

# **ARTHUR KUCKES CHILDCARE CENTER**

**Tompkins Cortland Community College  
170 North Street, Dryden, New York**

**PROJECT MANUAL: VOLUME 1** with ADD #1; ADD #2; ADD#3; 2-26-18  
Project # 18-101      February.1, 2018

## **CLAUDIA BRENNER DESIGN**

421 N. Aurora Street, Ithaca, New York 14850  
607-275-0715

## **DENDE ENGINEERING**

### **Structural Engineering**

40 Ridge Road, Lansing, New York 14882  
607-533-7719

## **T.G. MILLER, P.C.**

### **Engineers & Surveyors**

203 N. Aurora Street, Ithaca, NY 14850  
607-272-6477

## **JADE STONE ENGINEERING, PLLC**

### **Mechanical, Electrical, Plumbing**

444 Vanduzee Street, Watertown, NY 13601  
315-836-4062

## **TROWBRIDGE, WOLF MICHAELS**

### **Landscape Architects**

1001 W. Seneca St. Suite 101, Ithaca, NY 14850  
607-277-1400

## **RAN FIRE PROTECTION ENGINEERING**

1062 Central Avenue, Albany, NY 12205  
518-275-0791

This is to certify that to the best of our knowledge, information and belief-these plans and specifications are in accordance with applicable requirements of the New York State Building Code, The New York State Energy Conservation Construction Code.



# **ARTHUR KUCKES CHILDCARE CENTER**

**Tompkins Cortland Community College  
170 North Street, Dryden, New York**

**PROJECT MANUAL: VOLUME 2** with ADD #1; ADD #2: ADD#3; 2- 26-18  
Project # 18-101      Feb.1, 2018

## **CLAUDIA BRENNER DESIGN**

421 N. Aurora Street, Ithaca, New York 14850  
607-275-0715

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**170 North Street, Dryden, New York**

**SPECIFICATIONS: VOLUME 1 with BID ADDENDA #1; #2;#3**

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32 31 13	-	<u>Chain Link Fences and Gates</u>
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32 91 19	-	Soil Preparation
32 92 00	-	Turfs and Grasses
32 93 00	-	Plants
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33 10 00	-	Water Distribution
33 13 00	-	Hydrostatic Testing and Disinfection of Water System
33 30 00	-	Sanitary Sewerage
33 40 00	-	Storm Sewerage

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**Tompkins Cortland Community College**  
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33 40 00	-	Storm Sewerage

Section 004116 A – CONTRACT A

**BID FORM GENERAL CONSTRUCTION CONTRACT. - STIPULATED SUM (MULTIPLE-PRIME CONTRACT)**

1.1 BID INFORMATION

- A. Bidder: \_\_\_\_\_.
- B. Prime Contract: **General Construction Contract**
- C. Project Name: **New Construction for: Arthur Kuckes Childcare Center**
- D. Project Location: **Tompkins Cortland Community College**
- E. Owner: **Tompkins Cortland Community College**
- F. Architect: **Claudia Brenner Design**
- G. Architect Project Number: **18-101**

1.2 CERTIFICATIONS AND BASE BID

- A. Base Bid, Multiple-Prime (Single-Trade) Contract for **General Construction** Work: The undersigned Bidder, having carefully examined the Procurement and Contracting Requirements, Conditions of the Contract, Drawings, Specifications, and all subsequent Addenda, as prepared by Claudia Brenner Design and Architect's consultants, having visited the site, and being familiar with all conditions and requirements of the Work, hereby agrees to furnish all material, labor, equipment, and services, including all scheduled allowances, necessary to complete the construction of **General Construction** Work for above-named Project, according to the requirements of the Procurement and Contracting Documents, for the stipulated sum of:
  - 1. \_\_\_\_\_ Dollars (\$\_\_\_\_\_).
  - 2. The above amount may be modified by amounts indicated by the Bidder on the attached Bid Supplement - Alternates and Bid Supplement - Unit Prices.

1.3 BID GUARANTEE

- A. The undersigned Bidder agrees to execute a contract for this Work in the above amount and to furnish surety as specified within **10** days after a written Notice of Award, if offered within **60** days after receipt of bids, and on failure to do so agrees to forfeit to Owner the attached cash, cashier's check, certified check, U.S. money order, or bid bond, as liquidated damages for such failure, in the following amount constituting five percent (5%) of the Base Bid amount above:
  - 1. \_\_\_\_\_ Dollars (\$\_\_\_\_\_).
- B. In the event Owner does not offer a Notice of Award within the time limits stated above, Owner will return to the undersigned the cash, cashier's check, certified check, U.S. money order, or bid bond.

1.4 TIME OF COMPLETION

- A. The undersigned Bidder proposes and agrees hereby to commence the Work of the Contract Documents on a date specified in a written Notice to Proceed to be issued by Architect, and shall fully complete the Work on or before 12-15-18.

1.5 ACKNOWLEDGEMENT OF ADDENDA

- A. The undersigned Bidder acknowledges receipt of and use of the following Addenda in the preparation of this Bid:
  - 1. Addendum No. 1, dated 2-19-18\_\_\_\_\_.
  - 2. Addendum No. 2, dated 2-22-18\_\_\_\_\_.
  - 3. Addendum No. 3, dated 2-26-18\_\_\_\_\_.
  - 4. Addendum No. 4, dated \_\_\_\_\_.

1.6 BID SUPPLEMENTS

- A. The following supplements are a part of this Bid Form and are attached hereto:
  - 1. Bid Form Supplement - Alternates.
  - 2. Bid Form Supplement – Unit Prices.
  - 3. Bid Form Supplement - Bid Bond Form (AIA Document A310).

1.7 CONTRACTOR'S LICENSE

- A. The undersigned further states that it is a duly licensed Contractor, for the type of work proposed, in Tompkins County, State of New York, and that all fees, permits, etc., pursuant to submitting this proposal have been paid in full.

1.8 SUBMISSION OF BID

- A. Respectfully submitted this \_\_\_\_ day of \_\_\_\_\_, 20\_\_.
- B. Submitted By \_\_\_\_\_(Name of bidding firm or corporation).
- C. Authorized Signature : \_\_\_\_\_( Handwritten signature).
- D. Signed By : \_\_\_\_\_(Type or print name).
- E. Title : \_\_\_\_\_(Owner/Partner/President/Vice President).
- F. Witnessed By : \_\_\_\_\_(Handwritten signature).
- G. Attest : \_\_\_\_\_(Handwritten signature).
- H. By : \_\_\_\_\_(Type or print name).
- I. Title : \_\_\_\_\_(Corporate Secretary or Assistant Secretary).
- J. Street Address: \_\_\_\_\_.
- K. City, State, Zip: \_\_\_\_\_.
- L. Phone: \_\_\_\_\_.
- M. License No.: \_\_\_\_\_.
- N. Federal ID No.: \_\_\_\_\_(Affix Corporate Seal Here).

**\*END OF SECTION\***

Section 004116 B – CONTRACT B

**BID FORM Electrical - STIPULATED SUM (MULTIPLE-PRIME CONTRACT)**

1.1 BID INFORMATION

- A. Bidder: \_\_\_\_\_.
- B. Prime Contract: **Electrical Contract**
- C. Project Name: : **New Construction for: Arthur Kuckes Childcare Center**
- D. Project Location: **Tompkins Cortland Community College**
- E. Owner: **Tompkins Cortland Community College**
- F. Architect: **Claudia Brenner Design**
- G. Architect Project Number: **18-101**

1.2 CERTIFICATIONS AND BASE BID

- A. Base Bid, Multiple-Prime (Single-Trade) Contract for **Electrical** Work: The undersigned Bidder, having carefully examined the Procurement and Contracting Requirements, Conditions of the Contract, Drawings, Specifications, and all subsequent Addenda, as prepared by Claudia Brenner Design and Architect's consultants, having visited the site, and being familiar with all conditions and requirements of the Work, hereby agrees to furnish all material, labor, equipment, and services, including all scheduled allowances, necessary to complete the construction of **Electrical** Work for above-named Project, according to the requirements of the Procurement and Contracting Documents, for the stipulated sum of:
  - 1. \_\_\_\_\_ Dollars (\$\_\_\_\_\_).
  - 2. The above amount may be modified by amounts indicated by the Bidder on the attached Bid Supplement - Alternates and Bid Supplement - Unit Prices.

1.3 BID GUARANTEE

- A. The undersigned Bidder agrees to execute a contract for this Work in the above amount and to furnish surety as specified within **10** days after a written Notice of Award, if offered within **60** days after receipt of bids, and on failure to do so agrees to forfeit to Owner the attached cash, cashier's check, certified check, U.S. money order, or bid bond, as liquidated damages for such failure, in the following amount constituting five percent (5%) of the Base Bid amount above:
  - 1. \_\_\_\_\_ Dollars (\$\_\_\_\_\_).
- B. In the event Owner does not offer a Notice of Award within the time limits stated above, Owner will return to the undersigned the cash, cashier's check, certified check, U.S. money order, or bid bond.

1.4 TIME OF COMPLETION

- A. The undersigned Bidder proposes and agrees hereby to commence the Work of the Contract Documents on a date specified in a written Notice to Proceed to be issued by Architect, and shall fully complete the Work on or before 12-15-18.

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1.7 CONTRACTOR'S LICENSE

- A. The undersigned further states that it is a duly licensed Contractor, for the type of work proposed, in Tompkins County, State of New York, and that all fees, permits, etc., pursuant to submitting this proposal have been paid in full.

1.8 SUBMISSION OF BID

- A. Respectfully submitted this \_\_\_\_ day of \_\_\_\_\_, 20\_\_.
- B. Submitted By: \_\_\_\_\_(Name of bidding firm or corporation).
- C. Authorized Signature: \_\_\_\_\_(Handwritten signature).
- D. Signed By: \_\_\_\_\_(Type or print name).
- E. Title: \_\_\_\_\_(Owner/Partner/President/Vice President).
- F. Witnessed By: \_\_\_\_\_(Handwritten signature).
- G. Attest: \_\_\_\_\_(Handwritten signature).
- H. By: \_\_\_\_\_(Type or print name).
- I. Title: \_\_\_\_\_(Corporate Secretary or Assistant Secretary).
- J. Street Address: \_\_\_\_\_.
- K. City, State, Zip: \_\_\_\_\_.
- L. Phone: \_\_\_\_\_.
- M. License No.: \_\_\_\_\_.
- N. Federal ID No.: \_\_\_\_\_(Affix Corporate Seal Here).

**\*END OF SECTION\***



Section 004116 C –CONTRACT C

**BID FORM HVAC - STIPULATED SUM (MULTIPLE-PRIME CONTRACT)**

1.1 BID INFORMATION

- A. Bidder: \_\_\_\_\_.
- B. Prime Contract: **HVAC Contract**
- C. Project Name: **New Construction for: Arthur Kuckes Childcare Center**
- D. Project Location: **Tompkins Cortland Community College**
- E. Owner: **Tompkins Cortland Community College**
- F. Architect: **Claudia Brenner Design**
- G. Architect Project Number: **18-101**

1.2 CERTIFICATIONS AND BASE BID

- A. Base Bid, Multiple-Prime (Single-Trade) Contract for **HVAC Work**: The undersigned Bidder, having carefully examined the Procurement and Contracting Requirements, Conditions of the Contract, Drawings, Specifications, and all subsequent Addenda, as prepared by Claudia Brenner Design and Architect's consultants, having visited the site, and being familiar with all conditions and requirements of the Work, hereby agrees to furnish all material, labor, equipment, and services, including all scheduled allowances, necessary to complete the construction of **HVAC Work** for above-named Project, according to the requirements of the Procurement and Contracting Documents, for the stipulated sum of:
  - 1. \_\_\_\_\_ Dollars (\$\_\_\_\_\_).
  - 2. The above amount may be modified by amounts indicated by the Bidder on the attached Bid Supplement - Alternates and Bid Supplement - Unit Prices.

1.3 BID GUARANTEE

- A. The undersigned Bidder agrees to execute a contract for this Work in the above amount and to furnish surety as specified within **10** days after a written Notice of Award, if offered within **60** days after receipt of bids, and on failure to do so agrees to forfeit to Owner the attached cash, cashier's check, certified check, U.S. money order, or bid bond, as liquidated damages for such failure, in the following amount constituting five percent (5%) of the Base Bid amount above:
  - 1. \_\_\_\_\_ Dollars (\$\_\_\_\_\_).
- B. In the event Owner does not offer a Notice of Award within the time limits stated above, Owner will return to the undersigned the cash, cashier's check, certified check, U.S. money order, or bid bond.

1.4 TIME OF COMPLETION

- A. The undersigned Bidder proposes and agrees hereby to commence the Work of the Contract Documents on a date specified in a written Notice to Proceed to be issued by Architect, and shall fully complete the Work on or before 12-15-18

1.5 ACKNOWLEDGEMENT OF ADDENDA

- A. The undersigned Bidder acknowledges receipt of and use of the following Addenda in the preparation of this Bid:
  - 1. Addendum No. 1, dated 2-19-18 \_\_\_\_\_.
  - 2. Addendum No. 2, dated 2-22-18 \_\_\_\_\_.
  - 3. Addendum No. 3, dated 2-26-18 \_\_\_\_\_.
  - 4. Addendum No. 4, dated \_\_\_\_\_.

1.6 BID SUPPLEMENTS

- A. The following supplements are a part of this Bid Form and are attached hereto:
  - 1. Bid Form Supplement - Alternates.
  - 2. Bid Form Supplement - Bid Bond Form (AIA Document A310).

1.7 CONTRACTOR'S LICENSE

- A. The undersigned further states that it is a duly licensed Contractor, for the type of work proposed, in Tompkins County, State of New York, and that all fees, permits, etc., pursuant to submitting this proposal have been paid in full.

1.8 SUBMISSION OF BID

- A. Respectfully submitted this \_\_\_\_ day of \_\_\_\_\_, 20\_\_.
- B. Submitted By: \_\_\_\_\_(Name of bidding firm or corporation).
- C. Authorized Signature: \_\_\_\_\_(Handwritten signature).
- D. Signed By: \_\_\_\_\_(Type or print name).
- E. Title: \_\_\_\_\_(Owner/Partner/President/Vice President).
- F. Witnessed By: \_\_\_\_\_(Handwritten signature).
- G. Attest: \_\_\_\_\_(Handwritten signature).
- H. By: \_\_\_\_\_(Type or print name).
- I. Title: \_\_\_\_\_(Corporate Secretary or Assistant Secretary).
- J. Street Address: \_\_\_\_\_.
- K. City, State, Zip: \_\_\_\_\_.
- L. Phone: \_\_\_\_\_.
- M. License No.: \_\_\_\_\_.
- N. Federal ID No.: \_\_\_\_\_(Affix Corporate Seal Here).

**\*END OF SECTION\***

Section 004116 D – CONTRACT D

**BID FORM Plumbing - STIPULATED SUM (MULTIPLE-PRIME CONTRACT)**

1.1 BID INFORMATION

A. Bidder: \_\_\_\_\_.

B. Prime Contract: **Plumbing Contract**

C. Project Name: **New Construction for: Arthur Kuckes Childcare Center**

D. Project Location: **Tompkins Cortland Community College**

E. Owner: **Tompkins Cortland Community College**

F. Architect: **Claudia Brenner Design**

G. Architect Project Number: **18-101**

H. CERTIFICATIONS AND BASE BID

I. Base Bid, Multiple-Prime (Single-Trade) Contract for **Plumbing** Work: The undersigned Bidder, having carefully examined the Procurement and Contracting Requirements, Conditions of the Contract, Drawings, Specifications, and all subsequent Addenda, as prepared by Claudia Brenner Design and Architect's consultants, having visited the site, and being familiar with all conditions and requirements of the Work, hereby agrees to furnish all material, labor, equipment, and services, including all scheduled allowances, necessary to complete the construction of **Plumbing** Work for above-named Project, according to the requirements of the Procurement and Contracting Documents, for the stipulated sum of:

1. \_\_\_\_\_ Dollars (\$\_\_\_\_\_).
2. The above amount may be modified by amounts indicated by the Bidder on the attached Bid Supplement - Alternates and Bid Supplement - Unit Prices.

1.2 BID GUARANTEE

A. The undersigned Bidder agrees to execute a contract for this Work in the above amount and to furnish surety as specified within **10** days after a written Notice of Award, if offered within **60** days after receipt of bids, and on failure to do so agrees to forfeit to Owner the attached cash, cashier's check, certified check, U.S. money order, or bid bond, as liquidated damages for such failure, in the following amount constituting five percent (5%) of the Base Bid amount above:

1. \_\_\_\_\_ Dollars (\$\_\_\_\_\_).

B. In the event Owner does not offer a Notice of Award within the time limits stated above, Owner will return to the undersigned the cash, cashier's check, certified check, U.S. money order, or bid bond.

1.3 TIME OF COMPLETION

- A. The undersigned Bidder proposes and agrees hereby to commence the Work of the Contract Documents on a date specified in a written Notice to Proceed to be issued by Architect, and shall fully complete the Work on or before 12-15-18.

1.4 ACKNOWLEDGEMENT OF ADDENDA

- A. The undersigned Bidder acknowledges receipt of and use of the following Addenda in the preparation of this Bid:

- 1. Addendum No. 1, dated 2-19-18 \_\_\_\_\_.
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- 4. Addendum No. 4, dated \_\_\_\_\_.

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- A. The following supplements are a part of this Bid Form and are attached hereto:

- 1. Bid Form Supplement - Alternates.
- 2. Bid Form Supplement - Bid Bond Form (AIA Document A310).

1.6 CONTRACTOR'S LICENSE

- A. The undersigned further states that it is a duly licensed Contractor, for the type of work proposed, in Tompkins County, State of New York, and that all fees, permits, etc., pursuant to submitting this proposal have been paid in full.

1.7 SUBMISSION OF BID

- A. Respectfully submitted this \_\_\_\_ day of \_\_\_\_\_, 20\_\_.
- B. Submitted By: \_\_\_\_\_(Name of bidding firm or corporation).
- C. Authorized Signature: \_\_\_\_\_(Handwritten signature).
- D. Signed By: \_\_\_\_\_(Type or print name).
- E. Title: \_\_\_\_\_(Owner/Partner/President/Vice President).
- F. Witnessed By: \_\_\_\_\_(Handwritten signature).
- G. Attest: \_\_\_\_\_(Handwritten signature).
- H. By: \_\_\_\_\_(Type or print name).
- I. Title: \_\_\_\_\_(Corporate Secretary or Assistant Secretary).
- J. Street Address: \_\_\_\_\_.
- K. City, State, Zip: \_\_\_\_\_.
- L. Phone: \_\_\_\_\_.
- M. License No.: \_\_\_\_\_.
- N. Federal ID No.: \_\_\_\_\_(Affix Corporate Seal Here).

**\*END OF SECTION\***

Section 004116 E – CONTRACT E

**BID FORM Civil Construction. - STIPULATED SUM (MULTIPLE-PRIME CONTRACT)**

1.1 BID INFORMATION

A. Bidder: \_\_\_\_\_.

B. Prime Contract: **Civil Construction Contract**

C. Project Name: **New Construction for: Arthur Kuckes Childcare Center**

D. Project Location: **Tompkins Cortland Community College**

E. Owner: **Tompkins Cortland Community College**

F. Architect: **Claudia Brenner Design**

G. Architect Project Number: **18-101**

H. CERTIFICATIONS AND BASE BID

I. Base Bid, Multiple-Prime (Single-Trade) Contract for **Civil Construction** Work: The undersigned Bidder, having carefully examined the Procurement and Contracting Requirements, Conditions of the Contract, Drawings, Specifications, and all subsequent Addenda, as prepared by Claudia Brenner Design and Architect's consultants, having visited the site, and being familiar with all conditions and requirements of the Work, hereby agrees to furnish all material, labor, equipment, and services, including all scheduled allowances, necessary to complete the construction of **Civil Construction** Work for above-named Project, according to the requirements of the Procurement and Contracting Documents, for the stipulated sum of:

1. \_\_\_\_\_ Dollars (\$\_\_\_\_\_).

2. The above amount may be modified by amounts indicated by the Bidder on the attached Bid Supplement - Alternates and Bid Supplement - Unit Prices.

1.2 BID GUARANTEE

A. The undersigned Bidder agrees to execute a contract for this Work in the above amount and to furnish surety as specified within **10** days after a written Notice of Award, if offered within **60** days after receipt of bids, and on failure to do so agrees to forfeit to Owner the attached cash, cashier's check, certified check, U.S. money order, or bid bond, as liquidated damages for such failure, in the following amount constituting five percent (5%) of the Base Bid amount above:

1. \_\_\_\_\_ Dollars (\$\_\_\_\_\_).

B. In the event Owner does not offer a Notice of Award within the time limits stated above, Owner will return to the undersigned the cash, cashier's check, certified check, U.S. money order, or bid bond.

ARTHUR KUCKES CHILDCARE CENTER

BID FORM CIVIL CONSTRUCTION. - STIPULATED SUM (MULTIPLE-PRIME CONTRACT)

004116 E - 1

1.3 TIME OF COMPLETION

- A. The undersigned Bidder proposes and agrees hereby to commence the Work of the Contract Documents on a date specified in a written Notice to Proceed to be issued by Architect, and shall fully complete the Work on or before 12-15-18.

1.4 ACKNOWLEDGEMENT OF ADDENDA

- A. The undersigned Bidder acknowledges receipt of and use of the following Addenda in the preparation of this Bid:

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- 3. Addendum No. 3, dated 2-26-18 \_\_\_\_\_.
- 4. Addendum No. 4, dated \_\_\_\_\_.

1.5 BID SUPPLEMENTS

- A. The following supplements are a part of this Bid Form and are attached hereto:

- 1. Bid Form Supplement - Alternates.
- 2. Bid Form Supplement – Unit Prices.
- 3. Bid Form Supplement - Bid Bond Form (AIA Document A310).

1.6 CONTRACTOR'S LICENSE

- A. The undersigned further states that it is a duly licensed Contractor, for the type of work proposed, in Tompkins County, State of New York, and that all fees, permits, etc., pursuant to submitting this proposal have been paid in full.



1.7 SUBMISSION OF BID

- A. Respectfully submitted this \_\_\_\_ day of \_\_\_\_\_, 20\_\_.
- B. Submitted By : \_\_\_\_\_( Name of bidding firm or corporation).
- C. Authorized Signature : \_\_\_\_\_( Handwritten signature).
- D. Signed By : \_\_\_\_\_( Type or print name).
- E. Title : \_\_\_\_\_( Owner/Partner/President/Vice President).
- F. Witnessed By : \_\_\_\_\_( Handwritten signature).
- G. Attest : \_\_\_\_\_(Handwritten signature).
- H. By : \_\_\_\_\_(Type or print name).
- I. Title : \_\_\_\_\_( Corporate Secretary or Assistant Secretary).
- J. Street Address: \_\_\_\_\_.
- K. City, State, Zip: \_\_\_\_\_.
- L. Phone: \_\_\_\_\_.
- M. License No.: \_\_\_\_\_.
- N. Federal ID No. : \_\_\_\_\_( Affix Corporate Seal Here).

**\*END OF SECTION\***

**CLAUDIA BRENNER DESIGN**  
421 N. Aurora Street, Ithaca, New York 14850  
cbrenner@claudiabrennerdesign.com

**ARTHUR KUCKES CHILDCARE CENTER**  
**Tompkins Cortland Community College**  
**170 North Street, Dryden, New York**

**BID ADDENDA # 3**

Project # 18-101      February 26, 2018

The following addenda #3 is issued in response to submitted RFIs (Request for Information) and corrections and clarifications to the distributed BID SET dated Feb, 1, 2018; ADD #1 and ADD#2

This addenda has been added to the specifications as Section 00 91 31C Addenda #3

All documents procured through Dataflow; as per Invitation for Bids Section 00 11 16; 1.5

This addenda specification sections, listed below.

Please see the following:

**SPECIFICATIONS:**

The following specification sections had additions, deletions or clarifications of content and are identified in the Table of Contents and below by *ITALICS and underline ADD#3*

00 00 03      -      Table of Contents

01 12 00      -      Multiple Contract Summary ADD#3

1.5 GENERAL BUILDING CONSTRUCTION CONTRACT

Section A: 1.5 Item 3 Site development furnishings and Equipment. **DELETE**

1.9 CIVIL CONTRACT:

**DELETE** Section A: Item 25 below grade building construction excavation and backfill

**ADD Section A:** Item 26 Site development furnishings and equipment

01 23 00      -      Alternates ADD #3

Section 1.5 SCHEDULE OF ALTERNATES

ARTHUR KUCKES CHILDCARE CENTER  
BID ADDENDA #3  
009131C-1

**ADD:** ITEM N: ALTERNATE No. A-9 - Provide 80 ml G410 Reflective Grey **Textured** membrane system

07 54 00 - Thermoplastic Membrane Roofing ADD#3  
Section 2.1 B. Alternate A-8 **change to** Alternate A # 9

32 31 13 - Chain Link Fences and Gates ADD#3  
Clarifications.

Bid forms have been modified to include the date of Feb 23, 2018 Addenda #3 and are identified in the Table of Contents and below with an underline

00 41 16 A - Bid Form – G.C. Stipulated Sum (Multiple Prime Contract)  
00 41 16 B - Bid Form – Electrical Stipulated Sum (Multiple Prime Contract)  
00 41 16 C - Bid Form – HVAC Stipulated Sum (Multiple Prime Contract)  
00 41 16 D - Bid Form – Plumbing Stipulated Sum (Multiple Prime Contract)  
00 41 16 E - Bid Form – Civil Construction Stipulated Sum (Multiple Prime Contract)

#### REQUEST FOR INFORMATION (RFI)

**BID RFI #3** Request by All Around Excavating dated 2-22-18

Question 1: What contract is responsible for the supply and installation of the underdrain pipe, fabric and stone for the foundation drain as shown on detail 1 of drawing S-2? Answer: GC

Question 2: What contract is responsible for the sub base preparation for the buildings slab on grade? Answer: GC

Question 3: What contract is responsible for the sub base preparation for concrete patios or walks being installed under the GC contract, contract A? Answer: GC

Question 4: Addendum 1 in volume 1 section 011200-3 1.5 A 3 states the GC contract is responsible for site development furnishings and equipment. Could you please clarify what site development, furnishings and equipment are by the GC? Answer: This item moved to CIVIL: See Multiple contract summary ADD#3. All work associated with Sunshade structure is in CIVIL contract.

Question 5: Addendum 1 in volume 1 section 011200-3 1.5 6 states the GC contract is responsible for slab on grade construction include earthwork and sub drainage and insulation. Does this mean the GC is responsible for their own wall and footer excavation and backfill? Answer: YES

**BID RFI #4** Request by All Around Excavating dated 2-22-18

Question 1: Chain link specs indicate residential grade material. Pipe sizes do not line up with detail on L520. There is no spec for chain-link mesh. Please specify desired gate hardware as there is a wide range of options with varying design and quality.

Answer: See revised spec section 32 31 13-Chain Link Fences and Gates

ARTHUR KUCKES CHILDCARE CENTER  
BID ADDENDA #3  
009131C-2

**BID RFI #5** Request by William H Lane Inc. RFI #2 dated 2-23-18  
Please clarify which contract is to provide playground equipment.  
ANSWER: The play equipment is in the CIVIL contract.

**BID RFI #6** Request by J Cocca; Streeter Associates. dated 2-23-18  
See spec 075400, 2.1, B.  
States Alternate A-8 is for a Grey Textured membrane system

See 012300, 1.5, H.  
States A-8 is for Stile & Rail Doors

ANSWER: Alternate A-9 added for textured membrane roofing: see Section 01 23 00  
Schedule of Alternates ADD#3 and corrected Section 07 54 00.

**BID RFI #7** Request by J Cocca; Streeter Associates. dated 2-26-18  
Where is the description of the paints? Reference Schedule on A 5.3  
ANSWER: Schedule on A 5.3 references color only.  
Paint descriptions found in spec section 09 91 23 Part 3.6

**BID RFI #8** Request by Frey & Campbell Inc.  
On P-4 Water Softener is shown; not on schedule P-0 or in specifications 22 00 00. Please provide  
ANSWER: Custom Care C43-0090-20 Simplex metered softener with 2” control valve. Contactor will need to perform a water test prior to submission to verify hardness, our selection is based on 20 GPG.

**BID RFI #9** Request by Frey & Campbell Inc. dated 2-26-18  
P-0 Detail Water Service- calls out water meter. Who will be providing meter? If plumbing contractor please provide specifications.  
ANSWER: Contractor to provide. Neptune T10 2” water meter or approved equal. Water meter shall meet AWWAC700 Standards. Meter shall have Direct and remote reading capability.



**END OF ADDENDA #3**  
ARTHUR KUCKES CHILDCARE CENTER  
BID ADDENDA #3  
009131C-3

## SECTION 011200

### **MULTIPLE CONTRACT SUMMARY**

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

##### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

##### 1.2 SUMMARY

- A. Section includes a summary of each contract, including responsibilities for coordination and temporary facilities and controls.
- B. Specific requirements for Work of each contract are also indicated in individual Specification Sections and on Drawings.
- C. Related Requirements:
  - 1. Section 011000 "Summary" for the Work covered by the Contract Documents, restrictions on use of Project site, phased construction, coordination with occupants, and work restrictions.
  - 2. Section 013100 "Project Management and Coordination" for general coordination requirements.

##### 1.3 DEFINITIONS

- A. Permanent Enclosure: As determined by Architect, the condition at which roofing is insulated and weathertight; exterior walls are insulated and weathertight; and all openings are closed with permanent construction or substantial temporary closures equivalent in weather protection to permanent construction.

##### 1.4 GENERAL REQUIREMENTS OF CONTRACTS

- A. Extent of Contract: Unless the Agreement contains a more specific description of the Work of each Contract, requirements indicated on Drawings and in Specification Sections determine which contract includes a specific element of Project.
  - 1. Unless otherwise indicated, the work described in this Section for each contract shall be complete systems and assemblies, including products, components, accessories, and installation required by the Contract Documents.
  - 2. Trenching and backfilling for the work of each contract shall be the work of each contract for its own work
  - 3. Blocking, backing panels, sleeves, and metal fabrication supports for the work of each

- contract shall be the work of each contract for its own work.
4. Furnishing of access panels for the work of each contract shall be the work of each contract for its own work. Installation of access panels shall be the work of each contract for its own work.
  5. Equipment pads for the work of each contract shall be the work of each contract for its own work.
  6. Roof-mounted equipment curbs for the work of each contract shall be the work of each contract for its own work.
  7. Painting for the work of each contract shall be the work of each contract for its own work.
  8. Cutting and Patching: Provided under each contract for its own work.
  9. Roof penetrations for HVAC and roof drains shall be provided by the General Construction Contract
  10. Through-penetration or firestopping for the work of each contract shall be provided by each contract for its own work.
- B. Substitutions: Each contractor shall cooperate with other contractors involved to coordinate approved substitutions with remainder of the work.
- C. Temporary Facilities and Controls: In addition to specific responsibilities for temporary facilities and controls indicated in this Section and in Section 015000 "Temporary Facilities and Controls," each contractor is responsible for the following:
1. Installation, operation, maintenance, and removal of each temporary facility necessary for its own normal construction activity, and costs and use charges associated with each facility, except as otherwise provided for in this Section.
  2. Plug-in electric power cords and extension cords, supplementary plug-in task lighting, and special lighting necessary exclusively for its own activities.
  3. Its own field office, complete with necessary furniture, utilities, and telephone service.
  4. Its own storage and fabrication sheds.
  5. Temporary enclosures for its own construction activities.
  6. Staging and scaffolding for its own construction activities.
  7. General hoisting facilities for its own construction activities, up to 2 tons.
  8. Waste disposal facilities, including collection and legal disposal of its own hazardous, dangerous, unsanitary, or other harmful waste materials.
  9. Progress cleaning of work areas affected by its operations on a daily basis.
  10. Secure lockup of its own tools, materials, and equipment.
  11. Construction aids and miscellaneous services and facilities necessary exclusively for its own construction activities.
- D. Temporary Heating, Cooling, and Ventilation: The General Building Construction Contract is responsible for temporary heating, cooling, and ventilation before weathertight enclosure of building is complete. The HVAC Contract is responsible for temporary heating, cooling, and ventilation after permanent enclosure of building is complete and Owner will pay utility-use charges.
- E. Use Charges: Comply with the following:
1. Sewer Service: The Owner will be responsible for the cost for sewer service use by all parties engaged in construction activities at Project site.
  2. Temporary Toilet Facilities: Include the cost for Temporary toilet facilities for use by all parties engaged in the construction activities at Project site in the General Building

- Construction Contract.
3. Water Service: The Owner will be responsible for the cost for water service, whether metered or otherwise, for water used by all entities engaged in construction activities at Project site.
  4. Electric power service: The Owner will be responsible for the cost for electricity, whether metered or otherwise, for electricity used by all entities engaged in construction activities at Project site.

## 1.5 GENERAL BUILDING CONSTRUCTION CONTRACT

- A. Work in the General Building Construction Contract includes, but is not limited to, the following:
1. Remaining work not identified as work under other contracts.
  2. DELETED.
  3. DELETED
  4. DELETED
  5. Foundations, including footings, foundation walls, foundation drains, concrete patios under canopies; (at covered entry patio, infant covered patio, toddler covered patio, preschool covered patio), mechanical equipment slab, sidewalk adjacent to building at West Exit, landing at East Exit, sidewalk Outside Art Room to toddler patio, sidewalk Outside Art Room to preschool patio, slab West Outside closet, slab East Outside closet, slab Outside Art Room.
  6. Slabs-on-grade, including earthwork, sub drainage systems, and insulation.
  7. Below-grade building construction, including thermal and moisture protection.
  8. Superstructure, including floor and roof construction.
  9. Exterior closure, including walls, parapets, doors, windows, insulated metal wall panels; metal wall panels, soffits, and louvers.
  10. Roofing, including coverings, flashings and roof specialties.
  11. Interior construction, including partitions, doors, interior glazed openings, and fittings.
  12. Fire-protection specialties.
  13. Interior finishes, floorings, finish carpentry, manufactured casework, specialty casework, and window treatments.
  14. Miscellaneous items, including concrete equipment bases and painting of mechanical and electrical work except as follows:
  15. Equipment, including the following:
    - a. Visual display rails, room identification signage
- B. Temporary facilities and controls in the General Building Construction Contract include, but are not limited to, the following:
1. Temporary facilities and controls that are not otherwise specifically assigned to the Plumbing Contract, Mechanical Contract, Electrical Contract, and Civil Contract.
  2. Temporary enclosure for building exterior, except as indicated.
  3. Dewatering facilities and drains.
  4. Excavation support and protection, unless required solely for the Work of another contract.
  5. Project identification and temporary signs.
  6. General waste disposal facilities.

7. Temporary stairs.
8. Temporary fire-protection facilities.
9. Lights.
10. DELETED.
11. DELETED.
12. Security enclosure and lockup.
13. Environmental protection.
14. Restoration of Owner's existing facilities if used as temporary facilities.
15. Sanitary Facilities: Provide temporary toilets, wash facilities and drinking water for use of all construction personnel.

#### 1.6 PLUMBING/FIRE PROTECTION CONTRACT

A. Work in the Plumbing Contract includes, but is not limited to, the following:

1. Water supply within building.
2. DELETED
3. DELETED
4. DELETED
5. DELETED
6. Sanitary sewerage to five feet outside building.
7. Storm water drainage to five feet outside building.
8. Plumbing fixtures.
9. Sanitary waste and vent piping
10. Fire-suppression systems.
  - a. Wet pipe sprinkler systems.
11. Plumbing connections to equipment furnished by the General Construction Contract, Plumbing Contract, HVAC Contract, Electrical Contract, and Civil Contract.
12. Gas supply within building to regulator

#### 1.7 MECHANICAL (HVAC) CONTRACT

A. Work in the Mechanical (HVAC) Contract includes, but is not limited to, the following:

1. Energy supply, including hot- and chilled-water supply systems.
2. HVAC systems and equipment.
3. HVAC instrumentation and controls.
4. HVAC testing, adjusting, and balancing.
5. Building automation system tied to existing Main Building systems
6. Mechanical connections to equipment furnished by the General Construction Contract, Plumbing Contract, HVAC Contract, and Electrical Contract,.

B. Temporary facilities and controls in the HVAC Contract include, but are not limited to, the following:

1. Temporary heating, cooling and ventilation once permanent enclosure is achieved and Owner has authorized use of permanent systems.



## 1.8 ELECTRICAL CONTRACT

- A. Work in the Electrical Contract includes, but is not limited to, the following:
1. Site electric and telecommunications cabling and terminations
  2. Electrical service and distribution.
  3. Emergency power cabling and terminations
  4. Exterior and interior lighting
  5. Communication and security
  6. Special electrical systems, including the following:
    - a. Fire alarm systems.
    - b. Category 6 cabling and testing.
    - c. Fiber connection; building controls to main building
  7. Electrical connections to equipment furnished by the General Construction Contract, Plumbing Contract, HVAC Contract, Electrical Contract, and Civil/Site Contract.
- B. Temporary facilities and controls in the Electrical Contract include, but are not limited to, the following:
1. Electric power service and distribution.
  2. Lighting.
  3. Electrical connections to existing systems and temporary facilities and controls furnished by the General Construction Contract, Plumbing Contract, HVAC Contract, Electrical Contract, and civil Contract.

## 1.9 CIVIL CONTRACT

- A. Work in the civil Contract includes all work shown on the C-series drawings unless otherwise noted, but is not limited to, the following:
1. Earthwork, demolition and site preparation, erosion and sediment controls, grading.
  2. Structural fill including all special inspections
  3. Structural fill and non-structural fill
  4. Play area preparation for surfacing
  5. Storm drainage pipes and structures, bioentention filters and detention pond.
  6. Site storm drainage from five feet outside building.
  7. Site sanitary sewerage from five feet outside building.
  8. Stormwater Management Practice installation
  9. Water Supply from 6" gate valve outside building
  10. New hydrant
  11. DELETED
  12. Chain link fencing and gates.
  13. Installation of Play area surfacings.
  14. Asphalt and concrete walks, and curbs, sidewalk to curb from entry canopy, sidewalk from covered infant play patio to gate, sidewalk outside infant play gate to pedestrian walk, sidewalk outside gate of Preschool Play area to pedestrian walk, slab at lookout point (play area south), Parking Lots.
  15. Quarry stone in play area.
  16. DELETED.
  17. Site improvements and landscaping

18. Trenching, backfill and tracer wire for gas main by NYSEG
19. Electrical and telecomm pathways and manholes
20. Striping and traffic signage
21. Selective demolition and relocations
22. Light pole and bollard bases
23. Temporary soil stockpile embankment and removal including disposal of excess soils
24. Site preparation including clearing and earthwork
25. DELETED
26. Site development furnishings and equipment

B. Temporary facilities and controls in the Civil Contract include, but are not limited to, the following:

1. Temporary facilities and controls that are not otherwise specifically assigned to the General Contract, Plumbing Contract, HVAC Contract, and Electrical Contract.
2. Sediment and erosion control.
3. DELETED
4. DELETED
5. DELETED
6. Temporary roads and paved areas.
7. Excavation support and protection, unless required solely for the Work of another contract.
8. Site enclosure fence and tree protection, barricades and warning sign

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

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

**END OF SECTION**

Section 01 23 00  
**ALTERNATES**

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for alternates.

1.3 DEFINITIONS

- A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the bidding requirements that may be added to or deducted from the base bid amount if Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.
  - 1. Alternates described in this Section are part of the Work only if enumerated in the Agreement.
  - 2. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate alternate into the Work. No other adjustments are made to the Contract Sum.

1.4 PROCEDURES

- A. Coordination: Revise or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.
  - 1. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of alternate.
- B. Notification: Immediately following award of the Contract, notify each party involved, in writing, of the status of each alternate. Indicate if alternates have been accepted, rejected, or deferred for later consideration. Include a complete description of negotiated revisions to alternates.
- C. Execute accepted alternates under the same conditions as other work of the Contract.

- D. Schedule: A schedule of alternates is included at the end of this Section. Specification Sections referenced in schedule contain requirements for materials necessary to achieve the work described under each alternate.
1. Include as part of each Alternate, miscellaneous devices, accessory objects and similar items incidental to or required for a complete installation whether or not mentioned as part of the Alternate.

## 1.5 SCHEDULE OF ALTERNATES

- A. Alternate No. A-1: Unit Masonry change of product
1. Base Bid: Decro Block as per Section 04 00 00
  2. Alternate: Split Face Block material in lieu of Decro Block material.
- B. Alternate No. A-2: LVCT change of product:
1. Base Bid: LVCT as per Section 09 65 19 where indicated on Room Finish Schedule and drawings
  2. Alternate: Change LVCT product to PATCRAFT 1336V wood planx; color 00740 Spiced maple; "Mixed Materials converge Collection"; wear layer 40 mil
- C. Alternate No. A- 3: BASE
1. Base Bid: Install 4" carpet base in areas indicated on room finish schedule
  2. Alternate: Install 4" resilient base as per Section 09 65 13 in areas previously indicated to receive carpet base.
- D. Alternate No. A-4 KITCHEN COUNTERTOPS
1. Base Bid: Simulated Stone with under mount hand sink
  2. Alternate: Plastic Clad Laminate with drop in hand sink
- E. Alternate No. A-5 FORMED METAL WALL PANEL
1. Base Bid: Design Wall DSF
  2. Alternate: Versa – Lok:
- F. Alternate No. A-6 MANUFACTURED CASEWORK
1. Base Bid: Merillat Classic Portrait Sq. wood /maple
  2. Alternate: Merillat Masterpiece Capri Square/white laminate
- G. Alternate No. A-7 ROLLER WINDOW SHADES
1. Base Bid: provide and install
  2. Alternate: do not provide or install
- H. Alternate No. A-8 STILE AND RAIL DOORS
1. Base Bid: provide and install
  2. Alternate: Provide or install Molded Wood Composite Doors with glazings

- I. Alternate No. E-1: ICE MELT SYSTEM
  - 1. Base Bid: no system
  - 2. Alternate: Ice Melt system as per sheet E-1, note 4
  
- J. Alternate No. L-1: STONE TILE COMPASS
  - 1. Base Bid: no compass
  - 2. Alternate: provide as per detail 15 ; sheet L-501
  
- K. Alternate No. L-2: DECORATIVE FENCE & GATES
  - 1. Base Bid: all chain link
  - 2. Alternate: Detail 3 and 4; sheet L-502
  
- L. Alternate No. L-3: GRADE SLIDE AND PLATFORM
  - 1. Base Bid: no slide or platform
  - 2. Alternate: provide as per L-201 and spec section 11 68 00
  
- M. Alternate No. L-4: ADDITIONAL LOOP FOR RUBBER SURFACE TIRE TRACK
  - 1. Base Bid: no additional loop
  
- N. Alternate No. A-9:
  - 1. Base bid: membrane 80 ml G410 Reflective Grey
  - 2. Alternate: Provide 80 ml G410 Reflective Grey **Textured** membrane

**\*END OF SECTION\***

## SECTION 07 54 00

### THERMOPLASTIC MEMBRANE ROOFING

#### PART 1 GENERAL

##### 1.1 REFERENCE STANDARDS

- A. ASTM C578 - Standard Specification for Extruded Polystyrene Foam Insulation.
- B. ASTM D4434/D4434M - Standard Specification for Poly (Vinyl Chloride) Sheet Roofing; 2012.
- C. ASTM E96/E96M - Standard Test Methods for Water Vapor Transmission of Materials; 2010.
- D. ASTM E1980 - Standard Practice for Calculating Solar Reflectance Index of Horizontal and Low-Sloped Opaque Surfaces; 2011.
- E. FM DS 1-28 - Wind Design; Factory Mutual Research Corporation; 2007.
- F. ITS (DIR) - Directory of Listed Products; Intertek Testing Services NA, Inc.; current edition.
- G. NRCA ML104 - The NRCA Roofing and Waterproofing Manual; National Roofing Contractors Association; Fifth Edition, with interim updates.
- H. UL (RMSD) - Roofing Materials and Systems Directory; Underwriters Laboratories Inc.; current edition.
- I. UL (FRD) - Fire Resistance Directory; Underwriters Laboratories Inc.; current edition.

##### 1.2 ADMINISTRATIVE REQUIREMENTS

- A. Pre-installation Meeting: Convene one week before starting work of this section.
  - 1. Review preparation and installation procedures and coordinating and scheduling required with related work.

##### 1.3 SUBMITTALS

- A. See Section 01 33 00 - Submittal Procedures, for submittal procedures.
- B. Product Data: Provide data indicating membrane materials, flashing materials, insulation, and fasteners.
- C. Specimen Warranty: For approval.
- D. Shop Drawings: Indicate joint or termination detail conditions, conditions of interface with other materials, and setting plan for tapered insulation.
- E. Samples for Verification: Submit two samples 12 x 12 inches in size illustrating roof membrane, walkway and protection mat and insulation.

- F. Manufacturer's Installation Instructions: Indicate membrane seaming precautions and perimeter conditions requiring special attention.
- G. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
- H. Manufacturer's Field Reports: Indicate procedures followed, ambient temperatures, humidity, wind velocity during application, and supplementary instructions given.
- I. Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

#### **1.4 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section for a minimum of twenty years or greater to match in years to the length of warranty term. Third party manufacturing will not be permitted.
  - 1. Unchanged product formulation and or manufacturing process of the proposed membrane for the past 15 years.
  - 2. Provide list of 10 projects completed within the past 10 years in similar climatic conditions to this project, using the proposed membrane.
- B. Installer Qualifications: Company specializing in performing the work of this section:
  - 1. With minimum ten years documented experience.
  - 2. Approved by membrane manufacturer prior to bid date.
  - 3. Minimum of 10 completed single-ply PVC roofing systems manufactured by approved manufacturer, installed on commercial projects that have not failed in at least 10 years.
  - 4. Provide qualified manufacturer's technical (non-sales) representative to visit the Site during roofing system installation to review installation procedures and advise on procedures and precautions in use of roofing system.
    - a. Visits to start on the first workday with subsequent weekly site visits until installation is complete.
  - 5. Certification that the Installer has a minimum of 10 -years experience installing the proposed membrane system.
  - 6. Certification that the Installer is currently approved as an applicator of the proposed roof membrane system.
  - 7. Provide a sample copy of the Manufacturer's Warranty.
- C. Roofing Installer Certifications
  - 1. List at least 10 projects over the past 10 years using the proposed roof membrane including the following details:
    - a. Project location complete with address.
    - b. Project Owner Representative name with telephone or e-mail contact information.
    - c. Project square foot area.

2. Roofing Installer Field Supervisor

- a. Name and proof of successfully having completed necessary training offered by roofing system manufacturer, including schools, seminars, and similar opportunities.
- D. The Architect will recommend to the Owner the acceptability of the certifications and information provided by the Bidder.
- E. Refer to Document 002210 Instructions to Bidders.

**1.5 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver products in manufacturer's original containers, dry, undamaged, with seals and labels intact.
- B. Store products in weather protected environment, clear of ground, moisture and per roofing system manufacturer requirements
- C. Protect foam insulation from direct exposure to sunlight.

**1.6 FIELD CONDITIONS**

- A. Do not apply roofing membrane during unsuitable weather.
- B. Do not apply roofing membrane when ambient temperature is below 40 degrees F or above 100 degrees F.
- C. Do not apply roofing membrane to damp or frozen deck surface or when precipitation is expected or occurring.
- D. Do not expose materials vulnerable to water or sun damage in quantities greater than can be weatherproofed the same day.

**1.7 WARRANTY**

- A. See Section 01 77 00 - Closeout Submittals, for additional warranty requirements.
- B. System Warranty: Provide manufacturer's full system warranty agreeing to repair or replace roofing that leaks or is damaged due to wind or other natural causes.
  - 1. Warranty Term: 30 years.
  - 2. For repair and replacement include costs of both material and labor in warranty.
  - 3. Exceptions NOT Permitted:
    - a. Damage due to roof traffic.
    - b. Damage due to wind of speed at 90 mph.



## **PART 2 PRODUCTS**

### **2.1 MANUFACTURERS**

- A. Providing the following manufacturers meets the referenced technical performance requirements as acceptable products.
- B. PVC Membrane Materials:
  - 1. Sika Sarnafil, Inc.; [www.sarnafilus.com](http://www.sarnafilus.com). G410 Reflective Grey
  - 2. FiberTite, Inc.: [www.fibertite.com](http://www.fibertite.com).
  - 3. Bond-Cote: [www.bondcote.com](http://www.bondcote.com)
  - 4. Substitutions: See Section 01 60 00 - Product Requirements.

ALTERNATE A-9 - Provide 80 ml G410 Reflective Grey **Textured** membrane system

- C. Insulation:
  - 1. Sika Sarnafil Inc. Sarnatherm XPS: [www.sikacorp.com](http://www.sikacorp.com).
  - 2. Owens Corning Insulation Systems: [www.owenscorning.com](http://www.owenscorning.com).
  - 3. Dow Chemical Company: [www.dowbuildingsolutions.com](http://www.dowbuildingsolutions.com).
  - 4. Substitutions: See Section 01 60 00 - Product Requirements

### **2.2 ROOFING APPLICATIONS**

- A. Thermoplastic Membrane Roofing: One ply membrane and fully adhered over insulation and coverboard.
- B. Roofing Assembly Requirements:
  - 1. Solar Reflectance Index (SRI): 73, minimum, calculated in accordance with ASTM E1980.
    - a. Field applied coating may not be used to achieve specified SRI.
  - 2. Roof Covering External Fire-Resistance Classification: UL Class A.
  - 3. Factory Mutual Classification: Class I and windstorm resistance of I-90, in accordance with FM DS 1-28. ASCE 7 uplift calculations must be provided in submittal section.
  - 4. Insulation Thermal Value (R) LTTR: R=30.
- C. Acceptable Insulation Types - Constant Thickness Application:
  - 1. Two layers (to equal a min of R30) of 25 psi Extruded Polystyrene Foam Insulation board.
- D. Acceptable Insulation Types - Tapered Application:
  - 1. Tapered Extruded Polystyrene Foam Insulation board to meet requirements for slope to drain.

## 2.3 ROOFING MEMBRANE AND ASSOCIATED MATERIALS

### A. Membrane:

1. Material: Polyvinyl chloride ethylene interpolymer complying with ASTM D4434/D4434M. +/- in standard will not be accepted must be minimum.
2. Fabrication: Manufacturing process integrally blending reinforcing and membrane material into a homogeneous system with a minimum membrane thickness over scrim of 50% or greater.
3. Reinforcing: Internal fiberglass reinforcement.
4. Thickness: 0.080 inch, minimum. Nominal thickness will not be permitted
5. Sheet Width: Factory fabricated into largest sheets possible.
6. Tensile Strength: 1575 psi minimum
7. Elongation: 250
8. Membrane must have factory applied lacquer coating.
9. Solar Reflectance: 0.73, minimum, initial, and 0.65, minimum, 3-year, certified by Cool Roof Rating Council.
10. Thermal Emissivity: 0.89, minimum, initial, and 0.88, minimum, 3-year, certified by Cool Roof Rating Council.
11. Color: Reflective Grey
12. Design Basis: Roof membrane - Sika Sarnafil, G410, or equal.

### B. Seaming Materials: As recommended by membrane manufacturer.

### C. Membrane Adhesive: As recommended and approved by membrane manufacturer.

### D. Flexible Flashing Material: Sika Sarnafil, G459, or equal.

### E. Separation Sheet: Sheet polyethylene; 10 mil thick.

### F. Perimeter Edge/Fascia System:

1. Provide prefabricated perimeter edge system provided by roofing system manufacturer. System has concealed fasteners with no penetrations on the horizontal roof surface and includes fasteners and splice plates. Edge Grip is made from two distinct parts: Rigid retainer base plate and a decorative snap-on fascia cover. . Matching corners, end caps, fascia sumps, spill outs, etc. as required for complete assembly.

a) Retainer base plate shall be 0.05 inch aluminum in 10 ft. lengths with 9/32 inch (7 mm) slotted pre-punched holes for fastener spacing at 12 in on center..

b) Snap-on fascia cover shall be 24 gauge galvanized steel in 10 ft. lengths.

c) Snap-on fascia cover shall have a Kynar 500 finish.

d) Snap-on fascia cover color shall be -Bone White

2. Provide all anchors, clips and gravel stop/fascias as required by the membrane manufacturer to obtain the required full systems warranty.

3. The perimeter edge/fascia system must meet or exceed FM I.90 requirements.

### G. Walkway-Heavy Duty Crossgrip Protection Mats:

1. Composition: Open grid PVC with cross directional ribs.
2. Size: 24 x 384 inch rolls.
3. Surface Color: Light gray.
4. Products:
  - a. Sika Sarnafil – Crossgrip, or equal.
  - b. Substitutions: See Section 01 60 00 Product Requirements.

## **2.4 BASE LAYER/COVER BOARD SHEATHING**

- A. Base layer Glass mat faced gypsum panels, ASTM C 1177/C 1177 M, 5/8 inch thick mechanically attached
- B. Cover Board Sheathing: Glass mat faced gypsum panels, ASTM C 1177/C 1177 M, 1/2 inch thick.
  1. Products
    - a. Georgia-Pacific DensDeck: [www.densdeck.com](http://www.densdeck.com)
    - b. Temple-Inland, Inc.: GreenGlass Roof Board: [www.templeinland.com](http://www.templeinland.com)

## **2.5 INSULATION**

- A. Extruded Polystyrene Foam Insulation Board: Rigid closed cell foam, complying with ASTM C518, with the following characteristics:
  1. Compressive Strength: 25 psi
  2. Board Size: 48 x 48 inch, 48x96 inch or 24x,96 inch
  3. Tapered Board: Slope as indicated; minimum thickness 1/2 inch; fabricate of fewest layers possible.
  4. Board Edges: Square.
  5. Manufacturers:
    - a. Sika Sarnafil Inc: [www.sikacorp.com](http://www.sikacorp.com)
    - b. Owens Corning Insulation Systems: [www.ownscorning.com](http://www.ownscorning.com).
    - c. Dow Chemical Company: [www.dowbuildingsolutions.com](http://www.dowbuildingsolutions.com)
    - d. As provided by membrane manufacturer.

## **2.6 VAPOR BARRIER**

- A. Vapor Barrier: 32 mil (0.8mm) self-adhesive vapor barrier with primer where required adhered directly to the base layer board.

## **2.7 ACCESSORIES**

- A. Stack Boots: Prefabricated flexible boot and collar for pipe stacks through membrane; same material as membrane.
- B. Edge Strips: Wood fiberboard, compatible with roofing materials; tapered edge strips.
- C. Pre-Cut Tapered Insulation:
  1. Manufacturers:

- a. Atlas Roofing Corporation; Gemini Pre-Cut Crickets, Gemini One-Piece Drain Set, Gemini One-Piece Miter, and Gemini Tapered Edge Strip: [www.atlasroofing.com](http://www.atlasroofing.com).
- b. As provided by membrane manufacturer.
- c. Substitutions: See Section 01 60 00 - Product Requirements.

D. Spray or ribbon apply Two Component Foam Adhesive at vapor retarder:

1. Provide two part polystyrene chemical foam system designed for bonding layers of insulation together.
2. Spray foam adhesive system must be compatible with and approved for use with membrane roofing to obtain the specified roof warranty.
3. Spray application for full 100% coverage. Or bead attachment at 4 inch OC on entire project.
4. For canopy areas where insulation is not required use a 10 ml Polyethylene air barrier (as supplied by roofing system manufacturer) under the 5/8 base layer board.

E. Perimeter Bars:

1. Perimeter Bars: Provide and install wind protection perimeter bars at 4, in from perimeter of the roof. All perimeter bars to be mechanically attached to the structural deck and striped in the PVC Flashing membrane and welded seams. An FM-approved, heavy-duty, 14 gauge, galvanized, roll-formed steel bar used to attach membrane to deck

F. Membrane Adhesive: VOC Compliant bonding adhesive as recommended by membrane manufacturer.

G. Surface Conditioner for Adhesives: Compatible with membrane and adhesives.

H. Thinners and Cleaners: As recommended by adhesive manufacturer, compatible with membrane.

I. Insulation Adhesive: As recommended by insulation manufacturer.

J. Roofing Nails: Galvanized, hot dipped type, size and configuration as required to suit application.

K. Strip Reglet Devices: Galvanized steel, maximum possible lengths per location, with attachment flanges.

L. Insulation Perimeter Restraint: Metal edge device configured to restrain insulation boards in position.

M. Sealants: As recommended by membrane manufacturer.

N. Metal Threshold: As recommended by Membrane Manufacturer.

## **PART 3 EXECUTION**

### **3.1 INSTALLATION - GENERAL**

- A. Perform work in accordance with NRCA Roofing and Waterproofing Manual and manufacturer's instructions.
- B. Do not apply roofing membrane during unsuitable weather.
- C. Do not apply roofing membrane when ambient temperature is outside the temperature range recommended by manufacturer.
- D. Do not apply roofing membrane to damp or frozen deck surface or when precipitation is expected or occurring.
- E. Do not expose materials vulnerable to water or sun damage in quantities greater than can be weatherproofed the same day.
- F. Coordinate the work with installation of associated counter flashings installed by other sections as the work of this section proceeds.

### **3.2 EXAMINATION**

- A. Verify that surfaces and site conditions are ready to receive work.
- B. Verify deck is supported and secure.
- C. Verify deck is clean and smooth, flat, free of depressions, waves, or projections, properly sloped and suitable for installation of roof system.
- D. Verify deck surfaces are dry and free of snow or ice.
- E. Verify that roof openings, curbs, and penetrations through roof are solidly set, and nailing strips are in place.
- F. Provide a min of 10 fastener pull out tests on structural deck, prior to installing roofing systems (tests must meet uplift requirements)

### **3.3 MEMBRANE APPLICATION**

- A. Roll out membrane, free from wrinkles or tears. Place sheet into place without stretching.
- B. Shingle joints on sloped substrate in direction of drainage.
- C. Overlap edges and ends and seal seams by heat welding, minimum 3 inches. Seal permanently waterproof.
- D. At intersections with vertical surfaces:
  - 1. Extend membrane up a minimum of 4 inches onto vertical surfaces.
  - 2. Fully adhere flexible flashing over membrane and up to nailing strips.
  - 3. Secure flashing to nailing strips at 4 inches on center.
  - 4. Insert flashing into reglets and secure.

- E. At fascias, extend membrane under fascia and to the outside face of the wall.
- F. Around roof penetrations, seal flanges and flashings with flexible flashing.
- G. Coordinate installation of roof drains and related flashings.
- H. Attachment of Cover Board Sheathing: Embed cover board in adhesive in full contact or 4 inch ribbons, in accordance with roofing and insulation manufacturer's instructions.
- I. Install walkway pads. Space pad joints to permit draining.

### **3.4 GENERAL BASE LAYER/ INSULATION /COVERBOARD INSTALLATION REQUIREMENTS**

- A. Place insulation boards; butt in close contact. Cut neatly around protrusions through roof.
- B. Place and fit perimeter restraint to minimize movement of insulation boards.
- C. Attachment of base layer/insulation:

Attachment of Base Layer (barrier board)

1. Mechanically attach the base layer 5/8 board using #15 fasteners and plates at rates calculated per wind loads, specified uplift requirements and manufacturer's requirements.

Attachment of Insulation and coverboard:

1. Spray or ribbon apply two component Foam: Adhere new layers of insulation to vapor retarder and itself in accordance with roofing manufacturer's instructions and Factory Mutual requirements.
- D. Lay boards with edges in moderate contact without forcing. Cut insulation to fit neatly to perimeter blocking and around penetrations through roof.
  - E. Tape joints of insulation in accordance with roofing and insulation manufacturers 'instructions (if required).
  - F. At roof drains, use factory-tapered boards to slope down to roof drains over a distance of 24 inches.
  - G. Do not apply more insulation than can be covered with membrane in same day.

### **3.5 FIELD QUALITY CONTROL**

- A. See Section 01 40 00 - Quality Requirements, for general requirements for field quality control and inspection.
- B. Require site attendance of roofing material manufacturers weekly during installation of the Work.

### **3.6 CLEANING**

- A. Remove bituminous markings from finished surfaces.

- B. In areas where finished surfaces are soiled by work of this section, consult manufacturer of surfaces for cleaning advice and conform to their documented instructions.
- C. Repair or replace defaced or damaged finishes caused by work of this section.

**3.7 PROTECTION**

- A. Protect installed roofing and flashings from construction operations.
- B. Where traffic must continue over finished roof membrane, protect surfaces using durable materials.

**END OF SECTION**

## SECTION 323113 – CHAIN LINK FENCES AND GATES

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section Includes:
  - 1. Chain-link fences.
  - 2. Swing gates.
- B. Related Requirements:
  - 1. Division 03 Section "Cast-in-Place Concrete" for concrete footings.
  - 2. Division 32 Section "Earth Moving" for excavation, filling, rough grading, and backfill.

#### 1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
  - 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for the following:
    - a. Fence and gate posts, rails, and fittings.
    - b. Chain-link fabric, reinforcements, and attachments.
    - c. Gates and hardware.
- B. Shop Drawings: For each type of fence and gate assembly.
  - 1. Include plans, elevations, sections, details, and attachments to other work.
  - 2. Include accessories, hardware, gate operation, and operational clearances.
- C. Samples for Initial Selection: For each type of factory-applied finish.
- D. Samples for Verification: For each type of component with factory-applied finish, prepared on Samples of size indicated below:
  - 1. Polymer-Coated Components: In 6-inch lengths for components and on full-sized units for accessories.



#### 1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For testing agency.
- B. Product Certificates: For each type of chain-link fence and gate.
- C. Product Test Reports: For framework strength according to ASTM F 1043, for tests performed by a qualified testing agency.
- D. Field quality-control reports.
- E. Sample Warranty: For special warranty.

#### 1.5 QUALITY ASSURANCE

- A. Testing Agency Qualifications: For testing fence grounding; member company of NETA or an NRTL.
  - 1. Testing Agency's Field Supervisor: Certified by NETA to supervise on-site testing.
- B. Mockups: Build mockups to set quality standards for fabrication and installation. Once determined to be acceptable by landscape architect, mock up section may be considered part of final installation. All rejected mock ups shall be deconstructed and removed immediately from the project site.
  - 1. Build mockup for typical chain-link fence and gate, including accessories.
    - a. Size: 10-foot length of fence.

#### 1.6 FIELD CONDITIONS

- A. Field Measurements: Verify layout information for chain-link fences and gates shown on Drawings in relation to property survey and existing structures. Verify dimensions by field measurements.

#### 1.7 WARRANTY

- A. Special Warranty: Installer agrees to repair or replace components of chain-link fences and gates that fail in materials or workmanship within specified warranty period.
  - 1. Failures include, but are not limited to, the following:
    - a. Failure to comply with performance requirements.
    - b. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
  - 2. Warranty Period: 15 years from date of Substantial Completion.

## **PART 2 - PRODUCTS**

### **2.1 CHAIN-LINK FENCE FABRIC**

- A. General: Provide fabric in one-piece heights measured between top and bottom of outer edge of selvage knuckle or twist according to "CLFMI Product Manual" and requirements indicated below:
1. Fabric Height: 4'-0".
  2. Steel Wire for Fabric: 9 Gauge Wire Core. (8 Gauge Coated.)
    - a. Mesh Size: 2 inches.
    - b. Zinc-Coated Fabric: The material for chain link fence fabric shall be manufactured from galvanized steel wire. The weight of zinc shall meet the requirements of ASTM F668, Table 4.
    - c. Galvanized wire shall be PVC-coated to meet the requirements of ASTM F668.
    - d. Fence fabric shall be Class 2B - Fused and Bonded
    - e. Color: The coating color for the fence fabric shall be Black. Reference ASTM F668 and ASTM F934.
    - f. Coat selvage ends of metallic-coated fabric before the weaving process with manufacturer's protective coating.
  3. Selvage: Knuckled at both selvages.

### **2.2 FENCE FRAMEWORK**

- A. Posts and Rails: ASTM F 1043 for framework, including rails, braces, and line; terminal; and corner posts. Provide members with minimum dimensions and wall thickness according to ASTM F 1043 based on the following:
1. Fence Height: 48 inches.
  2. Light-Industrial-Strength Material: Group IC-L, round steel pipe.
    - a. Line Post: 2.5 inches diameter x WT40.
    - b. End, Corner, and Pull Posts: 3 inches diameter x WT40.
  3. Horizontal Framework Members: top and bottom rails according to ASTM F 1043.
    - a. Top and Bottom Rails: 1 5/8 inches diameter x WT40.
  4. Brace Rails: ASTM F 1043.
  5. Steel Framework PVC Coating:

- a. Color: Black
- b. The zinc used in the galvanizing process shall conform to ASTM B6. Weight of zinc shall be determined using the test method described in ASTM A90 and shall conform to the weight range allowance for ASTM A653, Designation G-90.
- c. The manufactured framework shall be subjected to a thermal stratification coating process including, as a minimum, a six-stage pretreatment/wash (with zinc phosphate), an electrostatic spray application of an epoxy base, and a separate electrostatic spray application of a polyester finish.
- d. The material used for the base coat shall be a (gray color) thermosetting epoxy; the minimum thickness of the base coat shall be two (2) mils. The material used for the finish coat shall be a thermosetting “no-mar” TGIC polyester powder; the minimum thickness of the finish coat shall be two (2) mils.
- e. The stratification coated pipe shall demonstrate the ability to endure a salt-spray resistance test in accordance with ASTM B117 without loss of adhesion for a minimum exposure time of 3,500 hours. Additionally, the coated pipe shall demonstrate the ability to withstand exposure in a weather-ometer apparatus for 1,000 hours without failure in accordance with ASTM D1499 and to show satisfactory adhesion when subjected to the cross-hatch test, Method B, in ASTM D3359. The polyester finish coat shall not crack, blister or split under normal use.

## 2.3 TENSION WIRE

### A. PVC-Coated Steel Wire:

1. Thickness: 7 Gauge, marcelled tension wire according to ASTM A 817 or ASTM A 824.
2. The coating for all wires shall be the same the galvanized wire with PVC color coating system required for the Wire Fabric.
3. Color: Black

## 2.4 SWING GATES

### A. General: ASTM F 900 for gate posts and double swing gate types.

1. Gate Leaf Width: As indicated in drawings.
2. Framework Member Sizes and Strength: Based on gate fabric height of 48 inches.

### B. Pipe and Tubing:

1. PVC Coated Steel: ASTM B6, ASTM A90, and ASTM A653; protective coating and finish to match galvanized steel fence framework with PVC coating.

2. Gate Posts: Round tubular steel.
    - a. Dimensions: As indicated on drawings.
    - b. Size: 3 inches diameter x WT40.
  3. Gate Frames and Bracing: Round tubular steel.
    - a. Dimensions: As indicated on drawings.
    - b. Frame: 1 5/8 inches diameter x WT20.
    - c. Frame Corner Construction: Welded. Grind welds smooth.
    - d. Finishing: Powder Coated
    - e. Color: Black
- C. Hardware:
1. Self-Latching Latch:
    - a. Basis-of-Design Product: DDTechnologies – Deluxe Lok Latch Round Self Latching Latch or approved equal.
    - b. Permitting operation from both sides of gate with provision for accessible from both sides of gate.
    - c. Color: Black
  2. Lock: Manufacturer's standard internal device.
  3. Self-Closing Hinge:
    - a. Basis-of-Design Product: DDTechnologies – Tru-Close Heavy Duty Round Self Closing Hinge or approved equal.
    - b. Color: Black

## 2.5 FITTINGS

- A. Provide fittings according to ASTM F 626.
- B. Post Caps: Provide for each post.
  1. Provide line post caps with loop to receive top rail.
- C. Rail and Brace Ends: For each gate, corner, pull, and end post.
- D. Rail Fittings: Provide the following:
  1. Top Rail Sleeves: Pressed-steel or round-steel tubing not less than 6 inches long.

- E. Tension and Brace Bands: Pressed steel.
- F. Tension Bars: Steel, length not less than 2 inches shorter than full height of chain-link fabric. Provide one bar for each gate and end post, and two for each corner and pull post, unless fabric is integrally woven into post.
- G. Tie Wires, Clips, and Fasteners: According to ASTM F 626.
  - 1. Standard Round Wire Ties: For attaching chain-link fabric to posts, rails, and frames, according to the following:
    - a. Hot-Dip Galvanized Steel: 0.106-inch-diameter wire; galvanized coating thickness matching coating thickness of chain-link fence fabric.
- H. Finish:
  - 1. The material for fence fittings shall be manufactured to meet the requirements of ASTM F626. The coating for all fittings shall be the same PVC color coating system required for the framework.
  - 2. Color: Black

## 2.6 GROUT AND ANCHORING CEMENT

- A. Nonshrink, Nonmetallic Grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107/C 1107M. Provide grout, recommended in writing by manufacturer, for exterior applications.
- B. Anchoring Cement: Factory-packaged, nonshrink, nonstaining, hydraulic-controlled expansion cement formulation for mixing with water at Project site to create pourable anchoring, patching, and grouting compound. Provide formulation that is resistant to erosion from water exposure without needing protection by a sealer or waterproof coating, and that is recommended in writing by manufacturer for exterior applications.

## **PART 3 - EXECUTION**

### 3.1 EXAMINATION

- A. Examine areas and conditions, with Installer present, for compliance with requirements for site clearing, earthwork, pavement work, and other conditions affecting performance of the Work.
  - 1. Do not begin installation before final grading is completed unless otherwise permitted by Architect.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

## 3.2 PREPARATION

- A. Stake locations of fence lines, gates, and terminal posts. Do not exceed intervals of 25 feet or line of sight between stakes. Indicate locations of utilities, lawn sprinkler system, underground structures, benchmarks, and property monuments.

## 3.3 CHAIN-LINK FENCE INSTALLATION

- A. Install chain-link fencing according to ASTM F 567 and more stringent requirements specified.
- B. Post Excavation: Drill or hand-excavate holes for posts to diameters and spacings indicated, in firm, undisturbed soil.
- C. Post Setting: Set posts in concrete at indicated spacing into firm, undisturbed soil.
  - 1. Verify that posts are set plumb, aligned, and at correct height and spacing, and hold in position during setting with concrete or mechanical devices.
  - 2. Concrete Fill: Place concrete around posts to dimensions indicated and vibrate or tamp for consolidation. Protect aboveground portion of posts from concrete splatter.
    - a. Posts Set into Holes in Concrete: Form or core drill holes not less than 5 inches deep and 3/4 inch larger than OD of post. Clean holes of loose material, insert posts, and fill annular space between post and concrete with nonshrink, nonmetallic grout or anchoring cement, mixed and placed according to anchoring material manufacturer's written instructions. Finish anchorage joint to slope away from post to drain water.
- D. Terminal Posts: Install terminal end, corner, and gate posts according to ASTM F 567 and terminal pull posts at changes in horizontal or vertical alignment of 15 degrees or more. For runs exceeding 500 feet, space pull posts an equal distance between corner or end posts.
- E. Line Posts: Space line posts uniformly at 10' o.c.
- F. Post Bracing and Intermediate Rails: Install according to ASTM F 567, maintaining plumb position and alignment of fence posts. Diagonally brace terminal posts to adjacent line posts with truss rods and turnbuckles. Install braces at end and gate posts and at both sides of corner and pull posts.
  - 1. Locate horizontal braces at midheight of fabric 72 inches or higher, on fences with top rail, and at two-third fabric height on fences without top rail. Install so posts are plumb when diagonal rod is under proper tension.
- G. Top Rail: Install according to ASTM F 567, maintaining plumb position and alignment of fence posts. Run rail continuously through line post caps, bending to radius for curved runs and terminating into rail end attached to posts or post caps fabricated to receive rail at terminal posts. Provide expansion couplings as recommended in writing by fencing manufacturer.
- H. Chain-Link Fabric: Apply fabric to outside of enclosing framework. Leave 1-inch bottom clearance between finish grade or surface and bottom selvage unless otherwise indicated. Pull fabric taut and tie to posts, rails, and tension wires. Anchor to framework so fabric remains under tension after pulling force is released.

- I. Tension or Stretcher Bars: Thread through fabric and secure to end, corner, pull, and gate posts, with tension bands spaced not more than 15 inches o.c.
- J. Tie Wires: Use wire of proper length to firmly secure fabric to line posts and rails. Attach wire at one end to chain-link fabric, wrap wire around post a minimum of 180 degrees, and attach other end to chain-link fabric according to ASTM F 626. Bend ends of wire to minimize hazard to individuals and clothing.
  - 1. Maximum Spacing: Tie fabric to line posts at 12 inches o.c. and to braces at 18 inches o.c.

### 3.4 GATE INSTALLATION

- A. Install gates according to manufacturer's written instructions, level, plumb, and secure for full opening without interference. Attach fabric as for fencing. Attach hardware using tamper-resistant or concealed means. Install ground-set items in concrete for anchorage. Adjust hardware for smooth operation.

### 3.5 ADJUSTING

- A. Gates: Adjust gates to operate smoothly, easily, and quietly, free of binding, warp, excessive deflection, distortion, nonalignment, misplacement, disruption, or malfunction, throughout entire operational range. Confirm that latches and locks engage accurately and securely without forcing or binding.
- B. Lubricate hardware and other moving parts.

### 3.6 DEMONSTRATION

- A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain chain-link fences and gates.

END OF SECTION 323113