

3.6 MANUFACTURERS' SERVICES

- A. As specified in Section 01640, MANUFACTURERS' SERVICES.

3.7 CLEANUP

- A. Upon completion of the roofing installation, clean the site as follows:
 - 1. Dispose of waste material and debris resulting from this operation offsite.
 - 2. Remove spots and smears of asphalt or other material resulting from Work from flashings, gravel stops, and other surfaces not intended to be coated with such material.
 - 3. Do not damage surfaces during removal.
 - 4. Use solvents, if necessary, to satisfactorily clean the materials.
 - 5. Replace damaged surfaces resulting from the above operation at no additional compensation.

---END OF SECTION---

Appendix to Specification 07510

Installation Details

1. Built-Up Roofing: Johns Manville 4GIG System
 2. Gravel Stop-Fascia Assembly
 3. Pitch Pocket Detail (JM Roof Penetration Pan)

1. Built-Up Roofing: Johns Manville 4GIG System

1. Built-up Roofing:
Johns Manville 4GIG System

ALLEGHENY COUNTY SANITARY AUTHORITY
OPERATION & MAINTENANCE MANUAL

CONTRACT 1540A
DEWATERING BUILDING ROOF AND WINDOW
REPLACEMENT, GENERAL

CONTRACT 1540A - GENERAL

BUILDING MATERIALS

DEWATERING BUILDING (400)

DIVISIONS 2-9

Mascaro Construction Company L.P.
1720 Metropolitan Street
Pittsburgh, PA 15233
412-321-4901

QC Submittal

Accepted for Record Purposes Rejected - See Remarks

The review of this submittal has been a general check to ascertain conformance with the Specification's requirements.

Acceptance does not relieve Supplier/Contractor from responsibility of compliance with all requirements of the Contract Documents.

Date: December 20, 2001

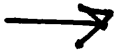
By: Michael W. Moran

ALCOSA's SPM (with amendments & legal: 2/20/01)

Cm Maintenance Support Group

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ONE		Metal Wall Panels	07412
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	3	Panel Finish Warranty	
	4	Product Test Data	
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FOUR		Paint	09900
	1	Product Data	
	2	Special Guarantee	



Mascaro Construction Company L.P.
 1720 Metropolitan Street
 Pittsburgh, PA 15233
 412-321-4901

Built Up Roofing

07510

Contractor: Mascaro Construction Company L.P.
1720 Metropolitan Street
Pittsburgh, PA 15233
412-321-4901

Installer: Phoenix Roofing, Inc.
P.O. Box 50
Imperial, PA 15126
724-695-3530

Manufacturer: Johns Manville
717 17th Street
Denver, CO 80277-5708
800-231-1064

Supplier: Northcoast Commercial Roofing Systems
79 North Industrial Park
211 Overlook Drive, Bay 7
Sewickley, PA 15143
800-441-8391

Mascaro Construction Company L.P.
1720 Metropolitan Street
Pittsburgh, PA 15233
412-321-4901

Built Up Roofing

07510

1. Installation Details

**Mascaro Construction Company L.P.
1720 Metropolitan Street
Pittsburgh, PA 15233
412-321-4901**

07510-2, 1, 2, B, 5

ROOF BUILD UP

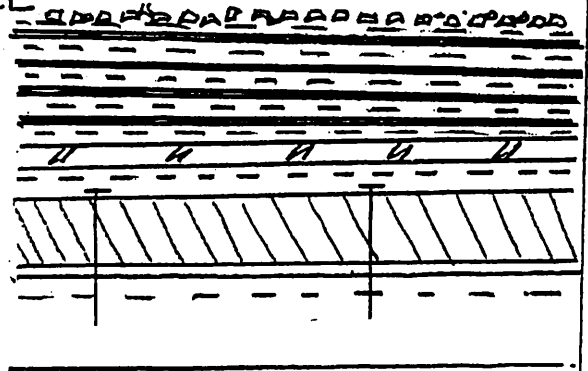
FOOD COAT TYPE II ASPH. & GRAVEL

4 PLY TYPE IV IN TYPE II ASPH.

3/4" PERLITE IN TYPE II ASPH.

TAPERED ISO INSOL. / MECH. FAST.

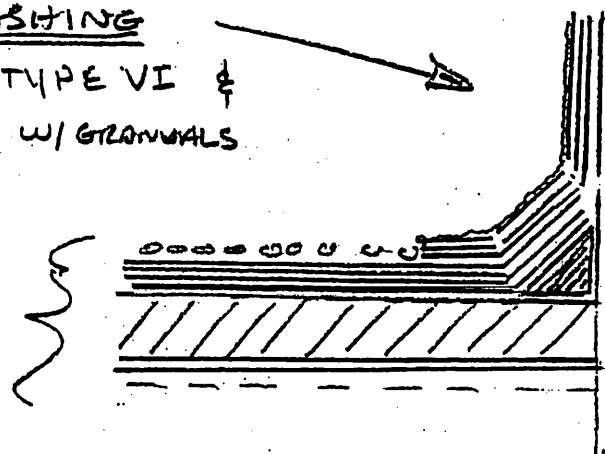
EXISTING METAL DECK



FLASHING

2 PLY TYPE VI &
1 PLY W/ GRANULARS

BUILT-UP ROOFING
SYSTEM

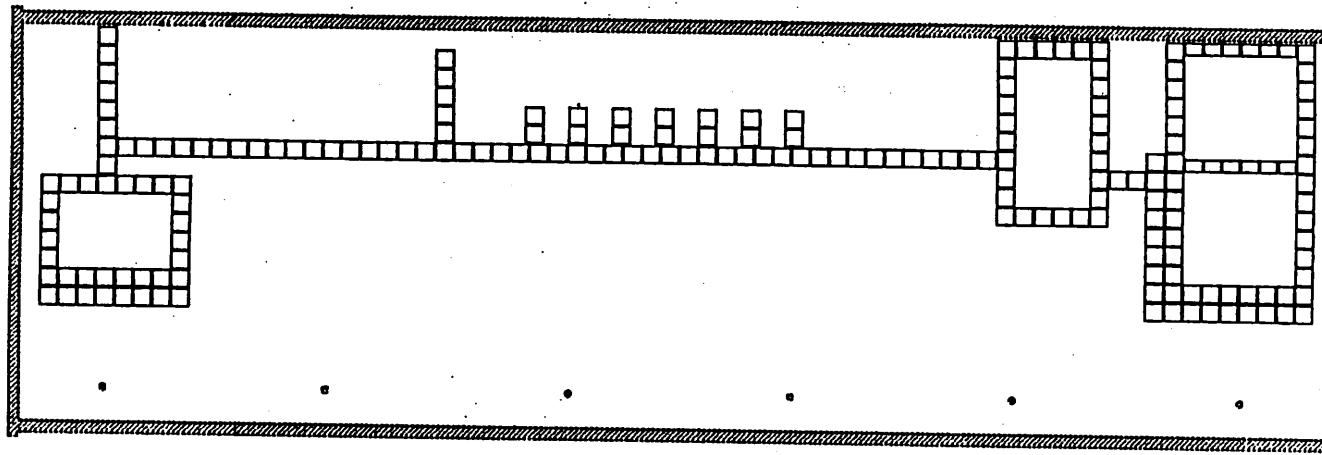


<p>MANVILLE ROOF BUILD-UP SPEC 4GIG ALCOSAN DEWATERING BLOG.</p>	<p>ALCOSAN 1540 A PHOENIX ROOFING INC. BY RJ DATE 7/18/00</p>
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ALCOSAN DEWATERING BUILDING

CONTRACT 1540 MASCARO CONSTRUCTION CO, L.P.

WALKPAD LAYOUT



SCALE: N.T.S.

PHOENIX ROOFING, INC.
MJE

Built Up Roofing

07510

2. Product Data

**Mascaro Construction Company L.P.
1720 Metropolitan Street
Pittsburgh, PA 15233
412-321-4901**



Johns Manville

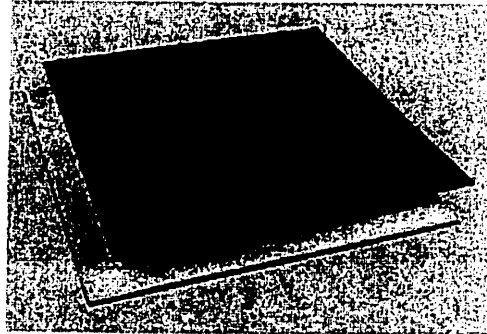
Commercial/Industrial Roofing Systems

DynaTred™

Walkway

Description

DynaTred Walkways are preformed, skid-resistant boards consisting of modified asphalt, reinforcements and fillers with a ceramic granule surface on both sides. They are durable, resilient and maintenance free.



Use

DynaTred Walkways can be installed over built-up and modified bitumen roofing systems to provide an integral, skid-resistant walkway for demanding service access needs.

If installed in hot asphalt, use the same asphalt recommended for use with the BUR or modified bitumen membrane. All four corners of each piece should be fully and firmly set prior to walking on the board.

Leave a minimum of 1" (25 mm) open space in all directions between walkway boards to provide for drainage of the roofing system.

DynaTred Walkways are not recommended for use on slopes in excess of 2" (51 mm).

Advantages

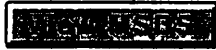
- Long-lasting roof protection
- Skid-resistant surface
- Durable, resilient and maintenance free
- Can be easily cut with a heavy-duty utility knife or circular saw with a carbide-tipped blade

Typical Physical Properties

Thickness DynaTred 5/16" (8 mm)	2 lbs/ft ² (9.8 kg/m ²)
Dimensions Width Length Thickness	32" (813 mm) ± 1/4" (6.4 mm) 32" (813 mm) ± 1/4" (6.4 mm) 5/16" (8 mm) ± 1/16" (1.6 mm)
Color DynaTred	Black/White or White/White
Water Absorption	<0.5%

Sizes

32" x 32" (813 mm x 813 mm) in thicknesses of 5/16" (8 mm) for DynaTred;



RS-4117 5-1998

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* DYNA TRED COLOR
TO BE WHITE/WHITE

PLEASE
CHOOSE
COLOR

PER JM WEBSITE "J-WALK" DOES NOT EXIST
AS SPECIFIED IN 07510-2, K.

Built-Up Roofing

Product	Use	Description	Size	Standard
GlasPly Premier	Ply	Premium, asphalt-coated, wet process fiber glass ply sheet for use in BUR and MB systems	5 sq. (46.5 m ²) roll	ASTM D 2178, Type VI
PermaPly-R	Ply	Premium, asphalt-coated, continuous strand fiber glass ply sheet for use in BUR and MB systems	5 sq. (46.5 m ²) roll	ASTM D 2178, Type VI
GlasPly IV	Ply	Asphalt-coated, fiber glass ply sheet for use in BUR and MB systems	5 sq. (46.5 m ²) roll	ASTM D 2178, Type IV
GlasBase P10s	Base	Premium, rubber-modified, asphalt-coated, fiber glass base sheet for use in BUR and MB systems	3 sq. (27.9 m ²) roll	None
GlasBase	Base	Premium, asphalt-coated, non-porous, fiber glass base sheet for use in BUR and MB systems	3 sq. (27.9 m ²) roll	ASTM D 4601
PermaPly 28	Base	Asphalt-coated, fiber glass base sheet for use in BUR and MB systems	3 sq. (27.9 m ²) roll	ASTM D 4601
Ventsulation	Base	A premium, asphalt-coated, granular, embossed, venting base sheet for use over wet fill decks or in recover applications with BUR and MB systems	1 sq. (9.3 m ²) roll	ASTM D 4897, Type II
GlasTite Flexible	Flashing	Durable polyester/glass scrim reinforced, asphalt-coated flashing sheet for use in BUR systems	½ - 1½ sq. (4.6 - 13.9 m ²) roll	None
GlasKap	Cap	Mineral-surfaced, asphalt-coated, fiber glass cap sheet for use in BUR systems	1 sq. (9.3 m ²) roll	ASTM D 3909
Industrial Roof Cement	Cement	Medium troweling, cut-back asphalt mastic reinforced with non-asbestos fibers for general use in BUR systems	5 gal. (18.9 liter) can	ASTM D 4586, Type II
Bestile Cement	Cement	Medium to heavy troweling, cut-back asphalt mastic reinforced with non-asbestos fibers and special mineral stabilizers for use in vertical flashing applications in BUR systems	5 gal. (18.9 liter) can	ASTM D 4586, Type II
Cold Application Cement	Cement	A heavy brushing, cut-back, non-asbestos, asphalt cement for use in cold-applied BUR	5 gal. (18.9 liter) can	ASTM D 3019, Type II
Topgard Type F	Coating	Medium brushing, cut-back asphalt coating reinforced with non-asbestos fibers for use as a top coat on smooth surfaced BUR	5 gal. (18.9 liter) can	ASTM D 4479, Type II
Topgard Type C	Coating	Medium brushing, non-fibrated, cut-back asphalt used as a top coat for smooth surfaced BUR on slopes greater than ½" per foot (41.6 mm/m)	5 gal. (18.9 liter) can	ASTM D 4479, Type II
Topgard Type A	Coating	A brush grade coating, consisting of aluminum flakes suspended in an emulsified asphalt, for use on smooth surfaced BUR	5 gal. (18.9 liter) can	None
Topgard Type B	Coating	Clay stabilized, water-based asphalt emulsion, with non-asbestos reinforcing fibers for use on smooth surfaced BUR	5 gal. (18.9 liter) can	ASTM D 1227, Type IV
Topgard Type E (West coast only)	Coating	Clay-stabilized, water-based, non-fibrated asphalt emulsion used as top coating on clean, smooth-surfaced BUR	5 gal. (18.9 liter) can	ASTM D 1227, Type III
Fibrated Aluminum Roof Coating	Coating	Cut-back, asphalt-based, non-asbestos, fiber reinforced, highly reflective aluminum coating for use on smooth surfaced BUR	5 gal. (18.9 liter) can	ASTM D 2824, Type III
Concrete Primer	Primer	Thin, cut-back asphalt used to prepare porous roof surfaces to receive hot asphalt and enhance adhesion	5 gal. (18.9 liter) can	ASTM D 41
Aquapatch Cement	Cement	Cut-back asphalt mastic, reinforced with non-asbestos fibers, formulated for use over both wet and dry surfaces	5 gal. (18.9 liter) can	ASTM D 4586, Type II

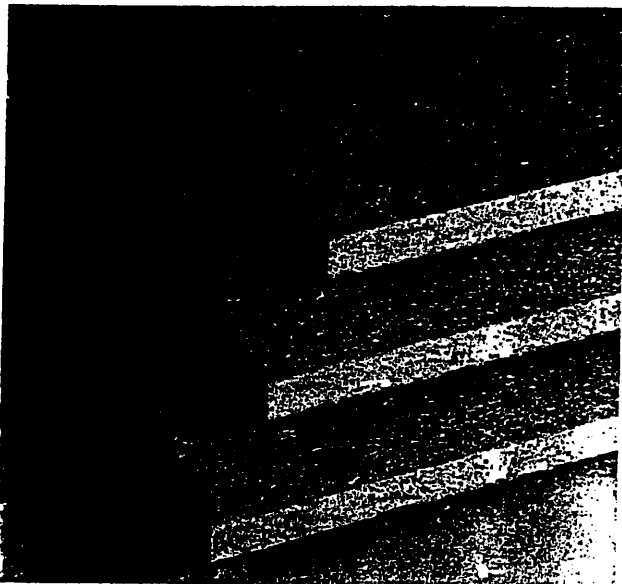
Modified Bitumen Products

Product	Use	Description	Size	Standard
DynaKap	Cap	A premium fiber glass mat and polyester mat reinforced, granular-surfaced, SBS modified bitumen cap sheet	¾ sq. (7.0 m ²) roll	ASTM D 5147*
DynaKap FR	Cap	A fire-resistant, premium, fiber glass mat and polyester mat reinforced, granular-surfaced, SBS modified bitumen cap sheet	¾ sq. (7.0 m ²) roll	ASTM D 5147*
DynaPly	Cap	A premium, smooth-surfaced, fiber glass mat and polyester mat reinforced, SBS modified bitumen cap sheet for use in gravel-surfaced, modified bitumen systems	1 sq. (9.3 m ²) roll	ASTM D 5147*
DynaGlas	Cap	A premium, fiber glass mat reinforced, granular-surfaced, modified bitumen cap sheet	1 sq. (9.3 m ²) roll	ASTM D 5147*
DynaGlas FR	Cap	A premium, fiber glass mat reinforced, granular-surfaced, modified bitumen cap sheet for use in fire-rated systems	1 sq. (9.3 m ²) roll	ASTM D 5147*
DynaGlas 30 FR	Cap	A fiber glass mat reinforced, granular-surfaced, modified bitumen cap sheet for use in fire-rated systems	1 sq. (9.3 m ²) roll	ASTM D 5147*
DynaLastic 180	Cap	A 180 gram polyester mat reinforced, granular-surfaced, modified bitumen cap sheet	1 sq. (9.3 m ²) roll	ASTM D 5147*
DynaLastic 180 FR	Cap	A 180 gram polyester mat reinforced, granular-surfaced, modified bitumen cap sheet for use in fire-rated systems	1 sq. (9.3 m ²) roll	ASTM D 5147*
DynaBase	Base	An SBS modified bitumen coated, fiber glass reinforced base sheet	1½ sq. (13.9 m ²) roll	ASTM D 5147*
DynaFlex	Flashing	A flexible polyester/glass scrim reinforced, granular-surfaced flashing sheet	¼ - ¾ sq. (2.3 - 7.0 m ²) roll	ASTM D 5147*
MBR Flashing Cement	Cement	A two-part, urethane-based, trowelling grade, elastomeric adhesive for use with SBS modified bitumen and BUR flashing	5½ gal. (20.8 liter) can	None
MBR Bonding Cement	Cement	A two-part, urethane-based, elastomeric interply adhesive for use with cold applied SBS modified bitumen and BUR systems	5½ gal. (20.8 liter) can	None
MBR Utility Cement	Cement	A one-part, trowelling grade, elastomeric adhesive for use as a utility adhesive with SBS modified bitumen and BUR systems	5 gal. (18.9 liter) can	None
MBR Cold Application Cement	Cement	A one-part, elastomeric interply adhesive for use with SBS modified bitumen systems	5 gal. (18.9 liter) can	None

* Material tested in accordance with ASTM D 5147, "Standard Test Methods for Sampling and Testing Modified Bituminous Sheeting Material". Product standards for modified bitumen products are currently under development by ASTM.

Fesco Board Roof Insulation

For Built-Up, Modified Bitumen and Single Ply Roofing Systems



Description

Fesco Board is a homogeneous board, composed of expanded perlite, a volcanic ore, blended with selected binders and fibers. The perlite particles are subjected to intense heat which causes them to expand approximately fifteen times their original size. The resulting glass-like beads contain air cells which provide high insulating efficiency.

The top surface of Fesco Board is sealed with Top-Loc[®] coating to ensure positive adhesion of a built-up or modified bitumen membrane. The minimum recycled content is 25% by weight.

Application

Fesco Board is a rigid, thermal roof insulation for use in built-up, modified bitumen and some single ply roofing systems. It may be applied using hot bitumen and/or mechanical fasteners.

Sizes

Fesco Board is available in 24" x 48" (0.61 m x 1.22 m) and 48" x 48" (1.22 m x 1.22 m) boards in standard thicknesses of 3/8", 1/2", and 3/4". Other sizes are available on request.

Advantages

Fesco Board complies with Environmental Protection Agency Regulation 40 CFR Part 248, Guideline for Federal Procurement of Building Insulation Products Containing Recovered Materials, as a recycled product approved for use on any project using federal funds.

Strength and Durability. When applied over rigid decks, Fesco board's high laminar tensile strength resists damage from on-the-job and maintenance traffic, offers an excellent substrate for all roofing membranes, and effectively bridges flute openings in metal decks.

Dimensional Stability. Because of its perlite composition and low water absorption rates, Fesco Board is dimensionally stable over a wide range of weather conditions.

Fire Resistance. Fesco Board has excellent fire resistance and is approved for use in FM and UL approved constructions.

Mopping Surface. Fesco Board provides an excellent base to receive a built-up or modified bitumen membrane. It has excellent compatibility with hot bitumen.

Good Adhesion. The top surface of Fesco Board is sealed with Top-Loc coating to control the penetration of mopping bitumen, helping to ensure proper adhesion of the roofing membrane.

Stable R-Value. Fesco Board has a stable R-value because it is composed of inorganic and fibrous materials.

Fesco Board Thermal Values

C-Value (Conductance)		R-Value (Resistance)		Thickness	
BTU/(hr·ft ² ·°F)	W/m ² ·°C	(hr·ft ² ·°F)/BTU	m ² ·°C/W	(in)	(mm)
0.48	2.73	2.08	.37	3/8	19

~~Tapered Fesco Board~~

~~Tapered Fesco Board is the low thermal product of choice for providing positive slope to drain on both new and reroof construction. It is available in 24" X 48" (0.61 m x 1.22 m) or 48" X 48" (1.22 m x 1.22 m) boards, custom cut and tapered to 1/8", 3/16", 1/4", or 1/2" per foot (10.4, 15.6, 20.8, or 41.6 mm/m) slope, depending on the need. For more information on Schuller tapered systems, refer to page 11-15.~~

Applicable Standards

Fesco Board complies with the material requirements of ASTM C 728.

Fesco Board has been rated in Factory Mutual fire and wind-resistant systems for BUR, single ply and modified bitumen constructions. This testing is specific to the roof deck, insulation, fastener, fastener pattern and the membrane. Space limitations preclude listing all approved combinations. For current information on Schuller FM approved systems, contact a Schuller Technical Service Specialist, Schuller Sales Representative or consult the current FM Approval Guide.

Fesco Board conforms to Underwriters Laboratories, Inc. Fire Hazard Classification, as a Roof Deck Construction Material (internal fire exposure) for use in Construction Numbers 1, 2, 156, 157, 158, and 374, and as a Built-Up Roof Covering Material (external fire). See the current UL Roofing Materials and Systems Directory. Material will have UL labels only when requested on the order.



Description

Schuller MBR Utility Cement is a specially formulated, trowel grade, modified asphalt adhesive designed for use with SBS modified bitumen flashing products. When cured, it forms a durable, elastomeric and watertight film. Unlike most other modified bitumen cold-process adhesives, this product will not damage the modified bitumen blend in the SBS sheet. MBR Utility Cement's formulation contains very low levels of petroleum spirits which make it compatible with all of the Schuller SBS modified bitumen and built-up roofing products.

Physical Properties

Schuller MBR Utility Cement is ready to use as shipped and is not to be thinned. It can be installed in temperatures between 40 and 100°F (4 and 38°C). However, when the temperature is below 50°F (10°C), the adhesive must be stored in a warm area, approximately 70°F (21°C). To minimize installation difficulties associated with cold weather applications, use the less viscous winter grade material. Also, completely unroll the modified bitumen sheets and allow them to relax at least 15 minutes prior to installation, turning light-colored sheets up-side-down (dark-side up) helps accelerate the process.

For best results, make certain the surface to which the cement will be applied is clean, dry and free of loose material. All masonry surfaces which are to receive MBR Utility Cement must be primed with Schuller Concrete Primer. The primer must be allowed to dry thoroughly before application of the cement.

Use a notched masonry trowel to spread the MBR Utility Cement evenly, about 1/8" (3 mm) thick, working down firmly to ensure good adhesion. Schuller DynaFlex®, our SBS modified bitumen flashing product, is embedded into the cement film and brushed or rubbed to make contact and ensure adhesion.

Use

MBR Utility Cement can be used as a substitute for asphalt and MBR® Flashing Cement in our modified bitumen flashing details. It can be used to adhere the Schuller DynaFlex SBS modified bitumen flashing system, and built-up roofing felts to vertical surfaces; as a general purpose mastic on most built-up roofing and modified bitumen flashing details; as a penetration pan sealer, or, to strip-in the laps of modified bitumen base flashings.

SBS modified bitumen sheets are very heavy. To prevent slippage when installed on a vertical surface, the sheets must be secured with nails or mechanical fasteners. If the surface to which the flashing material will be attached cannot accommodate nails or other fasteners, MBR Flashing Cement must be used in lieu of MBR Utility Cement.

Advantages

- Compatible with all SBS modified bitumen and built-up roofing membranes
- Cold process—does not have to be heated
- Cures to form a durable, elastomeric and watertight film
- Ready for use as shipped

Packaging

MBR Utility Cement is available in 5 gallon (18.9 liter) pails and has an approximate shipping weight of 10 pounds per gallon (1.2 kg/liter). It is available in either a winter or summer grade. Both formulas contain the same basic ingredients, but the consistency, or viscosity, is adjusted to accommodate the ambient weather conditions in which the adhesive will be applied.

Caution

MBR Utility Cement is a combustible material and should be shipped and stored away from open flames, heat or sources of ignition. Keep all pails tightly sealed while in storage. It should be used only in well ventilated areas. It may cause eye, skin and respiratory irritation, and is harmful or fatal if swallowed. Avoid contact with skin: use impervious clothing and rubber gloves to avoid prolonged or repeated contact with skin. Read container label and follow all safety and disposal instructions.





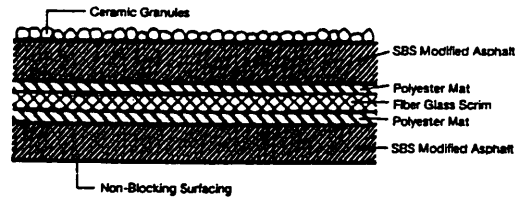
Physical Properties

Thickness	0.162 inches (4.1 mm)
Tensile Strength @ 0°F (-18°C)	
Machine Direction	160 lbs. force/in. width (28.0 kN/m)
Cross Machine Direction	130 lbs. force/in. width (22.8 kN/m)
Elongation @ 0°F (-18°C)	
Machine Direction	5.0%
Cross Machine Direction	5.5%
Tensile-Tear	
Machine Direction	255 lbs./in. (44.6 kN/m)
Cross Machine Direction	240 lbs./in. (42.0 kN/m)
Low Temperature Flexibility	0°F (-18°C)
Dimensional Stability	
Machine Direction	-0.10% change
Cross Machine Direction	-0.05% change

* Material tested in accordance with ASTM D-5147 Standard Test Methods for Sampling and Testing Modified Bituminous Sheet Materials.

Description

DynaFlex is an elastomeric, asphaltic blend product incorporating a strong, flexible fiber glass scrim and two, tough, puncture-resistant polyester mats in a blend of SBS (Styrene-Butadiene-Styrene) rubber and high quality asphalt. This elastomeric, asphaltic blend product has excellent weathering and elongation recovery properties. The elastomeric-based asphalt in the flashing has full recovery properties after 100% elongation and lends elasticity and flexibility to the product. The inorganic fiber glass reinforcing, in conjunction with the polyester mats, provides stability, toughness and flexibility to DynaFlex and resists moisture absorption. They also provide high tensile strength and afford better resistance to the factors which affect flashing performance. The covering layer of ceramic-coated roofing granules provides durability along with superior resistance to damage from weather. White granule products also provide heat reflectance.



Use

DynaFlex is engineered for use as a premium base flashing with modified bitumen and traditional built-up roofing membranes. DynaFlex is protected with factory-applied roofing granules and does not require any additional surfacing.

DynaFlex can be used on all traditional flashing details and membrane terminations. Its flexibility and conformability make it ideal for use on parapet walls, skylights, roof penetrations, drains, vents and roof edges.

DynaFlex should be installed with Type III or IV asphalt, at a temperature of 400°F (204°C) or at the EVT, whichever is higher, and mechanically fastened as prescribed in the installation specifications. DynaFlex may also be installed using MBR® Flashing Cement or MBR® Utility Cement.

Advantages

- Superior dual reinforcements
- Excellent elongation recovery properties
- Exceptional weatherability
- Conformable to flashing substrates
- Flexible and dimensionally stable

Sizes

Roll Size:			
25 sq. ft. (2.3 m ²)	37 sq. ft. (3.4 m ²)	75 sq. ft. (7.0 m ²)	
Roll Weight:			
26 lbs. (11.8 kg)	39 lbs. (17.7 kg)	77 lbs. (34.9 kg)	
Roll Length:			
25'0" (7.63 m)	25'0" (7.63 m)	25'0" (7.63 m)	
Roll Width:			
12" (305 mm)	18" (457 mm)	36" (914 mm)	



Description

Schuller GlasPly IV is a specially constructed ply felt that is formed by coating a Schuller wet-process fiber glass mat with a light film of asphalt which is then surfaced with a liquid parting agent that prevents sticking in the rolls while providing a clean, easy-to-mop surface. Laying lines are applied on the top surface of the felt so it can be installed with the exposure needed to provide the exact number of plies required by the specification.

Use

GlasPly IV is designed for use as a ply felt in hot bituminous roofing systems where it is used over nailable and non-nailable roof decks and over approved types of roof insulation. In these applications, GlasPly IV stabilizes the layers of bitumen, spans irregularities in the substrate, and provides strength and durability in the membrane assembly.

Physical Properties

GlasPly IV meets the requirements of ASTM D 2178, Type IV.

Breaking Strength (min.) lbf/in. (kN/m)	
Longitudinal (With the Fiber Grain)	44.0 (7.7)
Transverse (Across the Fiber Grain)	44.0 (7.7)
Net Dry Mass of Asphalt-impregnated Glass Felt (min.) lbs./100 ft ² (g/m ²)	
Average of All Rolls	7.0 (342)
Individual Rolls	6.0 (293)
Moisture at Time of Manufacture (max.)	1.0%
Mass of Desaturated Glass Felt (min.) lbs./100 ft ² (g/m ²)	
lbs./100 ft ² (g/m ²)	1.7 (83)
Bituminous Saturant (Asphalt) [min.] lbs./100 ft ² (g/m ²)	
lbs./100 ft ² (g/m ²)	3.0 (146)
Ash	70-88%
Parting Agent and Stabilizer (max.) lbs./100 ft ² (g/m ²)	
lbs./100 ft ² (g/m ²)	8.2 (400)

GlasPly IV has also been evaluated and approved for use in a variety of fire-rated constructions and is classified by Underwriters Laboratories, Inc. as a Type G-2 Coated Base Sheet and by Factory Mutual Research Corporation for use in approved FM constructions. Consult the Current UL Roofing Materials and Systems Directory and the FM Approval Guide for specific constructions.

Advantages

- Consistent tensile strength and tear resistance
- Controlled porosity allows the product to readily accept hot asphalt and disperse it throughout the entire felt and stabilizes the bitumen after cooling
- Readily accommodates gassing by venting volatile materials and moisture during application
- Low moisture absorption, excellent dimensional stability and resistance to rot makes it an ideal replacement for organic felt
- Easy to handle, lays flat, minimizes workmanship related problems
- Flexibility and conformability minimizes fishmouths, wrinkling and ridging

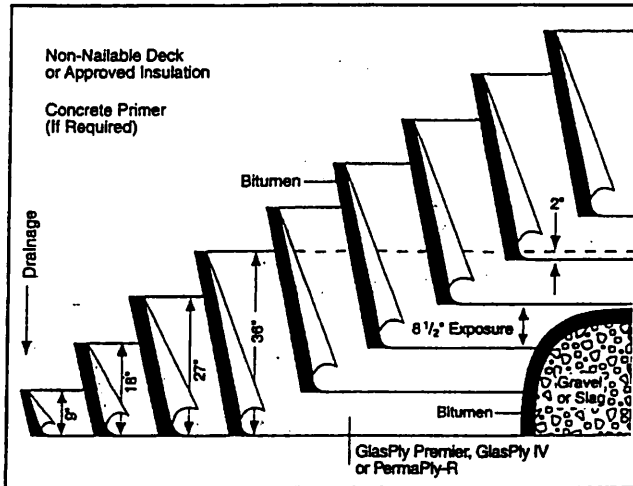
Sizes

Squares per roll	5 (46.5 m ²)
Roll weight	38 lbs. (17.2 kg)
Roll width	36" (0.92 m)
Roll length	180' (54.9 m)

Specification 4GIG**Four Ply
Gravel Surfaced
Fiber Glass Built-Up Roof**

For use over Schuller insulation, approved decks or other approved insulations, on inclines of up to 3" per foot (250 mm/m)

For Regions 1, 2 and 3

**General**

This specification is for use over any type of approved structural deck which is not nailable and which offers a suitable surface to receive the roof. Poured and pre-cast concrete decks require priming with Schuller Concrete Primer prior to application of hot bitumen.

This specification is also for use over Schuller roof insulations or other approved rigid roof insulations, which are not nailable and which offer a suitable surface to install the roof. Specific written approval is required for any roof insulation not manufactured or supplied by Schuller. Insulation should be installed in accordance with the appropriate Schuller Insulation Specification detailed in the current Schuller Commercial/Industrial Roofing Systems Manual. This specification can also be used in certain reroofing situations. Refer to the "Reroofing" section of the Schuller Commercial/Industrial Roofing Systems Manual. This specification is not to be used directly over poured or pre-cast gypsum or lightweight, insulating concrete fills.

Design and installation of the deck and/or substrate must result in the roof draining freely and to outlets numerous enough and so located as to remove water promptly and completely. Areas where water ponds for more than 24 hours are unacceptable and are not eligible to receive a Schuller Roofing Systems Guarantee.

Note: All general instructions contained in the current Schuller Commercial/Industrial Roofing Systems Manual should be considered part of this specification.

Flashings

Flashing details can be found in the "Bituminous Flashings" section of the Schuller Commercial/Industrial Roofing Systems Manual.

Application

Note: On roof decks with slopes up to 1" per foot (83.3 mm/m), the roofing felts may be installed either perpendicular or parallel to the roof incline. On slopes over 1" per foot (83.3 mm/m), refer to **Paragraph 6.11** of this section for special requirements.

Using **GlasPly Premier, PermaPly-R or GlasPly IV**, apply a piece 9" (229 mm) wide, then over that, one 18" (457 mm) wide, then over that, one 27" (686 mm) wide. Over these 3 partial sheets install a full width 36" (914 mm) piece. The following felts are to be applied full width, overlapping the preceding felts by 27 1/2" (699 mm) so that at least 4 plies of felt cover the substrate at all locations. Install each felt so that it is firmly and uniformly set, without voids, into the hot bitumen (within $\pm 25^{\circ}\text{F}$ [$\pm 14^{\circ}\text{C}$] of the EVT) applied just before the felt at a nominal rate of 23 lbs. per square (1.1 kg/m²), over the entire surface. Installation over porous substrates such as roof insulation may require up to 33 lbs. of hot bitumen per square (1.6 kg/m²).

Surfacing

Flood the surface with the appropriate bitumen at an approximate rate of 60 lbs. per square (2.9 kg/m²). Into the hot bitumen, embed an acceptable gravel at a rate of 400 lbs. per square (19.5 kg/m²) or an acceptable slag at a rate of 300 lbs. per square (14.6 kg/m²). Aggregate must be installed so that there is complete coverage across the entire surface and at least 50% of the aggregate is solidly adhered in the hot bitumen. Aggregate should meet the requirements of ASTM D 1863.

Asphalt should meet the requirements of ASTM D 312. The contractor must provide a Schuller confirmation number for asphalt on jobs which require a Guarantee. Check with a Schuller Technical Service Specialist for special requirements in hot climates.

Roof Insulation and Fasteners

Product	Use	Description	Thickness/ Fastener Length	Standard
½" Retro-Fit Board	Low Thermal	A high density, perlite based, utility board used in recover situations or as a cover board for closed cell plastic foam insulation boards	½" (13 mm)	ASTM C 728
Fesco Board	Low Thermal	A homogeneous, perlite based, roof insulation board for use in BUR, MB and SPM roofing systems	¾" (19 - 48 mm)	ASTM C 728
Fiber Glass Roof Insulation	Mid Thermal	A rigid, glass fiber based, leaf paper wrapped, insulation board for use with BUR and MB roofing systems	¾" - 3" (19 - 76 mm)	ASTM C 726
Fes-Core	High Thermal	A composite insulation consisting of a rigid, polyisocyanurate foam core bonded to a top and bottom layer of Fesco Board for use in BUR, MB and SPM systems	2" - 3.3" (51 - 84 mm)	F.S. HH-I-1972, Type 5
Fesco Foam	High Thermal	A rigid insulation composed of a layer of perlite board, chemically bonded to a faced, polyisocyanurate board for use in BUR, MB and SPM systems	1.5" - 4" (38 - 102 mm)	F.S. HH-I-1972, Type 3
UltraGard	High Thermal	A rigid, closed cell, polyisocyanurate roof insulation faced with a reinforced fiber glass mat for use in BUR, MB or SPM systems	1" - 4.1" (25 - 104 mm)	F.S. HH-I-1972, Type 2
Tapered Fesco Board	Taper System	A homogeneous, perlite based, tapered roof insulation designed to provide slope to an otherwise flat roof deck	¼" - ½" per foot (10.4 - 20.8 mm/m)	ASTM C 728
Tapered UltraGard	Taper System	A high thermal, tapered, polyisocyanurate roof insulation designed to provide slope to an otherwise flat roof deck	¼" & ½" per foot (10.4 & 20.8 mm/m)	F.S. HH-I-1972, Type 2
FesCant Plus	Cant Strip & Tapered Edge	A perlite based, fire-resistant, cant and tapered edge strip for use in BUR and MB systems		None
UltraFast Screw/Plate	Fastener	A case-hardened, polymer coated, hex head #12 or #14 screw for use in securing roof insulation to a metal deck; available with metal or plastic plates	1½" - 14" (41 - 356 mm)	None
UltraGrip Screw/Plate	Fastener	A case-hardened steel, #12 and #14 screw, with a #3 Phillips head, for use in securing roof insulation to a metal deck; available with metal or plastic plates	1½" - 14" (41 - 356 mm)	None
GlasFast	Fastener Plate	A high strength polyolefin, 3" (76 mm) diameter plastic plate for use with Fiber Glass Roof Insulation	3" (76 mm)	None
CD-10	Fastener	A medium carbon steel, flat top pan head, fluoropolymer-coated fastener for use in securing roof insulation to structural concrete decks	2" - 9" (51 - 229 mm)	None
NTB	Fastener	A glass-filled nylon, double internal hex drive head, buttress thread, ¾" (19 mm) diameter fastener for securing roof insulation to gypsum and structural wood fiber decks	2½" - 7½" (64 - 191 mm)	None
LWC Base Sheet Fastener	Fastener	A G-90 galvanized, 1.75" (44 mm) long, double spreading, leg fastener for securing base sheets to lightweight insulating concrete and some poured gypsum decks	1.2" & 1.75" (30 & 44 mm)	None

Fesco Board Roof Insulation

For Built-Up, Modified Bitumen and Single Ply Roofing Systems

Fesco Board is classified by Underwriters Laboratories, Inc. and is approved insulation for numerous Class A roof constructions. Contact a Schuller Technical Service Specialist for details regarding specific approvals.

Other Approvals

Fesco Board has been approved by numerous municipalities including Dade County, FL. Fesco Board also meets the requirements of BOCA, ICBO, SBBCL and others. Please contact a Schuller Technical Service Specialist for details.

Technical Data

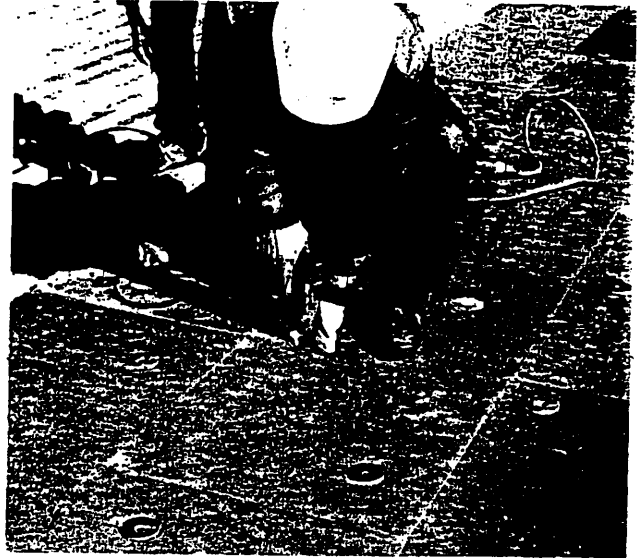
Physical Properties	Values	Test Method
Water Absorption, % by Volume— 2 hrs.	1.5 max.	ASTM C 209
Compression Resistance		
5% Consolidation—psi (kPa)	20 (138)	ASTM C 165
10% Consolidation—psi (kPa)	35 (241)	
Laminar Tensile Strength—psi (kPa)	4 (27.6) min.	ASTM C 209
Thermal Conductance (C)		
BTU/(hr • ft ² • °F) [nominal 1"]	0.36	ASTM C 177
(W/m ² • °C [nominal 25 mm])	(2.04)	ASTM C 177
Flexural Strength—psi (kPa)	40 (276) min.	ASTM C 203
Product Density—pcf (kg/m ³)	9 (144) min.	ASTM C 209
Dimensional Stability	0.5%	ASTM C 209

For use over Metal Decks

The minimum thicknesses of Fesco insulation over metal decks are as follows:

	Narrow	Intermediate	Wide
Width of Rib	Up to 1"	Up to 1½"	Up to 2½"
Opening	(25 mm) Maximum	(44 mm) Maximum	(64 mm) Maximum
Thickness of Insulation (Minimum)	¾" (19 mm)	1" (25 mm)	1½" (38 mm)

Avoid concentrating loads on insulation. Minimum bearing on flat surface: 2" (51 mm).



UL Fire-Rated Assemblies

Fesco Board is also listed by Underwriters Laboratories, Inc. for use in fire-rated assembly design numbers as shown in chart below. See current UL Fire Resistance Directory.

UL Roof/Ceiling Assembly Approvals

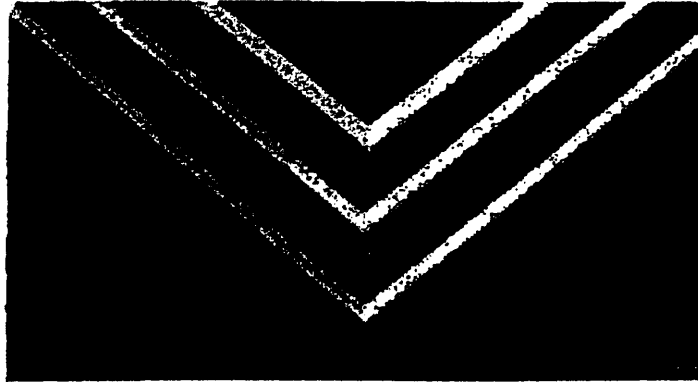
P001	P201	P404	P701	P801	P904
P004	P206		P708	P803	P909
	P210	P502	P710	P805	P912
	P211	P508	P713	P810	P915
	P224	P510	P718	P814	
	P225	P514	P720	P815	
	P230		P723	P817	
	P232		P729	P818	
	P237				
	P238				
	P250				
	P254				
	P259				
	P263				



Commercial/Industrial Roofing Systems

E'NRG'Y 2™**Description**

E'NRG'Y 2 is a rigid roof insulation board composed of a closed cell polyisocyanurate foam core bonded in the foaming process to universal fiber glass reinforced facers.



E'NRG'Y 2 meets the physical property requirements of ASTM C 1289 and Federal Specification HH-I-1972/Gen and HH-I-1972/2. E'NRG'Y 2 specialty products are also available as tapered panels, pre-cut miters and pre-cut crickets.

Use

E'NRG'Y 2 provides high thermal insulation value over metal, nailable, and non-nailable roof decks in built-up, modified bitumen and single ply membrane roofing systems. It may be applied using hot bitumen, cold adhesives or mechanical fasteners. The universal facer on the top and bottom side provide a suitable surface for mechanical attachments to a structural deck as well as a suitable surface to apply hot asphalt or cold adhesives. E'NRG'Y 2 has been rated in Factory Mutual 1A-60 and 1A-90 fire and wind-resistant systems for BUR, modified bitumen and single ply systems in specific constructions. It has been classified by Underwriters Laboratories, Inc. as an approved roof insulation in many Class A roof constructions and Roof/Ceiling hourly fire-rated assemblies, and is classified by Underwriters Laboratories Canada.

JM also supports NRCA Bulletin #9 in recommending that a cover board of Fesco Board, Fiber Glass Roof Insulation or 1/2" Retro-Fit Board be installed over foam insulations in hot membrane systems.

Advantages

- High thermal efficiency
- Universal facer that is compatible with BUR, modified bitumen and single ply membrane systems
- Complies with EPA requirements
- Meets Clean Air Act Amendments of 1990

Typical Physical Properties

	Values	Test Method
Water Absorption, % by Volume--2 hrs.	1.0 max	ASTM C 209
Dimensional Stability Change: 7 days @ 158°F (70°C), 90-100% RH Lengthwise Crosswise	<2% <2%	ASTM C 2126
Compressive Resistance* 10% Consolidation-psi (kPa)	20 (138) nom.	ASTM C 1621
Moisture Vapor Transmission**	<1 perm (57.5 ng/(Pa·s·m ²))	ASTM E 96
Flame Spread**	25 max	ASTM E 84
Service Temperature	-100 to 200°F (-73 to 93°C)	

* Also available in 25 psi (172 kPa).

** Foam core only.

For Use Over Metal Decks *

The minimum thicknesses of ENRG'Y 2 insulation over metal decks are as follows:

Width of Rib Opening	Up to 2 5/8" (67 mm)	Up to 3 3/8" (86 mm)	Up to 4 3/8" (111 mm)
Thickness of Insulation (Minimum)	1.0" (25 mm)	1.2" (30 mm)	1.3" (33 mm)

Sizes

ENRG'Y 2 is available in 4' x 4' (1.22 m x 1.22 m) boards (other sizes available by special request) and in thicknesses of 1.0" (25 mm) to 4.0" (102 mm).

Thermal Performance

Thickness (nom.)		C-Value (Conductance)		R-Value (Resistance)	
in	mm	BTU/(hr·ft ² ·°F)	W/m ² ·°C	(hr·ft ² ·°F)/BTU	m ² ·°C/W
1.0	25	.167	.95	6.0	1.05
1.2	30	.14	.79	7.1	1.26
1.3	33	.12	.68	8.3	1.47
1.4	36	.11	.62	9.1	1.60
1.5	38	.10	.57	10.0	1.76
1.6	41	.09	.51	11.1	1.96
1.8	46	.08	.45	12.5	2.20
2.0	51	.07	.40	14.3	2.52
2.3	58	.06	.34	16.7	2.94

2.5	64	.054	.31	18.6	3.27
2.7	69	.05	.28	20.0	3.52
3.0	76	.046	.26	22.0	3.83
3.2	81	.043	.24	23.4	4.10
3.4	86	.04	.23	25.0	4.40
3.8	97	.036	.20	28.0	4.89
4.0	102	.033	.19	30.0	5.34

The thermal values of ENRG'Y 2 were determined in accordance with PIMA Technical Bulletin 101 and ASTM C 1289.

Recent investigations have indicated that reduction in foam thermal performance will continue to occur after the PIMA six-month conditioning period. The ultimate R-value of these products will depend on individual installation circumstances.

When calculating the anticipated thermal performance over the expected life of these products, JM suggests the use of an R-value of 5.56 per inch of foam thickness ($0.98 \text{ m}^2\cdot\text{C}/\text{W}$).



RS-5039 5-1998

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SCHULLER

Roof Insulations

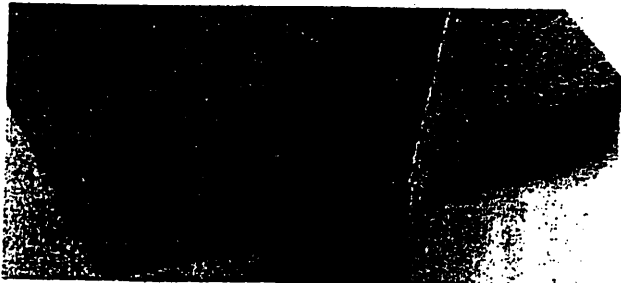
Tapered Fesco Board \otimes - USED AT DRAIN SUMPS.

Tapered UltraGard \int \otimes @ CRICKETS.
Roof Insulation

FesCant Plus Cant Strip \otimes - AT VERT. EDGES

TDC

TAPERED DESIGN CENTER



Product Descriptions

Tapered Fesco Board

Tapered Fesco uses only Schuller Fesco Board, a perlite-based, thermal roof insulation designed for use over nailable, non-nailable or metal roof decks. It is especially adaptable to reroofing applications, where both improved thermal insulation and positive drainage must be achieved.

Tapered Fesco is supplied in 24" x 48" (0.61 m x 1.22 m) or 48" x 48" (1.22 m x 1.22 m) boards, custom cut and tapered to 1/8", 1/4", 1/2" or 3/4" per foot (5.2, 10.4, 20.8, or 41.6 mm/m) slope depending on the need. Custom sizes are available.

Tapered Fesco Board complies with Environmental Protection Agency Regulation 40 CFR Part 248, "Guideline for Federal Procurement of Building Insulation Products Containing Recovered Materials", as a recycled product approved for use on any project using federal funds.

Tapered UltraGard Roof Insulation

Tapered UltraGard is a high thermal roof insulation board consisting of a core of rigid, closed-cell, polyisocyanurate foam, faced with a universal, black, fiber glass reinforced mat.

Tapered UltraGard is available in 48" x 48" (1.22 m x 1.22 m) boards, tapered to 1/8" or 3/8" per foot (10.4 or 20.8 mm/m).

MANUFACTURED WITH HCFCs (HYDROCHLOROFLUOROCARBONS)

Tapered UltraGard is produced with chemicals currently accepted as replacements in the CFC phase-out process, chemicals that significantly reduce the ozone depletion potential. All UltraGard products are manufactured with 141b blowing agents using only HCFCs (hydrochlorofluorocarbons). Tapered UltraGard is in compliance with EPA requirements governing all materials produced after May 15, 1993. UltraGard meets the standards of the Clean Air Act Amendments of 1990.

Tapered UltraGard Thermal Values

1/8" (10.4 mm/m) Tapered UltraGard Systems

Product Thickness		Average R-Value*		Average Thickness	
		(hr·ft ² ·°F)	m ² ·°C		
(in)	(mm)	BTU	W	(in)	(mm)
1/2-1	13-25	4.5	0.79	3/4	19
1-1 1/2	25-38	7.5	1.32	1 1/4	32
1 1/2-2	38-51	12.2	2.15	1 3/4	44
2-2 1/2	51-64	16.0	2.82	2 1/4	57
2 1/2-3	64-76	20.0	3.52	2 3/4	70
3-3 1/2	76-89	23.7	4.18	3 1/4	83
3 1/2-4	89-102	27.7	4.88	3 3/4	95

1/4" (20.8 mm/m) Tapered UltraGard Systems

Product Thickness		Average R-Value*		Average Thickness	
		(hr·ft ² ·°F)	m ² ·°C		
(in)	(mm)	BTU	W	(in)	(mm)
1 1/2-1 1/2	13-38	6.0	1.06	1	25
1 1/2-2 1/2	38-64	14.3	2.52	2	51
2 1/2-3 1/2	64-89	21.6	3.81	3	76
1-2	25-51	10.0	1.76	1 1/2	38
2-3	51-76	18.0	3.17	2 1/2	64
3-4	76-102	26.0	4.58	3 1/2	89

*The R-values for this product were determined by ASTM C 518 in accordance with the six-month conditioning procedure outlined in PIMA Technical Bulletin 101 (RIC/TIMA Technical Bulletin 281-1).

Recent investigations have indicated that reduction in foam thermal performance will continue to occur after the PIMA (RIC/TIMA) six-month conditioning period. The ultimate R-value of these products will depend on individual installation circumstances. When calculating the anticipated thermal performance over the expected life of these products, Schuller suggests the use of an R-value of 5.56 per inch of foam thickness (0.98 m²·°C/W).

Note: FM and UL rated systems must be a minimum of 1 1/2" (38 mm) thick.

TAPERED ULTRAGUARD ISO

USED AT CRICKETS.

FASTENING $\textcircled{1}$ @ 2 SF



Tapered Fesco Board 

Tapered UltraGard
Roof Insulation

FesCant Plus Cant Strip 



TAPERED DESIGN CENTER

FesCant Plus Cant Strip

Schuller can also supply fire-resistant FesCant Plus Cant Strip, as well as Tapered Edge Strip, in standard and custom-cut sizes to meet special needs. Both are made of Schuller Cant Board, a high density, laminated board made of high-strength fibers and expanded perlite. Because of the perlite content, FesCant Plus Cant Strip and Tapered Edge Strip offer far greater fire resistance than conventional wood fiber materials. This feature is important to all roofs, but especially applicable to torch-applied modified bitumen systems.

FesCant Plus Cant Strip complies with Environmental Protection Agency Regulation 40 CFR Part 248, "Guideline for Federal Procurement of Building Insulation Products Containing Recovered Materials", as a recycled product approved for use on any project using federal funds.



FesCant Plus Cant Strip (right) extinguishes while wood fiber cant strip still smolders after 10 minutes.

Schuller Tapered Design Center

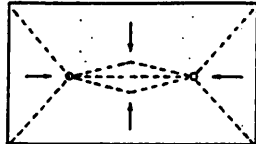
Program Services

The importance of providing a roof with positive slope to drain is well documented. Schuller's Tapered Fesco Board and Tapered UltraGard provides the roofing system designer, specifier or contractor with a means of creating positive slope in any building structure.

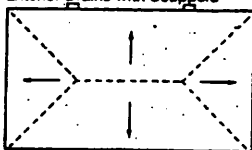
Schuller has a comprehensive program to provide custom designs and takeoffs tailored to the needs of each individual project. For detailed information, call the Schuller Tapered Design Center at: **(800) 545-8715.**

Typical Drainage Layouts

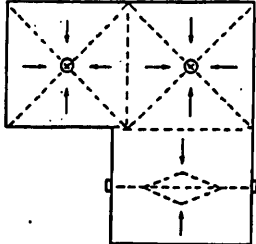
Interior Drains



Exterior Drains with Scuppers



Interior Drains



Note: Always provide a minimum of two drains per drainage area when interior drainage is used.

Scupper

1. Individualized Design Service.

The Schuller Tapered Design Center will work closely with the architect, designer or contractor to prepare a design or plan to achieve positive slope, including crickets, for both new and reroofing applications, with special attention given to complicated older roof problems. This plan, developed from a "walk-through" or from your roof drawings, can then be incorporated into your bid documents.

2. Total System Specification Service.

A Schuller Tapered Design Center Specialist can also incorporate the drainage system plan into an overall specification for the complete roofing system package—whether it be a Schuller built-up, modified bitumen or single ply roofing system.

3. Fully-Guaranteed Systems.

Schuller Tapered Design Center uses only genuine Schuller job-proven Tapered Fesco Board and Tapered UltraGard. The tapered insulation drainage system can qualify for inclusion in the Schuller roof guarantee program which covers the performance of the entire Schuller roofing system package with up to 20 year, No-Dollar-Limit protection on both materials and workmanship.

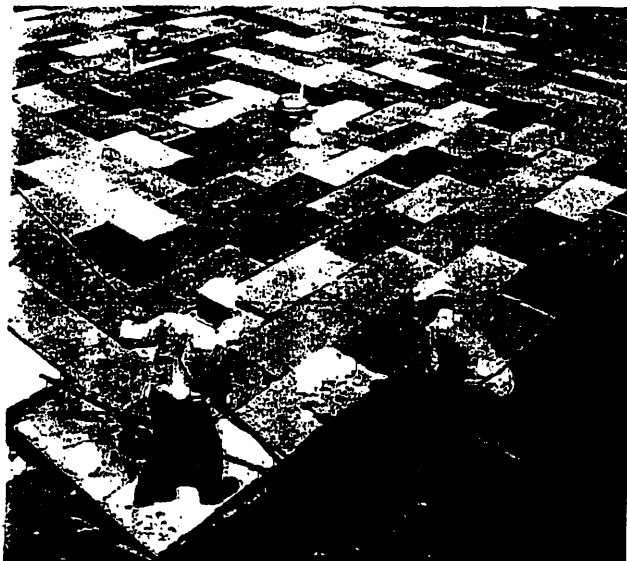
4. Top-Quality, Job-Tapered Product.

The Schuller Tapered Design Center will supply genuine Schuller Tapered UltraGard in $\frac{1}{8}$ " and $\frac{1}{4}$ " (10.4 and 20.8 mm/m) tapers and Fesco Board tapered in a variety of standard designs and shapes to provide $\frac{1}{8}$ ", $\frac{3}{16}$ ", $\frac{1}{4}$ " or $\frac{1}{2}$ " per foot (10.4, 15.6, 20.8, or 41.6 mm/m) slopes plus custom-cut and custom-tapered sizes to fit the needs of cricket systems and special applications.

5. A Partnership Working for You.

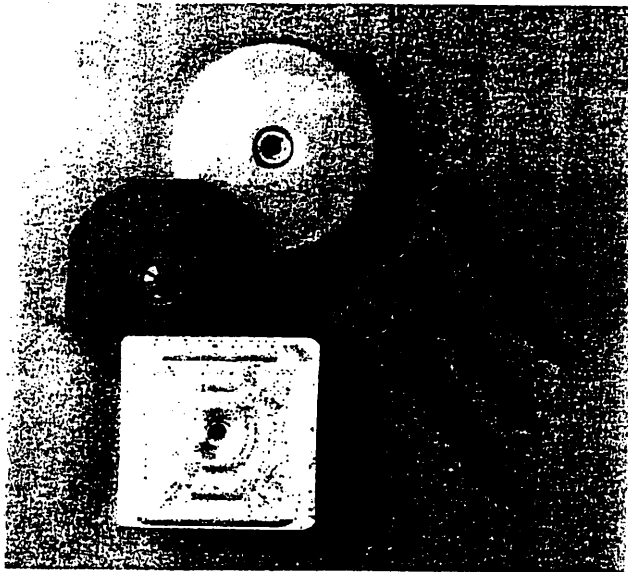
By using the services of the Schuller Tapered Design Center, you will gain from personalized, individualized service. Their expertise is backed by the full resources of a company that has been solving roofing problems for well over 135 years.

Contact the Schuller Tapered Design Center the next time you need a design or plan to achieve positive drainage in your roofing system. **Call (800) 545-8715.**



UltraFast Fasteners

Roof Insulation Mechanical Fastening



Description

A premium, No. 12, hexhead roof insulation fastener coated with ClimaSeal for superior corrosion resistance. UltraFast is required to be used, with UltraFast Locking Plastic Plates or UltraFast Galvalume Metal Plates, on all Schuller guaranteed systems using insulation over metal decks.

Advantages

Faster Application. Hex washer head provides positive bit engagement for faster driveability. The X-point drills consistently through 18 gauge (1.2 mm) metal decks and also significantly increases drilling speed.

Longer Life. ClimaSeal coating exceeds the FM 4470 requirements for cycles of corrosion testing by 100%.

Accurate Fastener Installation. Hex washer head provides positive bit engagement providing straight drilling consistency.

Sizes*

Screw Length	Insulation Range (Top Flange)	Insulation Range (Top or Bottom Flange)
1 1/8" (41 mm)	1/2" to 1 1/4" (13 to 29 mm)	
2 1/8" (57 mm)	1/2" to 1 3/4" (13 to 44 mm)	
2 3/8" (73 mm)	1" to 2 3/8" (25 to 60 mm)	
3 1/8" (83 mm)	1" to 2 3/4" (25 to 70 mm)	1" to 1 1/2" (25 to 32 mm)
3 3/8" (95 mm)	1" to 3 1/4" (25 to 83 mm)	1" to 3 3/8" (25 to 95 mm)
4 3/8" (111 mm)	1 1/2" to 3 1/4" (41 to 98 mm)	1 1/2" to 2 3/4" (41 to 60 mm)
5" (127 mm)	2 1/4" to 4 1/4" (57 to 114 mm)	2 1/4" to 3" (57 to 76 mm)
6" (152 mm)	3 1/4" to 5 1/4" (83 to 140 mm)	3 1/4" to 4" (83 to 102 mm)
7" (178 mm)	3 3/4" to 6 1/4" (83 to 159 mm)	3 3/4" to 5" (83 to 127 mm)
8" (203 mm)	4 1/4" to 7 1/4" (108 to 191 mm)	4 1/4" to 6" (108 to 152 mm)
10" (254 mm)	6 1/4" to 9 1/4" (159 to 241 mm)	6 1/4" to 8" (159 to 203 mm)
12" (305 mm)	8 1/4" to 11 1/4" (210 to 292 mm)	8 1/4" to 10" (210 to 254 mm)
14" (356 mm)	10 1/4" to 13 1/4" (260 to 343 mm)	10 1/4" to 12" (260 to 305 mm)

*FM requires fasteners to penetrate a minimum of 1/2" (13 mm) through an approved steel deck.

Applicable Standards

UltraFast may be included in the Schuller Roofing System Guarantee when used with Schuller Roof Insulation.

Schuller UltraFast is eligible for inclusion in numerous Factory Mutual and Underwriters Laboratories roofing systems. These approvals are specific to deck, insulation and membrane type. Contact a Schuller Technical Service Specialist for details.

UltraFast is approved by a number of municipalities including Dade County, Florida and meets the requirements of ICBO, BOCA and SBCCI.

The UltraFast Coating exceeds the corrosion resistance requirements of Factory Mutual Specification #4470.

UltraFast Pullout Values

In Metal		Pullout	
Thickness		Pounds Force (lbf)	Newtons (N)
Gauge	mm		
22	0.8	425	1890
20	0.9	502	2233
18	1.2	674	2998
16	1.5	874	3888

Note: Test results obtained were under laboratory-controlled conditions. Appropriate safety factors should be applied to these ultimate values by the customer.

In Plywood (1" [25 mm] embedment into decking)

Thickness		Pullout	
in	mm	Pounds Force (lbf)	Newtons (N)
1/2	13	326	1450
3/4	19	544	2420

Figures based on A.C. exterior plywood, and will vary depending on the quality and type of wood.

In Wood Plank

Depth		Pullout	
in	mm	Pounds Force (lbf)	Newtons (N)
1	25	784	3487
1 1/2	32	1084	4822
1 3/4	38	1292	5747

UltraFast Ultimate Tensile Strength—2562 pounds force (11,396 N)
UltraFast Ultimate Shear Strength—1229 pounds force (5,467 N)

SIZE MIN 2 7/8" AND
LARGER TO ACCOMMODATE
THE CALCKETS.

Built Up Roofing

07510

3. Special Guarantee

**Mascaro Construction Company L.P.
1720 Metropolitan Street
Pittsburgh, PA 15233
412-321-4901**

1

Roofing Guarantee

Whereas PHOENIX ROOFING, INC.
of 230 CORAOPOLIS ROAD, SUITE 200, CORAOPOLIS, PA 15108
herein called "the Contractor," has completed application of the following roof:
Owner: ALLEGHENY COUNTY SANITATION AUTHORITY
Address of owner: 3300 PREBLE AVENUE, PITTSBURGH, PA 15233
Type and name of building: DEWATERING BUILDING
Location: ALCOSAN COMPLEX
Area of roof: 167 SQUARES, MANVILLE 4GIG
Date of completion: 10/16/00
Date guarantee expires: 10 YEARS

Whereas, at the inception of such work the Contractor agreed to guarantee the aforesaid roof against faulty workmanship for a limited period and subject to the conditions herein set forth:

Now, Therefore, the Contractor hereby Guarantees, subject to the conditions herein set forth, that during a period of 10 years from the date of completion of said roof, it will, at its own cost and expense, make or cause to be made such repairs to said roof and composition flashing resulting solely from faults or defects in materials or workmanship applied by or through the Contractor as may be necessary to maintain said roof in watertight condition.

This guarantee is made subject to the following conditions:

1. Specifically excluded from this guarantee is any and all damage to said roof, the building or contents caused by the acts or omissions of other trades or contractors; lightning, windstorm, hailstorm, or other unusual phenomena of the elements; foundation settlement; failure or cracking of the roof deck; defects or failure of material used as a roof base over which the roof is applied, faulty construction of parapet walls, copings, chimneys, skylights, vents, supports, or other parts of the building; vapor condensation beneath the roof; penetrations for pitch boxes; or fire. If the roof is damaged by reason of any of the foregoing this guarantee shall thereupon become null and void for the balance of the guarantee period unless such damage is repaired by the Contractor at the expense of the party requesting such repairs.
2. The Contractor is not liable for consequential damages to the building or contents resulting from any defects in said roof or composition flashing.
3. No work shall be done on said roof, including, but without limitation, work in connection with flues, vents, drains, sign braces, railings, platforms or other equipment fastened to or set on the roof, and no repairs or alterations shall be made to said roof, unless the Contractor shall be first notified, shall be given the opportunity to make the necessary roofing application recommendations with respect thereto, and such recommendations are complied with. Failure to observe this condition shall render this guarantee null and void. The Contractor shall be paid for time and material expended in making recommendations or repairs occasioned by the work of others on said roof.
4. This guarantee shall become null and void if the roof is used as a promenade or work deck or is sprayed or flooded, unless such use was originally specified and the specification is noted in paragraph 8 below. Areas that pond water shall not be covered by this guarantee.
5. This guarantee shall not be or become effective unless and until the Contractor has been paid in full for said roof in accordance with the agreement pursuant to which such roof was applied.
6. This guarantee shall become null and void unless the Contractor is promptly notified of any alleged defect in materials or workmanship and provided an opportunity to inspect the roof.
7. This guarantee is in lieu of all other guarantees or warranties, express or implied. THERE ARE NO WARRANTIES OR GUARANTEES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF.

8. Additional conditions or exclusions. THIS WARRANTY COVERS MATERIAL AND/OR WORKMANSHIP NOT OTHERWISE COVERED BY THE MANUFACTURER'S WARRANTY, AND AS PER MAINTENANCE ADDENDUM ATTACHED.

In Witness Whereof, this instrument has been duly executed this 5th day of February, 2001

PHOENIX ROOFING, INC.

By: R. P. Vanucci
ROBERT P. VANUCCI, OPERATIONS MANAGER



Guarantee Form No. 1977A Roofing Contractors Association of Western Pa., Inc.
Serving qualified roofing contractors in
the Western Pennsylvania Area



Johns Manville

November 14, 2000

Phoenix Roofing, Inc.
P.O. Box 50
Imperial, PA 15126

REF: Dewatering Building
Guarantee #FNB0797116

To Whom It May Concern:

This is to confirm that on October 8, 2000, I completed my final inspection on the above referenced project. At the time of my inspection, nothing was observed that would prevent Johns Manville Roofing Systems from issuing the requested Johns Manville Roofing Systems Gold Shield Guarantee.

Upon Johns Manville Guarantee Service Unit receiving my inspection forms, your completion notice and any other required items, Johns Manville Roofing Systems intends to issue the referenced guarantee.

Please understand that this inspection was conducted solely for the benefit of Johns Manville and is offered for your guidance and assistance with the understanding that my comments are not meant to be constituted as an assumption by Johns Manville of any liability for design, installation, or workmanship beyond the terms of the applicable Guarantee.

If you have any questions, please give me a call.

Sincerely,

Walter H. Postufka
Sales Representative

**PHOENIX ROOFING, INC.
SPECIAL GUARANTEE**

**ALCOSAN DEWATERING BUILDING
CONTRACT 1540A**

In accordance with contract document, Phoenix Roofing, Inc. will provide this Special Guarantee for a period of 10 years from (date of manufacturers roof inspection). The following items are included in this warranty, but shall be subordinate to the Johns Manville Warranty.

1. Roof top inspection is included twice a year (spring & fall) and after severe storms.
2. Clear debris and remove from roof.
3. Check drains, scuppers, pitch pans and downspouts, as applicable to assure free flow
4. Check meld of roof for blisters, alligatoring, cracking and loss of granules or gravel.
5. Check roof edges, flashings, roof penetration and expansion joints.

PHOENIX ROOFING, INC.

Robert P. Vanucci
Operations Manager

Building Owner:

SCHULLER
Roofing Systems
Gold Shield®
Roofing System
Guarantee

Building Name:

Approved Roofing Contractor:

Guarantee Number:

Term & Maximum Monetary Obligation to
Maintain a Watertight Roofing System

Date of Completion:

Years \$

COVERAGE

The components of the Roofing System covered by this Guarantee are:

- Membrane Spec. and Type
- Flashing Spec. and Type
- Insulation Type
- Accessories (Type and Quantity)

These Schuller Guaranteed components are referred to below as the "Roofing System", and ALL OTHER COMPONENTS OF THE OWNER'S BUILDING ARE EXCLUDED FROM THE TERMS OF THIS GUARANTEE.

Schuller International, Inc. guarantees to the original Owner that during the Term commencing with the Date of Completion, Schuller will pay for the materials and labor required to promptly repair the Roofing System to return it to a watertight condition if leak(s) occur due to (a) ordinary wear and tear, or deficiencies in any or all of the component materials of the Roofing System or (b) workmanship deficiencies in the application of the Roofing System.

WHAT TO DO IF YOUR ROOF LEAKS

In the event any leak should occur in the Roofing System:

1. Building Owner must notify Schuller Guarantee Services (see reverse) in writing immediately upon discovery of the leak and in no event later than 30 days after discovery of the leak.
2. In response to this notice, Schuller will arrange to inspect the Roofing System.
 - (i) If the leaks are the responsibility of Schuller under this Guarantee (see Exclusions and Exclusions), Schuller will take prompt appropriate action to return the Roofing System to a watertight condition.
 - (ii) If the leaks are not the responsibility of Schuller under this Guarantee, to the extent necessary, at the Building Owner's request, advise the Building Owner within a reasonable time of the problem reports that Schuller Guarantee does require to return the Roofing System to a watertight condition. If the Building Owner, at his expense, promptly arranges to return the Roofing System this Guarantee will remain in effect for the unexpired portion of its Term. Failure to advise Schuller in a timely and reasonable fashion will void any further obligation of Schuller under this Guarantee as to the unexpired portion of the Roofing System.
3. In the event an emergency condition exists which requires immediate repair to avoid damage to the Building or its contents, then Building Owner may make essential temporary repairs. Schuller will reimburse Building Owner for those repair expenses which would have been the responsibility of Schuller under the Guarantee had the emergency situation.

LIMITATIONS AND EXCLUSIONS

This Guarantee is not a performance warranty or performance policy; therefore, routine inspections and maintenance are the Building Owner's responsibility. The Guarantee does not obligate Schuller to repair the Roofing System, or any part of the Roofing System, if the leak(s) are caused by (a) improper installation, (b) misuse, abuse or negligence, (c) installation or material failure other than those involving the component materials specified above as the Roofing System or exposure of the Roofing System components to damaging substances such as acid or solvents or to abnormal conditions such as vermin, (d) changes to the Roofing System or the Building's usage that are not approved in writing by Schuller, or (e) failure of the Building substrate (structural, structural or otherwise) and weather resulting from wind, hail, fire, lightning, debris, impact or other causes) or improper drainage (ponded water). Schuller is not responsible for leaks and damage resulting from water entry from any portion of the Building structure not a part of the Roofing System.

Schuller shall have no obligation under this Guarantee until all bills for installation, materials and services have been paid in full to Schuller Roofing Systems and the Approved Roofing Contractor.

TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, SCHULLER DISCLAIMS ANY IMPLIED WARRANTY, INCLUDING THE WARRANTY OF MERCHANTABILITY AND THE WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, OR LIMITS SUCH WARRANTY TO THE MAXIMUM AND TO THE EXTENT OF THE EXPRESS WARRANTY CONTAINED IN THIS GUARANTEE.

THE EXCLUSIVE RESPONSIBILITY AND LIABILITY OF SCHULLER UNDER THIS GUARANTEE IS TO MAKE REPAIRS THAT MAY BE NECESSARY TO MAINTAIN THE ROOFING SYSTEM IN A WATERTIGHT CONDITION IN ACCORDANCE WITH THE OBLIGATIONS WHICH ARE THE RESPONSIBILITY OF SCHULLER UNDER THIS GUARANTEE.

SCHULLER AND ITS AFFILIATES WILL NOT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES TO THE BUILDING STRUCTURE (UPON WHICH THE ROOFING SYSTEM IS AFFIXED) OR ITS CONTENTS, LOSS OF TIME OR PROFITS OR ANY INCONVENIENCE. SCHULLER AND ITS AFFILIATES SHALL NOT BE LIABLE FOR ANY DAMAGES WHICH ARE BASED UPON NEGLIGENCE, BREACH OF WARRANTY, STRICT LIABILITY OR ANY OTHER THEORY OF LIABILITY OTHER THAN THE EXCLUSIVE LIABILITY SET FORTH IN THIS GUARANTEE. INCIDENTAL AND CONSEQUENTIAL DAMAGES SHALL NOT BE RECOVERABLE EVEN IF THE REMEDIES OR THE ACTIONS PROVIDED FOR HEREIN FAIL OF THEIR PURPOSE.

No one is authorized to change, alter or modify the provisions of this Guarantee other than the Manager, Marketing and Technical Services or authorized delegates. Schuller's delay or failure in entering the terms and conditions contained in this Guarantee shall not operate as a waiver of such terms and conditions. This Guarantee is solely for the benefit of the Building Owner identified above and will be transferred by Schuller in its sole discretion only after receiving satisfactory information and payment of a transfer fee, which must be delivered to Schuller as soon as practical, but no later than 30 days after the date of Building ownership transfer.

In the event Schuller pays for repairs which are required due to the acts or omissions of others, Schuller shall be subrogated to all rights of recovery of the building owner to the extent of the amount of the repairs.

Because Schuller does not practice Engineering or Architecture, neither the issuance of this Guarantee nor any review of the Building's construction or inspection of roof plans (or the Building's roof deck) by Schuller representatives shall constitute any warranty by Schuller of such plans, specifications and construction or in any way constitute an extension of the terms and conditions of this Guarantee. Any roof inspections are for the benefit of Schuller.

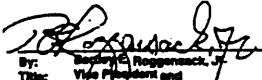
Schuller does not supervise nor is it responsible for a roofing contractor's work except to the extent stated herein.

*SCHULLER INTERNATIONAL, INC. ("Schuller"), is a Delaware corporation with its principal mailing address at P.O. Box 5106, Denver, Colorado 80217-5106.

IN WITNESS WHEREOF, SCHULLER INTERNATIONAL, INC. has caused this Guarantee to be duly executed and issued to cover the Roofing System specifically described in this Guarantee.

SCHULLER

Roofing Systems
P.O. Box 5106
Denver, CO 80217-5106

By: 
Title: Vice President and General Manager

Attorney-in-Fact

Built Up Roofing

07510

4. Maintenance Service Agreement

**Mascaro Construction Company L.P.
1720 Metropolitan Street
Pittsburgh, PA 15233
412-321-4901**

PHOENIX ROOFING, INC.

230 CORAOPOLIS ROAD, SUITE 200

CORAOPOLIS, PA 15108

(412) 778-8845

(412) 778-8846 (FAX)



ADDENDUM

MAINTENANCE AGREEMENT

Alcosan Project

Building: Dewatering Building

Completion Date: October 16, 2000

SCOPE OF MAINTENANCE SERVICE

Term of Agreement: 10 years from completion date indicated above.

Work to be performed by trained PHOENIX ROOFING, INC. employees.

Roof inspections to include:

1. Owner notification of semi-annual inspection 2 weeks prior to inspection.
2. Inspection will be performed two times a year, in the spring and fall.
3. Clear debris and remove from roof.
4. Unclog drains (unclog strainers).
5. Inspect drains, pitch pans, etc.
6. Check full field of roof for blisters, alligatoring, cracking and loss or displacement of ballast.
7. Check roof edges and flashings.
8. Check roof penetrations and expansion joints.
9. Submission of written report of inspection findings to owner within 2 weeks of inspection dates.

After inspections and in emergency situations, make repairs needed to keep roof in leak-free condition and to ensure guaranteed service life.

Robert P. Vanucci
Operations Manager



Johns Manville

Johns Manville Corporation
Roofing Systems Group
10100 W. Ute Avenue (80127)
P.O. Box 625005
Littleton, CO 80162-5005
303 978 5200
303 978 2808 Fax

Dear Building Owner:

Attached to this letter is the Gold Shield Roofing Systems Guarantee for the new roof recently installed on your building. We believe your building is now protected by one of the finest commercial roofing systems available on the market today. We appreciate the opportunity to provide you with a level of protection unmatched in the industry.

There are some things you should be aware of before you file this document away in a safe place:

1. This is NOT a maintenance agreement nor an insurance policy. Johns Manville's liability is strictly governed by the terms of the guarantee. If you have any kind of questions about this Guarantee, contact Johns Manville Guarantee Services at the appropriate number given below.
2. You are required to perform routine maintenance on the roofing system to keep the coverage of the Guarantee intact. For your convenience, a list of maintenance items is printed on the back of the Guarantee.

We hope that you never experience any difficulty with your roofing system. If you do have a problem, you should contact Johns Manville Guarantee Services at the phone numbers provided. Please have the guarantee at hand so that we may more efficiently handle your inquiry.

Our Technical Services Departments are staffed by some of the most experienced roofing professionals in the roofing industry. Please call on them for any questions you might have about commercial and industrial roofing and Johns Manville Products.

Sincerely,

Diet Karle
Manager, Guarantee Services
Johns Manville Roofing Systems Group

NE Region 800-345-9603
SE Region 800-633-8594
MidWestern Region 800-231-1064

SW Region 800-654-0071
Western Region 800-9225922



Johns Manville

Commercial/Industrial Roofing Systems

Gold Shield® Roofing Systems Guarantee

Building Owner:

ALLEG CO SAN AUTH
PITTSBURGH PA 15233

725892

Building Name:

DEWATERING BUILDING

3300 PREBLE AVE

PITTSBURGH PA 15233

Approved Roofing Contractor:

PHOENIX ROOFING INC.
P.O. BOX 50

Guarantee Number: FNBO797116

**Term & Maximum Monetary Obligation to
Maintain a Watertight Roofing System**

IMPERIAL PA 15126

Date of Completion: 16 OCT 2000

Years 10 \$
NO DOLLAR LIMIT
TOTAL SQUARES 167

COVERAGE

The components of the Roofing System covered by this Guarantee are:

Membrane Spec. and Type	4GIG	BUR
Flashing Spec. and Type	DFE-4, DFE-9, DFE-8	2140 LINEAR FEET
Insulation Type	NRG, .FB	
Accessories (Type and Quantity)		

These Johns Manville Guaranteed components are referred to below as the "Roofing System", and ALL OTHER COMPONENTS OF THE OWNER'S BUILDING ARE EXCLUDED FROM THE TERMS OF THIS GUARANTEE.

Johns Manville International, Inc.* guarantees to the original Building Owner that during the Term commencing with the Date of Completion, JM will pay for the materials and labor required to promptly repair the Roofing System to return it to a watertight condition if leaks occur due to: ordinary wear and tear, or deficiencies in any or all of the component materials of the Roofing System or workmanship deficiencies in the application of the Roofing System.

WHAT TO DO IF YOUR ROOF LEAKS

If you should have a roof leak please refer to directions on the reverse side.

LIMITATIONS AND EXCLUSIONS

This Guarantee is not a maintenance agreement or an insurance policy; therefore, routine inspections and maintenance are the Building Owner's responsibility (see reverse side of this document). Failure to follow the Maintenance Program on the reverse side of this document will void the Guarantee. This Guarantee does not obligate JM to repair the Roofing System, or any part of the Roofing System, for leaks resulting from (a) natural disasters including but not limited to the direct or indirect effect of lightning, fire, hailstorm, earthquake, tornadoes, hurricanes or other extraordinary natural occurrence and/or wind speeds in excess of a strong gale per the Beaufort scale, (b) misuse, abuse or negligence, (c) installation or material failures other than those involving the component materials expressly defined above as the Roofing System or exposure of the Roofing System components to damaging substances such as oil or solvents or to damaging conditions such as vermin, (d) changes to the Roofing System or the Building's usage that are not preapproved in writing by JM, or (e) failure of the Building substrate (mechanical, structural or otherwise and whether resulting from Building movement, design defects or other causes) or improper drainage (ponded water). JM is not responsible for leaks and damage resulting from water entry from any portion of the Building structure not a part of the Roofing System.

JM shall have no obligation under this Guarantee until all bills for installation, materials and services have been paid in full to JM Roofing Systems and the Approved Roofing Contractor.

The parties agree that any controversy or claims relating to this Guarantee shall be settled exclusively by arbitration in accordance with the Construction Industry Arbitration Rules of the American Arbitration Association, at the Denver, Colorado Office and judgement upon the award rendered by the Arbitrator(s) may be entered in any Court having jurisdiction thereof.

TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, JM DISCLAIMS ANY IMPLIED WARRANTY, INCLUDING THE WARRANTY OF MERCHANTABILITY QUALITY AND THE WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, OR LIMITS SUCH WARRANTY TO THE DURATION AND TO THE EXTENT OF THE EXPRESS WARRANTY CONTAINED IN THIS GUARANTEE.

THE EXCLUSIVE RESPONSIBILITY AND LIABILITY OF JM UNDER THIS GUARANTEE IS TO MAKE REPAIRS NECESSARY TO MAINTAIN THE ROOFING SYSTEM IN A WATERTIGHT CONDITION IN ACCORDANCE WITH THE OBLIGATIONS OF JM UNDER THIS GUARANTEE.

JM AND ITS AFFILIATES WILL NOT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES TO THE BUILDING STRUCTURE (UPON WHICH THE ROOFING SYSTEM IS AFFIXED) OR ITS CONTENTS, LOSS OF TIME OR PROFITS OR ANY INCONVENIENCE. JM AND ITS AFFILIATES SHALL NOT BE LIABLE FOR ANY DAMAGES WHICH ARE BASED UPON NEGLIGENCE, BREACH OF WARRANTY, STRICT LIABILITY OR ANY OTHER THEORY OF LIABILITY OTHER THAN THE EXCLUSIVE LIABILITY SET FORTH IN THIS GUARANTEE. INCIDENTAL AND CONSEQUENTIAL DAMAGES SHALL NOT BE RECOVERABLE EVEN IF THE REMEDIES OR THE ACTIONS PROVIDED FOR HEREIN FAIL OF THEIR PURPOSE.

No one is authorized to change, alter or modify the provisions of this Guarantee other than the Manager, Marketing and Technical Services or authorized delegate. JM's delay or failure in enforcing the terms and conditions contained in this Guarantee shall not operate as a waiver of such terms and conditions. This Guarantee is solely for the benefit of the Building Owner identified above and will be transferred by JM in its sole discretion only after receiving satisfactory information and payment of a transfer fee, which must be delivered to JM as soon as practical, but no later than 30 days after the date of Building ownership transfer.

In the event JM pays for repairs which are required due to the acts or omissions of others, JM shall be subrogated to all rights of recovery of the Building Owner to the extent of the amount of the repairs.

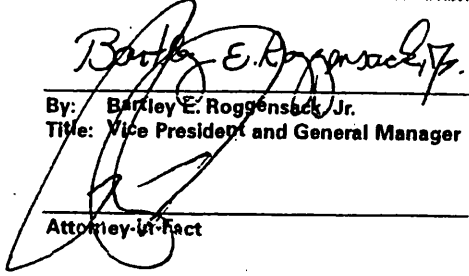
Because JM does not practice Engineering or Architecture, neither the issuance of this Guarantee nor any review of the Building's construction or inspection of roof plans (or the Building's roof deck) by JM representatives shall constitute any warranty by JM of such plans, specifications and construction or in any way constitute an extension of the terms and conditions of this Guarantee. Any roof inspections are solely for the benefit of JM.

JM does not supervise nor is it responsible for a roofing contractor's work except to the extent stated herein.

*JOHNS MANVILLE INTERNATIONAL, INC. ("JM"), is a Delaware corporation with its principal mailing address at P.O. Box 5108, Denver, CO 80217-5108.

Accepted By Owner's Authorized Representative

Date of Signature

By: 
Bartley E. Roggensack, Jr.
Title: Vice President and General Manager

Attorney-in-Fact

For this Guarantee to be effective, this registration must be signed and a copy returned to Johns Manville International, Inc., Guarantee Services Unit, 10100 West Ute Ave., Littleton, CO 80127, 303-978-2000, 800-922-5922, FAX: 303-978-2808, www.jm.com.

What To Do If Your Roof Leaks

1. Building Owner must notify JM Guarantee Services Unit (see below) immediately upon discovery of the leak and in no event later than 30 days after discovery of the leak.
2. In response to this notice, JM will arrange to inspect the Roofing System, and
 - (i) if the leaks are the responsibility of JM under this Guarantee (see Limitations and Exclusions), JM will take prompt appropriate action to return the Roofing System to a watertight condition, or
 - (ii) if the leaks are not the responsibility of JM under this Guarantee, advise the Building Owner within a reasonable time of the minimum repairs that JM believes are required to return the Roofing System to a watertight condition. If the Building Owner, at his expense, promptly makes such repairs to the Roofing System this Guarantee will remain in effect for the unexpired portion of its Term. Failure to make these repairs in a timely and reasonable fashion will void any further obligation of JM under this Guarantee as to the damaged portion of the Roofing System.
3. In the event an emergency condition exists which requires immediate repair to avoid damage to the Building or its contents, then Building Owner may make essential temporary repairs. JM will reimburse Building Owner for those repair expenses which would have been the responsibility of JM under the Guarantee.

Maintenance Program

In order to continue the coverage of this Guarantee the following maintenance program must be implemented.

There are a number of items not covered by this Guarantee that are the responsibility of the owner. In order to ensure that your new roof will continue to perform its function, you must examine and maintain these items on a regular basis:

- Maintain a file for your records on this roof, including this Guarantee, invoices, and subsequent logs of all inspections performed and repairs that are made to the roof.
- Inspect your roof at least semiannually. This is best done in the Spring, after the roof has been exposed to the harsh winter conditions, and, in the Fall after a long hot summer. It's also a good idea to examine the roof for damage after severe weather conditions, such as, hailstorms, heavy rains, high winds, etc.
- Since these types of roofs typically have a low slope, they are easily examined. However, care must be taken to prevent falling accidents.

When checking the roof:

- Remove any debris, such as, leaves, small branches, dirt, rocks, etc. that have accumulated.
- Clean gutters, down spouts, drains and the surrounding areas. Make certain they allow water to flow off the roof. Positive drainage is essential.
- Examine all metal flashings and valleys for rust and damage that may have been caused by wind or traffic on the roof, and make certain they are well attached and sealed. Any damaged, loose or poorly sealed materials must be repaired by an Approved Roofing Contractor.
- Examine the areas that abut the roof. Damaged masonry, poorly mounted counterflashing, loose caulking, bad mortar joints and any loose stone or tile coping can appear to be a membrane leak. Have these items repaired if found to be defective.
- Examine the edges of the roof. Wind damage often occurs in these areas. Materials that have been lifted by the wind need to be corrected by an Approved Roofing Contractor.
- Examine any roof top equipment, such as, air conditioners, evaporative coolers, antennas, etc. Make certain they do not move excessively or cause a roof problem by leaking materials onto the roof.
- Check the building exterior for settlement or movement. Structural movement can cause cracks and other problems which in turn may lead to leaks in your roofing system.
- Examine protective coatings; any cracked, flaking or blistered areas must be recoated.

Protecting your investment:

- Avoid unnecessary roof top traffic.
- If you allow equipment servicemen to go onto the roof, tell them to be careful. Dropped tools, heavy equipment, etc. can damage the membrane. Log all such trips to the roof.
- Do not allow service personnel to make penetrations into the roof, these are to be made only by an Approved Roofing Contractor.

All the terms and conditions of this Guarantee shall be construed under the internal law of the state of Colorado without regard to its conflicts of law principles. Invalidity or unenforceability of any provisions herein shall not affect the validity or enforceability of any other provision which shall remain in full force and effect.

This form is not to be copied or reproduced in any manner. This Guarantee is valid only in the United States of America.

Guarantee Services Unit

Johns Manville International, Inc., Guarantee Services Unit, 10100 West Ute Ave., Littleton, CO 80127

Guarantee Services Regional Phone Numbers

Northeastern	Southeastern	Midwestern	Southwestern	Western
800-345-9603	800-633-8594	800-231-1064	800-654-0071	800-922-5922

Roofing Systems Group
P.O. Box 5108
Denver, CO 80217-5108
www.jm.com

2. Gravel Stop-Fascia Assembly

2. Gravel Step/Fascia Assembly
(07620 Flashing)

ALLEGHENY COUNTY SANITARY AUTHORITY
OPERATION & MAINTENANCE MANUAL

**CONTRACT 1540A
DEWATERING BUILDING ROOF AND WINDOW
REPLACEMENT, GENERAL**

CONTRACT 1540A - GENERAL

BUILDING MATERIALS

DEWATERING BUILDING (400)

DIVISIONS 2-9

**Mascaro Construction Company L.P.
1720 Metropolitan Street
Pittsburgh, PA 15233
412-321-4901**

QC Submittal

Accepted for Record Purposes Rejected - See Remarks

The review of this submittal has been a general check to ascertain conformance with the Specification's requirements.

Acceptance does not relieve Supplier/Contractor from responsibility of compliance with all requirements of the Contract Documents.

Date: December 20, 2001

By: Michael W. Moran

ALCOSAN EFM (Engineering & Construction Services)

CM Maintenance Support Group

Table of Contents

Section	Item	Description	Specification Section
ONE		Metal Wall Panels	07412
	1	Product Data	
	2	Integral Window Extrusion Finish Warranty	
	3	Panel Finish Warranty	
	4	Product Test Data	
TWO		Built Up Roofing	07510
	1	Installation Details	
	2	Product Data	
	3	Special Guarantee	
	4	Maintenance Service Agreement	
THREE		Flashing	07620
	1	Product Data	
	2	Special Guarantee	
FOUR		Paint	09900
	1	Product Data	
	2	Special Guarantee	



Mascaro Construction Company L.P.
 1720 Metropolitan Street
 Pittsburgh, PA 15233
 412-321-4901

Flashing

07620

Contractor: Mascaro Construction Company L.P.
1720 Metropolitan Street
Pittsburgh, PA 15233
412-321-4901

Installer: Phoenix Roofing, Inc.
P.O. Box 50
Imperial, PA 15126
724-695-3530

Manufacturer: Cassady-Pierce Company, Inc.
2295 Preble Avenue
P.O. Box 99997
Pittsburgh, PA 15233
412-321-8987

Supplier: ATAS
6612 Snowdrift Road
Allentown, PA 18106
610-395-8445

Mascaro Construction Company L.P.
1720 Metropolitan Street
Pittsburgh, PA 15233
412-321-4901

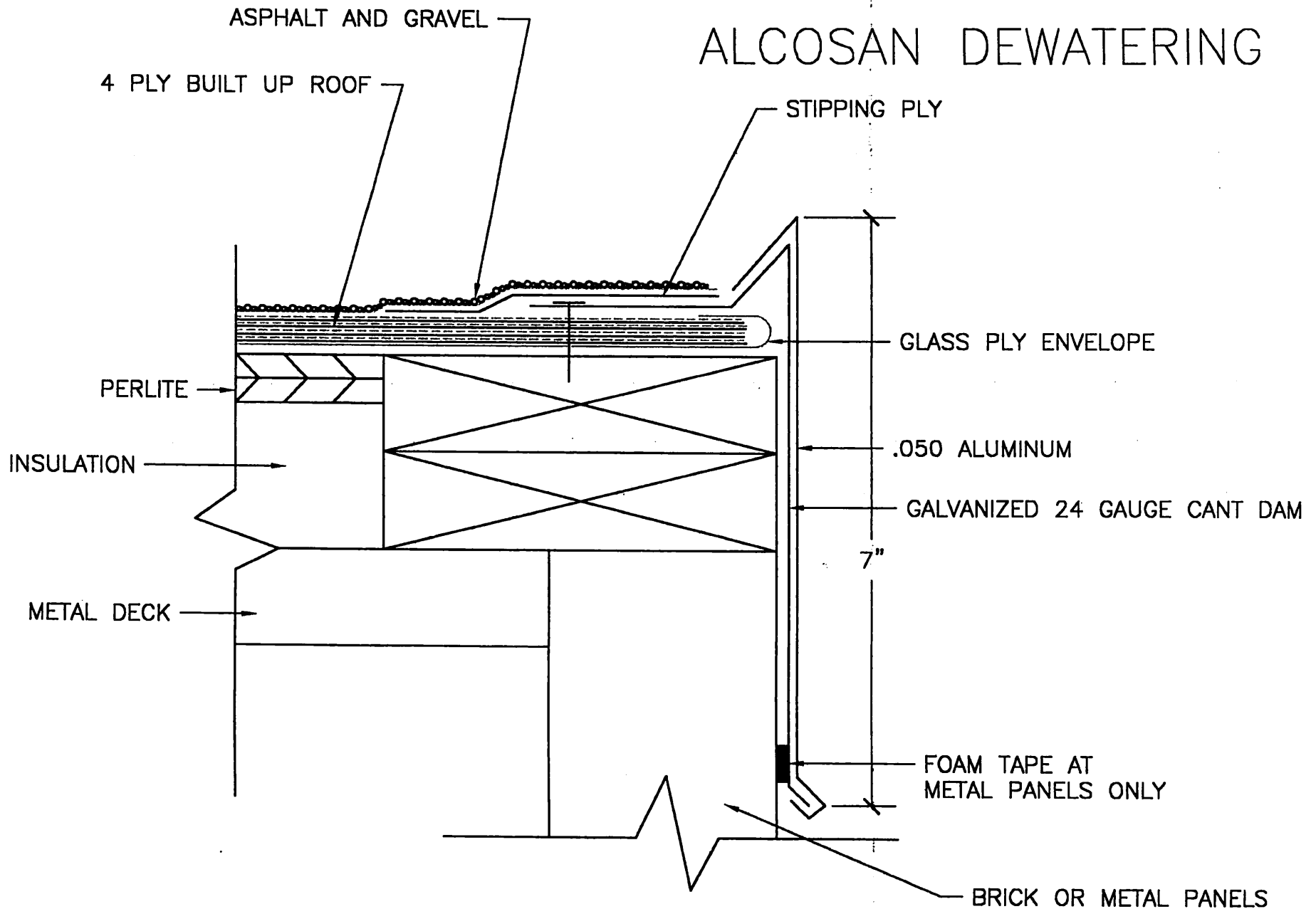
Flashing

07620

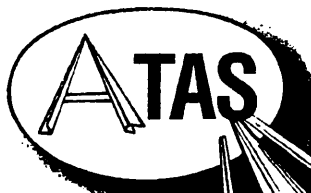
1. - Product Data

Mascaro Construction Company L.P.
1720 Metropolitan Street
Pittsburgh, PA 15233
412-321-4901

ALCOSAN DEWATERING



NOTE: PAINTED OR ANNODIZED METAL WILL PROTECT DISSIMILAR METALS.



ATAS International

Pennsylvania:

Ph: 610-395-8445

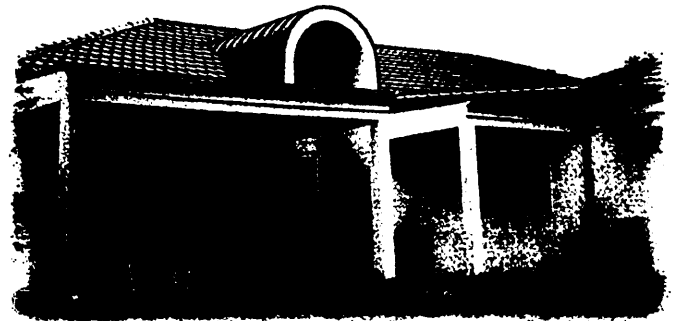
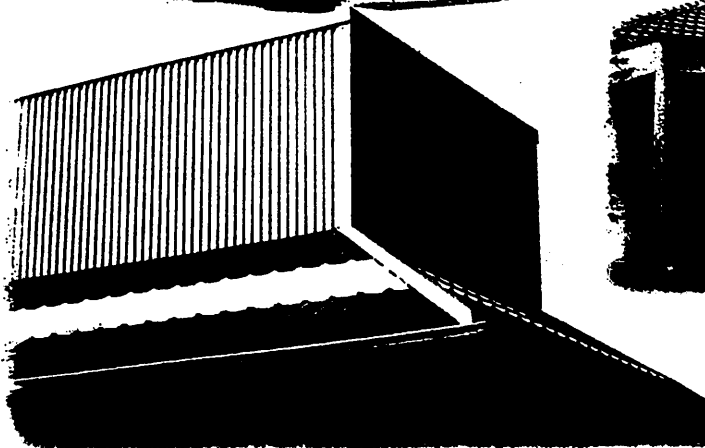
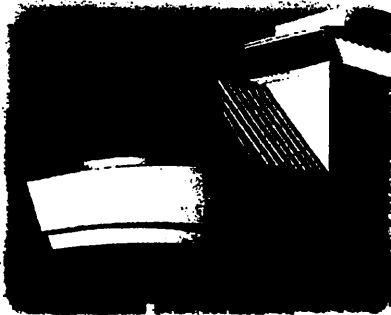
Fax: 610-395-9342

California:

Ph: 619-262-9911

Fax: 619-262-9914

www.atas.com



F
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C

STOCK COLORS

FLUOROPOLYMER FINISH

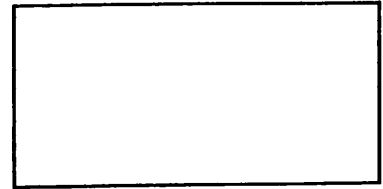
KYNAR 500® or HYLAR 5000® (20 Year Warranty)



09 SIERRA TAN



12 PATINA GREEN



26 BONE WHITE



03 MEDIUM BRONZE



22 MINT GREEN



10 ASCOT WHITE



01 CLASSIC BRONZE



11 FOREST GREEN



13 DOVE GREY

Per J. Findley 8/24/00

FASCIA

HOUSE COLOR




27 HARTFORD GREEN




20 SLATE GREY

PREMIUM FINISHES



23 COPPERTONE



24 ANTIQUE PATINA

KYNAR 500® is a registered trademark of Atochem North America, Inc.

HYLAR 5000® is a registered trademark of Ausimont.



16 ROCKY GREY



02 BLACK

ATAS INTERNATIONAL, INC.

stocks the following colors and gauges:

COLOR	STEEL				ALUMINUM			
	29 ga	26 ga	24 ga	22 ga	.032	.040	.050	.060
CLASSIC BRONZE	X		X	X	X	X	X	X
BLACK					X	X	X	
MEDIUM BRONZE			X	X	X	X	X	X
CHOC. BROWN			X		X	X	X	
CONCORD CREAM			X		X	X	X	
SANDSTONE			X		X	X	X	X
REDWOOD			X		X	X	X	
MISSION RED	X	X	X		X	X	X	
ASCOT WHITE			X		X	X	X	X
FOREST GREEN	X	X	X	X	X	X	X	X
PATINA GREEN			X		X	X	X	
DOVE GREY			X		X	X	X	X
SIAM BLUE			X		X	X	X	
RAWHIDE			X		X	X	X	
ROCKY GREY	X	X	X		X	X	X	
BRITE RED			X		X	X	X	
REGAL BLUE			X		X	X	X	
TEAL			X		X	X	X	
SLATE GREY	X	X	X	X	X	X	X	
SLATE BLUE		X	X		X	X	X	
MINT GREEN			X		X	X	X	
BOYSENBERRY			X		X	X	X	
BONE WHITE			X	X	X	X	X	X
HARTFORD GREEN			X		X	X	X	
SIERRA TAN	X		X		X	X	X	
PREMIUM:								
COPPERTONE			X		X	X	X	
ANTIQ. PATINA			X		X	X	X	
ANODIZED:								
CLEAR					X	X	X	
BRONZE					X	X	X	

X-AVAILABLE FOR IMMEDIATE SHIPMENT

The KYNAR 500® or HYLAR 5000® Finish carries a 20 Year Warranty against cracking, fading and chalking. ATAS coated materials are non-staining and virtually maintenance free. Any surface residue is easily removed with conventional cleaning solvents or detergents. Minor scratches may be touched up with an air dry touch-up coating of the same color, available from ATAS.



ATAS International, Inc.

www.atas.com
email: atas1996@worldnet.att.net

6612 Snowdrift Rd.
Allentown, PA 18106
Ph: (610) 395-8445
Fax: (610) 395-9342

4559 Federal Blvd.
San Diego, CA 92102
Ph: (619) 262-9911
Fax: (619) 262-9914

SILICONIZED POLYESTER

COLOR SELECTOR FOR THE
LIGHT GAUGE ALUMINUM
USED FOR

SOFFIT • COIL ACCESSORIES



60 WHITE



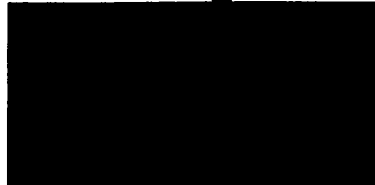
54 CREAM



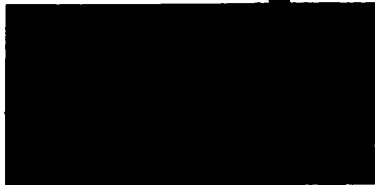
56 ANTIQUE IVORY



58 ROYAL BROWN



01 BRONZE



02 BLACK

These colors are available in the
smooth finish.
14 5/8" wide coil - .019 aluminum

ATAS INTERNATIONAL, INC. 20 YEAR LIMITED WARRANTY

INSTALLING**CONTRACTOR:** PHOENIX ROOFING, INC. **DATE:** 10/16/00**ADDRESS:** 230 CORAOPOLIS ROAD, CORAOPOLIS, PA 15108**PROJECT NAME/IDENTIFICATION:** ALLEGHENY COUNTY SANITARY AUTHORITY**ADDRESS:** 3300 PREBLE AVENUE, PITTSBURGH, PA 15233**STYLE:** STS480 **MATERIAL:** ALUM. **FINISH:** PVDF **COLOR:** DOVE GREY

1. This is to certify that the ATAS International, Inc. (ATAS) Cladding and Roof Panels sold by ATAS are manufactured by ATAS in accordance with the highest standards of engineering and production skills from durable, high quality coated materials.
2. ATAS warrants that its panels (PRODUCTS), upon delivery, are free from defects in material and workmanship, excluding any freight damage, and, if properly installed, will not, under normal conditions, rupture, crack or perforate for a period of 20 years from date of shipment. The term "free from defects in material and workmanship" does not include waviness present in the flat area of the panels, due to inconsistency in the alloys, galvanizing process, light gauge metals, uneven substrates, installation and/or misalignment of support systems over which the panels are applied, which the industry has accepted as being prevalent and normal. Such waviness shall not be the cause for a claim under this or any other warranty.
3. ATAS PRODUCT with the Fluoropolymer, Kynar 500®/Hylar 5000® finish, is warranted hereby not to chip, or peel for a period of twenty (20) years from date of shipment or change color more than 5 E units or chalk in excess of A.S.T.M.D 659-80 rating of 8.
4. ATAS PRODUCT with the Polyester finish is warranted hereby not to chip or peel for a period of twenty (20) years from date of shipment.
5. This Limited Warranty covers the PRODUCT, as stated in paragraphs 2, 3, or 4, exposed to normal atmospheric conditions (which term excludes corrosive or aggressive atmospheric conditions such as, but not limited to, those contaminated with chemical fumes or direct salt spray) in the Continental United States. This Limited Warranty shall not apply where the PRODUCT failure is the result of fire, lightning, hurricane, tornado, windstorm, hailstorm, war or civil disturbance, vandalism or other willful or accidental abuse, or other causes beyond the control of ATAS.
6. This Limited Warranty is for material only and does not include defects resulting from damage caused by other trades or materials substituted for, or used in addition to, ATAS's PRODUCT, or when failing to provide simple and/or reasonable maintenance to the PRODUCT. This Limited Warranty is only for material supplied by ATAS and not for any other material obtained from other sources or not engineered and manufactured by ATAS.
7. This Limited Warranty will not extend to or cover the damage to the PRODUCT due to improper shipping, handling, installation (which term includes failure to permit drainage of standing water), or failure to remove the protective masking, metal dust and shavings.
8. ATAS's liability under the terms of this Limited Warranty will be limited to a period not exceeding the period of any Limited Warranty running from customer to its customer and limited to the direct cost of refinishing or replacing the failed PRODUCT. Refinishing of the failed metal shall be performed by using standard finishing practices and materials, not necessarily replacing the PRODUCT, at ATAS discretion. ATAS will in all instances have the option of determining whether refinishing or replacing shall be utilized to fulfill its obligation. In no event however, shall ATAS's responsibility extend to any consequential damages, and in all cases, ATAS reserves the right to approve and negotiate the contract for such repainting or replacing. The Limited Warranty on any refinished or replaced PRODUCT supplied hereunder, shall be, for the then unexpired

portion of the Limited Warranty period, applicable to the original PRODUCT. In event of replacement the cost shall not exceed the original purchase price of the PRODUCT.

9. Any repair, refinishing or replacement not authorized by ATAS shall release ATAS from all liabilities and obligations with respect to the Products involved.

10. To be valid, any claim must be submitted by the Owner to ATAS in writing, within the guarantee period, and within 30 days after the Owner becomes or should have been aware of any alleged defect, giving the details of the complaint, date of installation, and name of dealer/contractor. ATAS must be given reasonable opportunity to inspect the PRODUCT claimed to be defective, determine responsibility, and effect a solution prior to initiation of any repair or replacement of the PRODUCT. ATAS shall be reimbursed by Owner for all expenses related to the investigation of the complaints, if the complaints are not the responsibility of ATAS, as covered under the rules set forth in paragraphs 2 through 9.

11. EXCEPT AS SET FORTH HEREIN, ATAS MAKES NO OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, WITH RESPECT TO THE PRODUCT. IN NO WAY SHALL ATAS BE RESPONSIBLE FOR ANY GENERAL, SPECIAL, COMPENSATORY OR CONSEQUENTIAL DAMAGE RESULTING FROM THE FAILURE OF THE PRODUCT.

12. This Limited Warranty will not become effective if the invoice/contract for this project is not paid in full to ATAS INTERNATIONAL, INC. in accordance with the standard terms and conditions set forth in agreement of sale or contract.

13. In event of failure of the PRODUCT, ATAS must be notified in writing, with adequate identification of the product, proof of purchase etc., by the owner, stating: Project name, address and date of installation, and owner's name, address and telephone number. This must be sent, certified mail with return receipt to: ATAS International, Inc., 6612 Snowdrift Rd., Allentown, PA 18106 Attention: Limited Warranty Service Department, with a copy of the owner's Limited Warranty certificate.

14. ATAS reserves the right to discontinue and/or make changes in any of its PRODUCTS. In the event the PRODUCT referred to in this Limited Warranty is not available, ATAS, at its discretion, will replace material of equal grade, quality, and price, not exceeding the original purchase price of the PRODUCT.

15. All notices given under, or pursuant to, this agreement shall be in writing and sent by certified mail, postage prepaid, return receipt requested to the party to whom such notice is to be given.

16. This writing embodies the entire Limited Warranty of ATAS and NO OTHER WARRANTIES are given beyond those set forth herein. ORAL STATEMENTS DO NOT CONSTITUTE WARRANTIES and are not part of this agreement or any other contract for sale. ATAS neither assumes, or authorizes, anyone (including but not limited to salesmen, dealers, contractors, builders, applicators and distributors) to assume or create for it other obligations or liabilities in connection with its PRODUCTS, or to alter, amend, or modify in any way, any term, or provision of this Limited Warranty.

WARRANTY REGISTRATION CERTIFICATES MANDATORY.

Must be submitted within 30 days of reasonable completion of contract subject to verification of the manufacturer.

Warranty certificate must be issued by an authorized officer of ATAS.

17. Completion and submission of the attached "Application for Registration" within the time limits, and in accordance with the instructions thereon, is a condition precedent to Limited Warranty coverage. There is no Limited Warranty coverage, expressed or implied, if the "Application for Registration" is not completed, validated and mailed to: ATAS International, Inc., 6612 Snowdrift Rd., Allentown, PA 18106 as instructed, and the certificate is sent via certified mail.

ATAS INTERNATIONAL, INC.

Application number
200520

ATAS INTERNATIONAL, INC.
20 YEAR
LIMITED WARRANTY CERTIFICATE

CERTIFICATE NUMBER: 20490 **DATE:** 10/16/00

NAME: ALLEGHENY COUNTY SANITARY AUTHORITY

ADDRESS: 3300 PREBLE AVE. PITTSBURGH, PA 15233

PROJECT IDENTIFICATION: ALCOSAN DEWATERING

ADDRESS OF PROJECT SITE: 3300 PREBLE AVE. PITTSBURGH, PA 15233

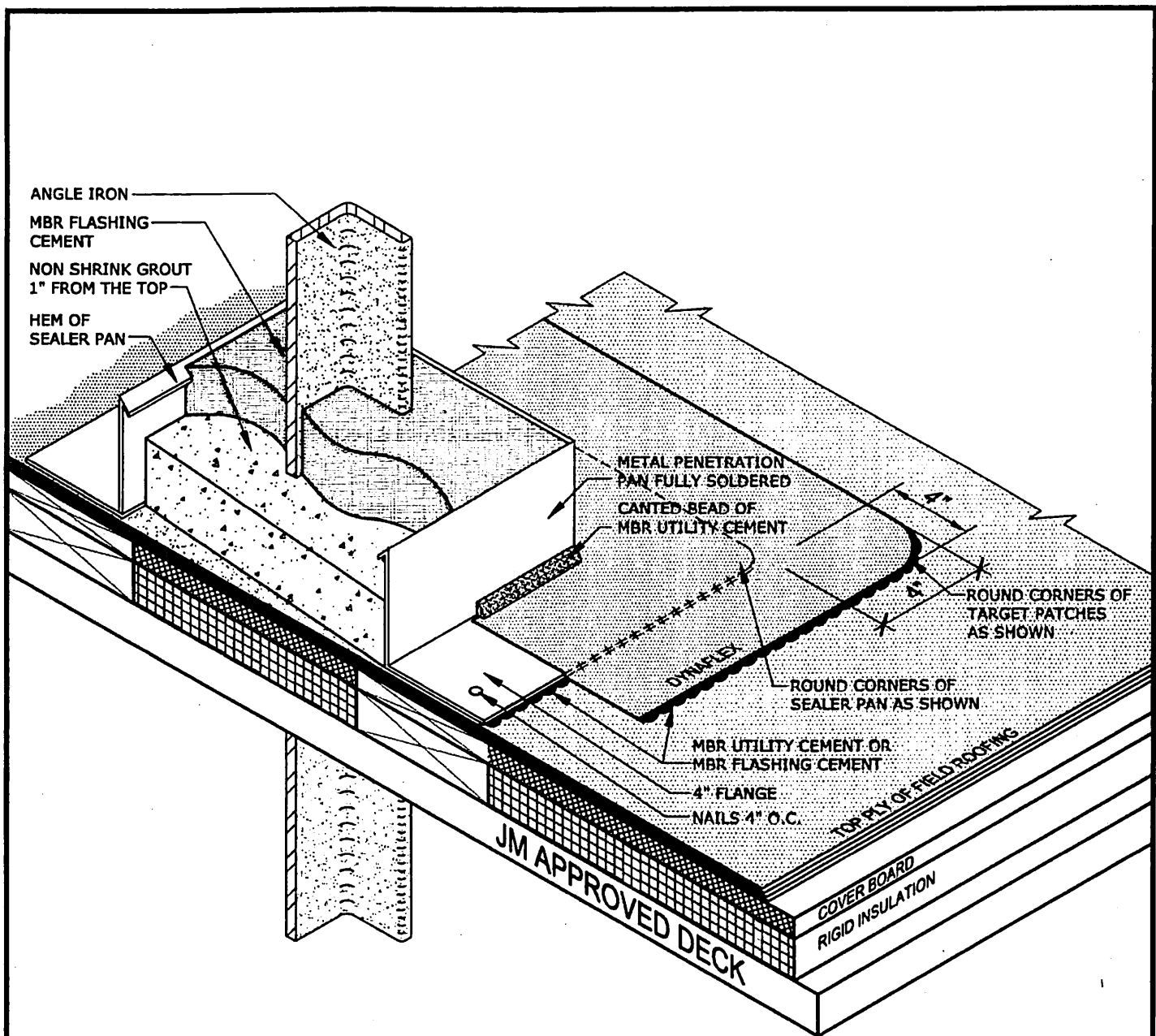
STYLE: STS480 **MATERIAL:** ALUM. **FINISH:** PVDF **COLOR:** DOVE GREY **TOTAL SQ.FT.:** 800.00

Signed by Warranty Administrator:

Amy M. Harkness

Date: 11/12/01

3. Pitch Pocket Detail (JM Roof Penetration Pan)



NOTES:

1. REFER TO JOHNS MANVILLE WEBSITE (www.jm.com) FOR MOST UP-TO-DATE INFORMATION.
2. MAINTAIN 2" MIN. CLEARANCE FROM PENETRATION TO EDGE OF METAL PAN.
3. ROUND FLANGE CORNERS ON METAL PAN.
4. PRIME INSIDE OF METAL PAN WITH PERMAFLASH PRIMER WHERE MBR FLASHING CEMENT WILL BE PLACED.
5. PENETRATION PANS ARE CONSIDERED MAINTENANCE ITEMS AND ARE NOT GUARANTEED BY JOHNS MANVILLE.
6. USE ASPHALT PRIMER ON FLANGES WHEN USING MBR UTILITY CEMENT. USE PERMAFLASH PRIMER ON FLANGES WHEN USING MBR FLASHING CEMENT.
7. ANY CARPENTRY, METAL WORK, OR MASONRY CONSTRUCTION SHOULD BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH LOCAL CODE REQUIREMENTS AND/OR PROJECT SPECIFICATIONS. THESE COMPONENTS SHOULD BE REVIEWED AND APPROVED BY A LICENSED DESIGN PROFESSIONAL.
8. PLEASE SEE BITUMINOUS FLASHING SPECIFICATIONS FOR A FULL DESCRIPTION OF INSTALLATION INSTRUCTIONS AND REQUIREMENTS WHICH ARE CONSIDERED A PART OF THIS DETAIL.

DRAWING NO.

DFE-16

PENETRATION

ROOF PENETRATION PAN

MEMBRANE TYPE:
 BUR

MAXIMUM GUARANTEE TERM:

Johns Manville is a manufacturer of commercial roofing products and offers this general conceptual information to you as a courtesy. This complimentary assistance is not to be used or relied upon by anyone as a substitute for professional engineering design and documentation required by building code, contract, or applicable law. By accepting these comments you agree they do not constitute any representation, endorsement of, or an assumption by Johns Manville of any liability for either the adequacy of the design of this building or any other material not supplied by Johns Manville.



SCALE
 N.T.S

ISSUE DATE
 6-11-14

**SECTION 07540
THERMOPLASTIC MEMBRANE ROOFING**

PART 1 GENERAL

1.1. SCOPE OF WORK

- A. **Screenings Garage (Building 513):** Furnish all labor, materials, equipment and incidentals required to replace the existing roof with a TPO roof membrane as specified herein and on the Contract Drawings for the Screenings Garage Roof Area.
1. Based on available construction and shop drawings, existing construction of this roof systems is as follows (Note: Contractor to field verify all existing conditions):
 - a. 1½” ribbed metal roof deck (Type B, 20 GA, galvanized), ½” gypsum board, tapered isocyanurate insulation, 0.060” EPDM. There are four (4) existing acrylic dome skylights with fall protection screens and insulating metal curbs that shall remain.
 2. Scope of Work:
 - a. Remove and dispose of the existing roof system down to the metal deck.
 - b. Remove and dispose of perimeter flashings metal.
 - c. Remove existing wood nailers and replace with new nailers.
 - d. Mechanically attach tapered isocyanurate insulation to the deck with a fastener density of 1 fastener every 2 sq.ft. Tapered insulation system should have a minimum thickness of 1½ inches and a slope of 1/8” per foot.
 - e. All drains shall have 4’x4’ fully mitered sumps with a slope of ½” per foot. Roofing contractor to supply new drain hardware, i.e. drain bolts, drain rings and metal drain strainers. Drain rings and strainers must be painted construction yellow.
 - f. Fully adhere a 60 mil TPO membrane and flashing system.

- g. Install new perimeter coping or counterflashing. Metal shall be 0.050", mill finish aluminum with standard kynar color to match existing color.
- h. Provide Manufacturer's 15 year labor and materials watertight warranty signed by roofing material's manufacturer and applicator.
 - 1. Warranty to cover all materials provided by roofing manufacturer.
 - 2. Warranty to include provision to allow Owner to make emergency repairs.

B. Power Generation Building (Building 411): Furnish all labor, materials, equipment and incidentals required to replace the existing roof with a TPO roof membrane as specified herein and on the Contract Drawings for the Power Generation Building Roof Areas.

- 1. There are seven areas that comprise the entire roof of the Power Generation Building, and are shown on the Drawings as designated herein. Based on available construction and shop drawings, existing construction of these seven (7) roof systems are as follows (Note: Contractor shall field verify all existing conditions):
 - a. Main Rooftop: 1½" ribbed metal deck (22 GA, galvanized), 5/8" gypsum board, tapered isocyanurate insulation, ½" recovery board, and single-ply membrane (0.060" EPDM).
 - b. Lower Rooftop: majority of roof is 3½" precast concrete, 2" insulation, built-up roof with gravel/stone ballast (constructed in the 1950's); newer areas (constructed in the 1990's) around exhaust fans and HVAC unit are 1 ½" ribbed metal deck (18 GA, galvanized), tapered insulation, and 4-ply coal tar built up roof.
 - c. Lower Penthouse Rooftop: 1½" ribbed metal roof (22 GA, galvanized), 5/8" gypsum board, tapered isocyanurate insulation, and single-ply membrane (0.060" EPDM).
 - d. Upper Penthouse Rooftop: 1½" ribbed metal deck (20 GA, galvanized), tapered isocyanurate insulation, and single-ply membrane (0.060" EPDM).
 - e. Caustic and Acid Tanks Rooftop: 1½" ribbed metal deck (22 GA, galvanized), 5/8" gypsum board, tapered isocyanurate insulation, and single-ply membrane (0.060" EPDM).

- f. Hurst Boiler Room Rooftop: 1½” ribbed metal deck (18 GA), 5/8” gypsum board, tapered isocyanurate insulation, and single-ply membrane (0.060” EPDM).
- g. Emergency Generator Rooftop: 4” precast concrete, 2” ribbed metal deck, 0.060” EPDM flashing, and fluid applied membrane.

2. Scope of Work:

- a. Remove and dispose of existing roof systems down to the metal and/or concrete decks on all areas of the roof.
- b. Remove and dispose of perimeter flashings metal.
- c. Remove existing wood nailers and replace with new nailers.
- d. Mechanically attach tapered isocyanurate insulation to the deck with a fastener density of 1 fastener every 2 sq.ft. fastener density. Tapered insulation system should have a minimum thickness of 1½ inches and a slope of 1/8” per foot.
- e. All drains shall have 4’x4’ fully mitered sumps with a slope of ½” per foot. Roofing contractor to supply new drain hardware, i.e. drain bolts, drain rings and metal drain strainers. Drain rings and strainers shall be painted construction yellow.
- f. Fully adhere a 60 mil TPO membrane and flashing system.
- g. Install new anti-skid walk pads around all roof-mounted equipment (HVAC units, exhaust fans/hoods/vents, and roof hatch), at step-off points at top and bottom of ladders, and outside doorway thresholds. Additionally, install walk pads to create walking paths between roof-mounted equipment, doorways and ladders at elevation changes. Contractor shall submit roof plan with proposed anti-skid pad layout and walking paths for review and approval.
- h. Install new perimeter flashings metal on all roofs. Metal shall be 0.050”, mill finish aluminum with standard kynar color to match existing color.
- i. Provide Manufacturer’s 15-year labor and materials watertight warranty signed by roofing material's manufacturer and applicator.
 - 1. Warranty to cover all materials provided by roofing manufacturer.

2. Warranty to include provision to allow Owner to make emergency repairs.

1.2. DEFINITIONS

- A. TPO: Thermoplastic Polyolefin.
- B. Roofing Terminology: Refer to ASTM D 1079 and glossary of NRCA's "The NRCA Roofing and Waterproofing Manual" for definition of terms related to roofing work in this Section.
- C. Design Uplift Pressure: The uplift pressure, calculated according to procedures in SPRI's "Wind Load Design Guide for Fully Adhered and Mechanically Fastened Roofing Systems," before multiplication by a safety factor.
- D. Factored Design Uplift Pressure: The uplift pressure, calculated according to procedures in SPRI's "Wind Load Design Guide for Fully Adhered and Mechanically Fastened Roofing Systems," after multiplication by a safety factor.

1.3 REFERENCE STANDARDS

- A. American Society for Testing and Materials (ASTM):
 1. C165 - Standard Test Method for Measuring Compressive Properties of Thermal Insulations.
 2. C209 - Standard Test Methods for Cellulosic Fiber Insulating Board.
 3. C755 - Standard Practice for Selection of Vapor Retarders for Thermal Insulation.
 4. C1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board.
 5. C1371 – Standard Test Method for Thermal Emittance.
 6. C1549 – Standard Test Method for Solar Reflectance.
 7. D412 - Standard Test Methods for Vulcanized Rubber and Thermoplastic Rubbers and Thermoplastic Elastomers - Tension.
 8. D471 – Standard Test Method for Rubber Property – Effect of Liquids.
 9. D573 – Standard Test Method for Rubber - Deterioration in an Air Oven.
 10. D624 - Standard Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers.

11. D746 - Standard Test Method for Brittleness Temperature of Plastics and Elastomers by Impact.
 12. D751 – Standard Test Method for Coated Fabrics.
 13. D816 - Standard Test Methods for Rubber Cements.
 14. D1079 – Terminology Relating to Roofing and Waterproofing.
 15. D1149 – Standard Test Methods for Rubber Deterioration - Cracking in an Ozone Controlled Environment.
 16. D1622 - Standard Test Method for Apparent Density of Rigid Cellular Plastics.
 17. D6878 – Specification for Thermoplastic Polyolefin Based Sheet Roofing.
 18. E108 – Test Methods for Fire Tests of Roof Coverings.
 19. E1980 – Standard Test Method for Solar Reflectance Index.
- A. Factory Mutual Global (FM): Loss Prevention Data.
1. 1-28, Wind Design.
 2. Fire Resistance Ratings of Building Materials
- B. Underwriters Laboratories Inc. (UL).
1. Fire Resistance Directory.
 2. Roofing Materials and Systems Directory.
- C. Building Code:
1. International Building Code, with City of Pittsburgh Amendments.
- D. Where reference is made to one of the above standards, the revision in effect at the time of bid opening shall apply.

1.4 PERFORMANCE REQUIREMENTS

- A. General: Provide installed roofing membrane and base flashings that remain watertight; do not permit the passage of water; and resist specified uplift pressures, thermally induced movement, and exposure to weather without failure.
1. Underwriters Laboratory (UL) Class A Rating.

- B. Material Compatibility: Provide roofing materials that are compatible with one another under conditions of service and application required, as demonstrated by roofing membrane manufacturer based on testing and field experience.
- C. FMG Listing: Provide roofing membrane, base flashings, and component materials that comply with requirements in FMG 4450 and FMG 4470 as part of a membrane roofing system and that are listed in FMG's "Approval Guide" for Class 1 or noncombustible construction, as applicable. Identify materials with FMG markings.
 - 1. Fire/Windstorm Classification: Class 1A- 90.
 - 2. Hail Resistance: MH.
- D. Flashings: Provide base flashings, perimeter flashings, detail flashings and component materials that comply with requirements and recommendations of the following:
 - 1. FMG 1-49 Loss Prevention Data Sheet for Perimeter Flashings.
 - 2. FMG 1-29 Loss Prevention Data Sheet for Above Deck Roof components.
 - 3. NRCA Roofing and Waterproofing Manual (Fifth Edition) for construction details and recommendations.
 - 4. SMACNA Architectural Sheet Metal Manual (Fifth Edition) for construction details.

1.5 SUBMITTALS

- A. Administrative Submittals: Proposed maintenance agreement.
- B. Shop Drawings: for roofing system. Include plans, elevations, sections, details, and attachments to other work.
 - 1. List of materials proposed for use including roofing materials, accessories, insulation, and fasteners.
 - 2. Manufacturer's specifications and installation instructions selected for use, including a description and profile of the complete system from the deck up.
 - 3. TPO Membrane – provide manufacturer’s data sheet with physical properties for TPO material, including: Weather resistance, heat aging, thickness, thickness over scrim, breaking strength, elongation at break, tear strength, puncture resistance, water absorption ozone resistance.
 - 4. Layout of tapered insulation, including slopes, and insulation fastening patterns for corner, perimeter, and field-of-roof locations
 - 5. Layout of anti-skid walk pads.

6. Documentation that anchoring system meets uplift requirements.
- C. Quality Control Submittals:
1. A letter or other documentation from roofing materials Manufacturer stating that installer has been trained and approved to apply the roof system.
 2. Manufacturer's Certification of Compliance.
 3. Sample copy of warranty to be provided.
 4. Sample copy of maintenance agreement to be provided.
 4. Manufacturer's Certificate of Proper Installation.
- D. Contract Closeout Submittals:
1. Manufacturer's Operation and Maintenance Manual, including sketches where applicable; recommendations for periodic inspections, care, and maintenance; identify common causes of damage with instructions for temporary patching until permanent repair can be made.
 2. Manufacturer's Certificate of Completion.
 3. Executed Maintenance Agreement.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications: Engage an installer with a minimum of 5 years of experience in the installation of roofing and flashing systems specified. Installer shall be trained and approved, authorized or licensed by the roofing system Manufacturer to install the Manufacturer's product; and who is eligible to receive the standard Manufacturer's warranty of the specified length.
- B. Fire-Test-Response Characteristics: Provide roofing materials with the fire-test-response characteristics indicated as determined by testing identical products per test method indicated below by UL, FM, or another testing and inspecting agency acceptable to authorities having jurisdiction. Identify materials with appropriate markings of applicable testing and inspecting agency.
1. Exterior Fire-Test Exposure: Class A; complying with ASTM E 108, for application and slopes indicated.
- C. Source Limitations: Obtain components including roof insulation and fasteners for membrane roofing system from same manufacturer as membrane roofing or approved by membrane roofing manufacturer.

D. Pre-roofing Conference:

1. Attendees: Conduit pre-installation conference with the following present: Owner and Owner's representatives, Construction Manager, Engineer, roof deck installer, roofing system materials Manufacturer's representative, roofer, and all other subcontractors likely to be on the roof.
2. Agenda: Acceptability of the deck, roofing system materials Manufacturer's specification selected, the materials, flashing details, roof warranty, and protection of the finished roofing system.
3. Document proceedings, including corrective measures or actions required, and furnish copy of record to each participant.

1.7 DELIVERY, STORAGE AND HANDLING

- A. Deliver materials in their original, unopened containers, clearly labeled with Manufacturer's name, product brand name, approval or listing agency markings, date of manufacture, and such identifying numbers as are appropriate.
- B. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by the roofing system manufacturer. Protect stored liquid materials from direct sunlight. Discard and legally dispose if liquid materials that cannot be applied within its stated shelf life.
- C. Protect roof insulation materials from physical damage and from deterioration by sunlight, moisture, soiling, and other sources. Store in a dry location. Comply with insulation manufacturer's written instructions for handling, storing, and protecting during installation.
- D. Handle and store roofing materials and place equipment in a manner to avoid permanent deflection of the roof deck.

1.8 ENVIRONMENTAL REQUIREMENTS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions, including temperature and precipitation, permit roofing system to be installed according to manufacturer's written instructions and warranty requirements.
- B. Do not expose materials vulnerable to water or sun damage in quantities greater than can be weatherproofed the same day.

- C. Asbestos: Contractor must conduct its operations according to applicable requirements including but not limited to those established by:
 - 1. Occupation Safety and Health Administration (OSHA).
 - 2. Environmental Protection Agency (EPA).
 - 3. Department of Transportation (DOT).
 - 4. State or Local Air Pollution Control Authorities/Agencies.
 - 5. State or Local Solid Waste or Hazardous Waste Authorities/Agencies.
 - 6. State or Local Health Department(s).
 - 7. State or Local Building Code Authorities.
 - 8. Other federal, state or local agencies or authorities.

1.9 WARRANTIES

- A. TPO Roofing Manufacturer's Warranty: Upon Completion of the work, furnish to the Owner the Manufacturer's written and fully executed and signed warranty, certifying the performance of its products and the consistency of the properties of such products against defects in materials for a period of 15 years from the date of Substantial Completion.
 - 1. Special warranty includes membrane roofing, base flashings, roof insulation, fasteners, substrate board, roofing accessories, anti-skid walkways/pads, and other components of the membrane roofing system.
 - 2. Warranty Period: 15 years from the date of Substantial Completion.
 - 3. One warranty shall be supplied for each building (411 and 513).
- B. In the event the roof fails to perform as specified above, the Warrantor (Manufacturer) shall make, at his/her expense, repairs to the roof to make it watertight and enable it to perform as warranted.

1.10 MAINTENANCE SERVICE

- A. Provide maintenance service for roof for each building (411 and 513) after it is substantially complete and placed in use for a period of 15 years.
- B. Maintenance Work: Performed by trained employees of installer.
- C. Make thorough inspections of the roof system:
 - 1. At least twice a year and after severe storms (as defined by ALCOSAN).

2. Perform in spring and fall.
 3. Clear debris and remove from roof area.
 4. Unclog drains where applicable.
 5. Check drains, scuppers, pitch pans and downspouts where applicable.
 6. Check full field of roof for blisters, alligatoring, cracking, and loss of adhesion to substrate.
 7. Check roof edges, copings and flashings.
 8. Check roof penetrations and expansion joints where applicable.
- D. After inspections and in emergency situations, make repairs needed to keep roof in leak-free condition and to ensure service life of the warranty.

PART 2 PRODUCTS

2.1 THERMOPLASTIC POLYOLEFIN ROOFING MEMBRANE

- A. Fabric-Reinforced Thermoplastic Polyolefin (TPO) Sheet: Uniform, flexible sheet formed from a thermoplastic polyolefin, internally fabric or scrim reinforced, and as follows:
1. Manufacturers: subject to compliance with requirements, provide products by one of the following:
 - a. Carlisle SynTec Systems.
 - b. Firestone Building Products Company.
 - c. Johns Manville.
 - d. GAF Materials Corporation.
 2. Thickness 60 mils (1.5 mm).
 3. Exposed Face Color: White
 4. Source Limitations: Obtain components for roofing system from roof membrane manufacturer.

2.2 AUXILIARY MEMBRANE ROOFING MATERIALS

- A. General: Auxiliary materials recommended by roofing system manufacturer for intended use and compatible with membrane roofing and other roofing components.

1. Liquid-type auxiliary materials shall meet VOC limits of authorities having jurisdiction.
- B. Sheet Flashing:
 1. Manufacturer's standard unreinforced thermoplastic polyolefin sheet flashing, 55-mils thick (1.4mm), minimum, of same color as sheet membrane.
- C. Bonding Adhesive: Manufacturer's standard solvent based bonding adhesive for membrane, and solvent-based bonding adhesive for base flashings.
- D. Slip Sheet: Manufacturer's recommended slip sheet, of type required for application.
- E. Metal Termination Bars: Manufacturer's standard predrilled stainless-steel or aluminum bars, approximately 1 by 1/8 inch (25 by 3 mm) thick; with anchors.
- F. Metal Battens: Manufacturer's standard aluminum-zinc-alloy-coated or zinc-coated steel sheet, approximately 1 inch (25 mm) wide by 0.05 inch (1.3 mm) thick, pre-punched.
- G. Fasteners: Factory-coated steel fasteners and metal or plastic plates meeting corrosion-resistance provisions in FMG 4470, designed for fastening membrane to substrate, and acceptable to membrane roofing system manufacturer.
- H. Miscellaneous Accessories: Provide pourable sealers, preformed cone and vent sheet flashings, preformed inside and outside corner sheet flashings, T-joint covers, termination reglets, cover strips, and other accessories.

2.3 RIGID ROOF INSULATION

- A. General: Provide preformed roof insulation boards manufactured or approved by TPO membrane manufacturer that comply with requirements and referenced standards, selected from manufacturer's standard sizes suitable for application, and of thicknesses indicated.
- B. Composite Polyisocyanurate Board Insulation: ASTM C 1289, Type II, Class 1, Grade 2, HCFC-free, 20 psi with felt or glass-fiber mat facer on both major surfaces.
 1. Tapered Insulation Summary:

a. Screenings Garage:	1.5 inch min, 1/8" slope
b. Power Generation Bldg.:	1.5 inch min, 1/8" slope
- C. Provide preformed saddles, crickets, tapered edge strips, and other insulation shapes where indicated or needed for sloping to drain. Fabricate to slopes indicated.

1. Cricket slope: Double tapered insulation slope.
 2. Provide crickets at walls between drains to promote drainage.
 - a. Factory precut or field-tapered insulation board, minimum 1-inch thick with top surface cut to a uniform, continuous slope of 1/4 inch per foot minimum or as shown. Due to different roof sizes, fans, attachments and drain locations on these roofs, positive slope/fall shall be maintained to carry runoff to drains to keep any accumulation of standing water.
 - b. Fabricate miters and edges to match abutting blocks.
- D. HD Isocyanurate Cover Board - a rigid insulation panel composed of a high-density (100 psi), closed-cell polyisocyanurate foam core laminated to coated-glass fiber-mat facer for use as a cover board or recover board, per manufacturer's recommendations.
1. Thickness: 1/2"
 2. R Value: 2.5

2.4 INSULATION ACCESSORIES

- A. General: Auxiliary materials recommended by roofing system manufacturer for intended use and compatible with membrane roofing and existing roofing system.
- B. Insulation Adhesive: Insulation manufacturer's recommended full spread, low-rise two-component urethane adhesive formulated to attach roof insulation to another insulation layer or substrate.
- C. Fasteners: Factory-coated steel fasteners and metal or plastic plates meeting corrosion-resistance provisions in FM 4470; designed for fastening roofing insulation components to substrate; tested by manufacturer for required pullout strength; and acceptable to roofing system manufacturer.
- D. Metal Flashing Sheet: Provide metal flashing sheet matching type, thickness, finish, and profile of existing metal flashing and trim.
- E. Miscellaneous Accessories: Provide miscellaneous accessories recommended by roofing system manufacturer.

2.5 ROOF WALKWAYS/ WALK PADS

- A. Nonskid, textured, in color to match roof membrane, TPO walk pads/rolls.
- B. Walkway pads to be supplied by membrane manufacturer.

1. Provide walkways/pads in locations described and indicated herein and on the Contract Drawings.

2.6 FASTENERS

- A. Into Wood: Zinc-coated, 12-gauge roofing nails with 1-inch diameter metal caps or heads and deformed shanks.
- B. Fasteners: Factory-coated steel fasteners and metal or plastic plates meeting corrosion-resistance provisions in FMG 4470, designed for fastening roof insulation to substrate, and acceptable to roofing system manufacturer.

PART 3 EXECUTION

3.1 PREPARATION

- A. Verify deck is firm, dry, clean, free of sharp edges, burrs, loose and foreign materials, oil, and grease, and reasonably smooth.
- B. Clean substrate of dust, debris, moisture, and other substances detrimental to roofing system installation according to roofing system manufacturer's written instructions. Remove sharp projections.
- C. Report immediately to Owner all cracks, breaks, holes, or other unusual irregularities in the surface.
- D. Fill surface joints and cracks wider than 1/4 inch with pourable sealer.
- E. Correct irregularities to deck/substrate that may cause ponding longer than 48 hours.
- F. Provide removals of existing membrane roofing, flashing, insulation, stone ballast, and appurtenances as indicated on the Drawings or when and where required for the Project. Maintain weathertight conditions at all times during any selective demolition work. Disposal of demolished materials at approved off-site landfill.

3.2 INSTALLATION, GENERAL

- A. Install a complete UL listed Class A system of compatible materials that will create a monolithic watertight single-ply roof membrane that is fully adhered to underlying insulation.

- B. Comply with membrane Manufacturer's instructions.
- C. Follow membrane Manufacturer's standard details for all flashing and termination conditions not shown.
- D. Follow membrane Manufacturer's safety and weather conditions recommendations.
- E. Nailers:
 - 1. Install wooden nailer at the perimeter of each roof level, curb flashing, expansion joints, and similar penetrations.
 - 2. Firmly anchor nailers to resist a force of 75 pounds per linear foot in all directions.
 - 3. Thickness of Nailer: Such that top of nailer is flush with the surface to which membrane is to be applied.
 - 4. A vertical nailer that will secure membrane at the horizontal plane may be used.
- F. Meet Factory Mutual Loss Prevention Data 1-28 requirements for I-90 uplift conditions.

3.3 VAPOR-RETARDER INSTALLATION

- A. Install APP Base sheet heat welded to primed surface to repair or replace existing vapor barrier. Always retain below. To function effectively, vapor retarders or air barriers must prevent air movement into membrane roofing system.
- B. Completely seal vapor retarder at terminations, obstructions, and penetrations to prevent air movement into membrane roofing system.

3.4 INSULATION INSTALLATION

- A. Install insulation necessary for R-value or thickness shown in two or more layers.
- B. Provide sumps around roof drains.
- C. Fasten insulation so that it will meet requirements of Factory Mutual I-90 uplift.
- D. Position boards of first layer so end joints are staggered and edges are supported by roof deck.

- E. Install additional layers with joints staggered or offset from those below.
- F. On Metal Roof Deck:
 - 1. 100 percent mechanically fastened with a Factory Mutual approved fastener in the pattern and quantity recommended by insulation or mechanical fastener Manufacturer.
 - 2. Provide one fastener per 2 square feet of insulation board, unless otherwise specified by Manufacturer.
- G. On Concrete Decks:
 - 1. Fastened with materials and method recommended by insulation or roofing system manufacturer to meet specified wind resistance requirements.
- H. Do not install more insulation each day than can be covered with membrane before end of day or start of inclement weather.

3.5 TPO ADHERED ROOFING MEMBRANE INSTALLATION

- A. Install roofing membrane over area to receive roofing according to membrane roofing system manufacturer's written instructions. Unroll roofing membrane and allow to relax before installing.
- B. Start installation of roofing membrane in presence of membrane roofing system manufacturer's technical personnel.
- C. Accurately align roofing membrane and maintain uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.
- D. Bonding Adhesive:
 - 1. Apply solvent-based bonding adhesive to substrate and underside of roofing membrane at rate required by manufacturer and allow to partially dry before installing roofing membrane. Do not apply bonding adhesive to splice area of roofing membrane.
- E. In addition to adhering, mechanically fasten roofing membrane securely at terminations, penetrations, and perimeter of roofing.
- F. Apply roofing membrane with side laps shingled with slope of roof deck where possible.

- G. Seams: Clean seam areas, overlap roofing membrane, and hot-air weld side and end laps of roofing membrane according to manufacturer's written instructions to ensure a watertight seam installation.
- H. Test lap edges with probe to verify seam weld continuity. Apply lap sealant to seal cut edges of roofing membrane.
- I. Verify field strength of seams a minimum of twice daily and repair seam sample areas.
- J. Repair tears, voids, and lapped seams in roofing membrane that does not meet requirements.
- K. Spread sealant or mastic bed over deck drain flange at deck drains and securely seal roofing membrane in place with clamping ring.
- L. Install roofing membrane and auxiliary materials to tie in to existing roofing.

3.6 TPO BASE FLASHING INSTALLATION

- A. Install sheet flashings and preformed flashing accessories and adhere to substrates according to membrane roofing system manufacturer's written instructions.
- B. Apply solvent-based bonding adhesive to substrate and underside of sheet flashing at required rate and allow to partially dry. Do not apply bonding adhesive to seam area of flashing.
- C. Flash penetrations and field-formed inside and outside corners with sheet flashing.
- D. Clean seam areas and overlap and firmly roll sheet flashings into the adhesive. Weld side and end laps to ensure a watertight seam installation.
- E. Terminate and seal top of sheet flashings and mechanically anchor to substrate through termination bars.

3.7 WALKWAY INSTALLATION

- A. Flexible Walkways: Install walkway products in locations described and indicated on Contract Drawings and as reviewed and approved layout plans. Heat weld to substrate or adhere walkway products to substrate with compatible adhesive according to roofing system manufacturer's written instructions.

3.8 MANUFACTURER'S FIELD SERVICES

- A. Provide Manufacturer's representative at site for installation assistance, inspection and certification of proper installation. See Section 01640, MANUFACTURER'S SERVICES for minimum on-site requirements of manufacturer's representative.

3.9 CLEANUP

- A. Remove spots and smears of adhesive, sealant, or other material resulting from the Work in this section from flashings, gravel stops, and other surfaces not intended to be coated with such material.
- B. During removal of spots and smears, ensure no damage will be done to the surfaces.
- C. Use solvents, if necessary, to satisfactorily clean the materials.

3.10 PROTECTION OF INSTALLED WORK

- A. Limit traffic of personnel and equipment on completed roof to that deemed essential for completion of Project.

3.11 ROOFING MEMBRANE FLOOD TESTING

- A. All roof areas shall be given a 24-hour, 1-inch minimum deep flood test. Drains shall be plugged and barriers placed to contain the water. Repairs if required shall be performed at no additional cost to the Owner. In freezing weather, an 8-hour daytime test shall be sufficient with the written approval of the Construction Manager.

3.12 Installation Details/Typical Details (See Appendix to Specification):

Building Expansion Joints – Roof-to-Wall (Figure 5-6)

Base Flashing for Wall-Supported Deck (TP-5)

Metal Parapet Cap (Coping) and Base Flashing (TP-7)

Equipment Support Curb (TP-10)

Equipment Support Stand (TP-11)

Equipment Support Stand Leg (TP-12)

Raised Curb Detail for Rooftop Air Handling Units and Ducts (Prefabricated Metal Curb) (TP-13)

Raised Curb Detail for Rooftop Air Handling Units and Ducts (Prefabricated Metal Curb) (TP-14)

Skylight, Scuttle and Smoke Vent (TP-15)

Isolated Stack Flashing (TP-16)

Plumbing Vent (TP-20A)

Plumbing Vent (Field Wrap) (TP-20B)

Pipe Penetration (Field Wrap) (TP-20C)

Penetration Pocket (TP-21)

Roof Drain (TP-22)

---END OF SECTION---

Appendix to Specification 07540

Installation Details/Typical Details

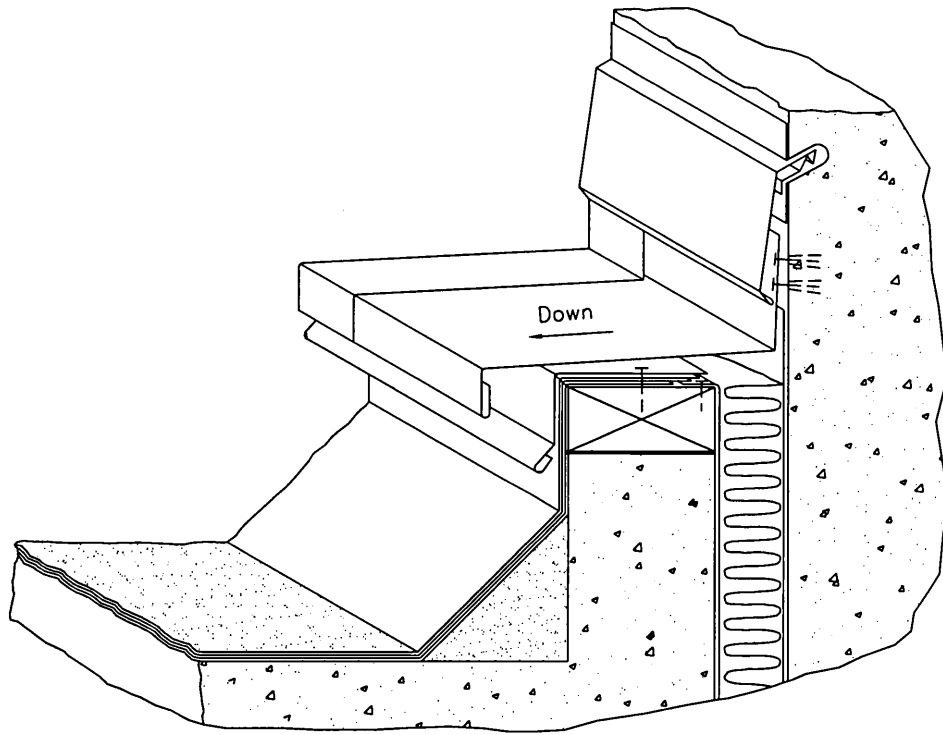


FIGURE 5-6 A

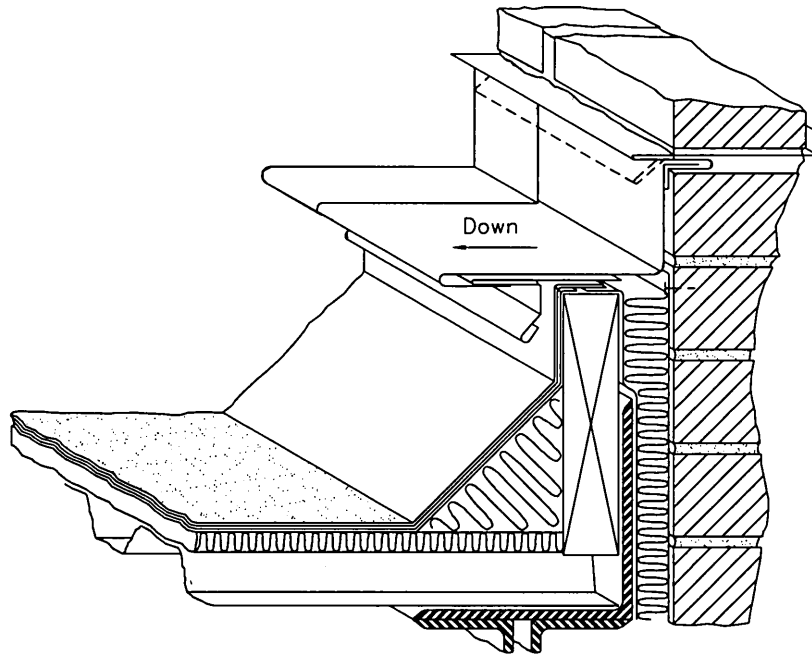
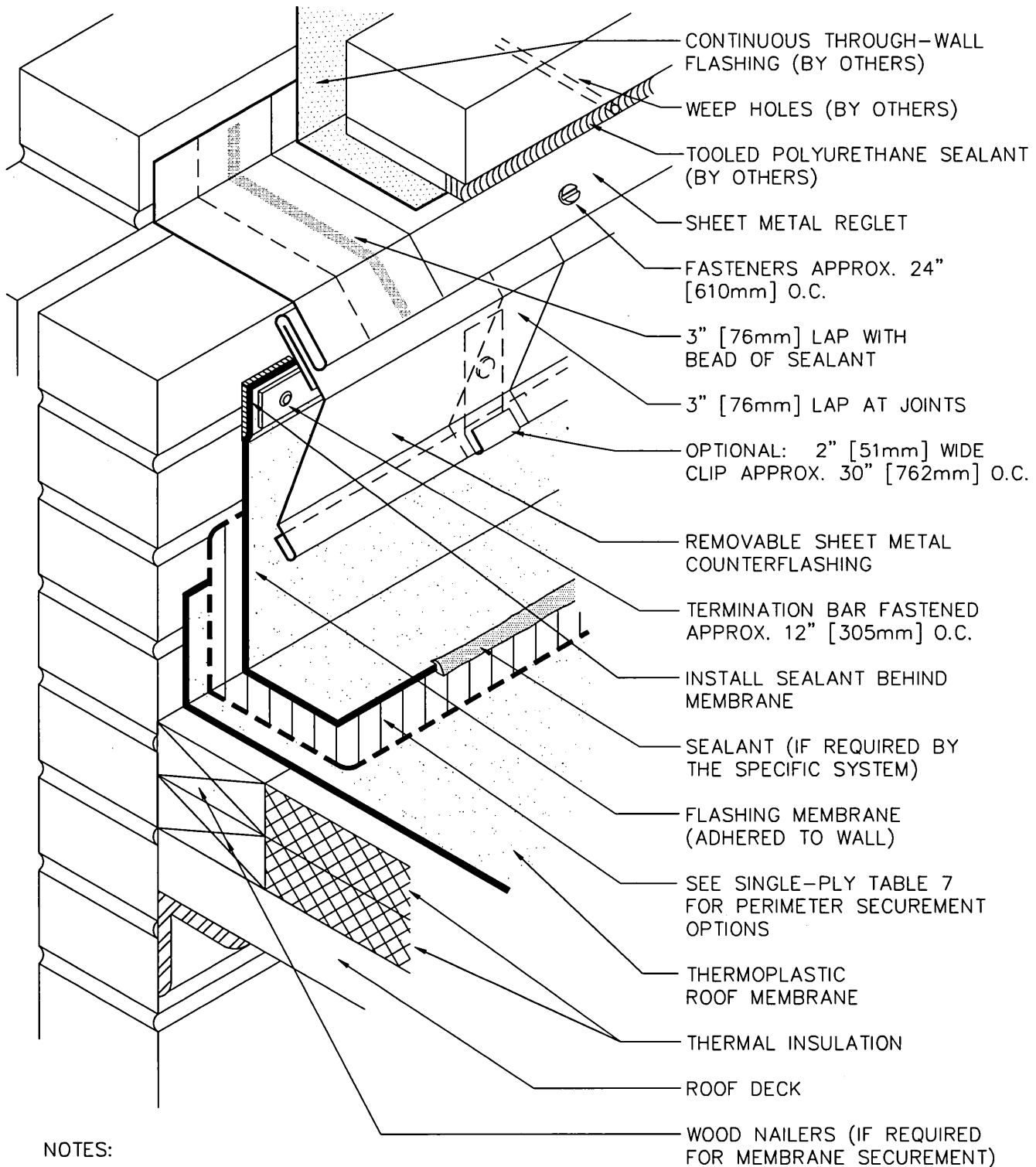


FIGURE 5-6 B

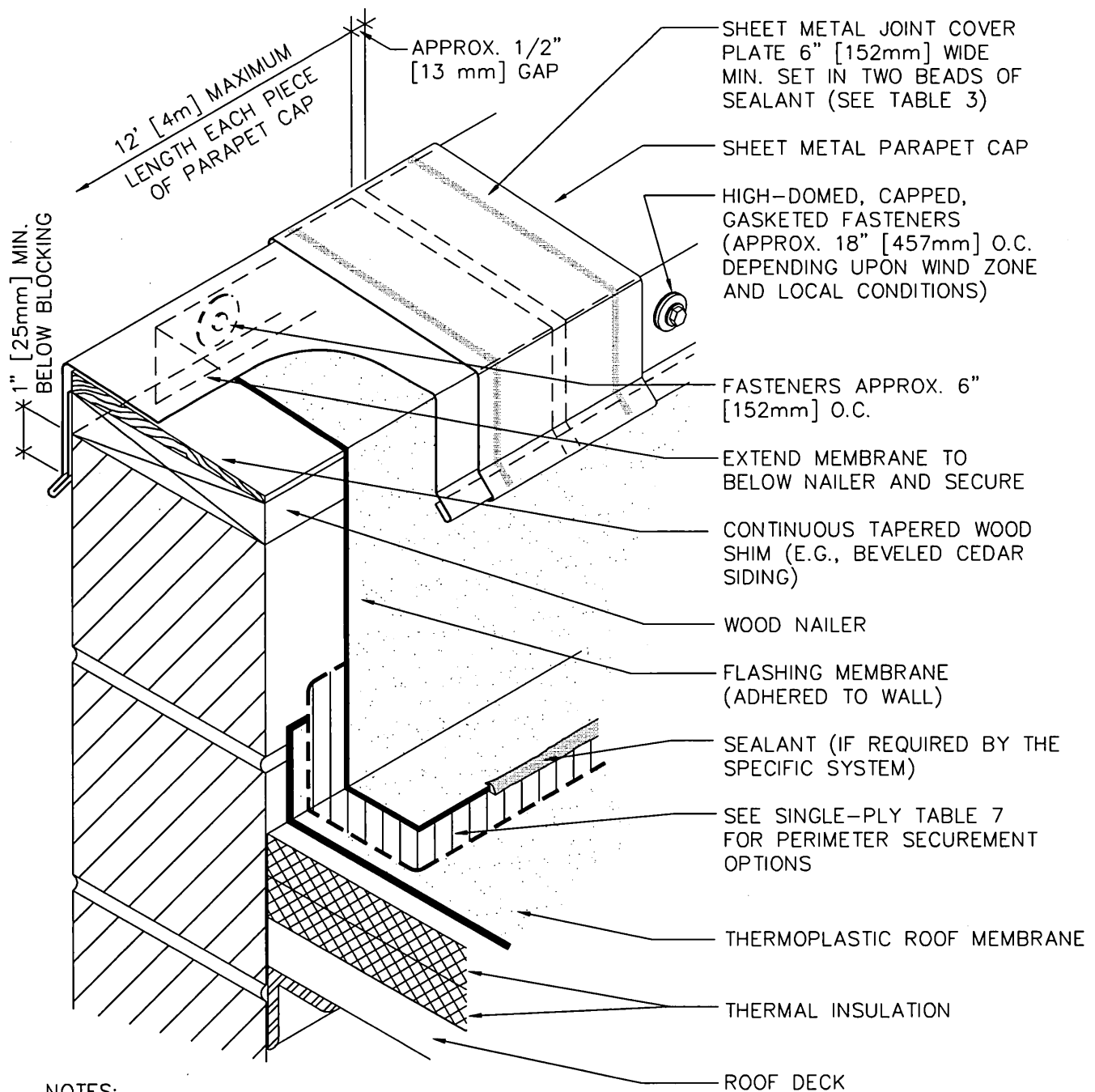
BUILDING EXPANSION JOINTS—
ROOF-TO-WALL

FIGURE 5-6



NOTES:

1. THIS DETAIL SHOULD BE USED ONLY WHERE THE DECK IS SUPPORTED BY THE WALL.
2. THE JOINTS IN THE SHEET METAL COUNTERFLASHING SHOULD NOT BE SOLDERED.
3. OTHER METHODS OF TOP TERMINATION AND COUNTERFLASHING MAY BE APPLICABLE (SEE TABLE 2).
4. TOP LAYER OF INSULATION CAN BE EITHER THERMAL INSULATION OR COVERBOARD INSULATION.
5. SLIP SHEET MAY BE REQUIRED BELOW MEMBRANE WHEN OVERLAYING SOME INSULATIONS OR SUBSTRATES.

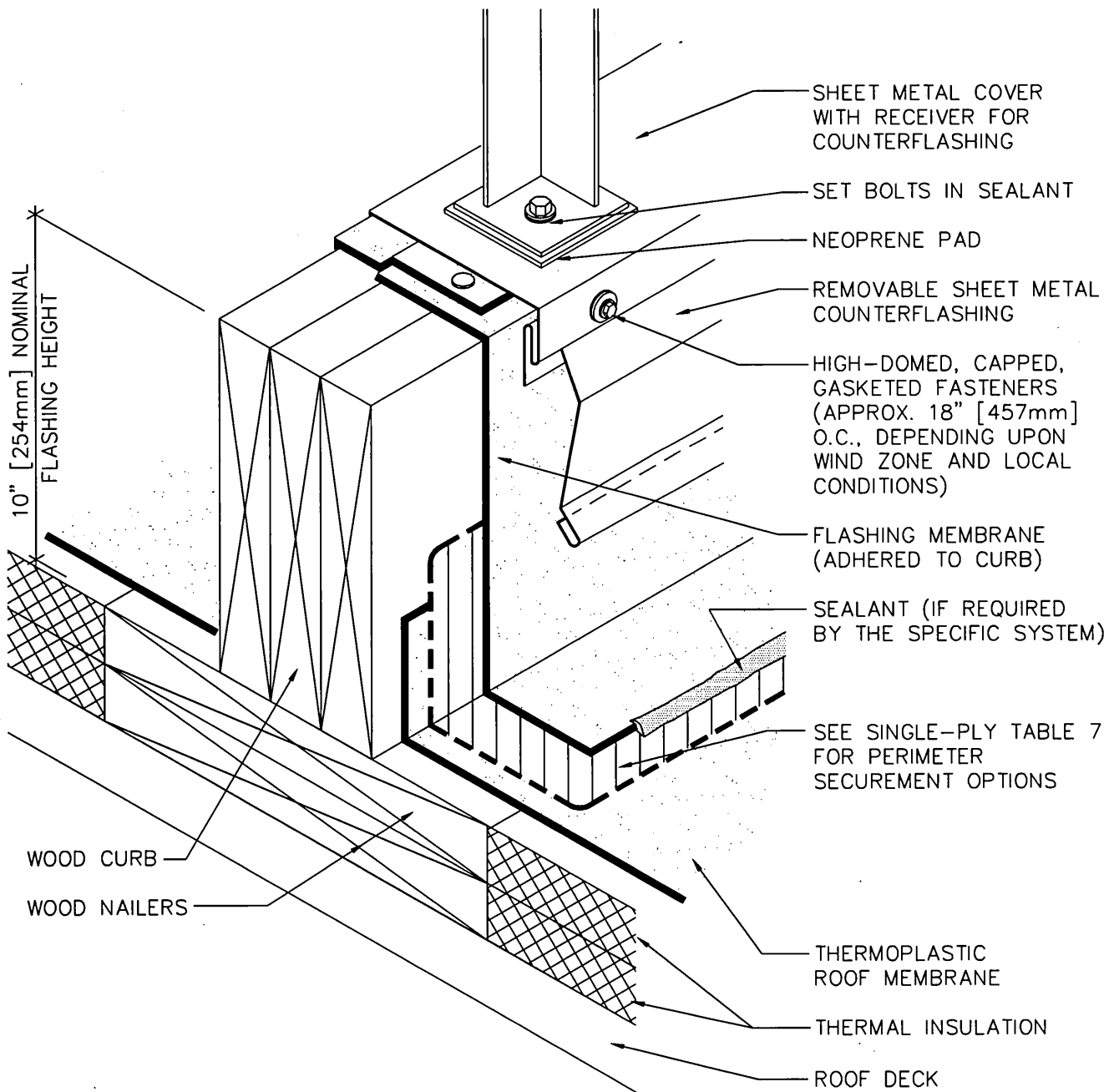


NOTES:

1. THIS DETAIL SHOULD BE USED ONLY WHERE THE DECK IS SUPPORTED BY THE WALL. EXPANSION JOINT DETAIL SIMILAR TO DETAIL TP-4 SHOULD BE USED FOR NON-WALL-SUPPORTED DECK.
2. SEE TABLE 3 FOR ALTERNATE SHEET METAL PARAPET CAP SECUREMENT, AND LOCKS AND SEAMS FOR JOINTS IN SHEET METAL.
3. TOP LAYER OF INSULATION CAN BE EITHER THERMAL INSULATION OR COVERBOARD INSULATION.
4. SLIP SHEET MAY BE REQUIRED BELOW MEMBRANE WHEN OVERLAYING SOME INSULATIONS OR SUBSTRATES.

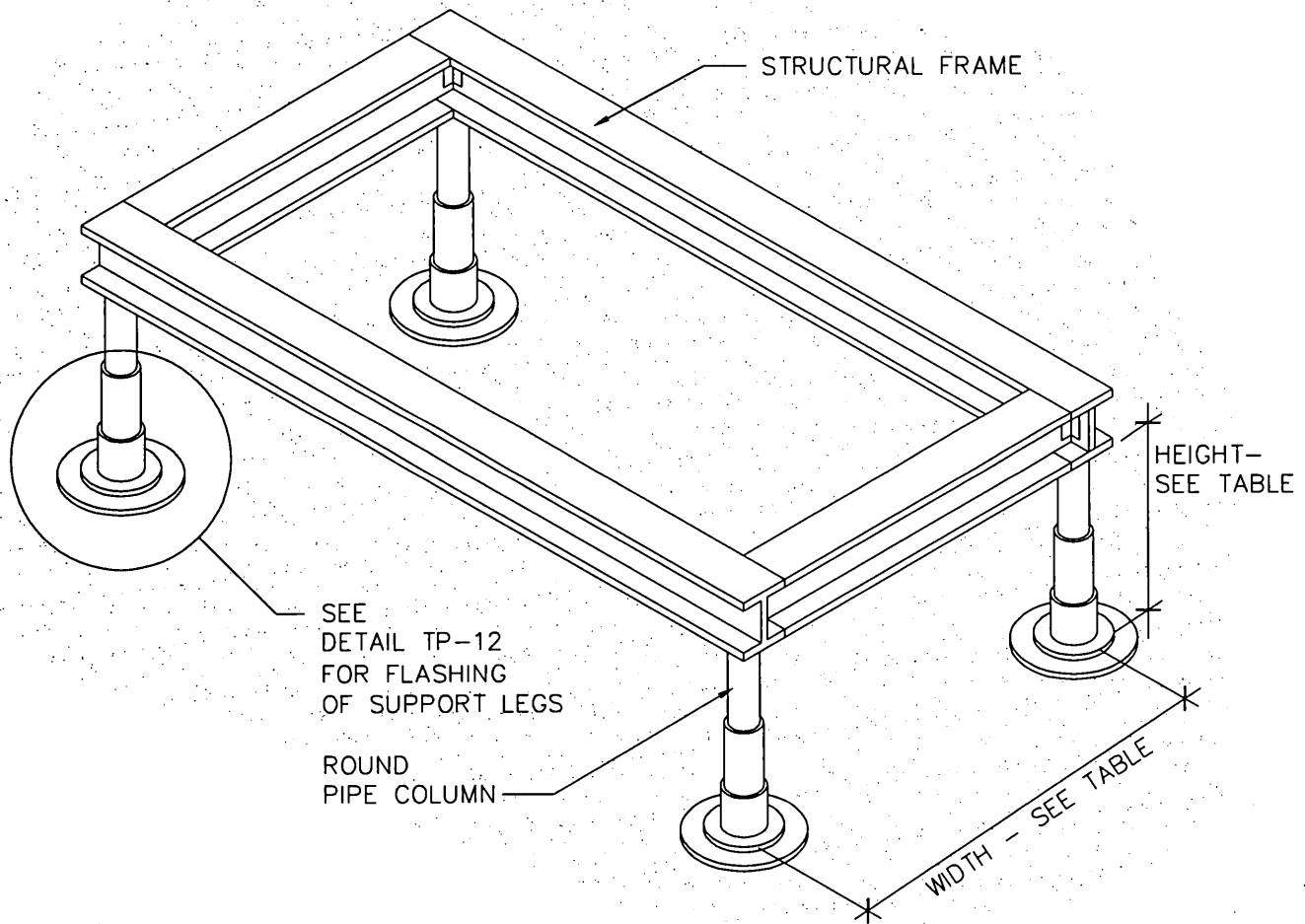
METAL PARAPET CAP (COPING)
AND BASE FLASHING

TP-7



NOTES:

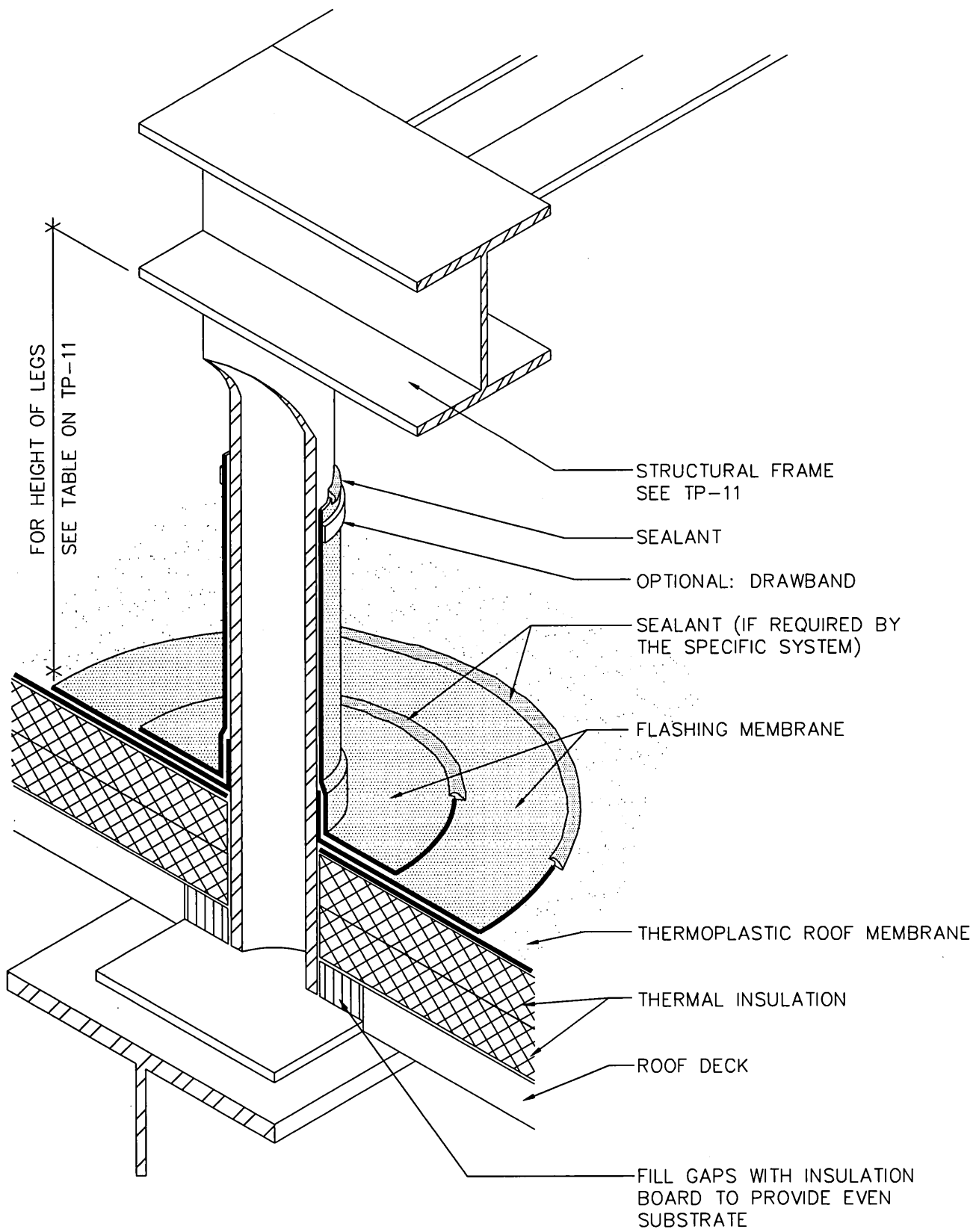
1. THIS DETAIL ALLOWS FOR ROOF MAINTENANCE AROUND THE SUPPORTED EQUIPMENT. THE CONTINUOUS SUPPORT IS PREFERRED IN LIGHTWEIGHT STRUCTURAL SYSTEMS BECAUSE THE EQUIPMENT WEIGHT CAN BE SPREAD ACROSS TWO OR MORE SUPPORTING MEMBERS. WHERE HEAVY STRUCTURAL SYSTEMS ARE USED OR WHERE THE LOAD CAN BE CONCENTRATED OVER A COLUMN, DETAIL TP-11 MAY BE PREFERRED. A MINIMUM OF 2 FEET [610mm] OF HORIZONTAL CLEARANCE MUST BE PROVIDED FOR REMOVAL AND REPLACEMENT OF ROOFING AND FLASHING BETWEEN PARALLEL SUPPORTS. A MINIMUM OF 3 FEET [914mm] OF VERTICAL CLEARANCE FROM ROOF SURFACE TO BOTTOM OF SUPPORTED EQUIPMENT SHOULD ALSO BE PROVIDED.
2. ATTACH NAILER TO DECK WITH SUITABLE FASTENERS.
3. TOP LAYER OF INSULATION CAN BE EITHER THERMAL INSULATION OR COVERBOARD INSULATION.
4. SLIP SHEET MAY BE REQUIRED BELOW MEMBRANE WHEN OVERLAYING SOME INSULATIONS OR SUBSTRATES.

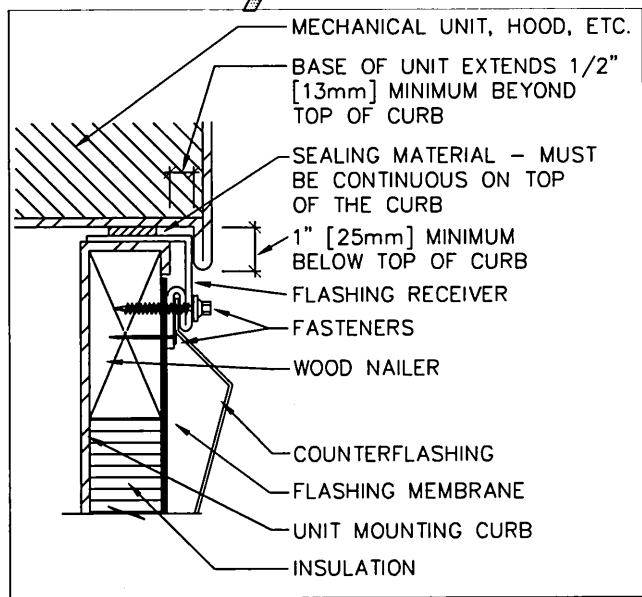
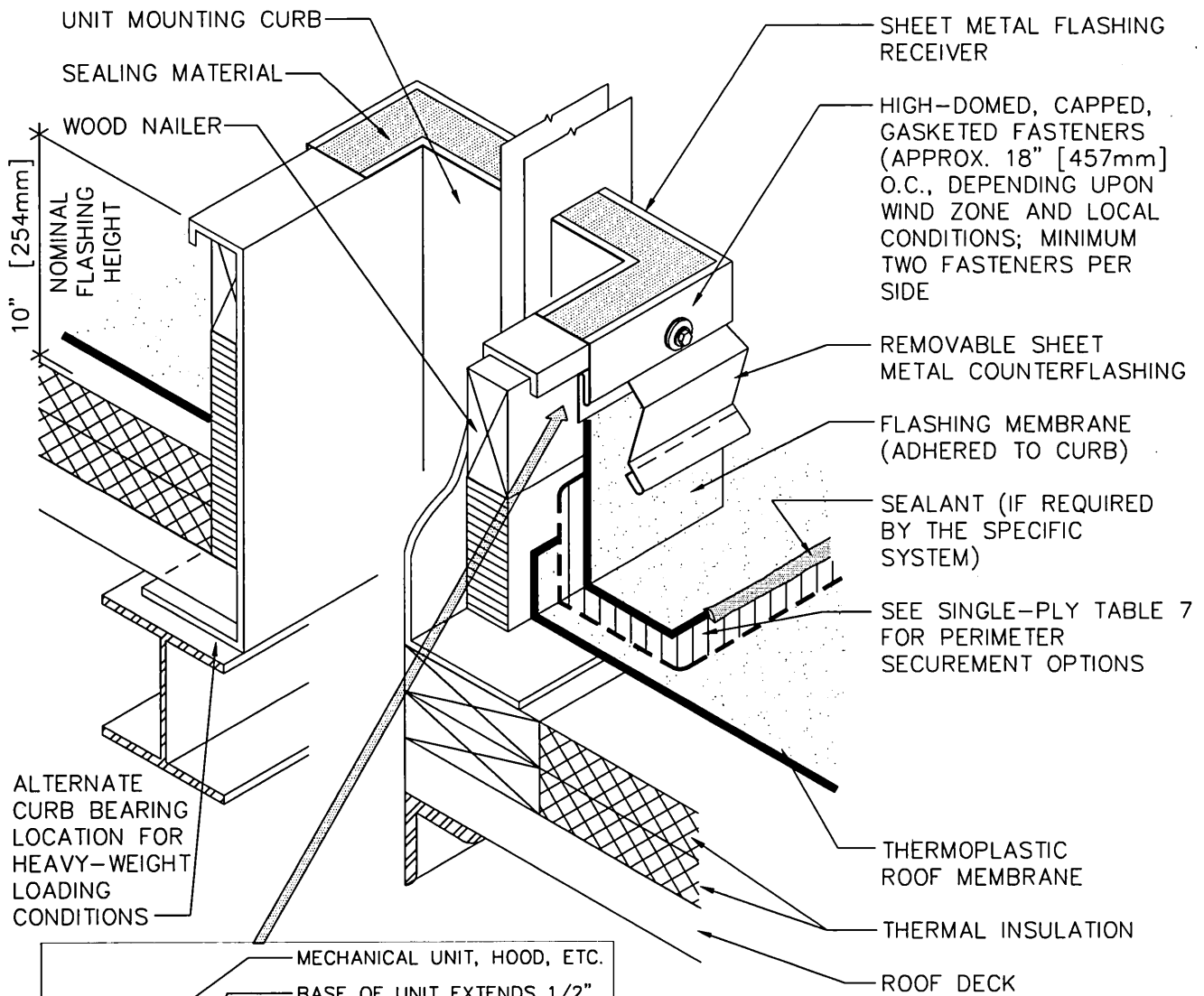


WIDTH OF EQUIPMENT	HEIGHT OF LEGS
UP TO 24" [UP TO 610mm]	24" [610mm]
25" TO 48" [635mm TO 1.2m]	36" [914mm]
48" AND WIDER [1.2m AND WIDER]	48" [1.2m]

NOTE:

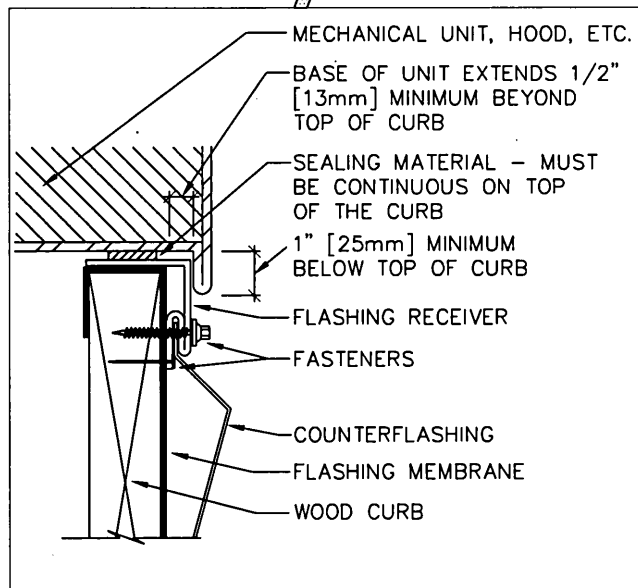
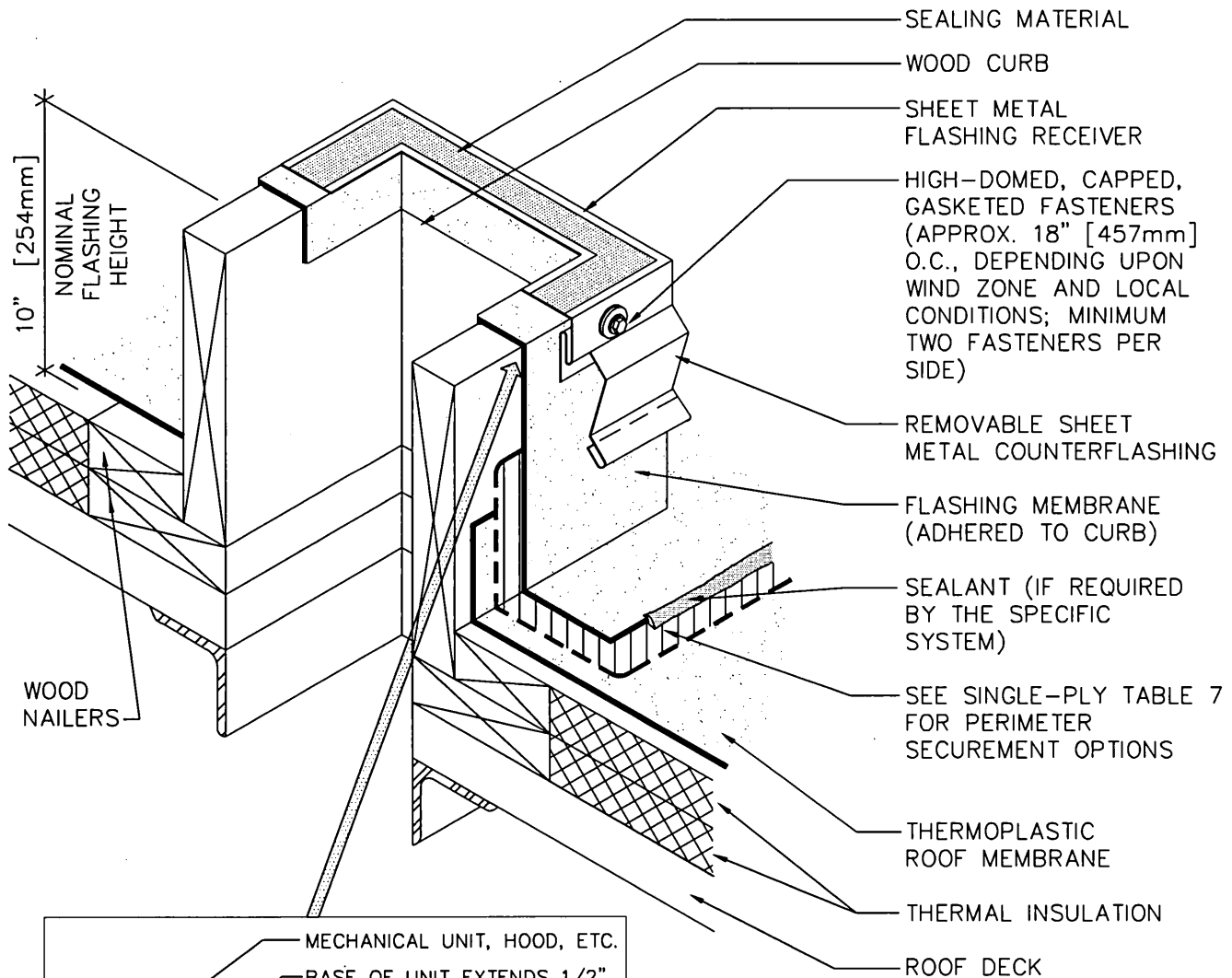
THIS DETAIL MAY BE PREFERABLE TO DETAIL TP-10 WHEN THE CONCENTRATED LOADS CAN BE LOCATED DIRECTLY OVER COLUMNS OR HEAVY GIRDERS IN THE STRUCTURE OF THE BUILDING. THIS DETAIL CAN BE ADAPTED FOR OTHER USES, SUCH AS SIGN SUPPORTS.





NOTES:

1. THE CURBS, TOP WOOD NAILER, AND SEAL STRIP ARE TO BE SUPPLIED BY THE CURB MANUFACTURER.
2. ATTACH NAILER TO DECK WITH SUITABLE FASTENERS.
3. WHEN POSSIBLE, THE MECHANICAL UNITS SHOULD NOT BE SET UNTIL THE ROOF MEMBRANE AND FLASHING HAVE BEEN INSTALLED.
4. TOP LAYER OF INSULATION CAN BE EITHER THERMAL INSULATION OR COVERBOARD INSULATION.
5. SLIP SHEET MAY BE REQUIRED BELOW MEMBRANE WHEN OVERLAYING SOME INSULATIONS OR SUBSTRATES.

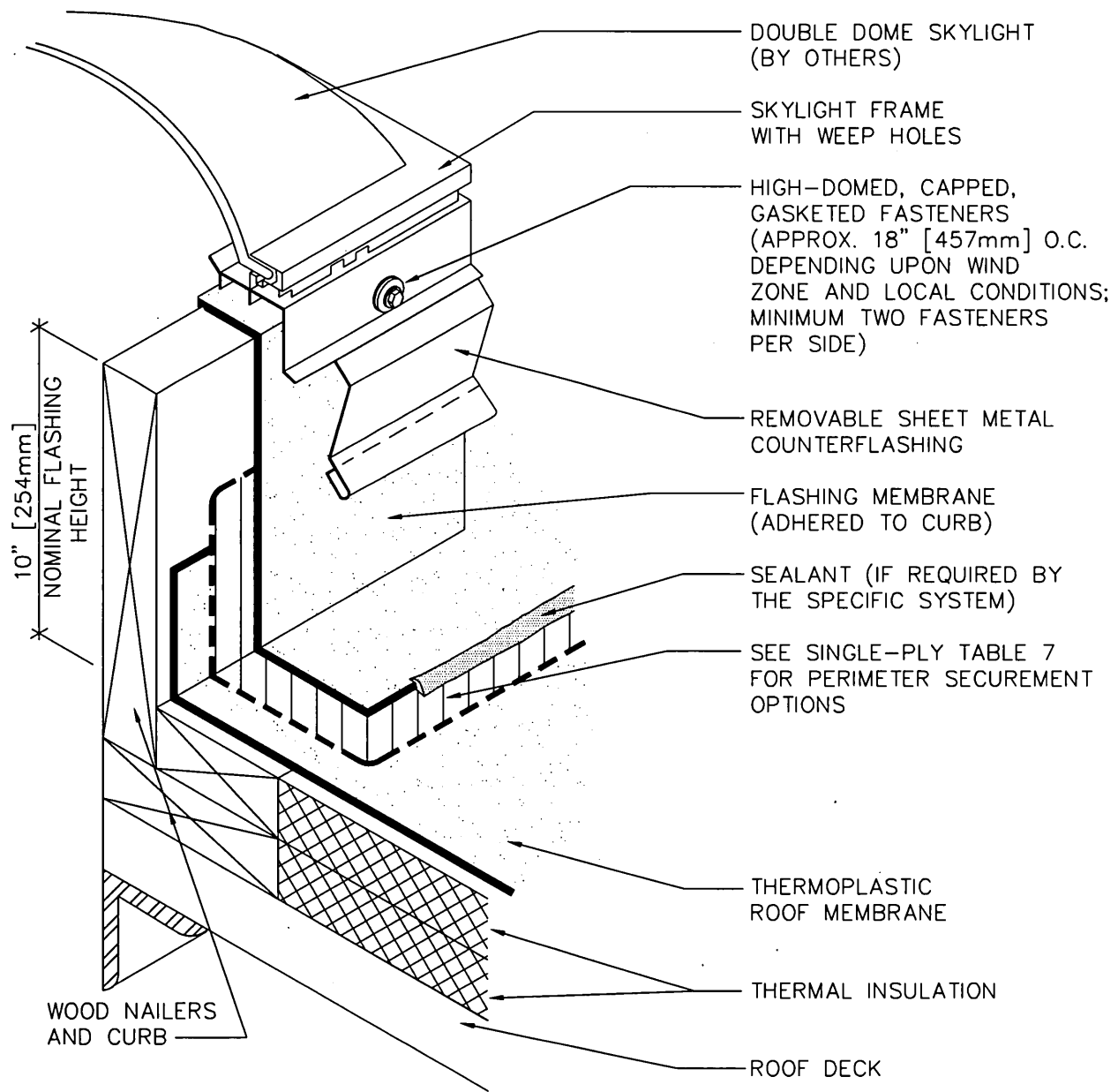


NOTES:

1. ATTACH NAILER TO DECK WITH SUITABLE FASTENERS.
2. TOP LAYER OF INSULATION CAN BE EITHER THERMAL INSULATION OR COVERBOARD INSULATION.
3. SLIP SHEET MAY BE REQUIRED BELOW THE MEMBRANE WHEN OVERLAYING SOME INSULATIONS OR SUBSTRATES.
4. WHEN POSSIBLE, THE MECHANICAL UNITS SHOULD NOT BE SET UNTIL THE ROOF MEMBRANE AND FLASHING HAVE BEEN INSTALLED.

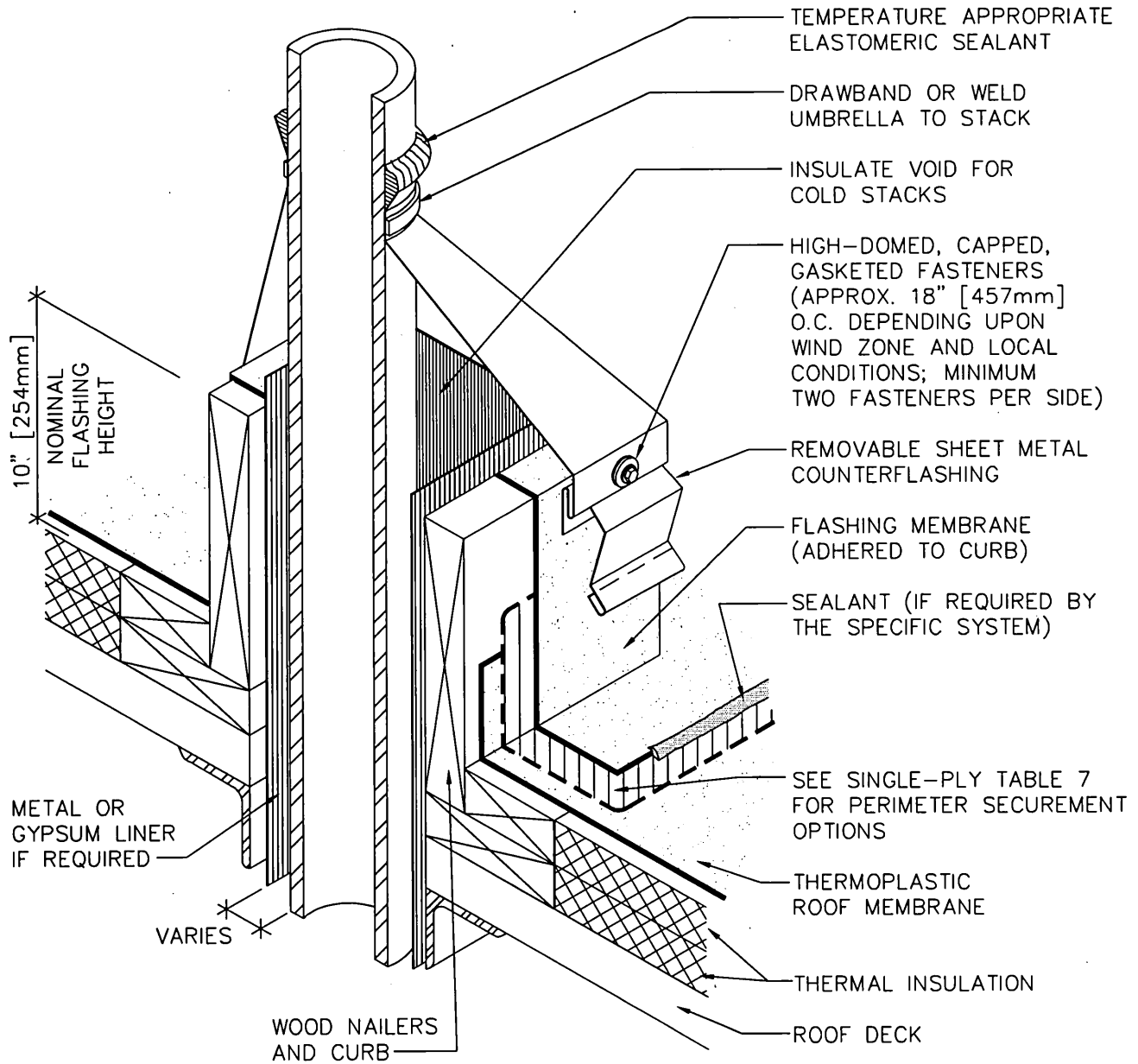
RAISED CURB DETAIL FOR ROOFTOP AIR HANDLING UNITS AND DUCTS (JOB SITE CONSTRUCTED WOOD CURB)

TP-14



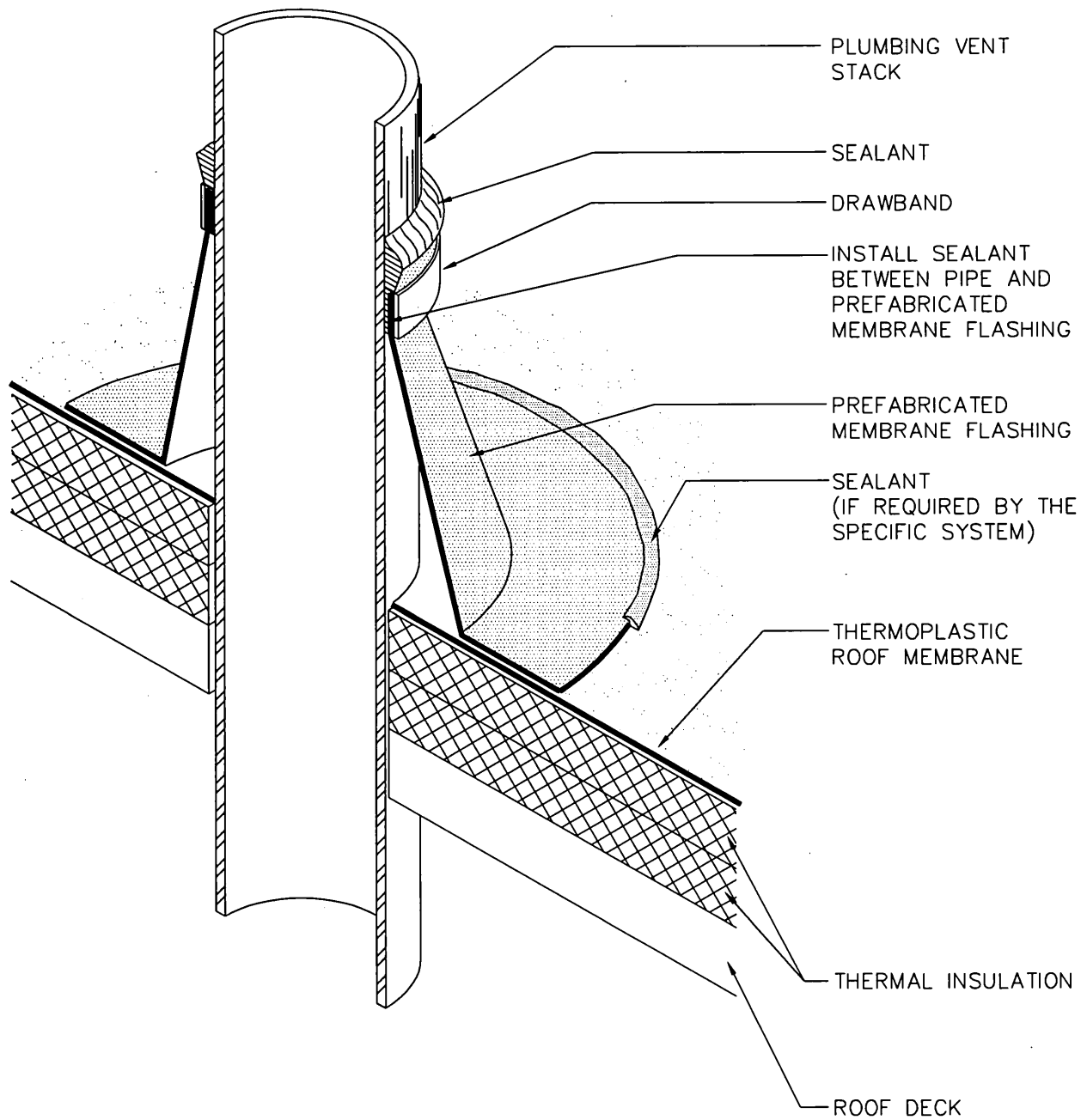
NOTES:

1. ATTACH NAILER TO DECK WITH SUITABLE FASTENERS.
2. TOP LAYER OF INSULATION CAN BE EITHER THERMAL INSULATION OR COVERBOARD.
3. SLIP SHEET MAY BE REQUIRED BELOW MEMBRANE WHEN OVERLAYING SOME INSULATIONS OR SUBSTRATES.



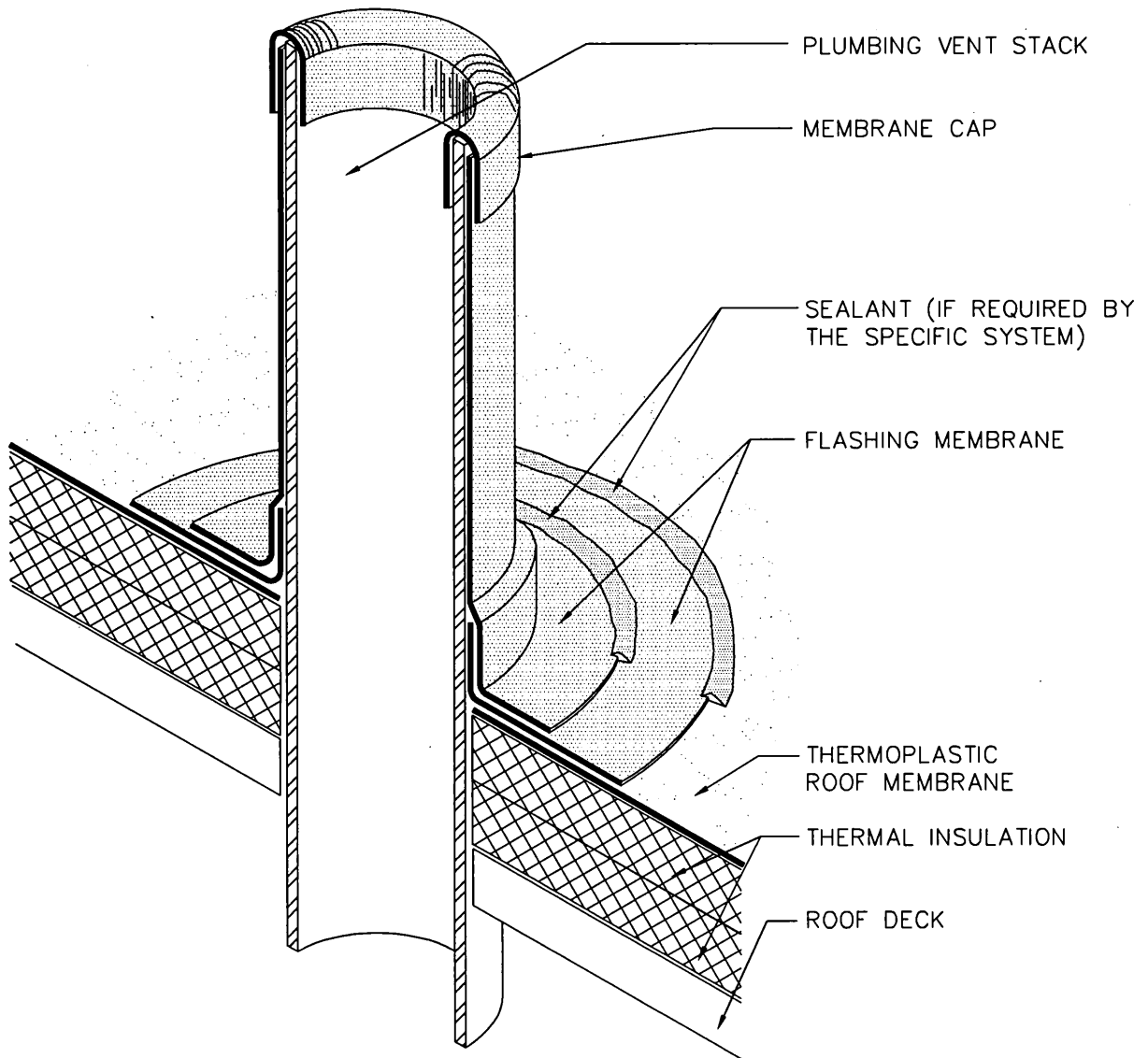
NOTES:

1. THIS DETAIL ALLOWS THE OPENING TO BE COMPLETED BEFORE THE STACK IS PLACED.
2. THE CLEARANCE NECESSARY BETWEEN THE OPTIONAL GYPSUM OR METAL LINER AND THE STACK, AND THE NEED FOR INSULATION, WILL DEPEND ON THE TEMPERATURE OF THE MATERIAL HANDLED BY THE STACK.
3. ATTACH NAILER TO DECK WITH SUITABLE FASTENERS.
4. TOP LAYER OF INSULATION CAN BE EITHER THERMAL INSULATION OR COVERBOARD INSULATION.
5. SLIP SHEET MAY BE REQUIRED BELOW MEMBRANE WHEN OVERLAYING SOME INSULATIONS OR SUBSTRATES.



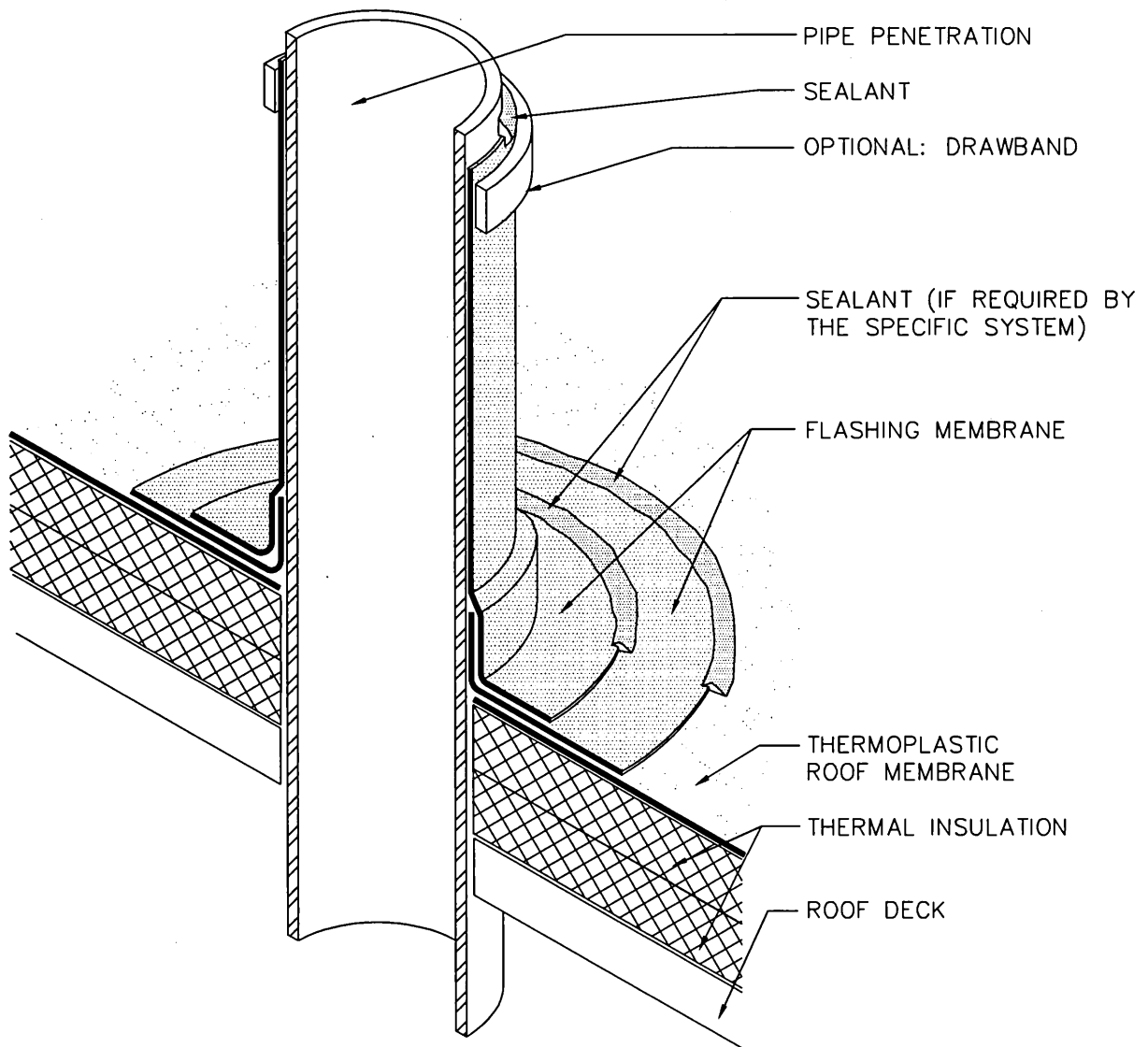
NOTES:

1. VENT STACKS AND OTHER PIPES SHOULD HAVE A MINIMUM OF 12 INCHES OF CLEARANCE ON ALL SIDES FROM WALLS, CURBS, AND OTHER PROJECTIONS TO FACILITATE PROPER FLASHING. (SEE TABLE 4.)
2. TOP LAYER OF INSULATION CAN BE EITHER THERMAL INSULATION OR COVERBOARD INSULATION.
3. SLIP SHEET MAY BE REQUIRED BELOW MEMBRANE WHEN OVERLAYING SOME INSULATIONS OR SUBSTRATES.



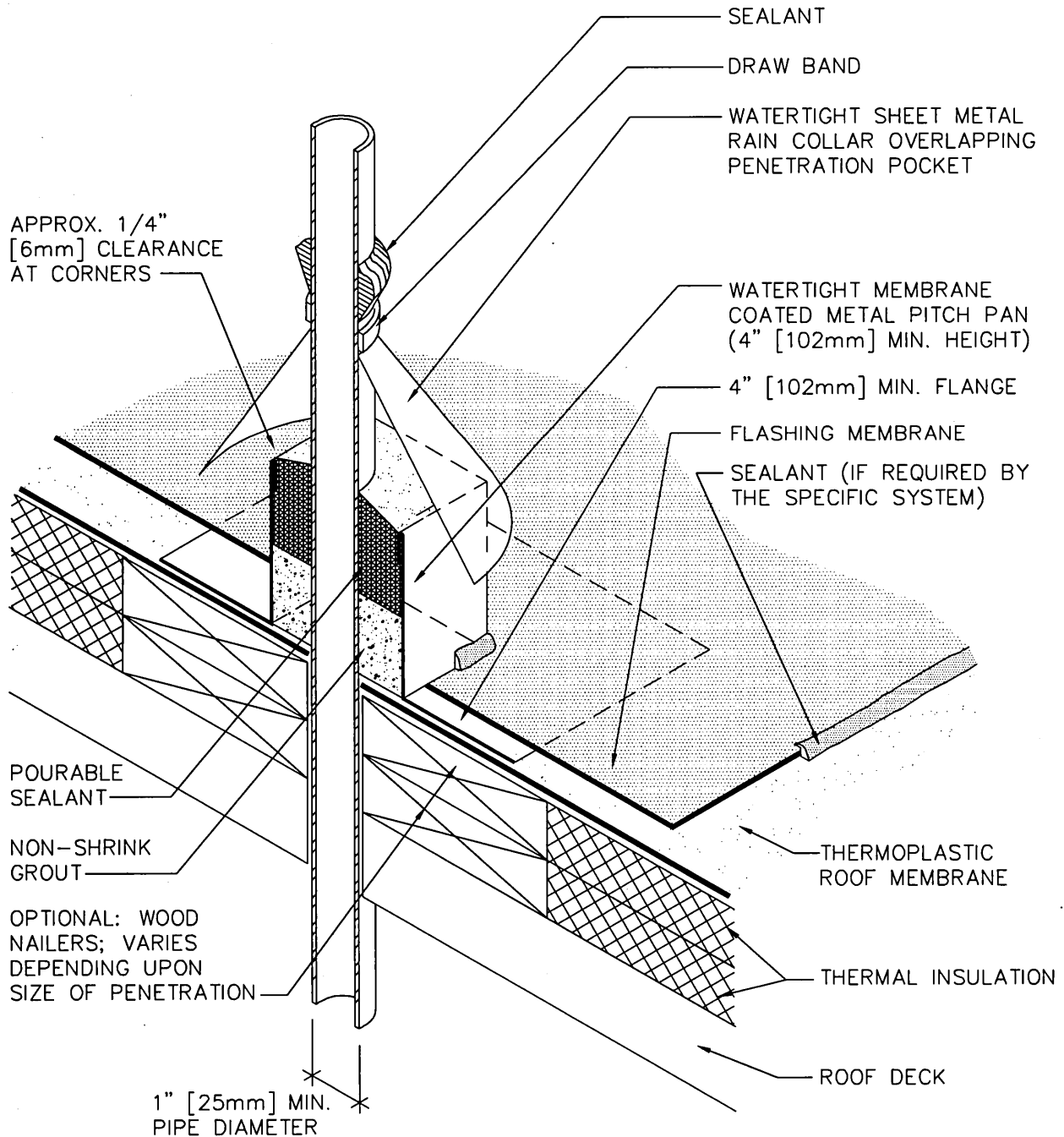
NOTES:

1. VENT STACKS AND OTHER PIPES SHOULD HAVE A MINIMUM OF 12 INCHES OF CLEARANCE ON ALL SIDES FROM WALLS, CURBS, AND OTHER PROJECTIONS TO FACILITATE PROPER FLASHING. (SEE TABLE 4.)
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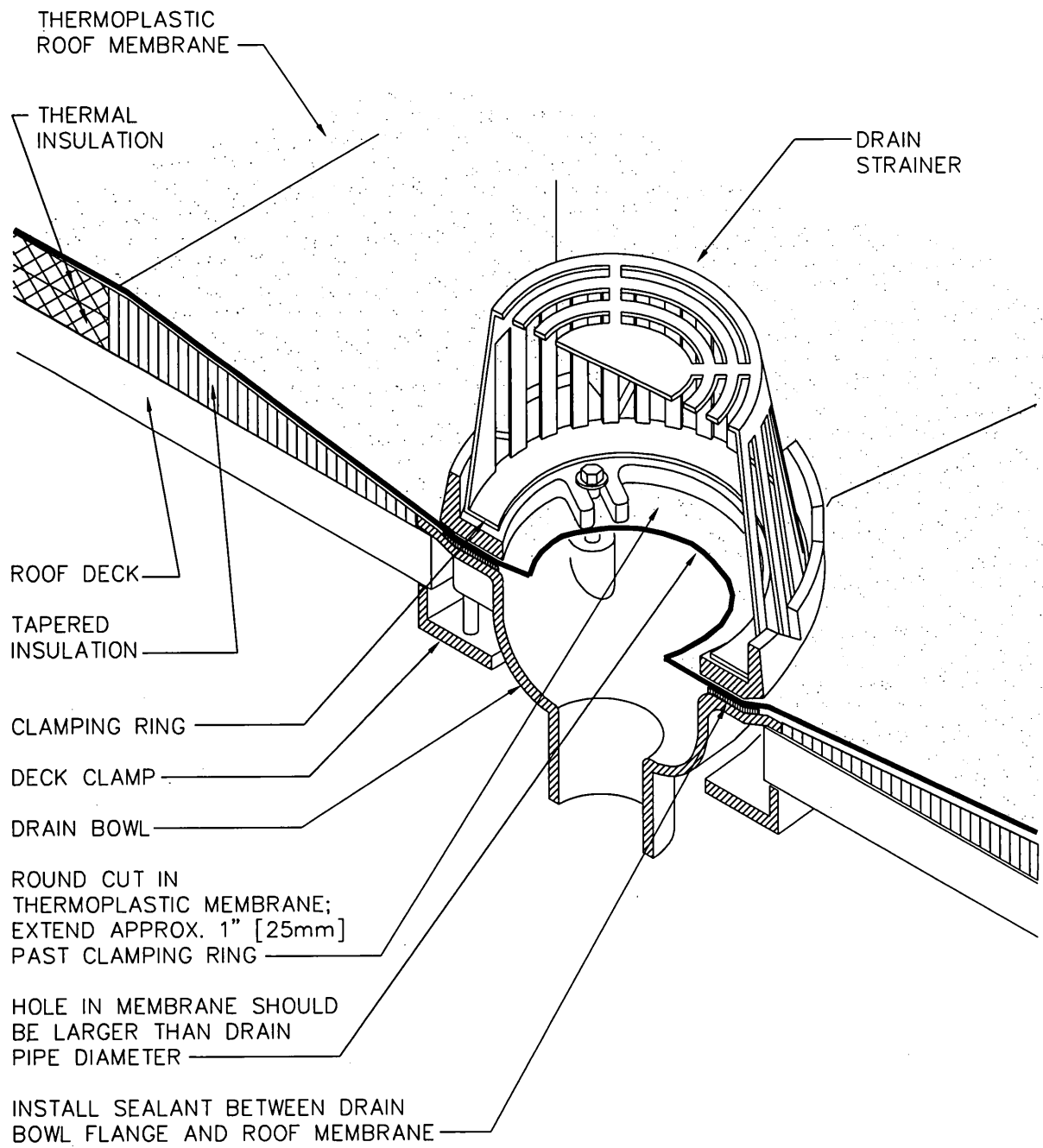
NOTES:

1. VENT STACKS AND OTHER PIPES SHOULD HAVE A MINIMUM OF 12 INCHES OF CLEARANCE ON ALL SIDES FROM WALLS, CURBS, AND OTHER PROJECTIONS TO FACILITATE PROPER FLASHING. (SEE TABLE 4.)
2. TOP LAYER OF INSULATION CAN BE EITHER THERMAL INSULATION OR COVERBOARD INSULATION.
3. SLIP SHEET MAY BE REQUIRED BELOW MEMBRANE WHEN OVERLAYING SOME INSULATIONS OR SUBSTRATES.



NOTES:

1. THIS DETAIL DEPICTS CUSTOM FABRICATED CONSTRUCTION. MANY MANUFACTURERS NOW OFFER PREFABRICATED FLASHING PIECES OR PERMIT THE USE OF MATERIALS FOR FLASHING PURPOSES OTHER THAN THOSE THAT ARE SHOWN HERE. SPECIFICS ON THESE PROPRIETARY DESIGNS VARY GREATLY, AND INDIVIDUAL MANUFACTURERS' SPECIFICATIONS SHOULD BE CONSULTED FOR THEIR USE.
2. ATTACH OPTIONAL NAILER TO DECK WITH SUITABLE FASTENERS.
3. TOP LAYER OF INSULATION CAN BE EITHER THERMAL INSULATION OR COVERBOARD INSULATION.
4. SLIP SHEET MAY BE REQUIRED BELOW MEMBRANE WHEN OVERLAYING SOME INSULATIONS OR SUBSTRATES.



NOTES:

1. THE USE OF A METAL DECK SUMP PAN IS NOT RECOMMENDED. HOWEVER, DRAIN RECEIVER/BEARING PLATES ARE APPLICABLE WITH SOME PROJECTS.
2. SLIP SHEET MAY BE REQUIRED BELOW MEMBRANE WHEN OVERLAYING SOME INSULATIONS OR SUBSTRATES.

CONTRACT 1714

**ROOF MODIFICATIONS FOR SCREENINGS GARAGE
AND POWER GENERATION BUILDING**

ARTICLE 7

PREVAILING MINIMUM WAGE DETERMINATION

**BUREAU OF LABOR LAW COMPLIANCE
PREVAILING WAGES PROJECT RATES**

Project Name:	Contract 1714 - Roof Modifications for Screenings Garage and Power Generation Building
Awarding Agency:	Allegheny County Sanitary Authority (ALCOSAN)
Contract Award Date:	5/21/2020
Serial Number:	20-02831
Project Classification:	Building/Heavy/Highway
Determination Date:	4/8/2020
Assigned Field Office:	Pittsburgh
Field Office Phone Number:	(412)565-5300
Toll Free Phone Number:	(877)504-8354
Project County:	Allegheny County

**BUREAU OF LABOR LAW COMPLIANCE
PREVAILING WAGES PROJECT RATES**

Project: 20-02831 - Building	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Asbestos & Insulation Workers	8/1/2017		\$36.66	\$24.25	\$60.91
Asbestos & Insulation Workers	8/1/2018		\$37.11	\$24.80	\$61.91
Asbestos & Insulation Workers	8/1/2019		\$38.16	\$25.75	\$63.91
Boilermakers	6/1/2016		\$40.90	\$27.61	\$68.51
Bricklayer	12/1/2017		\$31.69	\$22.15	\$53.84
Bricklayer	12/1/2018		\$32.35	\$22.49	\$54.84
Bricklayer	6/1/2019		\$32.75	\$22.79	\$55.54
Bricklayer	12/1/2019		\$33.25	\$22.99	\$56.24
Carpenters, Drywall Hangers, Framers, Instrument Men, Lathers, Soft Floor Layers	6/1/2017		\$33.01	\$16.63	\$49.64
Carpenters, Drywall Hangers, Framers, Instrument Men, Lathers, Soft Floor Layers	6/1/2018	5/31/2019	\$33.75	\$17.34	\$51.09
Carpenters, Drywall Hangers, Framers, Instrument Men, Lathers, Soft Floor Layers	6/1/2019	5/31/2020	\$34.72	\$17.82	\$52.54
Carpenters, Drywall Hangers, Framers, Instrument Men, Lathers, Soft Floor Layers	6/1/2020	5/31/2021	\$35.48	\$18.56	\$54.04
Carpenters, Drywall Hangers, Framers, Instrument Men, Lathers, Soft Floor Layers	6/1/2021		\$36.23	\$19.31	\$55.54
Cement Mason/Concrete Finisher	6/1/2017	5/31/2018	\$29.52	\$18.39	\$47.91
Cement Mason/Concrete Finisher	6/1/2018	5/31/2019	\$30.27	\$18.99	\$49.26
Cement Mason/Concrete Finisher	6/1/2019		\$31.27	\$19.39	\$50.66
Drywall Finisher	6/1/2017		\$27.80	\$19.14	\$46.94
Drywall Finisher	6/1/2018		\$28.10	\$19.99	\$48.09
Drywall Finisher	6/1/2019	5/31/2020	\$29.10	\$20.49	\$49.59
Drywall Finisher	6/1/2020	5/31/2021	\$30.10	\$20.89	\$50.99
Drywall Finisher	6/1/2021	5/31/2022	\$31.00	\$21.39	\$52.39
Drywall Finisher	6/1/2022		\$32.00	\$21.89	\$53.89
Electricians & Telecommunications Installation Technician	12/23/2017		\$39.76	\$26.44	\$66.20
Electricians & Telecommunications Installation Technician	12/22/2018		\$41.74	\$26.44	\$68.18
Electricians & Telecommunications Installation Technician	12/22/2019		\$44.46	\$26.44	\$70.90
Elevator Constructor	1/1/2018		\$47.22	\$33.00	\$80.22
Glazier	9/1/2017		\$28.00	\$22.60	\$50.60
Glazier	9/1/2018		\$28.62	\$23.23	\$51.85
Glazier	9/1/2019		\$30.50	\$24.40	\$54.90
Iron Workers (Bridge, Structural Steel, Ornamental, Precast, Reinforcing)	6/1/2017		\$33.54	\$30.24	\$63.78
Iron Workers	6/1/2018		\$34.49	\$31.17	\$65.66
Iron Workers	6/1/2019		\$35.49	\$32.30	\$67.79
Laborers (Class 01 - See notes)	1/1/2018		\$22.32	\$16.67	\$38.99
Laborers (Class 01 - See notes)	1/1/2019		\$22.37	\$17.67	\$40.04
Laborers (Class 01 - See notes)	1/1/2020		\$26.42	\$14.67	\$41.09
Laborers (Class 01 - See notes)	1/1/2021		\$27.47	\$14.67	\$42.14
Laborers (Class 02 - See notes)	1/1/2018		\$22.47	\$16.67	\$39.14
Laborers (Class 02 - See notes)	1/1/2019		\$22.52	\$17.67	\$40.19

**BUREAU OF LABOR LAW COMPLIANCE
PREVAILING WAGES PROJECT RATES**

Project: 20-02831 - Building	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Laborers (Class 02 - See notes)	1/1/2020		\$26.57	\$14.67	\$41.24
Laborers (Class 02 - See notes)	1/1/2021		\$27.62	\$14.67	\$42.29
Laborers (Class 03 - See notes)	1/1/2018		\$22.60	\$16.67	\$39.27
Laborers (Class 03 - See notes)	1/1/2019		\$22.65	\$17.67	\$40.32
Laborers (Class 03 - See notes)	1/1/2020		\$26.70	\$14.67	\$41.37
Laborers (Class 03 - See notes)	1/1/2021		\$27.75	\$14.67	\$42.42
Laborers (Class 04 - See notes)	1/1/2018		\$23.07	\$16.67	\$39.74
Laborers (Class 04 - See notes)	1/1/2019		\$23.12	\$17.67	\$40.79
Laborers (Class 04 - See notes)	1/1/2020		\$27.17	\$14.67	\$41.84
Laborers (Class 04 - See notes)	1/1/2021		\$28.22	\$14.67	\$42.89
Landscape Laborer (Skilled)	1/1/2018		\$21.01	\$15.31	\$36.32
Landscape Laborer (Skilled)	1/1/2019		\$21.44	\$16.08	\$37.52
Landscape Laborer (Skilled)	1/1/2020		\$21.64	\$16.98	\$38.62
Landscape Laborer (Tractor Operator)	1/1/2018		\$21.31	\$15.31	\$36.62
Landscape Laborer (Tractor Operator)	1/1/2019		\$21.74	\$16.08	\$37.82
Landscape Laborer (Tractor Operator)	1/1/2020		\$21.94	\$16.98	\$38.92
Landscape Laborer	1/1/2018		\$20.59	\$15.31	\$35.90
Landscape Laborer	1/1/2019		\$21.02	\$16.08	\$37.10
Landscape Laborer	1/1/2020		\$21.22	\$16.98	\$38.20
Millwright	6/1/2017		\$39.83	\$18.57	\$58.40
Operators (Class 01 - see notes)	6/12/2017		\$34.49	\$20.15	\$54.64
Operators (Class 01 - see notes)	6/1/2018		\$35.09	\$20.95	\$56.04
Operators (Class 01 - see notes)	6/1/2019		\$35.69	\$21.75	\$57.44
Operators (Class 01 - see notes)	6/1/2020		\$36.39	\$22.55	\$58.94
Operators (Class 01 - see notes)	6/1/2021		\$37.09	\$23.35	\$60.44
Operators (Class 02 -see notes)	6/12/2017		\$29.58	\$20.15	\$49.73
Operators (Class 02 -see notes)	6/1/2018		\$29.90	\$20.95	\$50.85
Operators (Class 02 -see notes)	6/1/2019		\$30.22	\$21.75	\$51.97
Operators (Class 02 -see notes)	6/1/2020		\$30.62	\$22.55	\$53.17
Operators (Class 02 -see notes)	6/1/2021		\$31.02	\$23.35	\$54.37
Operators (Class 03 - See notes)	6/12/2017		\$28.25	\$20.15	\$48.40
Operators (Class 03 - See notes)	6/1/2018		\$28.46	\$20.95	\$49.41
Operators (Class 03 - See notes)	6/1/2019		\$28.67	\$21.75	\$50.42
Operators (Class 03 - See notes)	6/1/2020		\$28.95	\$22.55	\$51.50
Operators (Class 03 - See notes)	6/1/2021		\$29.23	\$23.35	\$52.58
Painters Class 6 (see notes)	6/1/2017		\$27.50	\$18.66	\$46.16
Painters Class 6 (see notes)	6/1/2018		\$28.00	\$19.36	\$47.36
Painters Class 6 (see notes)	6/1/2019		\$28.50	\$20.06	\$48.56
Pile Driver Divers (Building, Heavy, Highway)	1/1/2018		\$50.33	\$18.55	\$68.88
Pile Driver Divers (Building, Heavy, Highway)	1/1/2019		\$51.45	\$19.30	\$70.75
Pile Driver Divers (Building, Heavy, Highway)	1/1/2020		\$53.10	\$19.70	\$72.80
Pile Driver Divers (Building, Heavy, Highway)	1/1/2021		\$54.75	\$20.10	\$74.85
Pile Driver Divers (Building, Heavy, Highway)	1/1/2022		\$56.40	\$20.50	\$76.90
Piledrivers	1/1/2018		\$33.55	\$18.55	\$52.10

**BUREAU OF LABOR LAW COMPLIANCE
PREVAILING WAGES PROJECT RATES**

Project: 20-02831 - Building	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Piledrivers	1/1/2019		\$34.30	\$19.30	\$53.60
Piledrivers	1/1/2020		\$35.40	\$19.70	\$55.10
Piledrivers	1/1/2021		\$36.50	\$20.10	\$56.60
Piledrivers	1/1/2022		\$37.60	\$20.50	\$58.10
Plasterers	6/1/2017		\$28.79	\$15.79	\$44.58
Plasterers	6/1/2017		\$28.79	\$15.79	\$44.58
Plasterers	6/1/2018		\$28.74	\$16.84	\$45.58
Plasterers	6/1/2019		\$29.78	\$17.20	\$46.98
plumber	6/1/2018		\$40.85	\$21.77	\$62.62
plumber	6/1/2019		\$43.00	\$21.77	\$64.77
plumber	6/1/2020		\$45.15	\$21.77	\$66.92
plumber	6/1/2021		\$47.25	\$21.77	\$69.02
plumber	6/1/2022		\$49.35	\$21.77	\$71.12
Plumbers	6/1/2017		\$39.20	\$21.27	\$60.47
Pointers, Caulkers, Cleaners	12/1/2017		\$29.88	\$18.73	\$48.61
Pointers, Caulkers, Cleaners	6/1/2019		\$31.38	\$19.44	\$50.82
Pointers, Caulkers, Cleaners	12/1/2019		\$31.93	\$19.64	\$51.57
Roofers	6/1/2017		\$31.00	\$15.17	\$46.17
Roofers	6/1/2018		\$31.00	\$16.42	\$47.42
Roofers	6/1/2019		\$34.83	\$13.84	\$48.67
Roofers	6/1/2020		\$36.08	\$13.84	\$49.92
Sheet Metal Workers	7/1/2017		\$33.70	\$27.74	\$61.44
Sheet Metal Workers	7/1/2018		\$34.47	\$28.08	\$62.55
Sheet Metal Workers	7/1/2019		\$36.21	\$28.36	\$64.57
Sprinklerfitters	1/1/2017		\$35.42	\$20.52	\$55.94
Sprinklerfitters	7/1/2017		\$36.42	\$20.52	\$56.94
Steamfitters	6/1/2017		\$41.71	\$19.01	\$60.72
Steamfitters	6/1/2018		\$40.55	\$22.67	\$63.22
Stone Masons	12/1/2017		\$32.66	\$21.41	\$54.07
Stone Masons	6/1/2019		\$33.72	\$22.05	\$55.77
Stone Masons	12/1/2019		\$34.22	\$22.25	\$56.47
Terrazzo Finisher	12/1/2017		\$31.08	\$15.85	\$46.93
Terrazzo Finisher	6/1/2019		\$32.01	\$16.52	\$48.53
Terrazzo Finisher	12/1/2019		\$32.37	\$16.74	\$49.11
Terrazzo Mechanics	12/1/2017		\$30.57	\$17.91	\$48.48
Terrazzo Mechanics	6/1/2019		\$31.31	\$18.67	\$49.98
Terrazzo Mechanics	12/1/2019		\$31.79	\$18.92	\$50.71
Tile Finisher	12/1/2017		\$25.16	\$14.90	\$40.06
Tile Finisher	6/1/2019		\$25.69	\$15.65	\$41.34
Tile Finisher	12/1/2019		\$26.00	\$15.86	\$41.86
Tile Setter	12/1/2017		\$30.75	\$19.05	\$49.80
Tile Setter	6/1/2019		\$31.47	\$20.03	\$51.50
Tile Setter	12/1/2019		\$31.91	\$20.24	\$52.15
Truck Driver (Group 1)	1/1/2020		\$29.93	\$20.21	\$50.14

**BUREAU OF LABOR LAW COMPLIANCE
PREVAILING WAGES PROJECT RATES**

Project: 20-02831 - Building	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Truck Driver (Group 1)	1/1/2021		\$30.68	\$20.96	\$51.64
Truck Driver (Group 1)	1/1/2022		\$31.43	\$21.71	\$53.14
Truck Driver (Group 2)	1/1/2020		\$30.39	\$20.52	\$50.91
Truck Driver (Group 2)	1/1/2021		\$31.14	\$21.27	\$52.41
Truck Driver (Group 2)	1/1/2022		\$31.89	\$22.02	\$53.91
Truckdriver class 1(see notes)	1/1/2016		\$27.62	\$16.60	\$44.22
Truckdriver class 2 (see notes)	1/1/2016		\$27.75	\$16.69	\$44.44
Truckdriver class 3 (see notes)	1/1/2016		\$28.23	\$16.98	\$45.21
Window Film / Tint Installer	10/1/2019		\$25.00	\$2.63	\$27.63

**BUREAU OF LABOR LAW COMPLIANCE
PREVAILING WAGES PROJECT RATES**

Project: 20-02831 - Heavy/Highway	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Carpenter	1/1/2018	12/31/2018	\$33.17	\$17.77	\$50.94
Carpenter	1/1/2019		\$34.02	\$18.42	\$52.44
Carpenter	1/1/2020		\$35.02	\$18.92	\$53.94
Carpenter	1/1/2021		\$36.03	\$19.41	\$55.44
Carpenter	1/1/2022		\$37.02	\$19.92	\$56.94
Carpenter Welder	1/1/2018	12/31/2018	\$34.12	\$17.77	\$51.89
Carpenter Welder	1/1/2019		\$34.97	\$18.42	\$53.39
Carpenter Welder	1/1/2020		\$35.97	\$18.92	\$54.89
Carpenter Welder	1/1/2021		\$36.98	\$19.41	\$56.39
Carpenter Welder	1/1/2022		\$37.97	\$19.92	\$57.89
Cement Finishers	1/1/2018		\$31.04	\$19.90	\$50.94
Cement Finishers	1/1/2019		\$31.94	\$20.50	\$52.44
Cement Masons	1/1/2020		\$32.84	\$21.10	\$53.94
Electric Lineman	5/29/2017		\$45.24	\$24.23	\$69.47
Electric Lineman	5/28/2018		\$46.29	\$25.26	\$71.55
Electric Lineman	5/27/2019		\$47.38	\$26.30	\$73.68
Iron Workers (Bridge, Structural Steel, Ornamental, Precast, Reinforcing)	6/1/2017		\$33.54	\$30.24	\$63.78
Laborers (Class 01 - See notes)	1/1/2018		\$24.85	\$22.35	\$47.20
Laborers (Class 01 - See notes)	1/1/2019		\$24.85	\$23.85	\$48.70
Laborers (Class 01 - See notes)	1/6/2020		\$26.10	\$24.10	\$50.20
Laborers (Class 01 - See notes)	1/6/2021		\$26.90	\$24.80	\$51.70
Laborers (Class 01 - See notes)	1/6/2022		\$27.70	\$25.50	\$53.20
Laborers (Class 02 - See notes)	1/1/2018		\$25.01	\$22.35	\$47.36
Laborers (Class 02 - See notes)	1/1/2019		\$25.01	\$23.85	\$48.86
Laborers (Class 02 - See notes)	1/6/2020		\$26.26	\$24.10	\$50.36
Laborers (Class 02 - See notes)	1/6/2021		\$27.06	\$24.80	\$51.86
Laborers (Class 02 - See notes)	1/6/2022		\$27.86	\$25.50	\$53.36
Laborers (Class 03 - See notes)	1/1/2018		\$25.40	\$22.35	\$47.75
Laborers (Class 03 - See notes)	1/1/2019		\$25.40	\$23.85	\$49.25
Laborers (Class 03 - See notes)	1/6/2020		\$26.65	\$24.10	\$50.75
Laborers (Class 03 - See notes)	1/6/2021		\$27.45	\$24.80	\$52.25
Laborers (Class 03 - See notes)	1/6/2022		\$28.25	\$25.50	\$53.75
Laborers (Class 04 - See notes)	1/1/2018		\$25.85	\$22.35	\$48.20
Laborers (Class 04 - See notes)	1/1/2019		\$25.85	\$23.85	\$49.70
Laborers (Class 04 - See notes)	1/6/2020		\$27.10	\$24.10	\$51.20
Laborers (Class 04 - See notes)	1/6/2021		\$27.90	\$24.80	\$52.70
Laborers (Class 04 - See notes)	1/6/2022		\$28.70	\$25.50	\$54.20
Laborers (Class 05 - See notes)	1/1/2018		\$26.26	\$22.35	\$48.61
Laborers (Class 05 - See notes)	1/1/2019		\$26.26	\$23.85	\$50.11
Laborers (Class 05 - See notes)	1/6/2020		\$27.51	\$24.10	\$51.61
Laborers (Class 05 - See notes)	1/6/2021		\$28.31	\$24.80	\$53.11
Laborers (Class 05 - See notes)	1/6/2022		\$29.11	\$25.50	\$54.61
Laborers (Class 06 - See notes)	1/1/2018		\$23.10	\$22.35	\$45.45
Laborers (Class 06 - See notes)	1/1/2019		\$23.10	\$23.85	\$46.95

**BUREAU OF LABOR LAW COMPLIANCE
PREVAILING WAGES PROJECT RATES**

Project: 20-02831 - Heavy/Highway	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Laborers (Class 06 - See notes)	1/6/2020		\$24.35	\$24.10	\$48.45
Laborers (Class 06 - See notes)	1/6/2021		\$25.15	\$24.80	\$49.95
Laborers (Class 06 - See notes)	1/6/2022		\$25.95	\$25.50	\$51.45
Laborers (Class 07 - See notes)	1/1/2018		\$25.85	\$22.35	\$48.20
Laborers (Class 07 - See notes)	1/1/2019		\$25.85	\$23.85	\$49.70
Laborers (Class 07 - See notes)	1/6/2020		\$28.60	\$24.10	\$52.70
Laborers (Class 07 - See notes)	1/6/2020		\$27.10	\$24.10	\$51.20
Laborers (Class 07 - See notes)	1/6/2021		\$27.90	\$24.80	\$52.70
Laborers (Class 07 - See notes)	1/6/2022		\$28.70	\$25.50	\$54.20
Laborers (Class 08 - See notes)	1/1/2018		\$27.35	\$22.35	\$49.70
Laborers (Class 08 - See notes)	1/1/2019		\$27.35	\$23.85	\$51.20
Laborers (Class 08 - See notes)	1/6/2020		\$28.60	\$24.10	\$52.70
Laborers (Class 08 - See notes)	1/6/2021		\$29.40	\$24.80	\$54.20
Laborers (Class 08 - See notes)	1/6/2022		\$30.20	\$25.50	\$55.70
Operators (Class 01 - see notes)	1/1/2018		\$31.29	\$20.78	\$52.07
Operators (Class 01 - see notes)	1/1/2019		\$31.89	\$21.68	\$53.57
Operators (Class 01 - see notes)	1/1/2020		\$32.89	\$22.23	\$55.12
Operators (Class 01 - see notes)	1/1/2021		\$33.89	\$22.73	\$56.62
Operators (Class 01 - see notes)	1/1/2022		\$34.79	\$23.33	\$58.12
Operators (Class 02 -see notes)	1/1/2018		\$31.03	\$20.78	\$51.81
Operators (Class 02 -see notes)	1/1/2019		\$31.63	\$21.68	\$53.31
Operators (Class 02 -see notes)	1/1/2020		\$32.63	\$22.23	\$54.86
Operators (Class 02 -see notes)	1/1/2021		\$33.63	\$22.73	\$56.36
Operators (Class 02 -see notes)	1/1/2022		\$34.53	\$23.33	\$57.86
Operators (Class 03 - See notes)	1/1/2018		\$27.38	\$20.78	\$48.16
Operators (Class 03 - See notes)	1/1/2019		\$27.98	\$21.68	\$49.66
Operators (Class 03 - see notes)	1/1/2020		\$28.98	\$22.23	\$51.21
Operators (Class 03 - see notes)	1/1/2021		\$29.98	\$22.73	\$52.71
Operators (Class 03 - See notes)	1/1/2022		\$30.88	\$23.33	\$54.21
Operators (Class 04 - See notes)	1/1/2018		\$26.92	\$20.78	\$47.70
Operators (Class 04 - See notes)	1/1/2019		\$27.52	\$21.68	\$49.20
Operators (Class 04 - See notes)	1/1/2020		\$28.52	\$22.23	\$50.75
Operators (Class 04 - See notes)	1/1/2021		\$29.52	\$22.73	\$52.25
Operators (Class 04 - See notes)	1/1/2022		\$30.42	\$23.33	\$53.75
Operators (Class 05 - See notes)	1/1/2018		\$26.67	\$20.78	\$47.45
Operators (Class 05 - See notes)	1/1/2019		\$27.27	\$21.68	\$48.95
Operators (Class 05 - See notes)	1/1/2020		\$28.27	\$22.23	\$50.50
Operators (Class 05 - See notes)	1/1/2021		\$29.27	\$22.73	\$52.00
Operators (Class 05 - See notes)	1/1/2022		\$30.17	\$23.33	\$53.50
Painters Class 1 (see notes)	6/1/2017		\$31.85	\$18.66	\$50.51
Painters Class 1 (see notes)	6/1/2017		\$31.98	\$18.43	\$50.41
Painters Class 1 (see notes)	6/1/2018		\$32.50	\$19.36	\$51.86
Painters Class 1 (see notes)	6/1/2019		\$33.15	\$20.06	\$53.21
Painters Class 2 (see notes)	6/1/2017		\$33.95	\$18.66	\$52.61

**BUREAU OF LABOR LAW COMPLIANCE
PREVAILING WAGES PROJECT RATES**

Project: 20-02831 - Heavy/Highway	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Painters Class 2 (see notes)	6/1/2018		\$34.60	\$19.36	\$53.96
Painters Class 2 (see notes)	6/1/2019		\$35.25	\$20.06	\$55.31
Painters Class 3 (see notes)	6/1/2017		\$27.58	\$18.48	\$46.06
Painters Class 3 (see notes)	6/1/2017		\$33.95	\$18.66	\$52.61
Painters Class 3 (see notes)	6/1/2018		\$34.60	\$19.36	\$53.96
Painters Class 3 (see notes)	6/1/2019		\$35.25	\$20.06	\$55.31
Painters Class 4 (see notes)	6/1/2017		\$27.16	\$18.66	\$45.82
Painters Class 4 (see notes)	6/1/2018		\$27.68	\$19.36	\$47.04
Painters Class 4 (see notes)	6/1/2019		\$28.20	\$20.06	\$48.26
Painters Class 5 (see notes)	6/1/2017		\$22.07	\$18.66	\$40.73
Painters Class 5 (see notes)	6/1/2018		\$22.49	\$19.36	\$41.85
Painters Class 5 (see notes)	6/1/2019		\$22.91	\$20.06	\$42.97
Pile Driver Divers (Building, Heavy, Highway)	1/1/2018		\$50.33	\$18.55	\$68.88
Pile Driver Divers (Building, Heavy, Highway)	1/1/2019		\$51.45	\$19.30	\$70.75
Pile Driver Divers (Building, Heavy, Highway)	1/1/2020		\$53.10	\$19.70	\$72.80
Pile Driver Divers (Building, Heavy, Highway)	1/1/2021		\$54.75	\$20.10	\$74.85
Pile Driver Divers (Building, Heavy, Highway)	1/1/2022		\$56.40	\$20.50	\$76.90
Piledrivers	1/1/2018		\$33.55	\$18.55	\$52.10
Piledrivers	1/1/2019		\$34.30	\$19.30	\$53.60
Piledrivers	1/1/2020		\$35.40	\$19.70	\$55.10
Piledrivers	1/1/2021		\$36.50	\$20.10	\$56.60
Piledrivers	1/1/2022		\$37.60	\$20.50	\$58.10
Steamfitters (Heavy and Highway - Gas Distribution)	5/1/2017		\$40.98	\$32.53	\$73.51
Truck Driver (Group 1)	1/1/2020		\$29.93	\$20.21	\$50.14
Truck Driver (Group 1)	1/1/2021		\$30.68	\$20.96	\$51.64
Truck Driver (Group 1)	1/1/2022		\$31.43	\$21.71	\$53.14
Truck Driver (Group 2)	1/1/2020		\$30.39	\$20.52	\$50.91
Truck Driver (Group 2)	1/1/2021		\$31.14	\$21.27	\$52.41
Truck Driver (Group 2)	1/1/2022		\$31.89	\$22.02	\$53.91
Truckdriver class 1(see notes)	1/1/2018		\$28.52	\$18.40	\$46.92
Truckdriver class 1(see notes)	1/1/2019		\$28.99	\$19.43	\$48.42
Truckdriver class 2 (see notes)	1/1/2018		\$28.66	\$18.48	\$47.14
Truckdriver class 2 (see notes)	1/1/2019		\$29.13	\$19.51	\$48.64
Truckdriver class 3 (see notes)	1/1/2018		\$29.13	\$18.78	\$47.91
Truckdriver class 3 (see notes)	1/1/2019		\$29.59	\$19.82	\$49.41

Appendix to Contract 1714

Site Photos (on flash drive only):

Building 400 – Dewatering Building Roof

Building 411 – Power Generation Building Roof

Building 513 – Screenings Garage (Truck Loading) Roof